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Inner-City Energy and Environmental Education Consortium

A Planning Grant Report Prepared by

Weston Institute
One Weston Way
West Chester, PA 19380

On behalf of: The American University, Archdiocese of Baltimore, Archdiocese of Philadelphia, Archdiocese of Washington, D.C., Baltimore City Community College, Baltimore City Public Schools, Catholic University of American, Cheyney State University, Community College of Philadelphia, Coppin State College, Delaware State College, District of Columbia Public Schools, Drexel University, Dundalk Community College, Gallaudet University, George Washington University, Howard University, Inner-City Consortium, Inc., The Johns Hopkins University, LaSalle University, Lincoln University, Montgomery College-Takoma Park Campus, Morgan State University, Philadelphia College of Pharmacy and Science, School District of Philadelphia, Sojourner-Douglass College, Temple University, Towson State University, University of Baltimore, University of the District of Columbia, University of Maryland-Baltimore County, University of Pennsylvania, Weston Institute, and Widener University.

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1. EXECUTIVE SUMMARY

Public concern for improving the quality of our human environment, and the quality of life, has led to the enactment of an ever-increasing number of laws which regulate further degradation of air, water, and soil. Another aspect of these new laws is that they mandate the cleanup of sites contaminated through decades of industrial use and the construction of the weapons of war. The Department of Energy has a major role to play in the development of new energy sources, the disposal of spent fuel from our nations's nuclear power plants, and in the cleanup of weapons sites.

The numbers of individuals with adequate education and training to participate effectively in the highly technical aspects of site cleanup are insufficient to meet the increasing demands of industry and government. Further, the growing public interest in the concept of sustainable development, which will be necessary for society's survival, places increased emphasis on the complex interrelationships between energy sources and environmental restoration and waste management. Young people are particularly sensitive to these issues and want to become better equipped to solve the problems which will confront them during their lives. Educational institutions, on the other hand, have been slow in offering courses and curricula which will allow students to fulfill these interests. This has been in part due to the lack of federal funding to support new academic programs.

The inner-cities of the nation contain large populations of students, mostly minorities who live below the poverty level and come from single-parent homes. Not only do these students represent a huge untapped pool of human talent which can help society solve its many energy/environmental problems but they are also increasingly aware that minorities are frequently exposed to greater environmental hazards than society at large. This Consortium has been organized to initiate a focused educational effort to reach inner-city youth with interesting and useful energy and environmental programs which can lead to well-paying and satisfying careers. Successful Consortium programs can be replicated in other parts of the nation.

The Inner-City Energy and Environmental Education Consortium comprises thirty two academic institutions located either in, or serving, the inner-cities of Washington, D.C., Baltimore, and Philadelphia. The mission of the Consortium is *to attract and retain inner-city youth to pursue careers in energy-related scientific and technical areas and in environmental restoration and waste management.* The Consortium has four goals which are (1) to organize administrative support and attract teachers to participate, (2) to develop academic and vocational curriculum materials and programs, (3) to increase the involvement of parents, mentors, and community organizations, and (4) to excite and empower students to enter and to succeed in energy/environmental careers. The grade levels addressed by the Consortium begin at pre-kindergarten and extend through undergraduate education, indeed, on into graduate education.

A planning grant of $249,000 was awarded to Weston Institute in the summer of 1992. The past year has been spent organizing the Consortium, developing strategies to fulfil the mission and attain the goals listed above, and preparing this Program Plan. One of the first tasks of the Consortium was to inventory existing energy and environmental programs in the three cities. An inventory was first published in August 1992 with a second, and more complete edition, being published at the end of 1992.

To bring together representatives of the 32 institutions from the three cities, and help them work toward a common purpose, a series of workshops were held. These workshops were highly structured, using the Nominal Group Technique, to produce tangible and useful reports in a

relatively short time. The reports of these workshops, some seven in total, are appended to this Program Plan.

This Program Plan comprises four major elements which provide an organizational framework. The first element is focused on schools and academies which form the backbone of our public and parochial school systems. The focal point of this element is the highly successful Environmental Technology Academy located at Abraham Lincoln High School in Philadelphia and the Philadelphia High School Academies, Inc. (PHSA). It is the PHSA which is the private, non-profit organization which works cooperatively with the school system and which provides a means for representatives of business and industry to contribute their time and resources in an extremely effective way. The replication of the academies is a major thrust of this Plan.

The second element of this Plan mobilizes the talents and resources of institutions of higher education in the three cities. Each college and university promotes, to varying degrees depending on its particular local needs, a variety of programs focused on inner-city and neighborhood youth. Typically, these programs are tertiary to the main purpose of the institution. The five projects included in this Plan will help colleges and universities establish connections with schools and academies and with community colleges. These connections are expected to produce new ideas and new opportunities which will benefit the students involved and will show the way to other institutions of higher education.

The third element of this Plan focuses on inner-city community colleges. Community colleges enroll over 5 million of the 12 million matriculating undergraduate students throughout the nation. They are the link between high school and a more affordable first two years of college. Community colleges also provide a link with high schools with their two--plus two--plus two--programs that pass students on to four year colleges along a carefully planned path. Through associate degree programs, students can also move quickly and effectively into the workforce, filling many important roles in the energy and environmental fields. The Department of Energy-sponsored Partnership for Environmental Technology Education (PETE) will provide curriculum support and access to innovations in community colleges in other parts of the country and with governmental laboratories.

The fourth element of the Plan concerns linkages. It is critical that this consortium offer the Department of Energy more than just a series of projects without a multiplier effect. The eight projects in the linkages section of this Plan are designed to form close ties with the Consortium of Historically Black Colleges and Universities/Minority Institutions which are concerned with waste management technology education. The SPHERE program, for example, will provide a mechanism for energy/environmental problems of interest to professionals in DOE/EPA laboratories and field sites to be placed before students at several levels to enhance their academic programs and to give them a flavor of new career opportunities. It will also open the door to employment opportunities. Other projects in the linkages element of this plan build on proven and established programs such as science fairs, the DOE Science Bowl competitions, and PRIME, Inc. which now sends over 50 highly talented students each year to HBCU/MI institutions.

The budget request for the first year of Consortium operation is slightly over $3 million. To show the extent of commitment of the participating academic organizations, a non-federal match of over 26% of the total program cost is proposed.

2. INTRODUCTION

Attention to the educational needs of the nation continues to increase. Public concern is focused in several areas which do not necessarily have obvious connections. First there is concern with the deteriorating performance of students who complete high school. Standardized test scores continue to decline. Violence pervades many schools. Fewer students show a sustained interest in science and mathematics. As public funds become scarcer, school system budgets continue to be cut. Debate intensifies as school choice is advocated by many who are dissatisfied with public school student performance.

A second public concern is for the quality of our human environment, indeed, the quality of life. This is a complex issue that over the past twenty five years has seen the public become much more aware of the manifold environmental threats to human health that exist in everyday life. This rapid increase in awareness has caused elected officials to respond with laws which are designed to set the nation on a better and safer course. Beginning with the 1976 Resource conservation and Recovery Act (RCRA), and the 1980 Comprehensive Response, compensation, and Liability Act (CERCLA), a growing list of federal, state, and local laws have been enacted, many without adequate knowledge of the correct regulatory limits, and, in some cases, the substances which need to be regulated.

A third public concern is with energy resources. This concern relates to the pollution caused by cars and trucks, as well as factories and power plants. The 1974 Arab crude oil embargo was an early warning of our national vulnerability to the loss of imported petroleum. Domestic reserves and production continue to decline as existing fields are exhausted and new deposits are increasingly difficult to find. Exploration for petroleum has been hampered by the increase in environmental regulations which place some likely deposits off-limits to drilling. The recent Gulf-War demonstrated how decisively we will protect our national interest in continued availability of petroleum.

Another aspect of the public's concern about energy resources has been its hostility toward nuclear power. The nuclear power industry's construction program has been brought to a stop with little prospect that it will be restarted in the foreseeable future. In the mean time existing nuclear power plants are aging and creating larger quantities of spent fuel stored on site. The prospect of developing a national storage site for high-level nuclear waste is still in the distant future.

Yet another aspect of the public's concern about energy resources relates to its growing awareness of the massive problems left over from the era beginning in 1945 when atomic weapons were developed and manufactured. This production was carried out in great secrecy for national security reasons. With the escalation of the Cold War, weapons manufacturing increased many-fold. With secrecy a continued necessity, the public was not aware that the weapons sites were becoming major environmental hazards. The Department of Energy has organized to deal with these problems on an increasingly massive scale.

These environmental and energy challenges permeate every aspect of our lives as we strive to define a common focus for our societal efforts. Increasingly it is clear that sustaining human life on this planet is the focus which we must recognize and muster our resources to achieve. Educational programs must prepare students with the tools they need to make positive contributions to the solution of the complex and interrelated sustainability problems confronting society. The common prerequisite in student preparation is a mastery of mathematics and science and comfort with the "things" which power our increasingly technological society.

Inner-city youth represent a large and relatively untapped reservoir of youngsters who have the potential to acquire an education which will equip them to lead happy and productive lives while contributing to the solution of these energy and environmental problems confronting society. Reaching inner-city youth with these educational opportunities presents a multi-faceted challenge. For example, poverty is greater in the inner-cities than in the country as a whole. Single parent households are more common than in the country as a whole. Drugs, AIDS, violence, poor schools, shrinking tax bases, are but a few of the difficulties confronting youngsters growing up in large U.S. cities.

Regardless of the problems faced by our inner-cities, youngsters there must be reached and provided with opportunities and motivation to succeed in life. Education is the key to their future success.

This Program Plan defines the elements of a pilot program in Washington, D.C., Baltimore, and Philadelphia where nearly 470,000 students in kindergarten through 12th grades are enrolled in the public and diocesan school systems. In addition, there are nearly 215,000 undergraduate and graduate students in the colleges and universities located in these three cities.

The Department of Energy has been, and is, an unusually active and creative federal agency in establishing and operating educational programs which are designed to meet its human resource needs. With a system of national laboratories which are turning their highly talented staffs to "greener" programs, with a large number of the most highly contaminated nuclear weapons sites in the nation to be cleaned up, and with the responsibility to work with the electric power industry to plan and operate a safe and publicly acceptable means of disposing of spent nuclear fuel, the Department of Energy has every reason to be proactive in the educational arena. Fortunately the Congress has recognized this responsibility and has given greater authority to the DOE to support educational programs which fulfill their own human resource needs but which also complement other educational efforts underway in other federal agencies.

In August 1992 the Department of Energy awarded a planning grant to Weston Institute to enable it to coalesce the interests of over 30 academic institutions in the three cities. During the past year, representatives of these institutions have worked together, many for the first time, to forge a consortial relationship which will demonstrate several successful ways in which inner-city youth can be offered educational opportunities which will give them entre into the energy and environmental fields. This Program Plan describes how the Inner-City Energy and Environmental Education Consortium has organized itself to carry out its educational mission, the resources which will be required to launch the effort, how the programs can become self-sustaining over time, and how this consortium can be linked with other DOE-sponsored educational programs and with educational programs sponsored by other federal agencies.

A new federal program of particular potential importance to the Inner-City Energy and Environmental Education Consortium is the Urban Systemic Initiative in Science, Mathematics, Technology Education launched by the National Science Foundation in September 1992. Each Consortium city has applied for an NSF-USI planning grant and awards have been made to Philadelphia and Baltimore. These DOE and NSF programs have the potential to be extremely complementary and mutually reinforcing.

3. CHARACTERISTICS OF CONSORTIUM METROPOLITAN AREA

The Metropolitan Area

The Consortium metropolitan area is a corridor bounded by Philadelphia on the north and Washington, D.C. on the south and interconnected by Interstate Highway 95 and the AMTRAK railroad route. In addition to the inner-cities of Philadelphia, Baltimore, and Washington, D.C., Chester, Pennsylvania, Wilmington, Delaware, and Towson, Maryland have been included. The three major cities have a combined 1990 census population of 2,928,491 and an inner-city school-aged (K-12) enrolment of 466,700, 75% of which are minorities. The metropolitan areas of which these three cities form the core, have a combined population of just over 12,000,000 (Ref.).

Demographic data from the 1990 census for the three major cities encompassed by the Consortium comprises 43% Caucasian, 50% African American, and 7% Other. This places the three cities among the top ten in the nation in black inner-city populations. The metropolitan areas represented by the Consortium account for approximately 14% of the total black population in the top 40 cities in the United States.

Because of this demographic composition, the Consortium represents a good test area for academic programs designed to reach inner-city youth and to fulfill the Consortium's mission and goals.

Philadelphia

The School District of Philadelphia has an enrollment of approximately 192,000. Recent information indicates that an estimated 67% lives below thee poverty line (Ref.). Philadelphia has 132 Catholic schools (several have been closed recently) which have a combined enrollment of 52,600 additional students.

The 1990 census for the City reveled a total city population of 1,585,577 with 825,839 white, 623,510 black, 89,193 Hispanic, and the remainder American Indian, Eskimo, or Asian. In the State of Pennsylvania, there are approximately 2 million school-aged children. Approximately 12% of these attend schools in the City of Philadelphia.

There are ten colleges and universities located in the City of Philadelphia, and suburban colleges and universities which operate urban centers, with a total enrollment of approximately 98,800. Of these, approximately 30% are minorities.

Baltimore

the Baltimore School District has an enrollment of approximately 108,000 students of which about 54% live below the poverty line. Baltimore has an additional 65 Catholic schools which have a combined enrollment o of 20,800 students. The 1990 census for the city revealed a population of 736,014 with 284,187 white, 433,705 black, and 7,602 Hispanic and the remainder American Indian, Eskimo, or Asian. In the State of Maryland there approximately 788,000 school-aged children. Approximately 17% of these children attend schools in the City of Baltimore.

There are ten colleges and universities located in the City of Baltimore, and suburban colleges and universities which operate urban centers, with a total enrollment of approximately 51,000.

Washington, D.C.

The District of Columbia Public Schools have an enrollment of approximately 81,000 students of which at least 26% live below the poverty line. The District has an additional 32 Catholic schools which have an enrollment of 9,700 students. The 1990 census for the District revealed a population of 606,900 with 166,131 white, 395,213 black, 37,710 Hispanic, and remainder American Indian, Eskimo, or Asian. In the District of Columbia there are approximately 91,000 school-aged children, 99% of whom attend with public schools of Catholic schools.

The eight participating colleges and universities located in the District of Columbia have a combined enrollment of approximately 67,500 students.

4. CONSORTIUM DESCRIPTION, MISSION, GOALS AND GOVERNANCE

Member Institutions

The Inner-City Energy and Environmental Education Consortium (Consortium) is an unincorporated group of degree and/or diploma granting academic institutions located in Washington, D.C., Baltimore, Maryland and vicinity, Delaware, and Philadelphia and vicinity. Those institutions located outside of inner-cities offer programs or attract students from inner-cities. The planning grant proposal contained copies of letters from 30 academic institutions which expressed interest in becoming part of the Consortium. Two additional institutions became active during the course of the planning process. These institutions are:

Washington, D.C.(9)	Baltimore (11)	Philadelphia (12)
D.C. Public Schools	Baltimore City Public Schs.	School District of Phila.
Archdiocese of Washington	Archdiocese of Baltimore	Archdiocese of Phila.
The American Univ.	Baltimore City Community Coll.	Cheyney Univ.
Catholic Univ. of America	Coppin State College	Comm. Coll. of Phila.
Gallaudet Univ.	Dundalk Community Coll.	Delaware State Coll.
George Washington Univ.	Johns Hopkins Univ.	Drexel Univ.
Howard Univ.	Morgan State Univ.	LaSalle Univ.
Montgomery College	Sojourner-Douglass Coll.	Lincoln Univ.
Takoma Park Campus	Towson State Univ.	Phil. Coll. of Pharmacy
Univ. of Dist. of Columbia	Univ. of MD., Balt. Co.	and Science
	Univ. of Baltimore	Temple Univ.
		Univ. of Pennsylvania
		Widener Univ.

With a few exceptions, participation by these institutions in consortium planning activities has been good. The school districts and the diocesan schools in each of the three cities have been exceptionally active.

Consortium Mission

The mission of the Consortium is ***to attract and retain inner-city youth to pursue careers in energy-related scientific and technical areas and in environmental restoration and waste management.*** This mission statement has proven to be widely acceptable to all participating organizations and served as a comfortable philosophic umbrella under which to shape this Program Plan.

Consortium Goals

The Consortium planning process has been focused on achieving four goals, within the framework provided by the mission statement. These goals are:

Goal 1: Organize administrative support and attract teachers to participate.

Goal 2: Develop academic and vocational curriculum materials and programs.

Goal 3: Increase involvement of parents, mentors, and community organizations.

Goal 4: Excite and empower students to enter and to succeed in energy/environmental careers.

A nominal group workshop was convened to address each goal and a workshop report issued listing the highest priority methods to achieve each goal.

Consortium Governance

The Consortium is an unincorporated organization governed by bylaws adopted by a Council of Chief Executives representing the participating organizations. At the organizing meeting of the Consortium, held at the National Academy of Science on 5 June 1992, Dr. Constance E. Clayton, Superintendent of the School District of Philadelphia, was elected Chair and Dr. William B. DeLauder, President of Delaware State College was elected Vice Chair.

At the second annual meeting of the Council of Chief Executives, held at the National Academy of Science on 4 June 1993, Dr. William B. DeLauder was elected Chair and Dr. Franklin L. Smith, Superintendent of the District of Columbia Public Schools, was elected Vice Chair.

A Steering Committee comprises one individual from each participating organization, appointed by the Chief Executive Officer of the organization. Dr. William S. Gaither, President of Weston Institute (through 30 June 1993 and, effective 1 July 1993, President and Chief Executive Officer of Inner-City Consortium, Inc.) serves as Chair of the Steering Committee and Consortium Director.

An Executive Committee of the Steering Committee comprises twelve individuals. Three represent the public school systems in each of the three cities, three represent the diocesan school systems in each of the three cities, and two at large-members are elected from among the representatives of higher education institutions in each of the three cities.

The complete bylaws which govern the Consortium are attached as Appendix 13.1 of this Program Plan.

Administrative support for the Consortium has been provided in the planning phase by Weston Institute. Administrative support for the implementation phase will be provided by Inner-City Consortium, Inc., a Delaware not-for-profit corporation established on 20 May 1993 for the express purpose of providing support for the Consortium. Articles of Incorporation and a resolution of the Board are shown in Appendix 13.4.

5. PREPARATION OF PROGRAM PLAN

Organization of Consortium

The organization of the Consortium began in June and July of 1991. This involved contacting the chief executive officers of the school districts, the diocesan school systems, and the principal colleges and universities in the three cities. Dr. William S. Gaither, President of Weston Institute led this effort and was assisted by Dr. Constance Clayton, Superintendent of the School District of Philadelphia. Letters of support of the concept of an Inner-City Consortium were obtained from 30 academic institutions.

Following receipt of a letter of intent from the Department of Energy, the Consortium was formally organized at a meeting of the Council of Chief Executives on 5 June 1992 at the Academy of Sciences in Washington, D.C. where bylaws were adopted (Appendix 13.1) and Steering Committee representatives from each institution designated. A twelve-person Executive Committee of the Steering Committee was also elected. An organizational meeting of the Steering Committee was held following the meeting of the Council of Chief Executives.

A calendar of events was adopted as an integral part of the plan to prepare the program for the Consortium. This 1992-93 Calendar of Consortium Meetings was designed to accomplish two purposes. The first was to develop consensus among the representatives of the member institutions concerning strategies (methods) to achieve the goals stated in the proposal to the Department of Energy. The second purpose of the calendar of meetings was to provide a forum, which would be both productive and professionally satisfying, for the representatives of the consortium member institutions to become acquainted, begin working together, and to involve others from their respective institutions. This strategy was successful and it resulted in eight working reports which are attached to this Program Plan as Appendices 13.5 through 13.13 attached to this Program Plan

Inventory of Existing Programs

The first step in developing the Program Plan was to prepare an inventory of existing programs. This task was carried out in July and August 1992 with extensive contacts being made with academic institutions, not-for-profit organizations, government agencies, businesses and industries. Information was gathered in a standard format developed by Weston Institute and approved by the Steering Committee. The first edition of the results was published as a 73 page document on 21 August (Appendix 13.5).

Due to summer vacations, and the fact that this was a new undertaking, it became apparent upon publication that a number of important programs had not been listed. Several suggestions were made by representatives of member institutions concerning additional information which would be useful in a second edition of the inventory. Steps were taken to collect more comprehensive information for a second edition from new sources and from sources which were already listed in the first edition. The second edition of the Inventory was published on 31 December 1992 and contained 133 pages (Appendix 13.11).

Measures of Effectiveness of Consortium Projects

The second meeting (the organizational meeting on 5 June was the first) of the Steering Committee was devoted to addressing the question: *what will be the most important Measures of Effectiveness of Consortium Programs?* The report of this workshop was published and distributed on 22

September to provide general guidance to the ad hoc standing committees which were scheduled to meet throughout the fall and winter of 1992. (Appendix 13.6).

When reviewing the workshop report, it became apparent to the Executive Committee of the Steering Committee that the perspective of employers was not represented in the 22 September report. To correct this deficiency, a second workshop was convened on 4 December. Attendees were invited from businesses, industries, and government agencies. The report of this workshop was published on 7 December 1992 (Appendix 13.9).

From these two workshops came the measures of effectiveness listed in the Request for Proposals dated 22 February 1993 (Appendix 13.3).

Standing Committees

Four ad hoc standing committees were formed to identify methods (strategies) to achieve each of the four consortium goals. Each committee met twice. The first meeting was an all-day session employing the Nominal Group Technique (NGT) to make optimum use of each participant's time and to produce a working report which was authored by all of the participants. These reports were typically published and distributed in less than one week following the completion of each workshop.

The second meeting of each ad hoc standing committee was held approximately four weeks after the first workshop. At the second meeting the individual, or team of individuals, who had authored one of the top ten priority methods was asked to present more detail about how they would implement their strategy and to develop preliminary cost estimates. Each presenter was allowed ten minutes to describe the information developed. This was followed by 20 minutes of discussion. This process allowed members of the ad hoc standing committees to (1) reach consensus on the most promising methods to achieve each program goal, and (2) to consider what types of projects they might propose as part of the Program Plan.

At these standing committee workshops, representatives of the participating institutions developed a consensus which superseded the preliminary strategies listed in the planning grant proposal dated 22 April 1992. Each of the four goals are stated below. Under each goal are the top five strategies, listed in descending order of priority based on ranking by members of each standing committee. Complete workshop reports are appended to this proposal.

Goal #1: Organize administrative support and attract teachers to participate. (Appendix 13.7)

Strategy 1: Develop financial and mission-related strategies to interest board members and provide released time and programmatic funding for teachers.

Strategy 2: Provide summer internships for students and teachers in industry, government, and academic research centers.

Strategy 3: Motivate environmental awareness among educators.

Strategy 4: Provide professional development opportunities

Strategy 5: Provide science internships for curriculum development

Goal #2: Develop academic and vocational curriculum materials and programs (Appendix 13.13)

Strategy 1: Bridge educational sectors by forming partnerships

Strategy 2: Involve energy/environmental professionals and teachers in curricula development

Strategy 3: Use local resources and environments in curricula

Strategy 4: Adapt and implement existing/successful curricula

Strategy 5: Develop database of existing curricula materials

Goal #3: Increase involvement of parents, mentors, and community organizations (Appendix 13.12)

Strategy 1: Provide energy/environmental career mentors

Strategy 2: Foster community improvement programs

Strategy 3: Offer career guidance programs

Strategy 4: Establish energy/environmental student services corps

Strategy 5: Identify established programs and relate to consortium projects

Goal #4: Excite and empower students to enter and to succeed in energy/environmental careers (Appendix 13.8)

Strategy 1: Improve energy/environmental curricula emphasizing SEM (science, engineering and mathematics)

Strategy 2: Provide financial aid for inner-city youth.

Strategy 3: Provide camps and field experiences to increase teacher/student energy/environmental awareness

Strategy 4: Establish internship programs with academia, business, industry, and government

Strategy 5: Educate the educators about energy/environmental issues

These strategies provided the participating individuals and institutions a sense of the priorities which the ad hoc committee members believed were the most promising to reach each of the Consortium's goals. The projects included in this Program Plan, do in most cases propose specific methods to implement one or more of the strategies listed above. Some strategies will need wait for the second or third program year to be included in a specific project.

Project Selection Criteria

Members of the Steering Committee devoted their 11 December 1992 meeting to addressing the question *What are the most important criteria for the selection of Consortium Projects?* The results

of this workshop were published on 14 December (Ref.). The ten most important criteria identified in this workshop are included in the Request for Proposals dated 22 February 1993.

Request for Preliminary Project Proposals

On 11 January 1993 a request was issued to all organizations listed in the *Inventory of Existing Programs - 2nd Edition,* to submit brief (four-page double spaced maximum length plus budget) proposals. The Request for Proposal used for that solicitation is shown in Appendix .

Forty one preliminary project proposals were received by the 8 February deadline. These were bound into ring binders and distributed to members of the Steering Committee. The Steering Committee met on 19 February to review and rank the preliminary project proposals. Based on the guidance received from the Steering Committee, 29 individuals were invited to submit final project proposals.

Request for Final Project Proposals

The request for final project proposals was dated 22 February and is included as Appendix . Twenty three final project proposals were received by the 1 April deadline. The length of the final project proposal write-up was limited to eight single-spaced pages, plus budgets and appendices.

These projects were reviewed by a team of three individuals, and ranked for their suitability for inclusion in the Program Plan.

Organization of the First-Year Program Plan

The Steering Committee met in Baltimore on 16 April to review the final projects submitted and the evaluation of the team of reviewers. Projects which met the criteria of the RFP and also contributed to achieving the mission and the goals of the Consortium were organized into four principal elements. These elements are (1) schools and academies, (2) higher education, (3) career and technical education, and (4) linkages. Section 6 of this plan presents each of these elements, and the detailed project descriptions included under each.

1992-93 Calendar of Events to Prepare Program Plan

June 1992

- 5 June 1992 ***Council of Chief Executives and Steering Committee*** met in Washington, DC at the National Academy of Science to organize Consortium, adopt Bylaws, elect officers, and to appoint Steering Committee and elect Executive Committee.

July 1992

- Weston Institute collected information for Inventory of Existing Programs

August 1992

- 21 August 1992 ***Executive Committee*** met at University City Science Center in Philadelphia to approve Calendar of Events and list of Questions to be Addressed at Nominal Group Workshops. Weston Institute publishes *Inventory of Existing Programs*.

- 25 August 1992 Weston Institute accepted $249,000 planning grant from Department of Energy.

September 1992

- 18 September 1992 ***Steering Committee*** met in Baltimore from 9:00 a.m. to 4:30 p.m. to establish Measures of Effectiveness (MOE's) of Consortium programs. Nominal Group Technique (NGT) workshop format was employed.

- 22 September 1992 Weston Institute published and distributed the *Measures of Effectiveness Workshop* report to Steering Committee members.

October 1992

- 9 October 1992 ***Teacher's Standing Committee*** met in Baltimore to address the question *What will be the most effective methods to organize administrative support and recruit teachers to participate in Consortium Programs?*

- 12 October 1992 Report of Teacher's Standing Committee Workshop published and distributed.

- 15 October 1992 ***Executive Committee*** met in Washington, DC in the School Superintendent's Conference Room.

- 23 October 1992 ***Student's Standing Committee*** met in Baltimore to address the question *What will be the most effective methods to excite and empower students to enter and to succeed in energy and environmental careers?*

- 30 October 1992 Report of Student's Committee workshop published and distributed.

November 1992

- 13 November 1992 ***Teacher's Standing Committee*** met in Baltimore to review and follow-up on the report of their 9 October workshop. Implementation plans were examined and cost estimates were developed for the Committee's ten highest priority methods.

- 20 November 1992 ***Executive Committee*** met in Baltimore at Morgan State University, in the School of Engineering. Agenda items included (1) review of the draft Request for Proposals (RFP), and (2) preliminary estimates of the fiscal 1993-94 program budget target.

December 1992

- 3 December 1992 ***Student's Standing Committee*** met in Baltimore at the Johns Hopkins School of Continuing Studies Downtown Center, to review the report of their 23 October workshop. Implementation plans were examined and cost estimates were developed for the Committee's ten highest priority methods.

- 4 December 1992 ***Business, Industry, and Government Agency Representatives*** met in Baltimore at the Johns Hopkins School of Continuing Studies Downtown Center in Baltimore to address the question *What will be the most important Measures of Effectiveness of Consortium Programs?*

- 7 December 1992 Report of business, industry, and government agency representatives Measures of Effectiveness workshop report published and distributed.

- 11 December 1992 ***Steering Committee*** met in Baltimore at the Johns Hopkins School of Continuing Studies Downtown Center to establish criteria for selecting Consortium projects.

NGT workshop format was employed. In addition to Steering Committee members, business, industry and government representatives who employ high school and college graduates were invited to participate.

- 14 December 1992 Weston Institute published and distributed the Steering Committee workshop report on Project Selection Criteria.

- 18 December 1992 ***Executive Committee*** met at the University of Baltimore, Charles Hall. The agenda was to select Measure(s) of Effectiveness and Project Selection Criteria for Consortium programs for use in the Request for Proposals.

January 1993

- 7 January 1993 **Request for Proposals** (Draft*) mailed to Steering Committee Members soliciting brief preliminary proposals * Draft designation was requested by DOE.

- 8 January 1993 ***Parents/Community Standing Committee*** met in Baltimore at the Johns Hopkins School of Continuing Studies Downtown Center to address the question *What will be the most effective methods to involve parents, mentors, and community organizations in the support of Consortium Programs?* The NGT workshop format was employed.

- 11 January 1993 Weston Institute published and distributed the report of the Parents/Community Standing Committee.

- 15 January 1993 ***Executive Committee*** met in Philadelphia at the School District of Philadelphia Administration Building, 21st and the Parkway.

- 29 January 1993 ***Curriculum Standing Committee*** met in Baltimore at the Johns Hopkins School of Continuing Studies Downtown Center from to address the question: *What will be the most effective methods to develop academic and vocational curriculum materials or Consortium Programs?*

February 1993

- 5 February 1993 Weston Institute published and distributed the report of the Curriculum Standing Committee Workshop.

- 8 February 1993 ***First Round Preliminary Proposals Were Due*** at Weston Institute office by 5:00 p.m.

- 12 February 1993 ***Parent's Standing Committee*** met in Baltimore at the Johns Hopkins School of Continuing Studies Downtown Center from 9:00 a.m. to 4:30 p.m. to review the report of their workshop. Implementation plans were examined and cost estimates developed for the Committee's highest priority methods.

- 19 February 1993 ***Executive Committee (All Members of Steering Committee Invited)*** met in Washington, DC from 9:30 a.m. to 4:00 p.m. to review and rank first round preliminary proposals. Member organizations to be invited to submit full proposals were identified. Weston Institute published and distributed the report of the Parent's Committee workshop.

- 22 February 1993 ***Request for Full Proposals*** issued by Weston Institute to selected organizations invited to submit full proposals for 1993-94 Consortium program plan and funding

- 26 February 1993 ***Curriculum Standing Committee*** met in Baltimore at the Johns Hopkins School of Continuing Studies Downtown Center from 9:00 a.m. to 4:30 p.m. to review the report of their workshop. Implementation plans were examined and cost estimates developed for the Committee's highest priority methods.

March 1993

- 19 March 1993 ***Steering Committee*** met in Washington, DC from 10:00 a.m. to 2:00 p.m. to review 1993-94 Consortium funding prospects, establish budget targets for Program Plan, and identify readers for the final proposals.

April 1993

- 1 April ***Final Proposals for 1993-94 Projects Due*** in Weston Institute office by 5:00 p.m.

- 6 April Readers met at Weston Institute to review all final proposals received. Final projects were selected for Program Plan.

- 16 April ***Executive Committee (All Members of Steering Committee Invited)*** met in Baltimore to review final project proposals and to develop the organizational strategy for the Program Plan.

- 29 April ***Stand-up Presentation for DOE*** was held at DOE Headquarters from 2:30 p.m. until 5:00 p.m. DOE staff provided critique and recommendations for improvement.

May 1993

- 14 May 1993 ***Steering Committee*** met in Philadelphia 10:00 a.m. to 4:00 p.m. to review and approve 1993-94 Consortium Program Plan organization and target funding level and to review the comments received from DOE at the 29 April Stand-up Presentation. Inner-City Consortium, Inc. was described as the successor organization to Weston Institute.

June 1993

- 4 June 1993 ***Council of Chief Executives*** will meet in Washington, DC to approve 1993-94 Consortium Program Plan and to confirm Inner-City Consortium, Inc. as the management organization for the 1993-94 program year.

- 23 June 1993 Consortium Program Plan was submitted to the Department of Energy by Weston Institute on behalf of the participating organizations.

6. ELEMENTS OF PROGRAM PLAN

Project Selection

The project selected for inclusion in the final Program Plan met the criteria of the RFP dated 22 February 1993. In addition to meeting the criteria of the RFP, four concerns were addressed in the final project selection process. The first concern was that the projects were of high quality and should produce valuable results in fulfilling the mission of the Consortium and achieving its goals.

The second concern in selecting projects was that each of the three major cities have a significant role to play in the implementation of the Program Plan.

The third concern in selecting projects was that, to the greatest extent practical, the projects be based on successful models and represented the best practice and research in the field. Here the concept that this inner-city consortium become a pilot project to reach students in the inner-cities of other major metropolitan areas throughout the nation.

The fourth and final consideration in selecting projects was that each be amenable to replication and amplification as a result of being part of a consortial effort. In other words, its the intention of this consortium to be of greater value and effectiveness than if it were just a series of individual projects. Thus, the fourth element of the Program Plan is devoted to linkage projects which can build on existing strengths in each of the three cities and also on the strengths of other consortia now being supported by the Department of Energy. For example, this Program Plan, because of its inner-city focus, has already developed strong ties to the Consortium of Historically Black Colleges and Universities/Minority Institutions (HBCU/MI).

The four elements of the Program Plan, which contain 19 separate projects, are divided into the following sections.

Element #1: Schools and Academies

This element focuses on K-12 education in the three cities. It is based on enhancing and replicating the highly successful Environmental Technology Academy which is sponsored by the Philadelphia High School Academies, Inc. and the School District of Philadelphia. Data on the performance of students is impressive and support by business, industry and government enviable. Charter schools and other site-based initiatives are also included in this element.

Element #2: Higher Education

This element includes projects which will be carried out by colleges and universities which offer bachelors and graduate degrees. The stimulation and benefits deriving from the first element of the Project Plan are expected to make these projects more effective and to provide opportunities for cross-fertilization as the consortium matures.

Element #3: Career and Technical Education

This element is devoted to the unique and important role played by community colleges in the respective cities and in the training of individuals who will be able to meet the needs of the DOE and other federal agencies, as well and businesses and industries concerned with energy, environmental restoration and waste management.

Element #4: Linkages

The Inner-City Consortium will come into being when increased attention is being paid to the education of inner-city youth. Each project proposed in the Linkages Element of the Program Plan has been carefully selected because it can build on existing strengths in other programs, some DOE sponsored, some sponsored by other federal agencies, and some sponsored by business and industry. This plan element is intended to provide much of the "glue" which will make the Inner-City Energy and Environmental Education Consortium be of much greater value than the sum of its individual parts.

6.1 SCHOOLS AND ACADEMIES

6.1.1 District of Columbia Public Schools Urban Energy/Environmental Initiative

6.1.2 Northern High School - Project E6: Environment, Energy, Economics,Ethics, and Efficacy through Education

6.1.3 Energy and Environmental Research Network (EERN) Program

6.1.4 Replicating the Environmental Technology Academy at an Inner-City High School

6.1.1 DISTRICT OF COLUMBIA PUBLIC SCHOOLS URBAN/ENVIRONMENTAL INITIATIVE

Proposed by
District of Columbia Public Schools

Summary

The District of Columbia Public Schools (DCPS) will implement an **urban energy/environmental initiative at two senior high schools and three junior high/middle schools. Through this project, the identified schools will develop and integrate successful energy/environmental programs and incorporate the private and public energy/environmental resources of the city. Ultimately, out of the initiative, an energy/environmental curriculum will be produced which will be replicated systemwide.** While the school system already has a variety of programs and projects related to energy and environment, too many of them are fragmented throughout the system and do not impact the numbers of students that they could. None of them adequately give full treatment to the integration of students' participation, teacher training, university and community involvement. Neither do they emphasize career attraction or recruitment features for inner-city youth. By giving oversight to an energy/environmental program that eliminates fragmentation of existing components, the applicant can put into place a cost-effective, strengthened urban program that **provides innovative practices to interest students in energy/environmental issues and attract them into related careers.**

Five schools in the District of Columbia will implement theme-centered programs that foster students' and staff's active involvement in this initiative. Two are senior high schools [Ballou and Dunbar] which already include strong mathematics/science components that will easily incorporate the energy/environmental strands. Thus, the applicant will be able to track the career component with students in grades 9-12, who are nearing the stage for making career decisions. Additionally, the three included junior high/middle schools [Roper, Sousa, Stuart-Hobson] will be able to feed into the two energy/environmental senior high schools. In order to assist schools in developing and implementing innovative strategies for inner-city youth that carry out the mission and goals of this initiative, the applicant will make available grants of **$50,000** directly to each school.

In addition to the University of the District of Columbia and the aforementioned energy/environmental-partnered program involvement, a major stakeholder in this project will be the District of Columbia Department of Public Works (DPW) Office of Recycling. This office will contribute financial, educational and technical assistance to teachers and students, inclusive of internships and mentorships. The DPW Office of Recycling will provide linkages to additional stakeholders such as the Environmental Planning Commission; the solid waste management firm Girshman, Brickner & Bratton; the Browning Ferris Industries; Health Systems Marketing and Development Corporation; Waste Management, Inc.; and the Eagle Maintenance Services *[See Work Plan and Appendix C for details]*. Hence, through this initiative, students will be encouraged and educated to realize that ecological and energy resources are limited, that new attitudes must be developed for their use, that effective ways of conservation are needed, and that they themselves must take ownership in creating a high quality of life in ways that are sustainable.

Background & Importance

Background The DCPS has undertaken to reform and redesign its mathematics/science/technology (m/s/t) curricula, making it more inclusive of

consistently under-represented groups such as women, blacks, Hispanics, and students from low income families. Currently, through a grant from the U. S. Department of Education, DCPS is writing/developing a curriculum framework and collaborating with the McKenzie Group to design a revolutionary reform of mathematics and science for the District's students for funding through the National Science Foundation. Interventive and challenging programs such as the Dunbar Senior High Pre-Engineering Program and the Ballou Senior High School Mathematics/Science Program successfully have motivated numbers of students in mathematics/science/technology. However, interest in and awareness of energy and environmental issues by minorities in this metropolitan area continue to lag. Fewer than one-fourth of the District's school population of 80,618 students are involved in the approximately 50 energy/environmental programs in existence throughout the city. Furthermore, *SuccessGuide 1991*, a national, minority-published book that features "Career Opportunities," lists no jobs under either energy or environment. In the *Journal of the National Technical Association*, Rhonda Cross stresses that there are enormous opportunities for African Americans in these fields [energy, environment], **but knowing about them is the first step** (1993). On a national level, African Americans, especially those in the inner cities, have not felt that the energy/environmental movement spoke to their needs, and technically-trained people were more likely to go into other career directions (Deare, 1993).

Importance The poor and minorities, frequently in the inner cities, are the least likely to maintain a sustainable environment. Because they are less involved in energy/environmental issues, regulations, and policies; lack political clout; and tend to be silent about the abuses heaped on their neighborhoods, their areas most often become dumping grounds for environmental wastes and energy shortages. The effects of these wastes, shortages, and abuses are critical and far-reaching--touching their health, economy, mental outlook, and values. Moreover, the uncertainty of the economy, coupled with the downsizing and layoffs faced by workers, makes the need for energy/environmental career options for students critical. Hence, the escalating cost of caring for this environment, particularly in the District of Columbia, and the impact that it has on minorities make it mandatory that a viable program of study be incorporated immediately. *No short term measure will stem the tide of human abuse, waste, and indifference to this planet, perpetrated frequently by youth, pre-K through grade 12.* Initially, this project will help students, who are not involved with energy/environmental issues, to increase sensitivity to their environment and begin to make a difference by **valuing and caring for their natural resources.** It is important for the DCPS to take an initial step by developing a curriculum relevant to careers to impact this diverse, multicultural population early in their education. Such curricula must be attractive, relevant and framed to entice inner city students to examine their urban communities and begin to solve problems that detract from a sustainable quality of life and will. It is important for students to learn critical, creative thinking, and problem-solving skills along with linkages of mathematics and science. This project will provide students with hands-on, authentic present-day and futuristic experiences to help them make decisions about and take responsibility for the environment in which they live. Then, they must commit themselves to be a part of the world's solutions by pursuing careers in those fields.

Work Plan

This initiative will be developed in three phases. **In Phase 1 [Year 1]**, stakeholders will target interdisciplinary curriculum courses and a program of staff development training for guidance counselors, teachers, and local school administrators, utilizing governmental, business, industries, and academic resources. Emphasis will always include what students should know and be able to

do. Guidance counselors will specifically be trained in various career components and university offerings for students. Guidelines will be developed for local schools' receiving grants from this project. While staff training will be ongoing, students will begin a program of awareness by the second semester of the first year. During the summer, partners will involve students in work-related activities and internships. The project director will develop and file for use a data base of information for schools' references. **Phase 2 [Year 2]** will expand the stakeholders' involvement by implementation of the five schools' theme-centered programs complete with outcome-based strategies to encourage students to identify the most serious sustainable issues in the inner-city and apply science literacy to create solutions. Work experiences, internships, and energy/environmental explorations will continue. Evaluation will be ongoing. **Phase 3 [Year 3]** of the program will continue the full implementation of the urban environmental/energy initiative, inclusive of a career component, at the five (5) schools, grades 6-12. Stakeholders, through evaluation, will begin to modify the program and prepare to replicate components of the program in additional public schools in the District of Columbia.

Time Table

Year 1: Objective	Stakeholder	Date
• Compile and review existing DCPS programs, projects, and efforts.	Project Director, Staff	06/93-08/93
• Conduct Energy/Environmental/ Engineering Summer Institute	Teachers, Administrators	08/16-20/93
• Coalesce with D. C. Environmental Consortium of Educators.	Project Director/Administrators	08/93-07/94
• Visit effective consortium projects	Project Staff	06-10/93
• Establish guidelines for grant opportunities for local schools.	Project Staff	08/93
• Involve teachers, school restructuring team, energy/environmental experts in the program development.	Project Director	09/93-06/94
•Design an energy/environmental educational program with students' benchmarks.	DCPS, Gershman, Brickner & Bratton & DPW	09/93-06/94
• Provide staff development, inservice training for local school educators.	DCPS, university, business, DPW et. al experts	09/93-08/94
• Identify course of study needed for energy/environmental strand in m/s/t curricula.	Project Director, Staff, Partners, Instructional Specialists	09/93-06/94
• Develop curriculum relevant to energy/environmental careers.	DCPS, DPW; Gershman, Brickner & Bratton; Browning Ferris Industries; UDC	10/93- 08/94

• Introduce instructional staff to Environmental resources, issues.	Environmental Planning Commission (EPC)	09/93-08/94
• Provide $50,000 grant to each local school for innovative schoolwide prog.	DCPS	10/93
• Provide training sessions for local school counselors on careers	DPW Office of Recycling, Energy/Env. Experts & UDC	12/94-06/94
• Introduce students to energy/environment.	DCPS & Partners	12/93-06/94
• Develop criteria to determine the quantifiable results of the project.	Browning-Ferris Industries. & Health Systems Marketing & Development	02/94 -06/94
• Develop student-centered, user-friendly data base for recommending effective programs.	Project Staff	06/94-8/94
• Evaluate program.	Research & Evaluation.	6/94

Year 2:

• Provide $50,000 grant to local schools for ongoing training and implementation of innovative inner-city program.	Oversight Officer	09/94
• Purchase computer-based science science curriculum.	DCPS-Edunettes	10/1/94
• Implement integrated, cross-discipline curriculum relevant to needs of multicultural inner-city youth.	DCPS, Energy/Environment experts	Ongoing '94/95
• Provide career training for guidance counselors/librarians.	University, Experts	Ongoing
• Provide mentorships and internships for students and teachers.	EPC, DPW et. al.	Ongoing
• Provide hands-on experiences for teachers and students in –management of solid waste, recyc ling, source reduction, and energy conservation –work world experiences, including work ethics and environmental ethics.	Browning Ferris Ind. & Eagle maintenance Serv.	Ongoing
• Develop Energy/Environmental Careers Handbook for Multicultural Workforce.	Waste Management Inc. & DPW	01/95

• Establish guidelines for incentives for parent/student involvement and productions.	Project Staff & Partners	01/95
• Provide Summer employment for students.	DPW & Partners	Summer '95
• Evaluate program	Research & Evaluation.	Ongoing '94/95

Year 3

• Provide $50,000 grant to each local school.	DCPS	09/95
• Implement energy/environmental curricula that emphasize: –knowledge base regarding energy/environtal themes –hands-on approach to learning – cross discipline (art, music, English, math, social studies... –application of mathematics and science –career awareness and role of multicultural workforce –investigative experiences –community developed projects for sustainability –decision making activities –outcome-based products (fairs, exhibits, debates).	Local School Staff	Ongoing
• Involve students in internships and mentorships.	DPW and EPC	Ongoing
• Evaluate program.	DCPS Research & Evaluation. & Browning Ferris Industries	6/96
• Provide summer employment opportunities for youth in energy/environmental fields.	DPW, EPC et.al.	Summer '95 Summer '96

Demographic Composition of Students/Teachers [5 Schools]

Roper Junior High School

Students. Roper Junior High School, a proposed restructured school, will focus on enrichment and acceleration of mathematics and science. Located in Ward 7 of the city in Northeast Washington, Roper will reopen in September with both the student body and staff's applying for enrollment and teaching positions.

Proposed Program: As a "school of choice," Roper will place strong emphasis on an energy/environmental program, focusing on career awareness and options. The school is already developing a career component with partners in Seoul, Korea.

Sousa Middle School

Students. Sousa Middle School, which goes from grades 6-8, has a diverse population of 539 students, all African American. It draws students from the surrounding public housing community around Minnesota Avenue in Southeast Washington, and it also draws students from the more affluent neighborhood, such as the Pennsylvania Avenue/Branch Avenue area of Fairfax Village.
Teachers. Sousa's instructional team is comprised of a principal and an assistant principal, along with 42 teachers, 2 counselors and 1 librarian.
Proposed Program: Sousa proposes a programmatic theme of maintaining a pollution-free environment, with sub-themes related to the protection and restoration of the ecological integrity of community river basins and tributaries. Students will experience hands-on involvement in planting trees, restocking native fish species in the Anacostia Basin, and improving stream banks by returning their structure and morphology to original forms. During Phase 1, Sousa targets 100 students in grade 6, with an additional 100 students being added in each subsequent year as grade 7 is phased into year 2 and grade 8 in year 3. Partnerships already include governmental agencies, as well as the Audubon Society and the Chesapeake Bay Foundation.

Stuart-Hobson Middle School

Students. Stuart-Hobson, one of three schools in the Capitol Hill Cluster, has a student body of which eighty-eight percent is African-American, with the remaining 12% being Caucasian, Hispanic and Asian. The student body is evenly mixed male and female, with 123 students receiving free or reduced-cost lunches. 225 of the students in grades 5-8 attending Stuart-Hobson come from other areas of the city through special permission requests.
Teachers. The school's leadership includes a principal, an assistant principal, and the instructional staff, composed of 30 teachers [3 males, 27 females]; 1 counselor and 2 librarians.
Proposed Program: Stuart-Hobson would pursue instructional themes related to relationships of energy/environment to personal and world health, careers, labor and business consumerism, public involvement and effective use of the government and politics. The school would organize to include a steering committee, along with interdisciplinary teams. The project would highlight regular exploratory courses for students and "energy/environmental days." Hobson targets 375 students for inclusion the first year with grades 5-8. Current partnerships include Reynolds Aluminum, Smithsonian Outreach, and the D. C. Department of Energy.

Ballou Senior High School

Students. Ballou Senior High School, located in Ward 8 in Southeast Washington, has a student body population of 1,482 students of which 1,461 are African American; 10 Caucasian; 5 Hispanic and 6 Asian. The targeted population for this initiative will be 44 ninth graders and 100 tenth in the School of Mathematics and Science, the school's comprehensive college prep program focusing on intensive studies in mathematics and science. The overall school's attendance is 77%, and the dropout rate is at 15%. Ballou's student body generally tests from one to two grade levels below the norm.
Teachers. The leadership includes one principal, five assistant principals and one coordinator. The entire school body has an instructional staff of 100, 5 counselors, and 2 librarians.
Proposed Program: Ballou, in the process of restructuring via its Ventures in Education program, will focus on careers in mathematics and science. The school, which will divide into five *houses* offering a variety of programs and activities, will include an integrated technology strand in an energy/environmental program. It will focus on careers requiring technical skills and explore current and future critical issues in these fields. During the first year, the school will involve 50 students in grade 10; 100 students in grades 10 and 11 during the second year; and 150, inclusive of grade 12 during the third year.

Dunbar Senior High School

Students. Dunbar has a pre-engineering student body of 178, out of a school population of 751. Forty-eight percent is male and 52 percent female. 98% of the student body is African American, with the remaining students Caucasian, Hispanic, and Asian. A comparison of the 1992 test scores on the Comprehensive Test of Basic Skills shows that students in the ninth grade Pre-Engineering program scored 89% in reading, 72% in mathematics, 62% science, and 69% in language, while the regular program's students in grade 10 scored from one to two grade levels below the Pre-Engineering students.

Teachers. The schools's leadership includes 1 principal, two assistant principals, and 1 coordinator. The teaching staff numbers 67, 4 counselors, and 2 librarians.

Proposed Program: Pre-Engineering students in grades 11-12 will be included in Phase 1 with grades 10-12 being included in Phase 2. During Phase 1, Dunbar will design and implement with one class an environmental science course that will integrate laboratory activities in chemistry and biology; focus on the use, abuse and control of natural resources; and involve students in creating a biosphere. In subsequent phases students will integrate the WEFAX satellite technology and LANDSAT data into the environmental course. Such data will allow students to study the impact of weather patterns and track current weather conditions. Students will participate in "Mission to Planet Earth" as an interdisciplinary program involving classes in government policies, applied physics, problem solving, environmental science, and horticulture. Students will actively participate from conducting roundtable discussions to constructing a biosphere. Career counselors and consultants in the area of energy/environment, will provide career information and opportunities on a regular basis. Current partnerships are the Department of Energy and Environmental Protection Agency, PEPCO, NASA, the Army Corps of Engineers, an advisory board structure that includes Howard University and the University of the District of Columbia.

Expected Outcomes

It is expected that the outcome will be an improved, integrated, cost-effective, non-fragmented energy/environmental strand within the mathematics/science/technology curriculum that will impact upon an **increased population of inner city, multicultural students** to:

(1) become more aware and sensitive of their environment and its related issues,
(2) increase participation in science and mathematics courses and know their relevance to energy/environmental studies,
(3) increase test score performance in mathematics and science courses
(4) demonstrate problem solving and creative thinking,
(5) increase exposure to and likelihood of selection of energy/environmental career options,
(6) increase cross-discipline, decision making skills in creating a more sustainable environment,
(7) apply decision making in sponsoring lasting community improvement projects
(8) increase awareness of city's resources, services, and many-faceted roles,
(9) demonstrate an understanding of the work ethic, as well as the environmental ethic, and
(10) develop/disseminate materials and products reflecting critical, creative and problem-solving skills.
(11) decrease the devastation to their communities by giving services and/or designing lasting projects.

Measurement of Results

The project's data from teachers and students will be evaluated on an ongoing basis by the DCPS Research and Evaluation Office. Additionally, the Browning-Ferris Industries and Health Systems Marketing and Development Corporation will help with developing criteria to determine quantifiable results of the projects. Such a design will look at replicability of this initiative to additional schools on a local and national level. It will also determine whether outcomes are cost effective to communities. Evaluations will proceed through pre and post assessments, teacher reports, self-reports, completed

evaluations, observations, students' increased participation in career-related activities, and documented activities related to involvement with energy/environment human resources. Additionally, progress of the year's activities will be monitored as to completion, types of teacher training conducted; and increased students' production of projects, fairs, exhibits, and research papers will serve as a measurement of success.

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SuccessGuide 1991: The Guide to Black Resources. Washington, DC: G. C. Fraser, 1991.

Leadership and Management

Dr. Joan Brown, executive assistant to the superintendent of D. C. Public Schools, will oversee the DCPS Urban Energy/Environmental Initiative until a full-time project director from either the District of Columbia Public Schools or the Department of Public Works is hired. The project director (EG-12/DS-13), a secretary, and five university-level program assistants (WAE) will manage the project, utilizing the resources of partners [see Appendix B for vitae]. The program assistants will be housed in the local schools, working directly with staff and students.

Budget

The District of Columbia Public Schools is requesting $1,440,986 for a three-year period to carry out the outlined budget that appears in Appendix 6.1.1 A. Outside of personnel costs and indirect charge of 12.7% of the budget minus equipment, the majority of the funds will go directly to the local schools in yearly grants of $50,000 each school. These grants will be used for schools to develop innovative, inner-city programs that must be approved by the project staff and an oversight officer. The local schools could use these funds for materials and supplies related to energy and the environment; hands-on projects and products by students such as fairs, exhibits; community projects to alleviate escalating energy/environmental costs; investigative tools and equipment; mini-camps for elementary students or junior high schools; field trips to natural resources, museums, governmental offices; reference library materials on energy/environment; guest speakers/consultants for classes or career fairs; after school and weekend activities; and other innovative activities to foster a replicable program that excites and motivates students.

APPENDIX 6.1.1 A

BUDGETS

removed.

APPENDIX 6.1.1 B

BIOGRAPHIES OF PROJECT LEADERSHIP

JOAN W. BROWN
2013 Taylor Street, N.E.
Washington, D.C. 20018
(202) 832-3718

Experience

Executive Assistant to the Superintendent for Public Affairs/Educational Initiatives, 1992 to present.
Designs systemic educational initiatives linking schools with the community and public/private agencies thereby enabling schools to create and establish new programs and structures to attract, retain and prepare students for the 21st century. Develops proposals to fund and promote the Public School Choice Initiative for D.C. schools.

Executive Assistant to the Superintendent for America 2000, 1991-1992.
Created a strategic implementation plan to promote the attainment of national America 2000 goals in the District. Works with system personnel, government and local agencies, corporations, and the community to establish programs and collaboratives. Creates structures to develop proposals and grants to receive funds to direct and support efforts and to serve as a clearinghouse for America 2000 implementation. Coordinates all activities required for the establishment of an America 2000 community.

Assistant Superintendent, Division of Instructional Support and Professional Development and Training, 1990-1991.
Provided leadership for the development, implementation and coordination of professional development to promote the highest standards of job performance for all school system personnel. Guided the development and management of leadership training programs for central school-based administrators, the development and implementation of an instructional support delivery model for classroom teachers and administrators in K-12 schools; trained teachers and administrators in Madeline Hunter strategies; designed and maintained inservice education programs; managed the Intern-Mentor, Intern Graduate Consortium, Teacher Incentive Award , the Test Improvement (SAT, PSAT, and Potential Merit Scholars), and Math/Science Teacher Training Programs, often in collaboration with university and private sponsors, an extensive staff development program, and activities to support system initiatives (*i.e.*, Comer, Values, Special Education Mainstreaming and Retooling Teacher Training Programs).

Assistant Superintendent, Division of Early Childhood and Elementary Education, 1989-90.
Reorganized the educational management and fiscal functions for 123 elementary schools; established an early childhood initiative; lobbied and secured fiscal support for hands-on science/mathematics equipment, additional pre-kindergarden aides and teachers, and staff for early childhood demonstration centers.

Executive Director, Office of Incentive Programs, 1984-1989.
Established an office and programs to recognize and reward teachers. Coordinated the study of merit pay and incentives for teachers. Developed and implemented the Intern-Mentor Program; Intern Graduate Consortium, Department Chairperson Program, Teacher to Teacher Program,

and School Improvement Award Program. Developed and field tested subject-matter for beginning teachers. Conducted and evaluated professional development training programs for new and mentor teachers and for department chairpersons.

Executive Assistant to the Associate Superintendent, Office of Services and State Affairs, 1982-1984.
Supervised, monitored, and evaluated state functions and programs for special education, certification and accreditation, and grants administration. Served as a liaison to Board committees by writing reports, briefings, and general policy statements.

Executive Director, Division of Curriculum and Staff Development, 1977-1982.
Directed the development, revision, and publication of K-12 curriculum documents in all academic and vocational subject areas. Developed training modules, staff development workshops and institutes, and courses in the use of the Competency Based Curriculum (CBC) and technology. Trained teachers, administrators, counsellors, librarians, aides, and others in the use of CBC. Published scope and sequence guides, subject matter guides, parent brochures, and cluster tests.

Special Assistant for CBC, Office of Instruction, 1976-1977.
Created the position to lead reform efforts to restructure curriculum and staff development, and instructional delivery for teachers and administrators.

Director, Division of Staff Development and Professional Publications, 1975-1976.
Served briefly to redirect functions and operations to accommodate and promote changes needed in curriculum and instruction.

Principal, Eaton and Hearst Schools, 1971-1975.
Developed a model program for Pre-Kindergarten through 8 students with intensive parental involvement. Established open classrooms, learning corridors, and cluster organizations for multi-cultural students and teaching staff. Received private sector and foundation funding to conduct school-based training and to coordinate parental involvement.

Member, Innovation Team, Model School Division, 1967-1971.
Trained teachers in new approaches to teaching the core subjects, working collaboratively with the New England Regional Laboratory (EDC) to develop and field-test innovative curricula, *i.e.*: *Madison Math*; *Man, A Course of Study*; *Senesh's Economic Series*; ESI's *Peas and Particles, Batteries and Bulbs*, etc. Published children's writings: *Tell It Like It Is*; *Cardozo Raps*; *I Wish I Was*; and *Inching On Up*. Conducted workshops, institutes, conferences, and summer school programs focused on new classroom techniques and strategies.

Demonstration Teacher, H.D. Cooke and Goding Elementary School, 1961-1967.
Prepared lessons for teachers in need of reinforcement in classroom management, room environment, and instructional techniques. Teachers were recommended by supervisors and principals to participate in this activity at least once a week.

Professional Affiliations
American Association of School Administrators
Association for Supervision and Curriculum Development
Association of Teacher Educators
International Council on Education for Teaching (ICET Life Membership)
National Association of Elementary School Principals
National Council for Basic Education
National Council of States for Inservice Education Executive Board
National Staff Development Council
Network of Outcome Based Schools

Honors and Awards

Who's Who in American Colleges and Universities
Honor Graduate, D.C. Teachers College
Outstanding Educator, D.C. Librarians
Outstanding Educator, D.C. Teachers Center
Recipient of a travel grant from the British Council, London, England to study Teacher Centers
Recipient of D.C. Public Schools' Officers' Incentive Awards for Professional Development
Phi Delta Kappa Fraternity, George Washington University Chapter

Recent Publications

Toward Excellence in Teaching, District of Columbia Public Schools, Washington, D.C., 1985, 1986, 1987.
Teacher Incentive Program, paper presented at the University of Eindhoven, Eindhoven, Netherlands, ICET Press, Eindhoven, Netherlands, 1987.
Brief Perspectives on Test Validity, Erlbaum Associates, 1987.
The District of Columbia Public School Mentor: A Very Special Teacher, District of Columbia Public Schools, Washington, D.C., 1989.
The Comprehensive Plan for Instructional Support and Professional Development and Training, District of Columbia Public Schools, Washington, D.C., 1990.
Intern-Mentor Program: Induction for Beginning Teachers, paper presented at the Third Biennial Conference on Educational Leadership, East China Normal University, Shanghai, China, July 1991.
Factors That Influence Teacher's Selection of an Urban School District for Employment, Doctoral Dissertation, George Washington University and University Microfilms International, Ann Arbor, Mich., 1991.

Education

B.S. with honors, D.C. Teachers College, Washington, D.C., 1961
M.Ed., Education, University of Massachusetts, 1971
Ed.D., Educational Administration and Policy Studies, George Washington University, 1990
Non-degree graduate courses: University of the District of Columbia, American University, Purdue University, University of Maryland, Trinity College, 1961-1986

Joan W. Brown
March 1, 1993
Page 3 of 3

APPENDIX 6.1.1 C

SUPPORTING LETTERS AND CERTIFICATIONS

CAPITOL HILL CLUSTER SCHOOL

Peabody • Watkins • Stuart-Hobson
4th and E Streets, N. E.
Washington, D. C. 20002
Telephone Number: (202) 724-4758 • FAX (202) 724-4985

March 29, 1993

LETTER OF INTENT

The Department of Energy
United States of America

To Whom It May Concern:

With the approval of the science teachers of Stuart-Hobson Middle School and the Local School Restructuring Team, the Capitol Hill Cluster School enthusiastically supports the major goals of the Energy Proposal submitted by the District of Columbia Public Schools.

Please be advised that the Stuart-Hobson staff stands ready to implement the goals and objectives as set forth in the Energy Proposal and to engage in intensive staff development related to environmental themes and energy.

Thank you for including the Stuart-Hobson Middle School Campus of the Capitol Hill Cluster School in this Energy Proposal.

Respectfully submitted,

John R. Pfeiffer, PTA President

Helen S. Flagg, Principal

Sandra Jenkins, Science Teacher

Catherine Taylor, Science Teacher

Restructuring Team Representative

Restructuring Team Representative

ROPER JUNIOR HIGH SCHOOL
4800 Meade Street, N.E.
Washington, D.C. 20019
(202) 724-4632

March 29, 1993

Memorandum To: Dr. Joan Brown, Executive Assistant
From: Helena N. Jones, Principal
Re: D.C.P.S. Urban Energy/Evironmental Iniative

The Local School Restructuring Team and I approve the implementation of the Urban Energy/Environmental Initiative, and we are willing to support the major goals of the Energy proposal, especially the career component.

In addition, the staff is willing to undertake intensive staff development relative to energy/environmental themes. The school is also willing to effectively implement this program's goals and objectives and be held accountable for doing so.

Helena N. Jones, Principal

Edward Merriweather, Local School Restructuring Team
School Chapter Advisory Council

JOHN PHILIP SOUSA MIDDLE SCHOOL
37TH & ELY PLACE, S.E.
WASHINGTON, D.C. 20019
Telephone No. (202) 767-7020
Fax No. (202) 582-2953

MEMORANDUM

To: Dr. Joan Brown
Executive Assistant

From: William A. Lipscomb
Principal
Sousa Middle School

Date: March 26, 1993

Subject: Urban Energy/Environment Initiative

On behalf of the staff, students and administrative team at Sousa Middle School, it is the intentions of our entire school to work diligently towar doing whatever is necessary to support the goals and objectives of the Urban Energy/Environmental Initiative.

SENT BY: : 3-26-93 : 10:36 : SOUSA JR. HIGH→ D.C. PUBLIC SCHOOLS:# 2

EAGLE MANAGEMENT SYSTEMS, INC.

611 L Street, N.W. • Washington, D.C. 20001
(202) 789-0200 • Fax (202) 842-2584

April 2, 1993

Dr. Franklin L. Smith
Superintendent
D.C. Public Schools
415 12th Street, N.W.
Washington, D.C. 20004

Dear Dr. Smith:

This letter is in support of the District Government's effort to educate students about the environment and energy. Our firm Eagle Maintenance Recycling will provide in-kind assistance and other assisstance as needed. We welcome this opportunity to help the District Government and look forward to a rewarding partnership.

Sincerely,

Richard W. Tynes, Jr.
President

Printed on recycled paper.

BFI Waste Systems
BROWNING-FERRIS INDUSTRIES

Washington/Maryland Metro District

Recycled paper

March 30, 1993

Dr. Franklin L. Smith
Office of Superintendent
415 12th Street, NW
Suite 1209
Washington, DC 20004

Dear Dr. Smith:

Before you is a grade school educational program developed by **BROWNING-FERRIS INDUSTRIES, INC.** to educate children about recycling, the environment and energy.

BFI has worked closely with the District Government in an effort to introduce this curriculum into the D.C. Public School system. It is our hope that you will find this curriculum to be a valuable teaching tool and sanction it's use into the school system.

In partnership with D.C. Schools and the District Government, BFI would like to design a kick-off program and be a player in the curriculum's introduction throughout the school system.

We look forward to a partnership of educating today's children for tomorrow.

Sincerely,

BROWNING-FERRIS, INC.
WASHINGTON/MARYLAND METRO DISTRICT

Bill Thomas

William B. Thomas
Recycling Coordinator

WBT/pfc
Enclosure

8401 TRUCK WAY • CAPITOL HEIGHTS, MARYLAND 20743 • (301) 336-1000

1:30

GBB
SOLID WASTE
MANAGEMENT
CONSULTANTS

April 28, 1993

Dr. Franklin L. Smith
Superintendent
D.C. Public Schools
415 12th Street, N.W.
Washington, D.C. 200004

Dear Mr. Smith:

This letter is in support of the D.C. Public Schools' efforts to educate students about the environment and energy. Gershman, Brickner & Bratton, Inc. would be pleased to provide technical assistance in the form of sample material for developing solid waste management, recycling, and alternative energy curricula for various grade levels through the District's Litter and Solid Waste Commission. We look forward to working with the D.C. Public Schools.

Sincerely,

Robert H Brickner

Robert Brickner
Senior Vice President

cc: E. Wood, GBB
B. Scher, Chairperson, Litter and Solid Waste Commission

Gershman, Brickner & Bratton Inc

2735 Hartland Road
Falls Church, Virginia 22043 3537
(703) 573-5800 FAX (703) 698 1306

Printed on Recycled Paper

DOE F 1600.5 (11-80)

OMB Control No
1910-0400

U.S. DEPARTMENT OF ENERGY

ASSURANCE OF COMPLIANCE

Nondiscrimination of Federally Assisted Programs

Dr. Franklin L. Smith Franklin L. Smith (Hereinafter called the "Applicant") HEREBY AGREES to comply with Title VI of the Civil Rights Act of 1964 (Pub. L. 88-352), Section 16 of the Federal Energy Administration Act of 1974 (Pub. L. 93-275), Section 401 of the Energy Reorganization Act of 1974 (Pub. L. 93-438), Title IX of the Education Amendments of 1972, as amended (Pub. L. 92-318, Pub. L. 93-568, and Pub. L. 94-482), Section 504 of the Rehabilitation Act of 1973 (Pub. L. 93-112), the Age Discrimination Act of 1975 (Pub. L. 94-135), Title VIII of the Civil Rights Act of 1968 (Pub. L. 90-284), the Department of Energy Organization Act of 1977 (Pub. L. 95-91), and the Energy Conservation and Production Act of 1976, as amended (Pub. L. 94-385). In accordance with the above laws and regulations issued pursuant thereto, the Applicant agrees to assure that no person in the United States shall, on the ground of race, color, national origin, sex, age, or handicap, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity in which the Applicant receives Federal assistance from the Department of Energy.

Applicability and Period of Obligation

In the case of any service, financial aid, covered employment, equipment, property, or structure provided, leased, or improved with Federal assistance extended to the Applicant by the Department of Energy, this assurance obligates the Applicant for the period during which Federal assistance is extended. In the case of any transfer of such service, financial aid, equipment, property, or structure, this assurance obligates the transferee for the period during which Federal assistance is extended. If any personal property is so provided, this assurance obligates the Applicant for the period during which it retains ownership or possession of the property. In all other cases, this assurance obligates the Applicant for the period during which the Federal assistance is extended to the Applicant by the Department of Energy.

Employment Practices

Where a primary objective of the Federal assistance is to provide employment or where the Applicant's employment practices affect the delivery of services in programs or activities resulting from Federal assistance extended by the Department, the Applicant agrees not to discriminate on the ground of race, color, national origin, sex, age, or handicap, in its employment practices. Such employment practices may include, but are not limited to, recruitment, recruitment advertising, hiring, layoff or termination, promotion, demotion, transfer, rates of pay, training and participation in upward mobility programs; or other forms of compensation and use of facilities

Subrecipient Assurance

The Applicant shall require any individual, organization, or other entity with whom it subcontracts, subgrants, or subleases for the purpose of providing any service, financial aid, equipment, property, or structure to comply with laws cited above To this end, the subrecipient shall be required to sign a written assurance form, however, the obligation or both recipient and subrecipient to ensure compliance is not relieved by the collection or submission of written assurance forms.

Data Collection and Access to Records

The Applicant agrees to compile and maintain information pertaining to programs or activities developed as a result of the Applicant's receipt of Federal assistance from the Department of Energy. Such information shall include, but is not limited to, the following: (1) the manner in which services are or will be provided and related data necessary for determining whether any persons are or will be denied such services on the basis of prohibited discrimination; (2) the population eligible to be served by race, color, national origin, sex, age, and handicap; (3) data regarding covered employment including use or planned use of bilingual public contact employees serving beneficiaries of the program where necessary to permit effective participation by beneficiaries unable to speak or understand English; (4) the location of existing or proposed facilities connected with the program and related information adequate for determining whether the location has or will have the effect of unnecessarily denying access to any person on the basis of prohibited discrimination, (5) the present or proposed membership by race, color,

national origin, sex, age, and handicap, in any planning or advisory body which is an integral part of the program; and additional written data determined by the Department of Energy to be relevant to its obligation to assure compli recipients with laws cited in the first paragraph of this assurance.

The Applicant agrees to submit requested data to the Department of Energy regarding programs and activities devel the Applicant from the use of Federal assistance funds extended by the Department of Energy. Facilities of the A (including the physical plants, buildings, or other structures) and all records, books, accounts, and other sources of infor pertinent to the Applicant's compliance with the civil rights laws shall be made available for inspection during normal b hours on request of an officer or employee of the Department of Energy specifically authorized to make such insp Instructions in this regard will be provided by the Director, Office of Equal Opportunity, U.S. Department of Energy.

This assurance is given in consideration of and of the purpose of obtaining any and all Federal grants, loans, c (excluding procurement contracts), property, discounts, or other Federal assistance extended after the date hereto, Applicants by the Department of Energy, including installment payments on account after such data of application for F assistance which are approved before such date. The Applicant recognizes and agrees that such Federal assistance extended in reliance upon the representations and agreements made in this assurance and the United States shall ha right to seek judicial enforcement of this assurance. This assurance in binding on the Applicant, its successors, transf and assignees, as well as the person whose signature appears below and who is authorized to sign this assurance on of the Applicant.

June 10, 1993

(Date)

Dr. Franklin L. Smith

(Name of Applicant)

Superintendent of Schools
Chief State School Officer

415 12th Street, N.W., Rm. 1209
Washington, DC 20004

(Address)

Franklin L. Smith

(Authorized Official)

(202) 724-4222

(Applicant's Telephone Number)

CERTIFICATIONS REGARDING LOBBYING; DEBARMENT, SUSPENSION AND OTHER RESPONSIBILITY MATTERS; AND DRUG-FREE WORKPLACE REQUIREMENTS

Applicants should refer to the regulations cited below to determine the certification to which they are required to attest. Applicants should also review the instructions for certification included in the regulations before completing this form. Signature of this form provides for compliance with certification requirements under 34 CFR Part 82, "New Restrictions on Lobbying," and 34 CFR Part 85, "Government-wide Debarment and Suspension (Nonprocurement) and Government-wide Requirements for Drug-Free Workplace (Grants)." The certifications shall be treated as a material representation of fact upon which reliance will be placed when the Department of Energy determines to award the covered transaction, grant, or cooperative agreement.

1. LOBBYING

The undersigned certifies, to the best of his or her knowledge and belief, that:

(1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

(3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

2. DEBARMENT, SUSPENSION, AND OTHER RESPONSIBILITY MATTERS

(1) The prospective primary participant certifies to the best of its knowledge and belief, that it and its principals:

(a) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;

(b) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

(c) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (1)(b) of this certification, and

(d) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

(2) Where the prospective primary participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

3. DRUG-FREE WORKPLACE

This certification is required by the Drug-Free Workplace Act of 1988 (Pub. L. 100-690, Title V, Subtitle D) and is implemented through additions to the Debarment and Suspension regulations, published in the Federal Register on January 31, 1989, and May 25, 1990.

ALTERNATE I
(GRANTEES OTHER THAN INDIVIDUALS)

(1) The grantee certifies that it will or will continue to provide a drug-free workplace by:

(a) Publishing a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the grantee's workplace and specifying the actions that will be taken against employees for violation of such prohibition;

(b) Establishing an ongoing drug-free awareness program to inform employees about:

(1) The dangers of drug abuse in the workplace;

(2) The grantee's policy of maintaining a drug-free workplace;

(3) Any available drug counseling, rehabilitation, and employee assistance programs; and

(4) The penalties that may be imposed upon employees for drug abuse violations occurring in the workplace;

(c) Making it a requirement that each employee to be engaged in the performance of the grant be given a copy of the statement required by paragraph (a);

(d) Notifying the employee in the statement required by paragraph (a) that, as a condition of employment under the grant, the employee will:

(1) Abide by the terms of the statement; and

(2) Notify the employer in writing of his or her conviction for a violation of a criminal drug statute occurring in the workplace not later than five calendar days after such conviction;

(e) Notifying the agency, in writing, within ten calendar days after receiving notice under subparagraph (d)(2) from an employee or otherwise receiving actual notice of such conviction. Employers of convicted employees must provide notice, including position title, to every grant officer or other designee on whose grant activity the convicted employee was working, unless the Federal agency has designated a central point for the receipt of such notices. Notice shall include the identification number(s) of each affected grant;

(f) Taking one of the following actions, within 30 calendar days of receiving notice under subparagraph (d)(2), with respect to any employee who is so convicted:

(1) Taking appropriate personnel action against such an employee, up to and including termination, consistent with the requirements of the Rehabilitation Act of 1973, as amended; or

(2) Requiring such employee to participate satisfactorily in a drug abuse assistance or rehabilitation program approved for such purposes by a Federal, State, or local health, law enforcement, or other appropriate agency;

(g) Making a good faith effort to continue to maintain a drug-free workplace through implementation of paragraphs (a), (b), (c), (d), (e), and (f).

(2) The grantee may insert in the space provided below site(s) for the performance of work done in connection v the specific grant:

Place of Performance:
(Street address, city, county, state, zip code)

415 12th Street N.W.

Washington, DC 20004

☐ Check if there are workplaces on file that are not identified here.

ALTERNATE II (GRANTEES WHO ARE INDIVIDUAL

(1) The grantee certifies that, as a condition of the grant, he or s will not engage in the unlawful manufacture, distributi dispensing, possession, or use of a controlled substance conducting any activity with the grant.

(2) If convicted of a criminal drug offense resulting from violation occurring during the conduct of any grant activi he or she will report the conviction, in writing, within calendar days of the conviction, to every grant officer other designee, unless the Federal agency designates a ce tral point for the receipt of such notices. When notice is ma to such a central point, it shall include the identificati number(s) of each affected grant.

As the duly authorized representative of the applicant, I hereby certify that the applicant will comply with the above certification

NAME OF APPLICANT	PR/AWARD NUMBER AND/OR PROJECT NAME
Dr. Franklin L. Smith	
PRINTED NAME AND TITLE OF AUTHORIZED REPRESENTATIVE Dr. Franklin L. Smith Superintendent of Schools Chief State School Officer	
SIGNATURE	DATE
Franklin L. Smith	6/10/93

6.1.2 NORTHERN HIGH SCHOOL
PROJECT E6: ENVIRONMENT, ENERGY, ECONOMICS, ETHICS, and EFFICACY through EDUCATION

Proposed by
Baltimore City Public Schools

Summary

Through principles of efficacy, a programmatic belief that all can be successful and that intelligence is an acquired behavior, this project will engender environmental ethics and prepare urban students for energy and environmental careers. Through **Project E6** the Northern High school curricular and instructional program will be modified, staff in all departments will be trained, new technology will be infused, and partnerships with businesses, higher education, and community will be strengthened. The students will be empowered to take environmental action as they become involved in activities that lead to authentic work experiences. The desired outcome of this projec: is to create a model environmental magnet program at Northern High School in Baltimore City and to produce over a four year period, 50% of graduates ready to enter higher education and/or energy, environmental, scientific, and technical careers in the regional economy.

Background and Importance

"Baltimore: Where Science Comes To Life," is the theme of an exciting plan to transform the Baltimore regional economy from manufacturing to high technology in the biological and medical sciences. This visionary effort, spearheaded by the Greater Baltimore Committee, is forging partnerships among business, education, labor, government and community leaders. The Columbus Center for marine research and exploration and the Hopkins Bayview research campuses are first steps. A key to this effort is educating a workforce where 85% of jobs require special technological skills. According to the Maryland Department of Employment and Economic Development, job growth in the region is expected in newer environmental industries.

In April 1993 the *Environmental Technology Project*, an environmental/energy industry research study, was completed for the Technology Council of the Greater Baltimore Committee. It notes that:

"The irrefutable interrelation between environment, energy and the economy has been accepted as conventional wisdom through the work and findings of the Carnegie Commission on Science, Technology and the Government in their just released (April, 1993) report entitled, *Science Technology and Government for a Changing World.* This linkage, has produced an industry which assumes the work of promoting substantial economic development through respect for the environment. This environmental technology industry, or "envirotech" includes companies that manufacture products or provide services in the environmental and energy areas, as well as educational and research institutions. It appears that this previously loosely-structured, difficult-to-define industry is poised to break out of its relative obscurity and establish itself as one of the economic engines driving national economic growth. The development of an Environmental/Energy Technology Business Council is worthy of strong deliberation at the present time. Several factors contribute the timely consideration and opportuneness of such as effort:

- Strong indications that this is a fast-growing, multi-disciplinary industry are supported by the attached compilation of approximately 300 regional environmental and energy technology-related

businesses, not including the legal, accounting and trade association support services in the Baltimore area.

• Dramatic growth is occurring in this industry and is expected to continue throughout the next decade. The current global market for environmental technology is estimated to be $300 billion and is expected to double by the year 2000.

• The domestic and international markets for waste management, environmental remediation and alternative energy systems are being drive by the realities of expanding population, the linkage of trade and the environment (NAFTA & GATT), international agreements (e.g. Rio Summit), over-used landfills, government regulations resulting from citizen outrage and lawsuits prompted by toxic dumping. The cost of cleaning up military and energy installations alone is increasing 35% per year and could exceed $1 trillion over the next 50 years. Europe is currently spending $50 billion per year on environmental products and services.

• The Federal government is likely to play a lead role in fueling much of the anticipated growth in this arena. The Department of Energy has indicated that $300-600 billion will be spent in the next 30 years to cleanup hazardous waste in the United States. Also expected, as reported in a new manpower study, is the need for DoE to hire an additional 25,000 employees over the next 5 years primarily through federal contractors.

• It is expected that the Federal Lab system will play an expanded role within the private sector.

• Additionally, the "peace dividend" of post-Cold War defense conversion will result in a dramatic shift of federal dollars from the defense ledger to civilian R&D. One of the definitive aspects of the direction of these re-prioritized federal funds will be the "dual-use" criteria, in which partnerships are sought to produce both defense and commercial applications of technology. Areas for designated dual-use partnerships include: environmentally conscious manufacturing technology, fuel-cell technology and other alternate power sources, marine biotechnology and defense-environmental restoration activities."

The industry in Maryland appears to be well-represented and should be able to benefit from our proximity to Federal facilities and the future emphasis on collaboration and partnerships, specifically emphasized the need for the Labs to redefine their thinking on technology transfer from weapons to environmental technology and respond positively to the pull of the market by seeking and forming critical partnerships with the private sector. Maryland's efforts to identify and define the envirotech industry have been well-intentioned, but somewhat scattered. The Center for Global Change at the University of Maryland, College Park companies state-wide and develop strategies to catalyze business development and technology transfer activity. Private and public sector attention has also focused on the environmental arena through recent efforts by DEED, MDE, the GBC, the Abell Foundation, the World Trade Center Institute and the former Baltimore Regional Council of Governments just to mention a few". (A listing of 300 environmental and energy related industries in the Maryland area appears in Appendix 6.1.2 C)

Mayor Kurt Schmoke,who heralds Baltimore as *The City that Reads,* has increased spending for education by 57%. Dr. Walter Amprey, Superintendent of Public Instruction, has undertaken an exhaustive reorganization and strategic planning process which is expected to transform Baltimore City Public Schools which serves 110,000 students, 81% of whom are African-American and 67% of whom receive free or reduced lunch. The common problems of single parent households, poor attendance, high drop-out rate, and under achievement are being addressed by a myriad of innovative strategies of which **Project E6** will become in integral part.

Northern High School is a comprehensive school located in northeast Baltimore City. The school has 1,160 students, 90% of whom are African American. One fifth of the students are in special

education programs. While the incoming ninth grade class averages 500 students, the graduating class averages 150 students, a distressing fact which has prompted Northern staff to initiate major reforms. Effort has been made to revamp the Northern curriculum, provide greater assistance for at risk students, and to attract resources both material and human. The science department has developed an environmental science emphasis. Through small grants and linkages with other programs, offerings and field experiences have been expanded, a greenhouse has been constructed, and more students are engaged in college and career preparation activities.

The Northern staff is anxious to make energy and environmental curriculum a focus which can also serve as a program to attract students city-wide. Students, parents, central office personnel, as well as community members, and business partners concur. Northern is being linked to a number of efforts which will contribute to the success of **Project E6.** A feeder middle school is adopting an experiential/expeditionary learning approach. A computerized environmental monitoring station and interactive distance learning center are in planning. The school serves as the citywide site for environmental training for teachers. Local colleges and universities are in close cooperation offering programs for both staff and students. Other partners have pledged support. The stage is set.

The implementation of **Project E6** will be instrumental not only in the restructuring of Northern High School but in creating a new academic center focusing on energy and the environment in concert with the vision of the Baltimore region. This unique program will offer urban students an opportunity that has been denied in the past. **Project E6** will be a natural extension to another project at Winston Middle School, a feeder to Northern, proposed to become an Expeditionary Learning Center based upon the Outward Bound Model. Northern is also part of the Herring Run Watershed Initiative and will join the Yale University School of Forestry summer environmental restoration project in Baltimore. Staff at Northern High school will be provided with the funds to actualize their dream of totally revamping their curriculum, creating interdisciplinary courses and providing authentic work experiences for students. They will also be able to engage in professional development (e.g. Certificate in Environmental Studies at Johns Hopkins University). Very importantly, **Project E6** will bring much needed technology to the Northern instructional program. It will link business partners and local colleges and universities with staff in training and with students (e.g. alternative energy course taught at Northern by college personnel). Finally, **Project E6** will serve as a model for Consortium members in transforming a struggling urban school into a viable magnet for energy and environmental careers.

Work Plan

The following timelines and objectives comprise the principal elements of the work plan.

Timeline	Objectives:	
By June 1996	a.	Prepare 50% of graduates for higher education, careers, and self sufficiency in environmental and energy careers.
By June 1995	b.	Empower all students with the knowledge, skills, and ethics necessary to make sound environmental decisions, and accept responsibility toward their urban community and larger environment.
By September 1994	c.	Modify the curricular and instructional program at Northern High School to create a multidisciplinary environmental and energy focus in both the humanities and the sciences to better serve students, act as a magnet program, and be a model for other comprehensive high schools in Baltimore and urban areas.

By September 1994 d. Provide a strong academic program, especially in science, mathematics, and technology that is enriched by multiple experiences related to energy and the environment (e.g. jobs, service, and cooperative ventures which have positive impacts on the community.)

By June 1995 e. Train students in the use of a variety of technologies (e.g.computers, laser discs, electronic environmental monitoring devices) that will allow them to extend capabilities, collect and manipulate data, produce multi-media projects and share them electronically with schools in Baltimore and other urban areas.

By September 1994 f. Provide professional development for staff in all disciplines to increase content background, improve instructional delivery, and increase technical abilities related to the energy and environmental programs and their interdisciplinary applications.

By September 1995 g. Maximize human and material resources for the program by forging partnerships with parents, community groups, energy/environment related businesses and industries, churches, colleges and universities, and environmental organizations.

Implementation Plan

By June 1994 Curricular Modification

a. Apply the DACUM process (a curriculum development procedure) to determine the knowledge, attitudes, and competencies employers in energy and environmental related education, business, and industry in the Mid-Atlantic region require of students and employees.

b. Modify the course sequence, course content, and outcomes in all disciplines to match DACUM and Baltimore City Public Schools (BCPS) competencies, and to incorporate current instructional strategies.

c. Modify the school schedule to provide greater flexibility and time for laboratories, field experiences, and work/service experiences.

d. Solicit input from parents, educators, students, experts and others.

e. Publicize the **Project E6** program as a "city wide school" to attract students interested in environmental and energy careers.

f. Select a program coordinator and advisory board.

By June 1994 Instructional Modifications

a. Adopt principles of efficacy and the African and African American infusion promoted by Baltimore City Public Schools

as applied to the **Project E6** program.

b. Adopt the new Baltimore City Public Schools mathematics and science comprehensive plan to upgrade the program and institute a tech-prep program in environmental and energy careers. (Tech-prep is a 2+2 program which links the last two years of high school with community college programs.)

c. Target resources and provide additional assistance (e.g. Futures) to at risk students to lower the dropout rate and combat problems such as drug use (e.g. Drug Free Schools project).

d. Arrange for students field experiences (e.g. Chesapeake Bay Foundation), career exploration (e.g. internships) and environmental/energy action projects (e.g. energy audits, habitat restoration, building weatherization, lead assessment) for students.

e. Use environmental and energy topics as a springboard for interdisciplinary activities (e.g. school newsletter using desktop publishing, musical events, art, plays, Earth-algebra.)

By June 1995 Technological Modifications

a. Upgrade computer hardware and software and other technologies (e.g. interface services, video-microscopy, laserdiscs) so that students can be trained on state of the art equipment.

b. Tap other resources to upgrade technology (e.g. BCPSinteractive television distance learning, weather, satellite station, Regional Center for Technology, Department of Forestry Environmental Monitoring Station).

c. Upgrade science laboratories (e.g. environmental monitoring equipment) and career and technology training areas (e.g. electronics laboratory).

By September 1994 Staff Development

a. Devise a series of general workshops for the entire staff (e.g. Multicultural Infusion, Principles of Efficacy, Technology, Environmental Concepts) as well as discipline specific workshops , (e.g. Math-Science Integration using Environmental Themes) and provide time and compensation for staff to engage in them.

b. Encourage staff to participate in summer study, internships, research and other professional development (e.g. Eisenhower Grant science and math workshops, Maryland Outdoor and Environmental Education Conference, EARTHWATCH, Certificate in Environmental Studies, Baltimore Gas and Electric Company sponsored Energy Workshops).

c. Provide intensive training in the application of technology in all subject areas. (e.g. computers. laserdiscs)

By September 1995 Partnerships

a. Invite all current partners (e.g. Office of Sciences and Mathematics, Goucher College, Coppin State, Morgan and Towson State Universities, Chesapeake Bay Foundation) to collaborate in the **E6 Project.**

b. Solicit new Baltimore area partners related to energy and environmental careers to cooperate on the project. (See Appendix for listing of industries)

c Develop internships at community sites (e.g. McLean Nurseries, Mt. Pleasant Turf Management, MIRCON Environmental Services)

d. Make a major effort to involve parents, community groups, and churches in urban based environmental (e.g. rodent infestation) and energy projects (e.g. home weatherization).

e. Develop a volunteer cadre to support the project (e.g. SERV: Society of Executive Retired Volunteer, National Technical Association.)

By June 1995 Student Empowerment

a. Develop with each incoming student and his/her family a personal plan for high school which is geared toward specific educational and career goals and review the plan annually.

b. Utilize a variety of resources to improve self-esteem, foster good decision making, promote leadership, encourage team building (e.g. peer facilitators), increase pride, and reduce negative behaviors (e.g. absenteeism).

c. Establish a student EcoAction Council to plan and implement student environmental and energy projects.

d. Involve students in a variety of extra curricular activities (e.g. MESA Club, Student Service Alliance) and service learning activities (e.g. lead abatement, auto emission audit, park restoration, stream maintenance) in energy and environmental areas.

e. Involve students in authentic work experience (e.g. internships, work-study) in environmental and energy career fields during the school year and summer (e.g. Yale Graduate Department of Forestry restoration.)

Demographic Composition of Students and Teachers

Enrollment Total 1106 Free or Reduced Lunch

9	512	37%
10	258	
11	170	
12	166	

Students By Ethnicity

Black	White	Asian	Hispanic	Native American
998	84	20	4	0
90.2%	7.54%	1.8%	.3%	0

By Grade by Ethnicity

	Black	White	Asian	Hispanic	Native American
9	91%	7.5%	1%	.5%	0
10	90%	7.0%	2%	1.0%	0
11	91%	6%	4%	0	0
12	86%	14%	0	0	0

By Sex

Male	Female
58%	42%

By Grade

	Male	Female
9	57%	43%
10	62%	38%
11	54%	46%
12	54%	46%

Staff

Total 50	55% female	45% male
66%	Black	
33%	White	
1%	Other	

Expected Outcomes to be accomplished by June 1996

a. Production, over a four year period, of 50% of graduates prepared to enter higher education and/or jobs in energy and environmental areas and an increase of 50% in the number of students who graduate.

b. Establishment of a comprehensive, multi-discipline, citywide magnet program with an energy and environmental focus that will serve as a local and regional model.

c. Upgraded instructional technologies to prepare students for technical careers.

d. Increased staff competencies through professional development and demonstrated improvement in instructional content and process.

e. Increased empowerment and engagement of students resulting in fewer dropouts and more

students,especially females and minorities, preparing for environmental and energy careers. (The number of graduates per year will increase by 50%. The number of students eligible for certificate of merit will increase by 50%.)

f. Expanded parent, community, higher education, business, industry, and organizational partnerships.

g. Rejuvenated academic program, especially in mathematics and science, with related service learning and field components, with an energy and environmental focus. There will be a 50% increase in the students earning four credits in laboratory science and four in algebra and higher math.

h. Development of a model for transforming an urban high school into an environmental and energy magnet school.

Measurement of Results

Monitoring and evaluation of the project will include data collection, site visits, and process and impact evaluation. Evaluation will include observation of the use of new curriculum, new classroom strategies, new materials, and teacher training. Instruments will evaluate the ease of use, suitability and potential effectiveness of curriculum and instructional technology. Teacher-made tests, assessments, and student products will evaluate the effectiveness of instruction and application of new technological innovations introduced as a result of this program. The academic program will be evaluated based upon changes of student success rates in all courses and the number of students success rates in all courses and the number of students completing four years of rigorous courses in science and mathematics. Comparisons of student performance will be made over the length of the program. Monitoring of student progress will be used to suggest changes to the program. A follow-up evaluation activity will measure the outcome of student preparation for energy, environmental and educational job placement. The effectiveness of partnerships will be evaluated based on the frequency of interaction, success of cooperative programs, and number of students completing internships or service projects. Each of the outcomes will be evaluated to determine costs, the degree of implementation, and whether stated outcomes have been achieved.

References

Szanton, Peter, *Baltimore 2000,* 1988. Regional Economic, Policy and Planning Study Greater Baltimore Committee, *Making Greater Baltimore A Global Life Sciences Community*. 1991.

Consortium of Maryland Colleges and Universities, *Baltimore Systemic Initiative to Enhance Mathematics and Science Education and Maryland Initiative for Mathematics and Science,* 1992. Baltimore City Schools, *Strategic Plan*. 1992.

Baltimore City Schools, *Comprehensive Plans in Science, Mathematics, Instructional Technology, and Tech-Prep*, 1992.

Baltimore City Schools and Morgan State University, *Urban Systemic Initiative Planning Grant to NSF*, 1993.

Weiss, John C. *The Environmental Technology Project Report* prepared for the Technology Council of the Greater Baltimore Committee, 1993.

Inner City Consortium Documents:

Essential Participant Information

Inventory of Existing Programs

Measures of Effectiveness Workshop

Teacher's Standing Committee Workshop

Student's Standing Committee Workshop

Measure's of Effectiveness Workshop Involving Prospective Employers

Project Selection Criteria Workshop

Inventory of Existing Programs - Second Edition

Parent's Standing Committee Workshop

Curriculum Standing Committee Workshop

Leadership and Management

Project E6 will become a part of the rejuvenation of Baltimore City Public Schools under the dynamic leadership of Dr. Walter Amprey, Superintendent. Dr. Lillian Gonzalez, Deputy Superintendent, will oversee the restructuring effort, target resources to the project, and will embed it regional efforts such as Tech-Prep the and the Baltimore area focus on life sciences careers. Dr. Maurice Howard, Assistant Superintendent, and Ms. Andrea Bowden, Coordinator of Sciences and Mathematics will coordinate **Project E6** with the massive systemic reforms in curriculum and instruction. Mr. Michael Pitroff, Coordinator of Office of Technology, will link **Project E6** with regional technology, education projects. Dr. John O'Connell Area Superintendent will provide coordination among northeast area schools. This central office commitment will ensure the support that Northern High School needs to actualize **Project E6.** Area colleges and universities will lend support under the direction of Dr. Laurence Boucher, Towson State University, Dr. Herman Howard, Coppin State College, and Dr. Ana Swamy, Morgan State University. The Northern **E6 Project** will be managed by a Program Coordinator. The coordinator will be a leader with background and experience in education, energy and environmental action, and community mobilization. The coordinator will report to the Principal, Mr. Doug Norris, who will be held accountable for overall **E6 Project** success. A steering committee composed of all collaborators and cooperators will provide guidance, resources, and technical support. Expenditure of funds will be approved by this committee and authorized by the principal.

Budget

Budget details are shown in Appendix 6.1.2 A.

APPENDIX 6.1.2 A

BUDGETS

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APPENDIX 6.1.2 B

BIOGRAPHIES OF PROJECT LEADERSHIP

Appendix B
Biographics of Project E6 Leadership

1. **Walter G. Amprey - Superintendent-Baltimore City Public Schools (1991-Present)**
   - B.A. in Education, Morgan State University; M.S. in Education Administration and Supervision, Johns Hopkins University; Ed. D. in Education, Temple University
   - Baltimore City Schools (1966-73) social studies teacher
   - Baltimore County Schools (1973-1991) Asst. Principal, Director of Staff Relations, Assistant Superintendent - SW area, Associate Superintendent of Facilities, Associate Superintendent - Staff and Community Relations.
   - Current Initiatives - Restructuring of central office support and school organization, initiation of innovative programs, (e.g. schools run by private companies, all male classes, efficacy, school based decision-making), reallocation of local, state, and federal funds, upgrading of academic programs K-12, linkages of services with governmental and private agencies, morale building and community support building outreach.

2. **Lillian Gonzalez - Deputy Superintendent, Department of Instructional Programs, Baltimore City Public Schools (1991-Present)**
   - B.A. in Psychology, Bank State College, M.S. in Special Education, City College of New York, Ed. D., in Educational Administration and Policy Studies, George Washington University
   - New York City Public Schools (1973-1989) teacher of retarded children, coordinator of bilingual special education
   - Washington D.C. Public School (1989-1991) - Assistant Superintendent for Special Populations (special education, bilingual, homeless, adult and community education).
   - Current initiatives - Revitalization of K-12 curriculum, redesigning of service delivery model for special education, developing model preschool programs for health-risk children, reconfiguration of middle and high school level programs

3. **Maurice Howard - Assistant Superintendent, Department of Curriculum and Instruction, Baltimore City Public Schools (1992-Present)**
   - B.A., Salisbury State College, M.A. Columbia University, MLA, Johns Hopkins University, Ed. D. (May, 1993), University of Maryland.
   - Harford County Public Schools (1971-1983) English teacher Department Chairperson, Supervisor of Secondary Schools
   - Maryland State Department of Education, (1983-1991) Specialist for Maryland High School Project, Chief, General Curriculum Branch

4. **Andrea Bowden - Coordinator, Office of Sciences and Mathematics (1992-Present)**
   - B.A. in Biology, College of Notre Dame of Maryland; M.S. in Urban Education, Johns Hopkins University, M. S. in Environmental Biology, Hood College; Ph.D. candidate University of Maryland.
   - Baltimore City Schools (1969-1993) teacher at five high schools, Department Head at two high schools, Science and Health Specialist, Supervisor of Science and Health K-12, Coordinator of Science, Mathematics, Health Physical Education, Chapter 1 Math, Special Education Science and Mathematics, and Nature Center and Zoo programs K-12.
   - Current initiatives - Revising curriculum K-12, STARS; elementary hands-on science grant Project; Eisenhower Grant for teacher training; middle school and

high school task forces, performance assessment; initiation of innovative programs (e.g. E6, Tech Prep Technology, Environmental Education).

5. **Ben Wallace**
   - B.S. University of Maryland Baltimore County, Graduate Courses at University of Maryland, Johns Hopkins, College of Notre Dame, Morgan State University
   - Naturalist, Bragg Nature Center, Baltimore City Public Schools (1978-Present)
   - Trainer for Project Learning Tree; CLASS, Canoe Safety
   - Youth and Maryland Conservation Corps (local coordinator)
   - Yellowstone National Park Rehabilitation Team Leader
   - Community Organizer-Central Atlantic Region American Friends Service Committee

6. **Doug Norris**
   - B.S., University of Maryland; M.S. Towson State University: Graduate courses University of Maryland
   - Northern High School - Principal (1988-Present)
   - Edmondson Westside High School - Dean (1985-1988)
   - Westside Skill Center - Assistant Principal (1982-1985)
   - Educational Specialist, Vocational Education (1977-1982)
   - Eastern High School - Evening School (1974-1975)
   - Southern High School - Teacher (1968-1977)

7. **Williette Harbor**
   - B.S., Tennessee State University (1968)
   - M.S., Morgan State University (1975)
   - Northern High School, Science Department Head (1988-Present)
   - Walbrook Senior High, Teacher (1979-1988)
   - Houston Woods Junior High, Teacher (1971-1979)
   - Calvin Coolidge High School, Teacher (1968-1971)
   - Member of PROJECT PRIME planning Council, DeWitt Wallace Funding; Member American Criminal Society; Member Maryland State Teacher Association Renew AAAS Project 2061 Science Benchwork Document.

8. **Joan Johnson**
   - B.S., Morgan State University (1965)
   - Morgan State University, Loyola College, University of Maryland, Bowie State College, Graduate Courses
   - Loyola College-Graduate Work
   - Baltimore City Public Schools - Teacher (20 years)
   - Northern High School - Teacher (7 years)
   - Sponsor of Academic Champion of Excellence at Morgan State; Maryland Student Service Alliance; Students Helping Other People Conflict Resolution, Youth Block Recycling Program
   - Grants from Chesapeake Bay Trust; Fund for Educational Excellence
   - Leader of Environmental Science Magnet Program at Northern

APPENDIX 6.1.1 C

SUPPORTING LETTERS AND CERTIFICATIONS

Appendix C

Letters of Commitment and/or Financial Support

Collaborating Organizations

- Northern High School Administration, Faculty, Staff, Students and Parents
- Baltimore City Public School Central Administration Northeast Area Office, Office of Sciences and Mathematics, Division of Curriculum and Instruction, Office of Grants Management, Office of Staff Development, Office of Instructional for Technology
- Goucher College - Howard Hughes Foundation Grant, Education Department
- Morgan State University - Engineering Department, Minorities in Teaching Careers, Comprehensive, Regional Center for Minorities, Center for Excellence in Science and Mathematics
- Towson State University - College of Education
- Coppin State College - Center for Thinking Skills, Division of Education

Cooperating Organizations

- Greater Baltimore Committee - economic development organization
- Johns Hopkins University - Applied Physics Lab, MESA Club (Mathematics, Engineering, Science, Achievement), Department of Environmental Engineering
- Greater Baltimore Medical Center - Medical and laboratory and technicians preparatory program.
- Baltimore City Office of Recycling
- Maryland State Department of Education - Environmental Education Program
- FUTURES - Maryland's Tomorrow - dropout prevention program
- Maryland Student Service Alliance
- Maryland Department of the Environment and Department of Natural Resources
- Maryland Environmental Services
- Chesapeake Bay Foundation - field trips, teacher training
- Outward Bound Baltimore - experiential learning
- Chesapeake Bay Trust - grant support
- Fund for Educational Excellence - grant support
- Abell Foundation - grant support
- Baltimore Gas and Electric Company - partnership
- Commonwealth - post graduation job and education support
- Bragg Nature Center and Irvine Nature Center - field trips, teacher training
- National Aquarium, Maryland Science Center, Baltimore Zoo - trips, training
- Yale University Graduate School of Forestry-environmental restoration
- Baltimore City and County Forestry Department - computerized monitoring
- Baltimore City Department of Parks and Recreation

Sally Michel
Chair, Advisory Board

Kathleen Kennedy Townsend
Executive Director

Margaret A. O'Neill
Deputy Director

Julie K. Ayers
Director of Instruction

Cathy L. Brill
Director of Special Education

Rachel Rhodes
Director of Special Projects

Jared Genser
Director of Youth Involvement

Maryland Student Service Alliance

The Courage To Care
The Strength To Serve

March 22, 1993

Dr. Walter G. Amprey
Superintendent of Public Instruction
Baltimore City Public Schools
200 East North Avenue
Baltimore, MD 21202

Dear Dr. Amprey:

The Maryland Student Service Alliance (MSSA) will enthusiastically support Northern High School's implementation of the Project E6 Grant Proposal.

Northern High School's environmental service-learning programs are models for the state. Joan Johnson, a science teacher at Northern, has shown her students that schools are without walls. Her students have learned to apply the knowledge they learn in her science class by working to preserve the environment in the community surrounding their school. Ms. Johnson's students have painted storm drains with "Don't Dump: Chesapeake Bay Drainage" messages, adopted a highway, participated in clean ups of Baltimore City neighborhoods, and started recycling programs.

To help Northern continue and expand its service-learning efforts, MSSA will train additional teachers in service-learning techniques, provide a service-learning inservice for all school staff, distribute a bi-monthly academic year newsletter on student service, supply service-learning curricula, instructional materials and technical support, and disburse small allotments of funds ($10 - $100) to finance service projects.

MSSA looks forward to working with Northern High School as it develops even greater service-learning programs.

With warm regards,

Julie Ayers

Maryland State Department of Education 200 W. Baltimore St. Baltimore, MD 21201 410/333-2427

GOUCHER COLLEGE

1021 Dulaney Valley Road
Baltimore, Maryland 21204-2794
(410) 337-6000

March 24, 1993

Mr. Douglas Norris
Northern High School
2201 Pinewood Avenue
Baltimore, MD 21214

Dear Mr. Norris:

We support your proposal for implementing the PROJECT E6 program. To assist you in your efforts, we are in the process of evaluating the possibility of offering the following topics as a part of this summer's Teacher Enrichment Program.

A. An in-depth computer training workshop emphasizing the use of computer equipment to program, recall and to manipulate data in the form of reports, charts and graphs.

B. Computer controlled laboratory exercises in chemistry and physics which will enable teachers and students to conduct and predict the results of various experiments through the use of computer simulation either prior to or in conjunction with actual laboratory exercises.

C. Workshops in chemistry and/or physics focusing on the following:

1. Waste management, energy consumption and alternative energy sources.

2. The effects of specific pollutants or class of pollutants on plant life around the school and community.

3. Examining various types of pollutants and their effects on

- the harbor and bay
- garbage dumps and landfills
- the ozone layer

In addition to the above, we will continue to involve the Northern students and their Goucher mentors in science related activities such as laboratory exercises, seminars, workshops and field trips.

The above topics are the result of our preliminary evaluation. As in the past, all topics and workshops offered in the Teacher Enrichment Program are jointly agreed upon by both Northern and Goucher staff.

Sincerely yours,

H. M. Zachary
SMART Coordinator

HMZ:lh

TOWSON
STATE UNIVERSITY
Towson, Maryland 21204-7097

Office of the Vice Presiden
Institutional Advancemen
(410) 830-222

March 19, 1993

Mr. Douglas Norris
Northern High School
2201 Pinewood Avenue
Baltimore, MD 21215-7893

Dear Mr. Norris:

Thank you for furnishing me with the information concerning "Project E6" and your proposal to secure support for this endeavor. From the materials provided, I can readily see how this project places an emphasis in areas that are deserving of increased attention.

Your plans at Northern High School for stressing energy and environmental issues are to be applauded. Please be assured of Towson State University's support and hopes that we can play a role in this most worthwhile project.

If I can be of further assistance, please do not hesitate to contact me.

Sincerely,

Daniel J. McCarthy
Vice President

DJM/dlm

IRVINE NATURAL SCIENCE CENTER

St. Timothy's School Stevenson, Maryland 21153 (410) 484-2413

Friday, March 19, 1993

Mr. Douglas Norris, Principal
Northern High School
McClean Boulevard and Pinewood Avenue
Baltimore, MD 21214

Dear Mr. Norris,

We are happy to support your proposal for Project E6 (Environment, Energy, Economics, Ethics, and Efficacy through Education). This comprehensive approach to restructuring Northern High School into a new academic center focusing on energy and the environment is strongly needed in both Baltimore City and the entire Chesapeake Bay region.

The staff at the Irvine Natural Science Center can assist the students and offer professional staff development for the teachers at Northern High School in a variety of ways. For example:

* We can continue and expand Irvine's **Natural Connections** program which involves training Northern High School students to teach Montebello Elementary School students lessons in outdoor biology and nature study.

* We can provide classroom presentations for the high school students using the Center's collection of live and stuffed animals on various natural science topics (predators, animal ecology, etc.).

* We can work with the teachers and students on a botany project to identify and map the flora of their surroundings.

* We can assist in the establishment and maintenance of a bird feeding station at the school that could be used for a variety of educational and research projects.

These and other ventures will help us to strengthen and expand the successful partnership we have already established with Northern High School. We look forward to assisting you with this proposal.

Sincerely,

Robert Mardiney
Education Director

Yale University *New Haven, Connecticut 06511*

March 22, 1993

SCHOOL OF FORESTRY AND
ENVIRONMENTAL STUDIES

Sage Hall
205 Prospect Street

(203) 432-5100
Telex: 5101012363 Yale FES
FAX: (203) 432-5942

Dr. William S. Gaither
President
Weston Institute
One Weston Way
West Chester, PA 19380

Dear Dr. Gaither:

I am writing in reference to the Baltimore City Department of Education's Project E6. The Yale School of Forestry and Environmental Studies' Urban Resources Initiative (URI) has been working in Baltimore for five years. During this time, we have established a solid partnership with the City's Department of Recreation and Parks, and have helped that organization to develop environmentally sound natural resource management strategies for Baltimore's 6500-acre park system. In addition, we have worked with the Department's Forestry Division to develop and implement its Community Forestry Stewardship Program, which teaches local community groups to plant and maintain trees in their own neighborhoods.

URI also has been working with Outward Bound to develop a program that uses natural resource management projects as a means by which to impart communication and leadership skills to students. This project, called the Outward Bound Urban Resources Initiative (OBURI) will expand during the summer of 1993 to include three groups of eleven 14-18-year-olds from inner city neighborhoods in Baltimore. They will work on projects in their own neighborhoods, including community forestry and open space reclamation projects. During this process, they will be exposed to a wide variety of natural resource management issues, and the potential for turning their summer activities into careers will be underscored. We also use a Geographic Information System (GIS) as a tool to develop and evaluate all our projects. Students of our OBURI program will use this system themselves next summer.

Recently, we have begun working with the Department of Education on several projects. These include natural resource management (i.e. wildflower plantings and wetland restoration) on school grounds, facilitating school yard clean-ups, and researching opportunities for market gardening in Baltimore. We are also working with the MD Department of Natural Resources to encourage the U.S. Forest Service to adopt Northern High School.

URI relies on expertise and cooperation from a number of local organizations. We have found that this not only allows us to successfully develop and implement a variety of projects, but it also fosters relationships among people and organizations who would otherwise not work together. And when URI projects come to a close, those people continue to work with one another. For this reason, we are particularly pleased to see that the Baltimore City Department of Education's Project E6 proposal calls for pooling expertise and resources from a wide variety of organizations.

We applaud this effort to marry environmental and energy issues to career track educational opportunities early in students' academic careers, and look forward to working with the Department of Education to assist the project in any way we can.

Sincerely,

Shawn Dalton

Ms. Shawn Dalton
Project Coordinator
Baltimore URI

c: W.G. Amprey, J. O'Connell, S. Alpern, L. Shemitz, M. Perritt, C. Buikema

COPPIN STATE
COLLEGE

2500 W. North Avenue
Baltimore, Maryland 21216-3698
Division of Education
(410) 383-5530

March 26, 1993

Dr. Walter G. Amprey
Superintendent of Public Instruction
Baltimore City Public Schools
200 E. North Avenue
Room 405
Baltimore, Maryland 21202

Dear Dr. Amprey:

I am pleased to write a letter of support for the "Environment, Energy, Economics, Ethics and Efficacy Through Education" proposal being submitted to the Department of Energy via the Weston Institute.

The Division of Education at Coppin State College is excited over the possibility of working collaboratively with the Baltimore City Public Schools. Coppin State College, as a collaborator in this project, will supply staff development support through the Division of Education and specifically, training by the Center for Thinking Studies. These services are estimated at $50,000 which will be provided by Coppin State College based on funding (in-kind services) of the proposal.

This proposal certainly has the possibility of allowing the transformation of a school towards a new, and certainly a much needed, focus in the area of energy and environmental education.

Sincerely,

Herman A. Howard, Acting Dean
Division of Education

HAH/cr

cc: Dr. Calvin Burnett
Dr. Sidney Krome
Dr. Toni Worsham
Dr. Geraldine Waters

GBMC®

GREATER BALTIMORE MEDICAL CENTER

March 30, 1993

Mr. Douglas Norris
Northern High School
2201 Pinewood Avenue
Baltimore, MD 21215-7893

Dear Mr. Norris:

The GBMC/Northern High School Partnership Committee and Greater Baltimore Medical Center are pleased to support your proposal for "Project E6: Environment, Energy, Economics, Ethics, and Efficacy through Education". This program for public school students is a vital part of a comprehensive effort nationwide to interest minority students toward higher education and professional careers in the sciences.

Having worked with you to create the "Medical, Laboratory and Technicians Preparatory Program Curriculum", we are aware of your commitment to provide students with skills needed to acquire jobs and educational opportunity in the area of healthcare. Healthcare curriculum which allows expanded and intense exposure to the sciences, be it in the laboratory or in the field, enhances the opportunity of students gaining the knowledge base needed to achieve higher levels of education, and gainful employment.

As skilled workers in many areas of healthcare are often in short supply, and a firm background in science and math are required for training in these fields, it is critically important that programs such as "E6" are initiated and students are given the opportunity and encouraged to participate. Your efforts will provide a potential work force to fill positions in the hospital and other ancillary and support services used by it.

GBMC wholeheartedly supports your proposed program and will continue to promote your efforts to provide the industry with quality future employees in the areas of science technology.

Sincerely,

Donald G. Loftus, F.A.C.H.E.
Executive Vice President and
Chief Operating Officer

Nanette S. Odend'hal
Administrative Services
Supervisor - Radiology

km

6701 NORTH CHARLES STREET
BALTIMORE, MARYLAND 21204
(410) 828-2000

WOMEN'S HOSPITAL FERTILITY CENTER AT GBMC CHARLES STREET

THE MILTON J. DANCE, JR. HEAD AND NECK CANCER REHABILITATION CENTER CHARLES STREET

THE SHEILA K. RIGGS RADIATION ONCOLOGY SERVICE CHARLES STREET

THE VIRGINIA B. SHERWOOD SAME DAY SURGERY CENTER CHARLES STREET

GBMC'S COMMUNITY AND FAMILY HEALTH CENTER 1017 EAST BALTIMORE STREET BALTIMORE, MARYLAND 21202

CITY OF BALTIMORE

KURT L. SCHMOKE, Mayor

DEPARTMENT OF EDUCATION

ASSISTANT SUPERINTENDENT
Division of Curriculum and Instruction
200 East North Avenue
Baltimore, Maryland 21202

June 8, 1993

Dr. William Gaither, President
Weston Institute
1 Weston Way
West Chester, Pennsylvania 19380

Dear Dr. Gaither:

Baltimore is among the first three cities to receive an Urban Systemic Change Planning Grant from the National Science Foundation. Our plan indicates that we will be seeking assistance from a variety of sources to move many more of our students, especially minorities, through high school with adequate preparation for continuing study and careers in the sciences, mathematics and technology.

The Baltimore proposals for the Inner City Energy and Environmental Consortium are certainly consistent with the Urban Systemic Initiative goals. Morgan State University's Space and Environmental Technology Education component extends a valuable program to more teachers and students. Morgan State University has a long-standing partnership with Northern High School and will work with the E6 Project. Baltimore City Community College and Morgan State University cooperate with Baltimore City Public Schools in offering teacher training and supplemental activities for students which enrich the science, mathematics, and technology program. Baltimore City administrative and support staff in central office work closely with all consortium partners on these and other projects. We anticipate using consortium projects as models for systemic change.

As principal investigators of the Baltimore Urban Systemic Grant, we pledge full cooperation with the Inner-City Energy and Environmental Consortium in its effort to improve the education of students in Baltimore City Public Schools.

Sincerely,

Maurice B. Howard

Maurice B. Howard
Assistant Superintendent
Department of Curriculum and Instruction
Baltimore City Public Schools

Patricia Morris

Patricia Morris
Dean, School of Education and Urban Studies
Morgan State University

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(03-80)
All Other Copies Are Obsolete

U.S. Department of Energy

Assurance of Compliance
Nondiscrimination in Federally Assisted Programs

BALTIMORE CITY PUBLIC SCHOOLS (Hereinafter called the "Applicant")

HEREBY AGREES to comply with Title VI of the Civil Rights Act of 1964 (Pub. L. 88-352), Section 16 of the Federal Energy Administration Act of 1974 (Pub. L. 93-275), Section 401 of the Energy Reorganization Act of 1974 (Pub. L. 93-438), Title IX of the Education Amendments of 1972, as amended, (Pub. L. 92-318, Pub. L. 93-568, and Pub. L. 94-482), Section 504 of the Rehabilitation Act of 1973 (Pub. L. 93-112), the Age Discrimination Act of 1975 (Pub. L. 94-135), Title VIII of the Civil Rights Act of 1968 (Pub. L. 90-284), the Department of Energy Organization Act of 1977 (Pub. L. 95-91), and the Energy Conservation and Production Act of 1976, as amended, (Pub. L. 94-385). In accordance with the above laws and regulations issued pursuant thereto, the Applicant agrees to assure that no person in the United States shall, on the ground of race, color, national origin, sex, age, or handicap, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity in which the Applicant receives Federal assistance from the Department of Energy.

Applicability and Period of Obligation

In the case of any service, financial aid, covered employment, equipment, property, or structure provided, leased, or improved with Federal assistance extended to the Applicant by the Department of Energy, this assurance obligates the Applicant for the period during which Federal assistance is extended. In the case of any transfer of such service, financial aid, equipment, property, or structure, this assurance obligates the transferee for the period during which Federal assistance is extended. If any personal property is so provided, this assurance obligates the Applicant for the period during which it retains ownership or possession of the property. In all other cases, this assurance obligates the Applicant for the period during which the Federal assistance is extended to the Applicant by the Department of Energy.

Employment Practices

Where a primary objective of the Federal assistance is to provide employment or where the Applicant's employment practices affect the delivery of services in programs or activities resulting from Federal assistance extended by the Department, the Applicant agrees not to discriminate on the ground of race, color, national origin, sex, age, or handicap, in its employment practices. Such employment practices may include, but are not limited to, recruitment, advertising, hiring, layoff or termination, promotion, demotion, transfer, rates of pay, training and participation in upward mobility programs; or other forms of compensation and use of facilities.

Subrecipient Assurance

The Applicant shall require any individual, organization, or other entity with whom it subcontracts, subgrants, or subleases for the purpose of providing any service, financial aid, equipment, property, or structure to comply with laws cited above. To this end, the subrecipient shall be required to sign a written assurance form, however, the obligation of both recipient and subrecipient to ensure compliance is not relieved by the collection or submission of written assurance forms.

Data Collection and Access to Records

The Applicant agrees to compile and maintain information pertaining to programs or activities developed as a result of the Applicant's receipt of Federal assistance from the Department of Energy. Such information shall include, but is not limited to the following: (1) the manner in which services are or will be provided and related data necessary for determining whether any persons are or will be denied such services on the basis of prohibited discrimination; (2) the population eligible to be served by race, color, national origin, sex, age and handicap; (3) data regarding covered employment including use or planned use of bilingual public contact employees serving beneficiaries of the program where necessary to permit effective participation by beneficiaries unable to speak or understand English; (4) the location of existing or proposed facilities connected with the program and related information adequate for determining whether the location has or will have the effect of unnecessarily denying access to any person on the basis of prohibited discrimination; (5) the present or proposed membership by race, color, national origin, sex, age and handicap, in any planning or advisory body which is an integral part of the program; and (6) any additional written data determined by the Department of Energy to be relevant to the obligation to assure compliance by recipients with laws cited in the first paragraph of this assurance.

The Applicant agrees to submit requested data to the Department of Energy regarding programs and activities developed by the Applicant from the use of Federal assistance funds extended by the Department of Energy. Facilities of the Applicant (including the physical plants, buildings, or other structures) and all records, books, accounts, and other sources of information pertinent to the Applicant's compliance with the civil rights laws shall be made available to inspection during normal business hours on request of an officer or employee of the Department of Energy specifically authorized to make such inspections. Instructions in this regard will be provided by the Director, Office of Equal Opportunity, U.S. Department of Energy.

This assurance is given in consideration of and for the purpose of obtaining any and all Federal grants, loans, contracts (excluding procurement contracts), property, discounts or other Federal assistance extended after the date hereto, to the Applicants by the Department of Energy, including installment payments on account after such data of application for Federal assistance which are approved before such date. The Applicant recognizes and agrees that such Federal assistance will be extended in reliance upon the representations and agreements made in this assurance and the United States shall have the right to seek judicial enforcement of this assurance. This assurance is binding on the Applicant, the successors, transferees, and assignees, as well as the person whose signature appears below and who is authorized to sign this assurance on behalf of the Applicant.

Applicant Certification

The Applicant further certifies that it has or, within 90 days of the date of the grant shall: (a) Designate(d) an individual to serve as Affirmative Action Officer; (b) Establish(ed) complaint procedures for employees and other beneficiaries of the program; (c) Prominently display(ed) posters and other written information publicizing the policy of nondiscrimination; (d) Provide(d) program information in languages other than English (including braille) in a manner to make it accessbile to sight impaired persons; (e) Establish(ed) procedures which enable it to notify DOE on a timely basis of any complaints filed against it and of the disposition of those complaints; (f) Require(d) any subrecipient (subgrantee/subcontractor) under this award to comply with the above cited laws and regulations; (g) Require the subrecipient to sign an assurance form, the applicant certifies that it shall monitor subrecipient compliance as appropriate; (h) Establish(ed) a system capable of collecting racial/ethnic/handicap/sex data in accordance with existing Federal requirements cited in the first paragraph of this assurance.

Development of Current Affirmative Action Plan

June 15, 1993
(Date)

Allan Harris
Affirmative Action Officer
(Name, Signature and Date)

(410) 396-8875
Telephone Number

Most recent onsite Federal Assistance Civil Rights review/audit:

Agency Conducting Review

Date

Baltimore City Public Schools
Applicant's Name

Date

Address: 200 East North Avenue
Baltimore, Maryland 21202

(410) 396-8803
Telephone Number

Authorized Official President, or Chief Executive Officer

Name and Signature

June 15, 1993
Date

CERTIFICATIONS REGARDING LOBBYING; DEBARMENT, SUSPENSION AND OTHER RESPONSIBILITY MATTERS; AND DRUG-FREE WORKPLACE REQUIREMENTS

Applicants should refer to the regulations cited below to determine the certification to which they are required to attest. Applicants should also review the instructions for certification included in the regulations before completing this form. Signature of this form provides for compliance with certification requirements under 34 CFR Part 82, "New Restrictions on Lobbying," and 34 CFR Part 85, "Government-wide Debarment and Suspension (Nonprocurement) and Government-wide Requirements for Drug-Free Workplace (Grants)." The certifications shall be treated as a material representation of fact upon which reliance will be placed when the Department of Energy determines to award the covered transaction, grant, or cooperative agreement.

1. LOBBYING

The undersigned certifies, to the best of his or her knowledge and belief, that:

(1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

(3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

2. DEBARMENT, SUSPENSION, AND OTHER RESPONSIBILITY MATTERS

(1) The prospective primary participant certifies to the best of its knowledge and belief, that it and its principals:

(a) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;

(b) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

(c) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (1)(b) of this certification; and

(d) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

(2) Where the prospective primary participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

3. DRUG-FREE WORKPLACE

This certification is required by the Drug-Free Workplace Act of 1988 (Pub. L. 100-690, Title V, Subtitle D) and is implemented through additions to the Debarment and Suspension regulations, published in the Federal Register on January 31, 1989, and May 25, 1990.

ALTERNATE I
(GRANTEES OTHER THAN INDIVIDUALS)

(1) The grantee certifies that it will or will continue to provide a drug-free workplace by:

(a) Publishing a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the grantee's workplace and specifying the actions that will be taken against employees for violation of such prohibition;

(b) Establishing an ongoing drug-free awareness program to inform employees about:

(1) The dangers of drug abuse in the workplace;

(2) The grantee's policy of maintaining a drug-free workplace;

(3) Any available drug counseling, rehabilitation, and employee assistance programs; and

(4) The penalties that may be imposed upon employees for drug abuse violations occurring in the workplace;

(c) Making it a requirement that each employee to be engaged in the performance of the grant be given a copy of the statement required by paragraph (a);

(d) Notifying the employee in the statement required by paragraph (a) that, as a condition of employment under the grant, the employee will:

FA-CERTS (2911)

(1) Abide by the terms of the statement; and

(2) Notify the employer in writing of his or her conviction for a violation of a criminal drug statute occurring in the workplace not later than five calendar days after such conviction;

(e) Notifying the agency, in writing, within ten calendar days after receiving notice under subparagraph (d)(2) from an employee or otherwise receiving actual notice of such conviction. Employers of convicted employees must provide notice, including position title, to every grant officer or other designee on whose grant activity the convicted employee was working, unless the Federal agency has designated a central point for the receipt of such notices. Notice shall include the identification number(s) of each affected grant;

(f) Taking one of the following actions, within 30 calendar days of receiving notice under subparagraph (d)(2), with respect to any employee who is so convicted:

(1) Taking appropriate personnel action against such an employee, up to and including termination, consistent with the requirements of the Rehabilitation Act of 1973, as amended; or

(2) Requiring such employee to participate satisfactorily in a drug abuse assistance or rehabilitation program approved for such purposes by a Federal, State, or local health, law enforcement, or other appropriate agency;

(g) Making a good faith effort to continue to maintain a drug-free workplace through implementation of paragraphs (a), (b), (c), (d), (e), and (f).

(2) The grantee may insert in the space provided below the site(s) for the performance of work done in connection with the specific grant:

Place of Performance:
(Street address, city, county, state, zip code)

NORTHERN HIGH SCHOOL

2201 PINEWOOD AVENUE

BALTIMORE, MARYLAND 21214

☐ Check if there are workplaces on file that are not identified here.

ALTERNATE II (GRANTEES WHO ARE INDIVIDUALS)

(1) The grantee certifies that, as a condition of the grant, he or she will not engage in the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance in conducting any activity with the grant.

(2) If convicted of a criminal drug offense resulting from a violation occurring during the conduct of any grant activity, he or she will report the conviction, in writing, within 10 calendar days of the conviction, to every grant officer or other designee, unless the Federal agency designates a central point for the receipt of such notices. When notice is made to such a central point, it shall include the identification number(s) of each affected grant.

As the duly authorized representative of the applicant, I hereby certify that the applicant will comply with the above certifications.

NAME OF APPLICANT	PR/AWARD NUMBER AND/OR PROJECT NAME
BALTIMORE CITY PUBLIC SCHOOLS	
PRINTED NAME AND TITLE OF AUTHORIZED REPRESENTATIVE	
Walter G. Amprey, Superintendent of Public Instruction	
SIGNATURE	DATE
	June 15, 1993

6.1.3 ENERGY AND ENVIRONMENTAL RESEARCH NETWORK (EERN) PROGRAM

Submitted by
The School District of Philadelphia

Summary

The Energy and Environmental Research Network Program will impact on the critical shortfall in science nationwide by significantly and equitably increasing the number of underrepresented and underserved students who are qualified and committed to careers in energy-related scientific and technical areas and in environmental restoration and waste management by providing a fully equipped science laboratory, staff development training, recruitment of minority student participants, Science Satellite Centers where students will actively "do energy and environmental science", and participate in science fairs focusing on energy and environmental science projects, and, energy and environmental seminars for parents. Over the three year projected program, we will serve 100 science resource leaders, 25 non-public science teachers, and 1,400 elementary, middle and high school students.

Background and Importance

The School District of Philadelphia is the fifth largest in the United States. In excess of thirteen thousand teachers are employed by the District in which more than 201,000 students are served. In keeping with America's Education Goals for the year 2000 and the five year Major System Goals for Improvement adopted by the School District of Philadelphia, Dr. Constance E. Clayton, Superintendent, has made science literacy one of the district's major initiatives in recognition that the nation, which ranks 23rd in the world in science, needs the talents of urban students in areas such as science and engineering.

The face of the workforce is changing. The national demographics reflect an ever increasing diversity amongst its citizenry. According to a 1989 Census Bureau projection, during the next four decades (1990-2030), the white population of America will grow by about 25%. During the same 40 year period, the African American population will increase by 68%, Pacific Island-American and American Indian populations will grow by 79% and the Hispanic or Latino population will grow by one hundred and eighty-seven percent (187%).

The diversity of the student population of the School District of Philadelphia mirrors that of many large urban areas. Our student body communicates in more than seventy different primary languages. Over 70% of the multi-ethnic and multiracial student body are from low income families meeting the financial requirements to entitle participation in federal compensatory education programs. The student body is 62.6% African American, 23.1% White, 9.7% Latino, and 4.4% Asian. Approximately 15% of our students are White females. Historically, African Americans, Latinos, and White females are among those groups that have been the most underrepresented and underserved, specifically in science and environmental careers.

During the 1990-91 school year only 6,996 out of a districtwide enrollment of 18,443 ninth grade students received course credit in science. This represents a dramatic 22% decrease (from 64% to 42%) as compared to ninth graders who received course credit in the 1984-85 school year. Further, based on data provided by the School District's Management Information Center, there is a significant decrease in student achievement in science when students reach 7th grade.

One of the key reasons why minorities are underrepresented in science, engineering education and careers is that the American education system fails to retain minorities at all points in the educational pipeline. Secondly Americans, according to research, consider the underrepresentation of minorities in science as an intractable problem. In addition, there is a common concept that only the best and brightest students can do science. This is demonstrated by the fact that many academic high schools only permit their mentally gifted students to participate in science fairs.

In 1980, 9% of full-time college freshmen planning to major in science or engineering were African American. Six years later only 5% of Bachelors in Science recipients were African American and by 1990, only 2% of the more than 13,600 with doctorates in science and engineering went to African Americans. Subsequently, research implies that increasing the number of minorities entering science and engineering courses of study at the university level cannot be achieved if there is no on-going comprehensive reform of science education. Research also indicates that it takes more than a willingness to increase these numbers. It takes partnerships with industry, professional organizations, institutes of higher education, federal agencies, reform in the way that science is taught, and commitment in the form of mentorship to motivate and sustain minority students in the area of science.

The changing demographics and the challenged environment are already causing a national preparation of the historically underrepresented for the needs of society. (The Secretary's Commission on Achieving Necessary Skills, 1992, America 2000) The Department of Energy has projected that there will be a shortage of over 10,000 scientists, engineers and technicians in the area of environmental restoration and waste management within the decade. While there are complex cultural, social, and economic reasons for this, the situation is so firmly entrenched in society that it is not likely to change without focused educational intervention.

Since 1990, the School District and, specifically, Lincoln High School's Environmental Technology Academy (ETA), has had an educational partnership with the Office of Environmental Programs at Florida A & M University (FAMU). FAMU is a member of the Historically Black Colleges and Universities/Minority Institutions (HBCU/MI) Environmental Restoration and Waste Management Consortium. It is also a recognized leader in undergraduate and graduate environmental education and is the site of a USDA water quality research center. FAMU/Office of Environmental Programs has supported the ETA by: (1) providing over $100,000 in scholarship funds; (2) providing opportunities for our ETA students to participate in the FAMU Summer Enrichment Program; (3) allowing ETA students doing environmental research projects access to FAMU faculty (via fax/telephone/mail); and (4) financially sponsoring Lincoln faculty and student attendance at the National Conference for the Advancement of Minorities in the Environmental Professions sponsored by the HBCU/MI Consortium and other environmental conferences.

In December 1990, the EPA formed a partnership with the School District of Philadelphia in order to solve the problem of communicating to minorities the health risks associated with radon and asbestos. This partnership resulted in the development and piloting of what has become a model environmental equity program entitled, "Radon and Asbestos Awareness Program (RAAP)".

We must make sure that our youth are prepared to serve as a qualified workforce in these endangered areas of science. We can no longer afford to allow the luck of the draw to determine who does science while minority and female youth slip through the cracks. We must stack the deck if we are to ensure that future scientists and engineers fully reflect the evolving face of urban America. We have no other option if we are to maintain our competitive status in an increasingly scientific and technological world. No longer can we "waste" <u>any</u> of the nation's human resources. Every effort must be made to guarantee that all students have an equal opportunity to succeed in science. It is the philosophy of this proposed program that the replacement of rote learning and memorization with group science projects designed to engage student interest and

spark their excitement will remove the mystique and forever dispel participants' intimidation and fear of "doing science".

As a member of the Inner-City Energy and Environmental Education Consortium the School District of Philadelphia proposes to implement, district-wide, a three year Energy and Environmental Research Network (EERN) Program for grades 5-12. The program is designed to foster a "hands-on" active teaching/learning model through teacher training and the establishment of six regional satellite centers where students actively learn to "do energy and environmental science". By the end of the third year, the program will have trained 100 science resource leaders and 25 non-public school teachers, and provide hands-on activities and environmental information to 1,400 students and 700 parents/guardians. This program will expand and enhance several programs currently being implemented by the School District of Philadelphia, e.g., the National Science Foundation funded Elementary Science Curriculum, (grades 1-6) which uses hands-on science kits developed collaboratively by the Franklin Institute and the School District of Philadelphia, and, the Radon and Asbestos Awareness Program, (grades 9-12) which involves regular radio forums consisting of professionals from EPA, other federal agencies, universities/colleges and private industry to communicate the health threats of radon and asbestos and to obtain direct feedback from members of racial minority communities on their experiences and perceptions of the proposed program has been developed in collaboration with the Philadelphia Urban Systemic Initiative, the Philadelphia Scientific Partnership (PSP) and will be integrated into the City-wide effort. The EERN Program Director, Dr. Curtis Howard is a member of the PSP Steering Committee

The overall goal of the EERN is to impact on the critical shortfall in science nationwide by significantly and equitably increasing the number of students who are qualified and committed to careers in energy-related scientific and technical areas and in environmental restoration and waste management.

Work Plan

The EERN objectives are to: (A) establish one additional science laboratory at Lincoln High School's ETA; (B) conduct staff development for 20 science regional leaders; (C) recruit 200 minority student participants; (D) implement two regional science satellite centers; (E) implement a systematic training program to prepare underserved and underrepresented students to do "hands-on" active learning energy and environmental science projects and enter science fair competitions; (F) implement two EERN Science Fairs; (G) conduct energy and environmental seminars for parents; and (H) publish a booklet of science resource leaders' and student research findings. The program's Director will select the School District's Central East and Central West administrative regions as implementation sites and will meet with the Regional Superintendents for assistance with the selection of program staff, student recruitment, and identification of satellite center sites. The work plan has been designed specifically to carry out each objective of the EERN Program as follows:

> Objective A: Establish One Additional Science Laboratory at Lincoln High School's ETA The additional science lab will complement one fully equipped laboratory already in existence at the ETA. The laboratory already in operation will be utilized for the training of program staff during Year I. The establishment of the second science lab will be the key to expanding our training capacity for Years II and III as well as maximizing our ability to offer students state-of-the-art equipment and technical assistance so important in their learning to do science. Required renovations for the second lab will include: plumbing, electrical and cabinetry installation, the purchase of equipment, such as, an Atomic Absorption Spectrophotometer, a Gas Chromatograph, tri-nocular microscopes, top-loading laboratory balances, an analytical balance with reproducibility, five 486DX computers with printers, a Nuclear Spectroscopy System,

and a Radon Counting and Gamma-Ray Spectrometry System, and miscellaneous furnishings and materials.

Objective B: Conduct Staff Development for 20 Science Resource Leaders Conducted by the EERN Coordinator, twenty science resource leaders, five middle and five high school, (for a total of ten from each of the two administrative regions) will receive 30 hours of staff development training between October and the end of December, 1993. Five additional training slots will be made available for the Archdiocese of Philadelphia science teachers who wish to participate. Representative training topics include: current issues and careers in energy, environmental and waste remediation; safe laboratory practice, introductions to laboratory instrumental analysis, atomic absorption spectroscopy, gas chromatography, surface water bio-assay methods, and portable field instrumentation and test kits; current issues in air quality and residential radon; and designing a student research project and using computers for scientific presentations. The resource leaders will be required to design an independent research project related to one of these topics, formally record their findings, and present them to the Coordinator at the end of the training.

Field trips to various energy/environmental sites, e.g., Limerick Nuclear Power Plant, the Air Quality Laboratory, etc., will be scheduled throughout the program year. Slots will be set aside for the Archdiocesan teachers who wish to participate.

Objective C: Recruit 200 Minority Student Participants Two hundred middle and high school minority students, one hundred students per each of the two administrative regions, will be recruited. The program will be announced in each classroom within the two regions. Interested students will complete an application form that will include selection criteria such as age, race, sex, and a science grade of C or better. Informal recommendations and referrals by teachers will also be solicited. Only those underrepresented underserved students as reflected in the demographic composition of the School District's student population, Section 4 will be recruited.

Objective D: Establish Sites for Two Regional Science Satellite Centers The Director, together with the Central East and Central West Regional Superintendents, will select the Satellite Center sites. Each Center will be open for a period of twelve weeks, February through April, 1994, two days a week, two hours a day, after school. Ten science resource leaders (five middle/five high school) will staff each Center. To provide administrative, supervisory and programmatic support. one of the resource leaders will be selected as an on-site Technical Assistant.

Objective E: Implement a Systematic Training Program to Prepare Underserved and Underrepresented Students to do "Hands-On" Active Learning Energy and Environmental Science Projects and Enter Science Fair Competitions Satellite Center activities will focus on using the hands-on approach to scientific learning and problem solving. The resource leaders will instruct the students in the operation and usage of state-of-the-art sophisticated analytical instrumentation that is currently employed by regulatory agencies and environmental and waste management firms. This instrumentation will include: atomic absorption spectrophotometer with graphite furnace and cold-vapor capabilities (for the quantification of metals, esp. mercury, lead and other heavy metals); gas chromatograph with ECD and FID detectors (or the determination of organic pollutants, such as PCB's, pesticides, and solvents); portable instrumentation such as UV/visible light spectrophotometers to perform analysis at satellite sites, surface waters and other points of pollution; and personal computer analyzer (PCA-E) for a nuclear spectroscopy, including radioactive decay and half-life measurement, gamma energy calibration, and peak integration.

Using this new knowledge, students will design a research project, either individually or in groups. To assist them, they will visit the ETA to use the microscopes and computers/printers which will become available with the completion of the second lab. While there, they will also receive instruction in the use of the Analytical Balance, top-loading laboratory balances, and the Radon Counting and Gamma-Ray Spectrometry System.

Presentations from representatives of the HBCU/MI Consortium will be scheduled throughout the program year and materials regarding undergraduate and graduate opportunities at these institutions will be circulated.

Objective F: Implement Two EERN Science Fairs Each Satellite Center will conduct an in-house EERN Science Fair during May, 1994. The standard for participation will be the same as the standard for participating in the School District's George Washington Carver Fair. Students will be required to follow the research regulations established by Science Service, parent of the International Science Fair. Judges will be recruited from among the members of the Inner-City Energy and Environmental Education Consortium, and the HBCU/MI. A recognition ceremony will be held and awards presented. All students who participate will receive at least a certificate of achievement. Members of the Consortium and Archdiocesan students will be invited to participate.

Objective G: Conduct Energy and Environmental Seminars for Parents The Coordinator will conduct two four hour seminars to be scheduled for two Saturday mornings. Speakers from government and industry will introduce parents to current issues in energy and the environment, and discuss air quality and residential radon. Radon kits will be provided and parents will be taught how to conduct a radon test in their homes. The samples will be collected and analyzed using the Radon Scintillation Counter available at the Environmental Academy's laboratories. Following the radon detecting research, parents will meet to present and discuss their findings. Parents will also be encouraged to participate in some of the scheduled field trips.

Objective H: Disseminate a Booklet of Science Resource Leaders and Student Research Findings Science Resource Leaders who complete training will be required to formally record and submit their research findings to the Coordinator. Students who participate in Center activities will be required to formally record and submit their research findings to the Technical Assistants. A booklet will be compiled to assist in the refinement and/or modification of program plans for Years II and III. The booklet will also be disseminated to other School District staff, Consortium members, and interested agencies and organizations.

Demographic Composition of Students/Science Resource Leaders to be Affected

The demographic composition of the students to be affected is: 67% African American, 1% Asian, 21% Latino and 11% White female. The demographic composition is: 64% African American and 36% White. (See Appendix 6.1.3 D for pie chart)

Expected Outcomes

- Teachers will develop strategies to help students develop critical thinking skills. This includes helping students apply their critical thinking skills to new experiences

which will lead them to search for patterns, identify problems, hypothesize, and make decisions based on observations.

- Teachers will develop the ability to frame and select topics and activities which focus on energy related scientific and technical areas, environmental restoration, and waste management.

- Students and teachers' research will be presented, published and disseminated.

- The number of students who participate in Science Fair competitions, at all levels, will increase significantly.

- An increased number of students will enter environmental and energy-related careers.

Measurement of Results

Objective A: To measure the attainment of this objective, the evaluator will visit the ETA at least twice during the program year to assess progress towards the completion of the lab. A checklist of equipment, materials and construction needed will be maintained to determine when the lab is considered fully operational.

Objective B: To measure the attainment of this objective, the Coordinator will maintain a record of attendance at training sessions. The evaluator will develop and administer a Likert-type survey to measure satisfaction with the training sessions, and materials and information presented.

Objective C: To measure the attainment of this objective, the evaluator will review the applications submitted and record the number and ethnicity of student participants.

Objective D: To measure the attainment of this objective, the evaluator will visit each of the two Satellite Centers at least once to determine that two instrumentation kits are located at each Center and, that sufficient classroom consumables and supplies are available for all student participants. He will also review sign-in sheets to determine the number of students who used the Centers.

Objective E: To measure the attainment of this objective, the evaluator will visit the two regional Satellite Centers to observe student training activities, student achievement and attendance records. In addition, he will monitor the in-house science fair projects to determine the number of students who participated in a project and prepare a summary of his findings.

Objective F: To measure the attainment of this objective, the evaluator will visit the EERN Fairs and summarize his/her findings, including the project sites, number of students who participated, the topics of projects, awards received, etc.

Objective G: To measure the attainment of this objective, the evaluator will review the records from each parent seminar to determine the number of parents attending, the number of radon kits provided, and the names of topics and/or speakers presented.

Objective H: To measure the attainment of this objective, the evaluator will review program records to determine that: by February, 1994, science resource leaders completed and submitted their research findings; by June, 1994 students completed and

submitted their research findings; and by August, 1994 the Coordinator compiled and published a Booklet of all research findings.

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Historically Black Colleges and Universities/Minority Institutions Annual Report, 1990/91

Leadership and Management

Dr. Curtis D. Howard, Science Curriculum Coordinator, School District of Philadelphia, will serve as Principal Investigator/Program Director responsible for the overall administration and fiscal matters pertaining to the grant program. Her educational qualifications include a B.S. in Biology and General Science, a Master of Science Education and Ph.D. in Education Administration. She is responsible for science curriculum development K-12, and has extensive experience designing, teaching, and supervising innovative science curricula. She is an advocate for increasing the likelihood of minority students choosing and succeeding in science and engineering careers. Her recent initiatives, stressing student training in critical and scientific thinking and problem solving through hands-on research have resulted in a 300% student participation increase in the county-wide science fair. Dr. Howard is Director of the George Washington Carver Science Fair, and a member of the Delaware Valley Science Fair Committee. She is also Director of a $1.9 million grant from the National Science Foundation. Dr. Howard will devote 5% of her time as Director of this project as an in-kind contribution. (See Appendix 6.1.3 B for Vitae)

Mr. James Kennedy, Laboratory Assistant, School District of Philadelphia, Lincoln High School, School District of Philadelphia, will serve as Project Coordinator (See Appendix 6.1.3 B for vitae). Mr. Kennedy trains students in the use and operation of a variety of analytical

instrumentation such as the atomic absorption spectrophotometer. His qualifications include a B.A. in Biology, a Senior Environmental Analyst, Semi-Volatile Organic Extractions for the Roy F. Weston Company, and Program Coordinator/Middle School Specialist, Young Scholars Program, Lincoln University. Mr. Kennedy is also involved in many student science related activities including the Lincoln High School PRIME Program (a science engineering minority enrichment experience), a variety of science fairs, coach of the Science Bowl Team, and Director/Instructor of the Cobbs Creek Environmental Scholars Program which focuses on teaching methods of water quality assessment to minority high school students. During the summer of 1992, Mr. Kennedy spent a month teaching environmental monitoring at a high school in Novgorod, Russia and was instrumental in planning, developing and establishing an ETA Program. For the past several years, he has conducted a teachers workshop on "Motivating the Student at Risk through Science" sponsored by the Academy of Natural Sciences of Philadelphia. Mr. Kennedy's duties and responsibilities will include but may not be limited to: select and order instrumentation kits, chemicals, reagents and all other program materials and supplies, design teacher and student research projects, conduct staff development sessions, solicit additional donations of equipment and supplies from industry sources, collect teacher research projects, plan and coordinate EERN fairs, procure MSDS of all chemicals, standards, reagents, etc., and plan and facilitate parent seminars.

Two Technical Assistants will be selected as an on-site coordinator for each Satellite Center. Their duties and responsibilities will include but may not be limited to: maintain instrumentation kits and inventory of classroom consumables, maintain MSDS of all chemicals, standards, reagents, etc., insure proper storage of all hazardous materials, assist in the implementation of EERN Fairs; collect student research projects, maintain student attendance records.

One part-time Research Assistant will provide evaluation services to the program. His duties will include but may not be limited to: develop evaluation strategies and instruments; provide report card grades pertaining to student recruitment, collect and analyze program data as may be required, monitor on-site implementation of program objectives to ensure all materials have been received and are being used by student participants, monitor seminars to ensure that all materials ordered have been received and are being used by parent participants, and assist in the preparation of any and all reports as may be required by the funding source and/or the School District of Philadelphia.

Secretarial support will provide administrative support services essential to carrying out all program activities, including, assistance in record keeping, processing requisitions, assisting Director and/or Coordinator in correspondence and communications, and assisting in duplication and reproduction of all program materials as needed.

Budget

See Budget Detail and Budget Narrative, Appendix 6.1.3 A.

Summary of Years II and III Programs During the second year of the project, the remaining four administrative regions and four regional Satellite Centers will be added to the program. Forty science resource leaders (ten from each region) and ten Archdiocesan teachers will be trained, and 400 students (100 from each region) will participate in Center and EERN Fair activities. First year program staff will assist first year students during the time they spend at the Satellite Centers, with designing environmental projects eligible for entry into the George Washington Carver Science Fair. Students may also elect to participate in the School District of Philadelphia, Environmental Science Fair which will be instituted during Year II.

Year III activities will include the continuation of all six regional Satellite Centers. The second annual School District Environmental Fair will be held with Year I and II students. Year III will also provide for expansion and further institutionalization of the program by reaching down to train

40 fifth and sixth grade science resource leaders. The Archdiocesan teachers will be given ten slots for their teachers. As many as 800 School district fifth and sixth grade students will participate in classroom hands-on activities, while all fifth and sixth students at each teacher's school will participate in a Traveling Science Show. Using the portable instrumentation kits and other consumables, the show will be presented at each school during an assembly program. Groups of first and second year student participants will serve as presenters and travel with program staff to each school. This activity will accomplish a number of things. First, it will provide an avenue for the 7th through 12th graders to showcase their science fair projects which will enhance their self-esteem and confidence and cast them as role models to a new generation (5th and 6th graders) of potential scientists in the fields of energy, environmental science and waste management. Secondly, it will help to reinforce everyone's interest in these fields, and lastly, it will create a new and wider audience for participation during Year II and greatly enhance our efforts to replicate and institutionalize this important program into the future.

APPENDIX 6.1.3 A

BUDGETS

removed, ds

APPENDIX 6.1.3 B

BIOGRAPHIES OF PROJECT LEADERSHIP

VITAE

Curtis D. Howard
1517 E. Mt. Pleasant Ave.
Philadelphia, PA 19150

(215) 248-2936

School District of Philadelphia
Office of Curriculum Support
Room 328
21st and Parkway
Philadelphia, PA 19103

(215) 299-7797

Expertise: Organizational Leadership, Curriculum and Instruction
Educational Leadership

Education:

Ph.D - Education Administration with focus on Organizational Leadership, Curriculum and Instruction
University of Pennsylvania-Graduate School of Education
37th and Walnut Sts.
Philadelphia, PA 19104

Beaver College-Education Division Certificate of Advanced Study
Wyncote, PA 19086
CAS - Educational Leadership with Distinction
Master of Science Education

Livingstone College
Salisbury, NC
BS - Biology and General Science (Liberal Arts)

Certifications:

Superintendent's Letter of Eligibility
Executive Director's Letter of Eligibility
Assistant Superintendent's Letter of Eligibility
Assistant Director's Letter of Eligibility
Supervisory:
Curriculum and Instruction
Science
Principal:
Elementary
Secondary
Biology
General Science

Professional Experiences:

School District of Philadelphia:
Curriculum Coordinator - Science
Science Supervisor k-12
Biology Teacher
General Science and Physical Science Teacher

Beaver College:
Adjunct Instructor
Graduate
Undergraduate
School District of Philadelphia
George Washington Carver Science Fair
Director
Pennsylvania Governor's School of Science
School District Coordinator
Delaware Valley Science Fair Committee
Member

NSF funded Proposal: "Middle School Site-Based Resource Leaders"
$1.9 Million
Projector Director

Member:Pennsylvania State Science & Technology Outcomes committee

Collaborated on the writing and implementation of Funded Proposals:
"Teaching Teachers How to Do Science with Students who have Limited English Proficiency"

"Operation Physics Teams for School District of Philadelphia"

Project Director
"Teaching Students who are Underrepresented in Science How to do Science Fair Projects"
Proposal Reviewer:
NSF (National Science Foundation)
•Teacher Enhancement- 1990
•Collaborative Grants - 1991
Urban Systemic Science Initiative Committee (NSF)
Executive Board Member & Co-Chairperson Intergrated Curriculum Committee

Staff Development Director
Extensive Science Staff Development K-12

Project 2061:
•American Association for the Advancement of Science
Science Curriculum Development Team

Assisted with design of manipulatives, **writing of curriculum** and Implementation of Inquiry science program in the Elementary schools of the School District of Philadelphia

Workshop: How to Develop Concepts From Hands-On Activities

Staff development leader of teachers who implement the hands-on, inquiry, science curriculum in their classroom

Convener: Monthly Meetings of Science Department Heads and Science Supervisors

Facilitator: Excellence Conference
University of Pennsylvania

Presenter: Sussex County Science Conference - 1991
National Science Teachers Association - 1991
"Implementing A Hands-On Science Program"

National Science Foundation (NSF) sponsored Conference: Coalition of Great City Schools
Topic: The Nature of Exemplary Science Programs

Budgeting: Dwight D. Eisenhower Funds for Science
Program Coordinator

Allocation of Eisenhower Funds, planning for program options such as,

- Middle School Science Fair Conferences
- Elementary School Conferences which focus on the development of Science Concepts
- Senior High School Conferences on Issues in Science Education
- Workshops to Strengthen Content and Teaching Skills
- College Courses to Strengthen Content and Teaching Strategies

Memberships:

Past President: •Women in Education
Past President: •National Twigs, Inc.
Trustee: •Chestnut Hill Academy
Department Superintendent:
•Grace Baptist Church of Germantown Sunday School
Tour Guide: •Centipede Tours - 1973-1985
Fellow: •Association of Supervision and Curriculum Development
Member: •Delta Sigma Theta Sorority
•National Association of Parliamentarians
•American Association of University Women (AAUW)
•Pennsylvania Association of Science Teachers
•Pennsylvania Association of Science Supervisors
•Phi Delta Kappa - Beaver College Chapter
•National Science Teachers Association
•National Association of Science Supervisors
•Academy of Natural Sciences Advisory Committee
•Franklin Institute Science Museum Education Committee
•College of Pharmacy and Sciences Advisory Committee
•Executive Board: Educational Alumni Association (EAA)
University of Pennsylvania
•Curriculum Development Committee, School District of Philadelphia
•School District Consultative Committees:
Site - Based Management and Shared Decision Making
•Pennsylvania Science Advisory Committee, Harrisburg, PA
•Energy Education Advisory Council (EEAC)
•Pennsylvania Association of Science and Curriculum Development
•Pennsylvania Teacher of the Year Committee 1991-92
•National Academy of Sciences - Advisory Committee
•Executive Committee of the Steering Committee of the Inner-City Energy and Environmental Education Consortium
•Board of Directors - American Youth Hostels

CURRICULUM VITA CO-PRINCIPLE INVESTIGATOR

James R. Kennedy Jr.

Home Address: 13 Baily Road
Yeadon, PA 19050
(215) 284-0686

Business Addresses: Environmental Technology Academy
Abraham Lincoln High School
Rowland & Ryan Avenues
Philadelphia, PA 19136
(215) 333-8450

Roy F. Weston, Inc.
Analytical Laboratory
208 Welsh Pool Road
Lionville, PA 19353
(215) 524-7360

Lincoln University
Young Scholars Program
Urban Education Foundation
4601 Market Street
Philadelphia, PA 19139
(215) 476-6656

The Academy of Natural Sciences
Of Philadelphia
Summer Scholars Program
Education Department
19th & The Parkway
Philadelphia, PA 19103
(215) 299-1061

Weston Institute
Weston Way
West Chester, PA 19380
(215) 430-3100

Education: 1965 West Philadelphia High School
48th & Walnut Street
Philadelphia, PA 19139

1973 Cheyney State College
Cheyney, PA 19319
B.A. Biology

PROFESSIONAL EXPERIENCE

1972 - PRESENT	Laboratory Assistant II; Philadelphia Environmental Technology Academy. Co-Liaison Prime and Pact Programs. Abraham Lincoln High School; The School District of Philadelphia
1989 - PRESENT	Senior Environmental Analyst Semi-Volatile Organic Extractions. Roy F. Weston Company Analytics Division; Lionville, PA. 19353
1991 - PRESENT	Program Coordinator/Middle School Specialist; Young Scholars Program; Lincoln University, Urban Education Center, Philadelphia, PA 19139
1991- PRESENT	Instructor, Summer Scholars Program; Instructor Teacher In-Service Program, The Academy of Natural Sciences of Philadelphia
1973 - 1988	Supervisor, Clinical Specimen Accessioning, SmithKline Clinical Laboratories, West Norriton, PA 19401

APPENDIX 6.1.1 C

SUPPORTING LETTERS AND CERTIFICATIONS

THE SCHOOL DISTRICT OF PHILADELPHIA
ABRAHAM LINCOLN HIGH SCHOOL
ROWLAND AND RYAN AVENUES
PHILADELPHIA, PENNSYLVANIA 19136-9998

TELEPHONE (215) 335 5653

March 30, 1993

Dr. William S. Gaither, President
Weston Institute
One Weston Way
West Chester, PA 19380

Dear Dr. Gaither:

I support and endorse without reservation the Inner -City Energy and Environmental Education Consortium proposal being submitted by the School District of Philadelphia to the Department of Energy.

As principal of Abraham Lincoln High School, I am committed to provide the school as the launch site for the Energy Environmental Research Network.

Sincerely yours,

Barbara M. Braman

Barbara M. Braman
Principal

Philadelphia
High School
Academies
Inc.
PARTNERS IN EDUCATION

(215) 546-6300
FAX
(215) 546-9174

March 30, 1993

Dr. Curtis D. Howard
Curriculum Coordinator
School District of Philadelphia
21st Street & The Parkway
Room 328
Philadelphia, PA 19103

Dear Dr. Howard:

The Philadelphia High School Academies, Inc. is pleased to endorse the proposal by the School District of Philadelphia to the Inner-City Energy and Environmental Education Consortium.

We understand that the School District's proposal calls for the establishment of an Energy and Environmental Research Network with headquarters located at Lincoln High School's Environmental Technology Academy.

In support of the proposal, the Philadelphia High School Academies, Inc. pledges to allocate in-kind contributions valued at $50,000, consisting specifically of laboratory furnishings and/or equipment, to the renovation effort related to the above mentioned program.

Sincerely,

Natalie S. Allen

Natalie S. Allen
President

NSA/tm

230 South Broad Street, 2nd Floor
Philadelphia, PA 19102

The Franklin Institute Science Museum

Benjamin Franklin Parkway
at 20th Street
Philadelphia, PA 19103-1194

Phone: 215.448.1208
FAX: 215.448.1235

June 8, 1993

Dr. Curtis Howard
Curriculum Coordinator
Office of Curriculum Support
School District of Philadelphia
21st and The Parkway
Philadelphia, PA 19103

Dear Curtis:

I am pleased to write in support of the School District of Philadelphia application to the Department of Energy for the "Energy and Environmental Research Network."

The Energy and Environmental Research Network builds on the School District commitment to inquiry-based teaching and learning in science. The program will open rich opportunities across the district for teachers and students to become actively involved in the exploration of energy and environmental science and to apply their academic study to real-world problems and issues. The program also supports a vital focus on the career potential of these fields, particularly for those urban minority and female students who are dramatically under-represented in science and technology careers.

As director of planning for the Philadelphia Urban Systemic Initiative (USI), the Philadelphia Science Partnership, I have been fortunate to have you serve on the USI Executive Committee. We anticipate the ongoing collaboration between the Energy and Environmental Network and the USI in the systemic reform of science, mathematics, and technology in the School District of Philadelphia.

Sincerely,

Carol

Carol A. Parssinen
Director of Planning
Philadelphia Science Partnership

Science Center & Fels Planetarium
Mandell Futures Center
Tuttleman Omniverse Theater
The Benjamin Franklin National Memorial

A copy of our official registration and financial information may be obtained from the Pennsylvania Department of State by calling toll free, within Pennsylvania, 1.800.732.0999. Registration does not imply endorsement.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
841 Chestnut Building
Philadelphia, Pennsylvania 19107-4431

March 30, 1992

Curtis Howard, Ph.D.
Office of Curriculum Support
School District of Philadelphia
21st Street & The Parkway
Philadelphia, PA 19103

Dear Dr. Howard:

I am writing on behalf of the Region III U.S. Environmental Protection Agency (EPA) Office of Environmental Equity to express our whole-hearted support for the Philadelphia School District's proposal to the U.S. Department of Energy to implement a district-wide, three year Energy and Environmental Research Network Program. We agree that providing such a "hands-on" experience for students and their parents is both an innovative and effective way to stimulate interest in the sciences and the environment - particularly when these students belong to minority segments of the population, which have experienced low representation in the sciences.

Increasing the number of women and minorities in scientific and environmental fields has been an Agency-wide EPA goal for a number of years, due to the traditional under-representation of these groups in our recruiting pools and within our Agency. Through our Environmental Equity efforts, we are also focusing on expanding environmental outreach and awareness to more minority communities, which are often highly impacted by environmental pollutants. This proposal offers an excellent medium through which to accomplish each of these goals.

We would anticipate the funding of this proposed program by the Department of Energy and look forward to working with this effort, as a continuing part of our very productive partnerships with Lincoln High School and other schools in the Philadelphia District. Please let me know of its status. I can be reached at (215) 597-6529.

Sincerely,

Dominique Lueckenhoff

Dominique Lueckenhoff
Program Manager
Office of Environmental Equity
Deputy Administrator's Office

NOBCChE

NATIONAL ORGANIZATION FOR THE PROFESSIONAL ADVANCEMENT OF BLACK CHEMISTS AND CHEMICAL ENGINEERS

DELAWARE VALLEY CHAPTER: P.O.BOX 588 • LAFAYETTE HILL, PENNSYLVANIA 19444 • 215-643-0118

March 31, 1993

Dr. Curtis Howard
Science Curriculum Coordinator
Office of Curriculum Support
School District of Philadelphia
21st and the Parkway
Philadelphia, PA 19103

Dear Dr. Howard,

On behalf of the Delaware Valley Chapter of the National Organization for the Professional Advancement of Black Chemists and Chemical Engineers (NOBCChE), we would like to extend our full support of the Energy and Environmental Research Network. We believe that the philosophy and approach, as described in the proposal, have the potential for significantly enhancing the level of environmental science education and awareness in our schools and communities.

Consistent with the goals and mission of our organization, we would like to extend an offer to provide mentors, quest speakers and/or workshops as an in-kind contribution to support the program. Please feel free to contact me if we can be of any assistance.

Sincerely,

Charmayne Thompson

Charmayne Thompson
President, DVC-NOBCChE

NATIONAL OFFICE: HOWARD UNIVERSITY • 525 COLLEGE AVE., NW • WASHINGTON D.C. 20059 • 202-269-4129

FLORIDA AGRICULTURAL AND MECHANICAL UNIVERSITY
TALLAHASSEE, FLORIDA 32307 / TELEPHONE: (904) 599-3550 FAX (904) 561-2
OFFICE OF ENVIRONMENTAL PROGRAMS

April 1, 1993

Dr. Curtis Howard
School District of Philadelphia
21st Street S. of the Parkway
Philadelphia, Pennsylvania 19103-1090

RE: Energy and Environmental Education Institute

Dear Dr. Howard:

I have reviewed the draft proposal to establish an Energy and Environmental Education Institute for the School District of Philadelphia.

I would like to express our commitment to be a partner in this endeavor. As a member of the Historically Black Colleges and Universities/Minority Institutions Environmental Restoration and Waste Management Consortium, we are committed to finding solutions to our own environmental restoration/waste management problems and those of DOE and the Nation. We realize that one of our most urgent tasks is to strengthen our science and engineering workforce. The education pipeline from kindergarten through the PhD level is failing to produce workers needed to meet the future demand; therefore, unless parents, schools, colleges, professional societies, social societies, industry, state legislatures, federal agencies, the President and Congress act in concert, our national science and engineering workforce will continue to erode and the prospect for maintaining an advanced industrial society will diminish.

We are glad to know that the School District of Philadelphia plans to become an important player in this concerted effort by establishing an Energy and Environmental Education Institute that will channel students into our educational pipeline and increase the number of students who are qualified for and committed to careers in scientific and technical areas of environmental sciences.

Since 1990, we have had a partnership with the School District of Philadelphia, especially Lincoln High School and have provided over $100,000 in scholarship funds provided opportunities for students to participate in summer enrichment programs, provided financial support for faculty and students to attend the National Congress Conference and provided Environmental Technology Academy Students access to FAMU faculty via fax/telephone/mail.

We look forward to broadening our services to the entire School District of Philadelphia through the Energy and Environmental Education Institute.

Sincerely,

Charles C. Kidd

Charles C. Kidd, Ph.D.
Associate Vice President for
Environmental Programs

FAMU IS AN EQUAL OPPORTUNITY/EQUAL ACCESS UNIVERSITY

NMHU
1893 Centennial 1993

13 April 1993

Curtis Howard, Ph.D.
Office of Curriculum Support
Room 330
21st Street & The Parkway
Philadelphia, PA 19103

Dear Dr. Howard:

This is a letter of support for the DOE proposal that is being developed for the School District of Philadelphia by James Kennedy. I understand that this proposal describes a program based on The Environmental Technology Academy at Lincoln High School in Philadelphia.

As Dean of the School of Science and Engineering at New Mexico Highlands University, I too have been involved with a highly successful program that emphasizes intensive hands-on student use of sophisticated analytical instrumentation. Our Chemistry degree program begins at the freshman year to stress this applied approach, and experience shows this to be a successful teaching and learning strategy, especially for minority students. And because the student population at Highlands is 75% minority, we know empirically that this pedagogical approach is effective with minority students when other teaching techniques fail.

I therefore am excited about this DOE proposal that takes a proven system for teaching average and/or disadvantaged students and implements it at the pre-college level. If more students in the Philadelphia area (and hopefully nation-wide at some date) can have the opportunity to participate in such a program, more young people will become motivated and interested in pursuing careers in the environmental professions and engineering. The self-confidence that is built by hands-on experience with instrumentation and the spark of curiosity that is ignited by such work has no substitute. As students develop skill with analytical techniques, their critical thinking skills are also sharpened. Such is the stuff that energetic and promising young scientists are made of.

I believe that this program is exactly the type needed by the HBCU/MI Environmental Technology Consortium to contribute to the undergraduate pipeline of well-prepared and innovative students. This proposal has my strongest support.

Yours truly,

Melinda L. McClanahan

Dr. Melinda L. McClanahan, Dean, School of Science and Engineering
HBCU/MI Consortium Coordinator

Tuskegee University

Founded by Booker T. Washington

School of
Agriculture & Home Economics

May 14, 1993

Curtis Howard
Office of Curriculum Support
Room 330
21st Street & The Parkway
Philadelphia, PA 19103

Dear Dr. Howard:

This letter serves to support the proposal by the Lincoln High School Environmental Technology Academy to expand their curriculum in environmental technology.

The Lincoln High School program has employed a curriculum that stresses intensive hands-on student use of analytical instrumentation, and the development of critical and scientific thinking and problem solving skills.

As a former high school science and chemistry teacher in the Chicago inner-city and presently the coordinator of undergraduate environmental science programs at a historically black university, I am confident that the proposed program from Lincoln High School will have a significant impact on increasing environmental science and engineering careers for minorities.

Sincerely,

Walter A. Hill
Dean and Research Director

cc: James Kennedy

Tuskegee, Alabama 36088

OMB Control No.
1910-0400

U.S. DEPARTMENT OF ENERGY

ASSURANCE OF COMPLIANCE

Nondiscrimination of Federally Assisted Programs

School District of Philadelphia (Hereinafter called the "Applicant") HEREBY AGREES to comply with Title VI of the Civil Rights Act of 1964 (Pub. L. 88-352), Section 16 of the Federal Energy Administration Act of 1974 (Pub. L. 93-275), Section 401 of the Energy Reorganization Act of 1974 (Pub. L. 93-438), Title IX of the Education Amendments of 1972, as amended (Pub. L. 92-318, Pub. L. 93-568, and Pub. L. 94-482), Section 504 of the Rehabilitation Act of 1973 (Pub. L. 93-112), the Age Discrimination Act of 1975 (Pub. L. 94-135), Title VIII of the Civil Rights Act of 1968 (Pub. L. 90-284), the Department of Energy Organization Act of 1977 (Pub. L. 95-91), and the Energy Conservation and Production Act of 1976, as amended (Pub. L. 94-385). In accordance with the above laws and regulations issued pursuant thereto, the Applicant agrees to assure that no person in the United States shall, on the ground of race, color, national origin, sex, age, or handicap, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity in which the Applicant receives Federal assistance from the Department of Energy.

Applicability and Period of Obligation

In the case of any service, financial aid, covered employment, equipment, property, or structure provided, leased, or improved with Federal assistance extended to the Applicant by the Department of Energy, this assurance obligates the Applicant for the period during which Federal assistance is extended. In the case of any transfer of such service, financial aid, equipment, property, or structure, this assurance obligates the transferee for the period during which Federal assistance is extended. If any personal property is so provided, this assurance obligates the Applicant for the period during which it retains ownership or possession of the property. In all other cases, this assurance obligates the Applicant for the period during which the Federal assistance is extended to the Applicant by the Department of Energy.

Employment Practices

Where a primary objective of the Federal assistance is to provide employment or where the Applicant's employment practices affect the delivery of services in programs or activities resulting from Federal assistance extended by the Department, the Applicant agrees not to discriminate on the ground of race, color, national origin, sex, age, or handicap, in its employment practices. Such employment practices may include, but are not limited to, recruitment, recruitment advertising, hiring, layoff or termination, promotion, demotion, transfer, rates of pay, training and participation in upward mobility programs; or other forms of compensation and use of facilities.

Subrecipient Assurance

The Applicant shall require any individual, organization, or other entity with whom it subcontracts, subgrants, or subleases for the purpose of providing any service, financial aid, equipment, property, or structure to comply with laws cited above. To this end, the subrecipient shall be required to sign a written assurance form, however, the obligation or both recipient and subrecipient to ensure compliance is not relieved by the collection or submission of written assurance forms.

Data Collection and Access to Records

The Applicant agrees to compile and maintain information pertaining to programs or activities developed as a result of the Applicant's receipt of Federal assistance from the Department of Energy. Such information shall include, but is not limited to, the following: (1) the manner in which services are or will be provided and related data necessary for determining whether any persons are or will be denied such services on the basis of prohibited discrimination; (2) the population eligible to be served by race, color, national origin, sex, age, and handicap; (3) data regarding covered employment including use or planned use of bilingual public contact employees serving beneficiaries of the program where necessary to permit effective participation by beneficiaries unable to speak or understand English; (4) the location of existing or proposed facilities connected with the program and related information adequate for determining whether the location has or will have the effect of unnecessarily denying access to any person on the basis of prohibited discrimination; (5) the present or proposed membership by race, color,

national origin, sex, age, and handicap, in any planning or advisory body which is an integral part of the program; and (6) ar additional written data determined by the Department of Energy to be relevant to its obligation to assure compliance b recipients with laws cited in the first paragraph of this assurance.

The Applicant agrees to submit requested data to the Department of Energy regarding programs and activities developed b the Applicant from the use of Federal assistance funds extended by the Department of Energy. Facilities of the Applicar (including the physical plants, buildings, or other structures) and all records, books, accounts, and other sources of informatio pertinent to the Applicant's compliance with the civil rights laws shall be made available for inspection during normal busines hours on request of an officer or employee of the Department of Energy specifically authorized to make such inspections Instructions in this regard will be provided by the Director, Office of Equal Opportunity, U.S. Department of Energy.

This assurance is given in consideration of and of the purpose of obtaining any and all Federal grants, loans, contract (excluding procurement contracts), property, discounts, or other Federal assistance extended after the date hereto, to th Applicants by the Department of Energy, including installment payments on account after such data of application for Federa assistance which are approved before such date. The Applicant recognizes and agrees that such Federal assistance will b extended in reliance upon the representations and agreements made in this assurance and the United States shall have th right to seek judicial enforcement of this assurance. This assurance in binding on the Applicant, its successors, transferees and assignees, as well as the person whose signature appears below and who is authorized to sign this assurance on behal of the Applicant.

6/11/93
(Date)

Constance E. Clayton/pm

School District of Philadelphia
(Name of Applicant)

21st Street South of the Parkway

Philadelphia, PA 19103
(Address)

Dr. Constance E. Clayton, Superintenden
(Authorized Official)

(215 299-7823
(Applicant's Telephone Number)

CERTIFICATIONS REGARDING LOBBYING; DEBARMENT, SUSPENSION AND OTHER RESPONSIBILITY MATTERS; AND DRUG-FREE WORKPLACE REQUIREMENTS

Applicants should refer to the regulations cited below to determine the certification to which they are required to attest. Applicants should also review the instructions for certification included in the regulations before completing this form. Signature of this form provides for compliance with certification requirements under 34 CFR Part 82, "New Restrictions on Lobbying," and 34 CFR Part 85, "Government-wide Debarment and Suspension (Nonprocurement) and Government-wide Requirements for Drug-Free Workplace (Grants)." The certifications shall be treated as a material representation of fact upon which reliance will be placed when the Department of Energy determines to award the covered transaction, grant, or cooperative agreement.

1. LOBBYING

The undersigned certifies, to the best of his or her knowledge and belief, that:

(1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

(3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

2. DEBARMENT, SUSPENSION, AND OTHER RESPONSIBILITY MATTERS

(1) The prospective primary participant certifies to the best of its knowledge and belief, that it and its principals:

(a) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;

(b) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

(c) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (1)(b) of this certification; and

(d) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

(2) Where the prospective primary participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

3. DRUG-FREE WORKPLACE

This certification is required by the Drug-Free Workplace Act of 1988 (Pub. L. 100-690, Title V, Subtitle D) and is implemented through additions to the Debarment and Suspension regulations, published in the Federal Register on January 31, 1989, and May 25, 1990.

ALTERNATE I
(GRANTEES OTHER THAN INDIVIDUALS)

(1) The grantee certifies that it will or will continue to provide a drug-free workplace by:

(a) Publishing a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the grantee's workplace and specifying the actions that will be taken against employees for violation of such prohibition;

(b) Establishing an ongoing drug-free awareness program to inform employees about:

(1) The dangers of drug abuse in the workplace;

(2) The grantee's policy of maintaining a drug-free workplace;

(3) Any available drug counseling, rehabilitation, and employee assistance programs; and

(4) The penalties that may be imposed upon employees for drug abuse violations occurring in the workplace;

(c) Making it a requirement that each employee to be engaged in the performance of the grant be given a copy of the statement required by paragraph (a);

(d) Notifying the employee in the statement required by paragraph (a) that, as a condition of employment under the grant, the employee will:

(1) Abide by the terms of the statement; and

(2) Notify the employer in writing of his or her conviction for a violation of a criminal drug statute occurring in the workplace not later than five calendar days after such conviction;

(e) Notifying the agency, in writing, within ten calendar days after receiving notice under subparagraph (d)(2) from an employee or otherwise receiving actual notice of such conviction. Employers of convicted employees must provide notice, including position title, to every grant officer or other designee on whose grant activity the convicted employee was working, unless the Federal agency has designated a central point for the receipt of such notices. Notice shall include the identification number(s) of each affected grant;

(f) Taking one of the following actions, within 30 calendar days of receiving notice under subparagraph (d)(2), with respect to any employee who is so convicted:

(1) Taking appropriate personnel action against such an employee, up to and including termination, consistent with the requirements of the Rehabilitation Act of 1973, as amended; or

(2) Requiring such employee to participate satisfactorily in a drug abuse assistance or rehabilitation program approved for such purposes by a Federal, State, or local health, law enforcement, or other appropriate agency;

(g) Making a good faith effort to continue to maintain a drug-free workplace through implementation of paragraphs (a), (b), (c), (d), (e), and (f).

(2) The grantee may insert in the space provided bel site(s) for the performance of work done in connectic the specific grant:

Place of Performance:
(Street address, city, county, state, zip code)

_____

_____

_____

☐ Check if there are workplaces on file that are not identified here.

ALTERNATE II (GRANTEES WHO ARE INDIVIDU

(1) The grantee certifies that, as a condition of the grant, he will not engage in the unlawful manufacture, distrib dispensing, possession, or use of a controlled substa conducting any activity with the grant.

(2) If convicted of a criminal drug offense resulting f violation occurring during the conduct of any grant ac he or she will report the conviction, in writing, wit calendar days of the conviction, to every grant offi other designee, unless the Federal agency designates tral point for the receipt of such notices. When notice is to such a central point, it shall include the identifi number(s) of each affected grant.

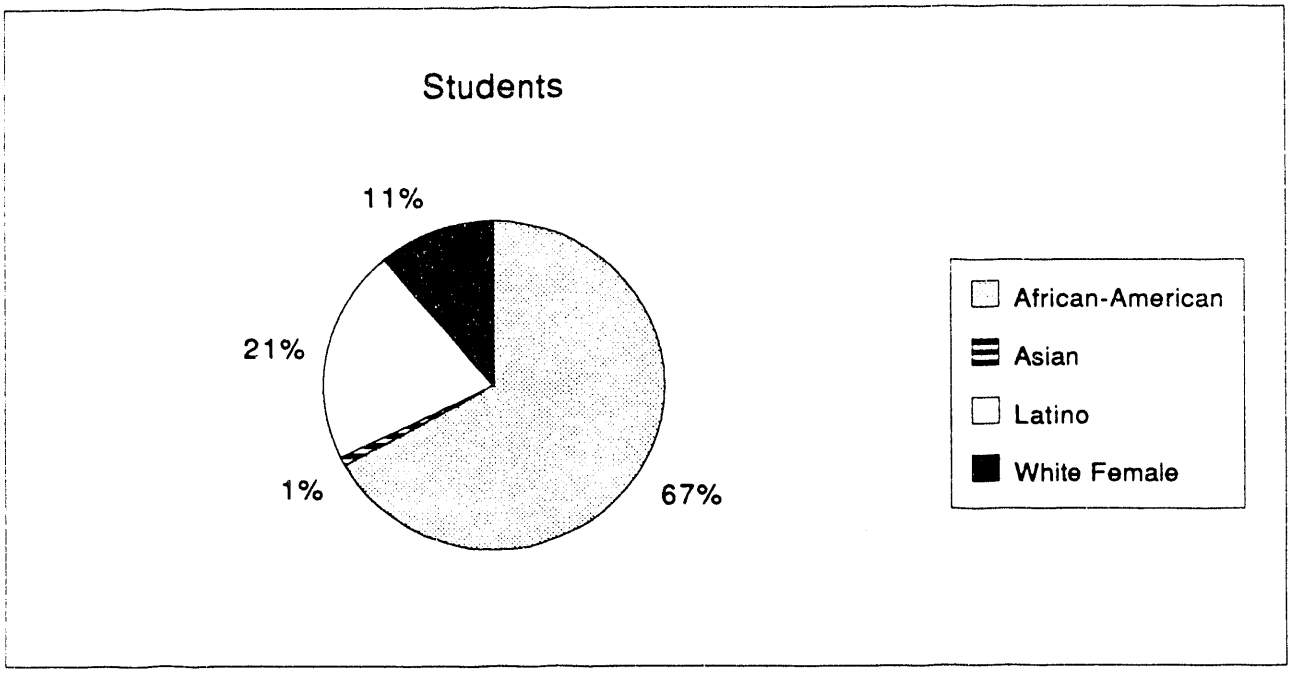
As the duly authorized representative of the applicant, I hereby certify that the applicant will comply with the above certifica

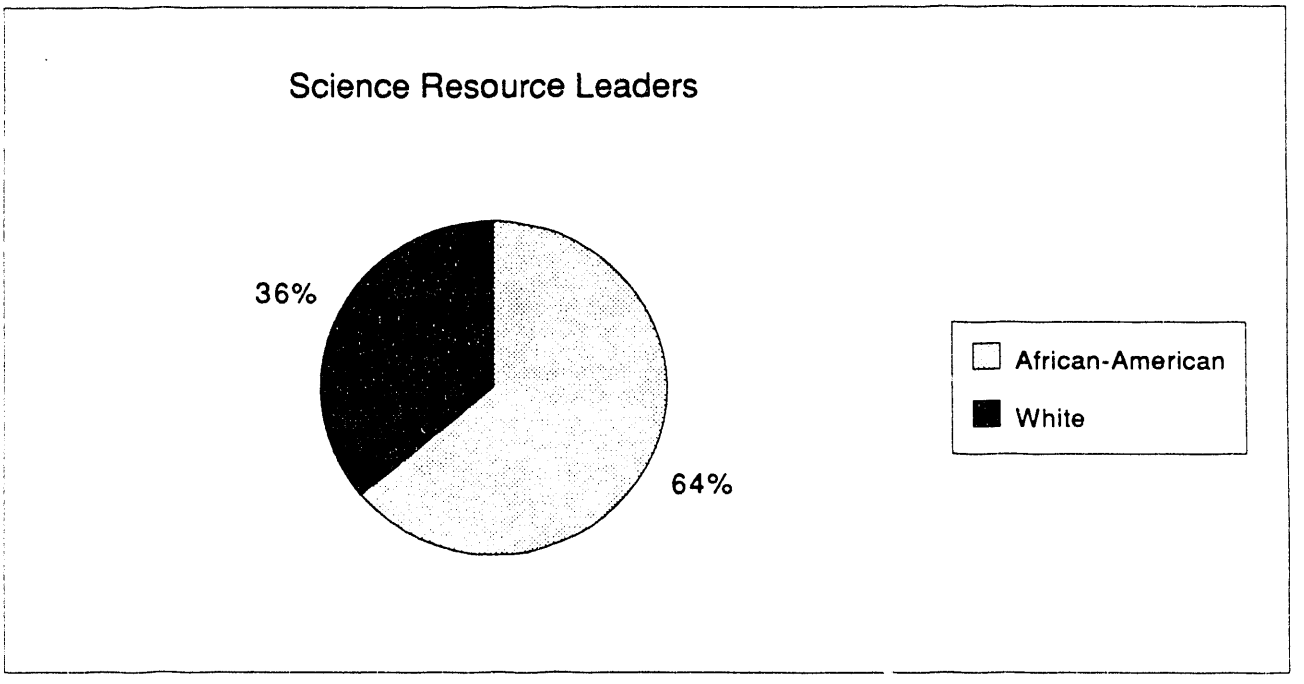
NAME OF APPLICANT	PR/AWARD NUMBER AND/OR PROJECT NA.
School District of Philadelphia	Energy and Environmental Research Network Program
PRINTED NAME AND TITLE OF AUTHORIZED REPRESENTATIVE	
Dr. Constance E. Clayton, Superintendent of Schools	
SIGNATURE	DATE
Constance E. Clayton /Key	6/11/93

APPENDIX 6.1.3 D

DEMOGRAPHIC INFORMATION

Year 1: Demographic Composition of Students and Science Resource Leaders to be Affected





6.1.4 REPLICATING THE ENVIRONMENTAL TECHNOLOGY ACADEMY AT AN INNER-CITY HIGH SCHOOL

Proposed by
Philadelphia High School Academies, Inc.

Summary

The Philadelphia High School Academies, Inc. seeks funding for replication of its Environmental Technology Academy at a second comprehensive high school in order to facilitate participation in the program by a larger number of minority youth residing in inner city neighborhoods.

The Environmental Technology Academy, established in 1988 at Lincoln High School in Northeast Philadelphia, is a four-year career development program for high school students that offers specialized classroom, laboratory and field training in the monitoring and analysis of the environment. This is the only program of its kind offered on the high school level in the region and, as such, provides the Academy graduate a tremendous advantage over other candidates for further education or employment in the field of environmental assessment and control.

During the four years of study, intensive training in the practical skills associated with environmental planning, biological and chemical testing of the environment, and pollution control is emphasized, in concert with a basic theoretical background in chemistry, biology and physics. The classroom theory and hands-on experiences are augmented with lectures from representatives of private industry and government agencies, as well as with field trips to environmental research and monitoring sites.

The Academy's approach to science education is decidedly hands-on. Some of the technology available to students in the Environmental Technology Academy's laboratory include an atomic absorption spectrophotometer, gas chromatographs, safety station equipment, water analysis and field sampling equipment, environmental chambers and personal computers. The Academy's Board of Governors, comprised of representatives of the environmental science industry, is an important resource for much of the equipment needed to keep training current with the industry's needs. In addition, the Board brings its technical expertise to matters related to curriculum and provides financial and in-kind support to make possible many of the incentive activities offered to the Academy's students.

Community service is a vital component of the Environmental Technology Academy's educational focus. Hence, students are encouraged to participate, under faculty participation, in projects such as the annual Pennypack Park clean-up and water quality testing and on-going radon testing in the homes of area residents. Recently, Academy students participated in a joint project with the regional office of the Environmental Protection Agency that involved introducing the subject of radon and radon testing to middle school youngsters in west and southwest Philadelphia and teaching them to conduct the tests in their own homes. Academy students did classroom demonstrations of the use of radon canisters at the middle schools, distributed canisters, collected them after the tests and took them back to the Academy lab to conduct the analyses. The results, along with information about agencies to contact for assistance, was returned to the middle school students.

Background & Importance

The Environmental Technology Academy is one of nine career-focused educational programs of the **Philadelphia High School Academies, Inc.**, which operates in partnership with the business community and the School District of Philadelphia.

During the civil unrest that plagued Philadelphia and other American cities in 1969, the dropout rate in some high schools was as high as fifty percent. Unemployment statistics for minority youth in Philadelphia were estimated to be even higher. Responding to this bleak condition, the Philadelphia Urban Coalition became the chief catalyst for bringing business and schools together in an effort to reduce both unemployment and the enormous secondary school dropout rate. The Coalition's endeavors resulted in the **Philadelphia High School Academies**, a program that links basic skills to occupational training and employment.

Founded on the premise that young people should graduate from high school fully prepared to be productive, contributing members of society, the Academies have, since 1969, provided an effective vehicle for attacking the drop-out problem and unemployment among the city's youth.

Operating primarily as small private schools within large public neighborhood high schools, each Academy has its own core group of teachers and career-focused curriculum. Students are rostered together as they progress from grades 9 through 12, and enjoy smaller classes, guest speakers and numerous incentive activities, including regularly scheduled field trips to various employment and cultural facilities, awards ceremonies, special scholarships and an annual Academy-wide essay and speech competition. Each career Academy receives input and direction from a Board of Governors, a group of industry leaders who, in addition to maintaining the Academy's link with the private sector, assist in providing paid work experience for students in their junior and senior years.

In addition to environmental technology, the Philadelphia High School Academies, Inc. administers programs in business, health care, law and public administration, electrical sciences, automotive sciences, fitness and health promotion, horticulture and the hospitality industry. From the School District the Academies receive academic and vocational teaching staff, equipment, facilities and supportive administrative services. The business community provides financial and in-kind support, advice on curriculum, paid work experience for in-school students and job opportunities for Academy graduates. The Philadelphia High School Academies, Inc. is headed by a Board of Directors which includes top executives from many of the area's leading corporations and provides development services and centralized support.

The importance of the Philadelphia High School Academies, Inc.'s proposal to replicate the Environmental Technology Academy at an inner city high school lies, ultimately, in **providing access** to a successful, highly technical, incentive-laden science education program to a larger number of minority students who would otherwise not receive it.

There are currently 243 students enrolled in the Environmental Technology Academy in northeast Philadelphia, of which only 99 (41%) are Black, Asian or Hispanic. Students of the Environmental Technology Academy have consistently ranked high in local and regional science fair competitions. A group of them has addressed the national conference of the Environmental Protection Agency Human Resources Council in Dallas, Texas; others have traveled as far as Russia to conduct environmental monitoring projects. At least one student has been the recipient of a 4-year, $40,000 science scholarship; others have enrolled in the environmental science department at Florida A & M University. Of the forty-four June 1992 graduates, forty-two are pursuing post-secondary education.

In replicating the Academy in a school which attracts a larger minority population, we will be able to offer to those students the kinds of incentives that have made the Environmental Technology Academy at Lincoln High School a model program. These incentives include:

- hands-on technical experience
- career guidance and advice on post-secondary education programs
- community improvement projects
- work experience and access to environmental career mentors

Further, in support of the mission of the Historically Black Colleges and Universities/Minority Institutions (HBCU/MI) Environmental Restoration and Waste Management Consortium, we anticipate from the second Environmental Technology Academy site, and would actively encourage, a number of student recruits with the prerequisite education to compete and succeed in the Consortium's science-related pre-college and university programs.

Work Plan

The Philadelphia High School Academies, Inc., in cooperation with the Board of Governors of the Environmental Technology Academy and the Philadelphia School District, will state its intent to replicate the Environmental Technology Academy at a second site in a Request for Proposal (RFP) for issue to all of Philadelphia's inner-city comprehensive high schools. The selection process will include review of proposals and site visits to the finalists by a Site Selection Committee, comprised of the PHSA, Inc. Program Director and members of the Board of Governors.

Among the criterion to be considered in selecting the host school will be qualifications of the proposed Academy teaching staff; student demographics and accessibility to the school, the ability of the school to provide appropriate laboratory space and the school administration's willingness to adhere to the Academy model.

Once a host school has been selected, preparation of the technical laboratory and student recruitment will begin. Recruitment efforts will be targeted to students from middle schools within the host school's feeder pattern, as well as city-wide. As with all Academy programs, the Environmental Technology Academy will strive to be as inclusive as possible in its selection of students seeking to enroll. Generally, students may be enrolled based on grades (C average) and attendance. However, students may also be accepted into an Academy based on the recommendation of a teacher or counselor, personal interview with the Coordinator, an indication of interest in science or math or a perceived need for a specialized program.

Student/Teacher Demographics

Seventy-five percent (75%) of Philadelphia High School Academies students describe themselves as African-American, Asian or Hispanic. Approximately 68% of all Academy students are considered economically disadvantaged while 3% are pregnant and parenting teens. Currently, the Environmental Technology Academy, in its one school site located in a predominantly white community at a considerable distance from the inner city, has the lowest percentage of minority students enrolled (41%). A second Environmental Technology Academy closer to minority neighborhoods will, in all likelihood, double minority enrollment in the program.

There are currently 254 teachers involved in the Academies program. Approximately 36% of them are African-American or Hispanic; 63% are White. These percentages are comparable to School District demographics overall.

On average, an Academy program classroom has a student/teacher ratio of 28:1.

Expected Outcomes

The primary goals of the Philadelphia High School Academies, Inc., in replicating the Environmental Technology Academy at a second host school, are to (1) increase the number of minority students exposed to this career area and (2) maintain program quality and promote positive student outcomes: high student retention; participation in community service projects and/or career-related paid work experience; a high level of graduation; and, beyond that, employment or enrollment in post-secondary education.

Measurement of Results:

The success of the Academies program lies in promoting attendance, performance and a respect for education and the work ethic that leads to increased graduation rates and, upon graduation, employment or post-secondary studies.

The Philadelphia High School Academies, Inc. receives monthly reports from the in-school Academy Coordinator on student attendance and performance and conducts 6-month and 18-month follow-up surveys on Academies graduates. Our most recent surveys indicate that Academy students maintain an average daily attendance rate of 88 - 92%. The drop-out rate for Academy students is less than 4% annually. Eighty-five to ninety percent (85-90%) of Academy students are employed within their first year after graduation, or are in post-secondary education, or both. The graduation rate for the Class of 1992, for all Academies, was 97%.

As with all Academy programs, attainment of this level or better of student outcomes will be the primary measure of the success of the new Environmental Technology Academy.

References

The Philadelphia High School Academies, Inc. was cited extensively in a 1992 book entitled, Career Academies: Partnerships for Reconstructing American High Schools (Jossey-Bass Publishers, San Francisco). The authors stated that, "The Philadelphia academies have focused on helping potential dropouts finish high school by offering a high-powered form of vocational education integrated with an academic core. They have shown on a small scale, with some of the most resistant students, what might be accomplished for all students....."

The Academies program has also been reviewed favorably by Robert Ivry, Senior Vice President, Manpower Demonstration Research Corporation (MDRC) New York, and Public/Private Ventures, Philadelphia.

A letter of endorsement from the Superintendent of the School District of Philadelphia is submitted with this proposal.

Leadership & Management

Replication of the Environmental Technology Academy will be directed by Natalie S. Allen, President, Philadelphia High School Academies, Inc. and William S. Gaither, Ph.D., President, Weston Institute and Chairman of the Environmental Technology Academy Board of Governors (See Appendix 6.1.4 B for vitae).

Mrs. Allen has been President of the Philadelphia High School Academies, Inc. since 1988. Under her leadership, Academy career areas have increased from four to nine; Academy programs have increased from 10 to 24; host schools have increased from 10 to 17 (some schools host more than

one program); students enrolled have increased from 800 to 3444; and funding support has increased from $300,000 to $1.2 million.

Once the new Academy is in place it will be managed by a Philadelphia High School Academies Program Director, who will work with the Board of Governors and the in-school Academy Coordinator.

In-school Academy activities are headed by the Academy Coordinator (lead teacher) with whom the Program Director is in almost daily contact. Regular formal meetings are scheduled, as well as staff development sessions, wherein program policy and problems are evaluated and acted upon. Each program also has an annual parents night at which input from parents of Academy students is received. Finally, business representatives from the Academy's Board of Governors are actively involved in policy planning, evaluation and delivery of program services.

Budget

The Philadelphia High School Academies, Inc. is requesting $250,000 over three years to replicate the Environmental Technology Academy. To augment that amount, the submitted budget indicates a need to provide from other funding sources $85,000 over three years, or a little more than $28,000 a year.

In support of our proposal we submit copies of three letters, indicating multi-year funding commitments, from the Sun Company, Inc. ($40,000 a year through 1994); the Connelly Foundation ($30,000 a year through 1995); and Independence Blue Cross ($25,000 a year through 1997). Also included in Appendix 6.1.4 C are letters of support from members of the Board of Governors.

Fund-raising for operating costs of Philadelphia High School Academies, Inc. and all Academies is on-going.

Equipment The equipment item will be defined in greater detail once the host school is selected through the process described above. Based on experience gained in outfitting the environmental technology laboratories at Abraham Lincoln High School the following equipment cost categories are being requested as part of this grant:

• Laboratory Furnishings (incl. cabinets, fumehood, student work tables)	$ 40,000
• Utilities (incl. HVAC, water, electricity, etc.)	$ 20,000
• Safety Equipment (eyewash station, shower, spill center)	$ 7,000
• Glassware	$ 15,000
• Instrumentation (UV/VIS Spectrophotometer, pH Meters, water baths, hot plates, etc.)	$ 25,000
• Supplies (Chemicals, reagents, media, gloves, etc.)	$ 3,000
Total of Equipment	$110,000

A detailed budget, with item-by-item justification, will be prepared and submitted before proceeding with any equipment acquisitions.

APPENDIX 6.1.4 A

BUDGETS

removed.

APPENDIX 6.1.4 B

BIOGRAPHIES OF PROJECT LEADERSHIP

APPENDIX B

Biographies of Project Leadership

NATALIE S. ALLEN, President
Philadelphia High School Academies, Inc.

Natalie S. Allen joined the Philadelphia High School Academies, Inc. in the fall of 1988, as the organization was being restructured to undertake a major expansion of its programs within the comprehensive schools. She is responsible for achieving the expansion, which includes placing existing Academy programs in new schools; establishing new Academies in other occupational areas; and increasing student enrollment to 5000 by 1996.

As President, Ms. Allen is also responsible for maintaining a dialogue between the School District of Philadelphia and the private sector to emphasize and facilitate the employability of Philadelphia's youth. She has recently received, on behalf of the Philadelphia High School Academies, Inc., a commendation from the School District of Philadelphia for the success of the Academies program and graduates, and another from the Regional Office of the Department of Labor for helping students achieve the competencies named in the Department's Secretary's Commission on Achieving Necessary Skills (SCANS) report.

Prior to heading the Academies, Ms. Allen was Executive Vice President and Chief Operating Officer of the Private Industry Council (PIC) of Philadelphia. Her experience includes more than ten years in human resources in the private sector.

A graduate of Hampton University, Ms. Allen serves on various boards and committees, including the Advisory Council for the Office of Education for Employment of the Philadelphia School District; the Center for Assessment and Policy Development; Philadelphia Futures; Opportunities Inn; and the Education for Employment Task Force. In addition, Ms. Allen is a member of the Board of Trustees of Harcum Junior College, and is an active member of her church.

WILLIAM S. GAITHER, Ph.D., P.E.
Chair, Board of Governors
Environmental Technology Academy

Dr. William S. Gaither was born in Indiana and graduated in 1956 from Rose Polytechnic Institute in Terre Haute, Indiana with a B.S. degree in Civil Engineering. In 1961 he began graduate study in Princeton University's Department of Civil Engineering, specializing in its River and Harbor Program. He received a Master of Science in Engineering in 1962, a Master of Arts in 1963 and the Doctor of Philosophy in 1964.

His business career began in 1956 when he joined the Contracting Division of Dravo Corporation in Pittsburgh serving as a design, field and research engineer. In 1965 Dr. Gaither became a supervising engineer with Bechtel Corporation in San Francisco responsible for major harbor projects in Algeria, Alaska, Libya, Australia and the United States. In 1974 he was elected a director of Roy F. Weston, Inc. and in 1987 became vice chairman of the company. From 1985 through 1990 he served on the board of the Philadelphia Electric Company and on its Nuclear Committee from its founding in 1987. He is also a trustee of the Mutual Assurance Company.

Dr. Gaither's academic career began in 1963 as a lecturer at Princeton University while still a graduate student. In 1964 he was appointed associate professor of coastal engineering at the University of Florida. He was named associate professor of civil engineering in 1967 at the University of Delaware and was promoted to professor in 1970. In 1970 he founded the graduate College of Marine Studies and simultaneously served as the University's Sea Grant College Program Director. Under his 14 years of leadership as dean and professor, the College gained national recognition for the quality and scope of its marine programs. In 1984 Dr. Gaither became president, trustee and professor at Drexel University. During his three-plus year tenure he expanded the academic programs, doubled sponsored research and alumni giving, enlarged the campus, secured funds for several major buildings, and re-organized the governance of the university. In 1988 Dr. Gaither organized and became founding president of the Weston Institute.

In addition to serving as Chair of the Environmental Technology Academy of the Philadelphia High School Academies, Inc., Dr. Gaither has served on the Marine Board of the National Research Council, chairing panels that issued reports on Polar Ocean Engineering, the Assimilative Capacity of the Oceans, and Alternative Ship Services. He is a director of the University City Science Center and recently elected to the board of the Academy of Science in Philadelphia. He and his wife reside in West Philadelphia.

APPENDIX 6.1.4 C

SUPPORTING LETTERS AND CERTIFICATIONS

THE SCHOOL DISTRICT OF PHILADELPHIA

BOARD OF EDUCATION

21ST STREET S. OF THE PARKWAY

PHILADELPHIA, PENNSYLVANIA 19103-1099

CONSTANCE E. CLAYTON
SUPERINTENDENT OF SCHOOLS

TELEPHONE (215) 299-7823-7824

March 22, 1993

Members, Project Selection Committee
Inter-City Energy and Environmental
Education Consortium

Dear Project Selection Committee Members:

We wholeheartedly endorse the proposal by the Philadelphia High School Academies, Inc. to recruit and encourage inner-city youth to pursue careers in environmental science and related technical fields through the replication of the Environmental Technology Academy at a second high school site.

In light of the growing complexity of environmental issues, it is increasingly important that our young people, in every community, are science literate, educated about the problems we face and motivated to address them. A second Environmental Technology Academy is an important step toward this goal.

We have every confidence in the ability of the Philadelphia High School Academies, Inc., under the leadership of Natalie S. Allen, to successfully implement this project.

Sincerely,

Constance E. Clayton

CEC/gsl

The Connelly Foundation

March 15, 1993

Mrs. Natalie S. Allen
President
Philadelphia High School Academies Inc.
230 South Broad Street, 2nd Floor
Philadelphia, PA 19102

Dear Mrs. Allen:

On Monday, March 8th, I reported to our Board of Trustees on our site visit with you and your associates at Benjamin Franklin High School. They were very impressed with this personalized education process and your statistics which illustrate the enormous success of your programs over the past twenty years. We emphasized the increased level of student self-esteem generated by these programs which propel them towards higher personal goals.

We are pleased to advise you that our Trustees have approved a grant in the amount of $90,000 to be paid in three installments of $30,000 each, prior to December 31, 1995. The purpose of the funds is to establish three academies (program and school to be determined by your selection process) and introduce one new academy at the start of each new school term in September 1993, 1994 and 1995.

Enclosed is our check in the amount of $30,000 to be applied towards one new academy to be introduced this fall. Please keep us apprised of its development.

Sincerely,

Josephine C. Mandeville

Josephine C. Mandeville
President

:mf

Enclosure

cc: H. Francis DeLone, Esq.

One Tower Bridge • Suite 1450 • West Conshohocken, Pa. 19428
(215) 834-3222

Independence
Blue Cross

OFFICE OF THE PRESIDENT

December 21, 1992

Ms. Natalie Allen
President
Philadelphia High School
Academies, Inc.
230 South Broad Street
Philadelphia, PA 19102

Dear Natalie:

I am pleased to inform you that Independence Blue Cross has approved a five year funding commitment to the High School Academies in the amount of $25,000 each year. The first installment of this pledge will be forwarded to you shortly.

Independence Blue Cross is pleased to continue its level of giving over the next several years. The success of the Academies Program, your expansion to include more students and ambitious plans for the future make this contribution money well-spent. I wish you continued success.

Please accept my personal best wishes for an enjoyable holiday season and a prosperous 1993.

Sincerely,

G. Fred DiBona, Jr., Esq.

GFD/mp

Natalie -
keep up the good work -!
Fred

cc: Dr. Constance E. Clayton
Mr. Ted Kirsch

1901 Market Street, Philadelphia, Pennsylvania 19103-1480
(215) 241-2422 • FAX: (215) 241-2624

Sun Company, Inc.
Ten Penn Center
1801 Market Street
Philadelphia PA 19

October 10, 1991

Mrs. Natalie S. Allen
President
Philadelphia High School Academies, Inc.
230 South Broad Street 2nd Floor
Philadelphia, PA 19106

Dear Natalie:

I am pleased to inform you that Sun's Contribution Committee has reviewed favorably Larry Wilson's proposal written on behalf of the Philadelphia High School Academies.

Our committee has approved a grant of $120,000 which is to be disbursed over a period of three years. The first of these disbursements can be anticipated in the first half of 1992. While we at Sun are pleased to announce our support of the Academies, next year's disbursement, as well as the total grant, is contingent upon Sun Company experiencing the financial performance necessary to support such a grant.

We look forward to Sun's continued working relationship with the entire Academies program and, more specifically, that of Applied Automotive and Mechanical Science. Continue success . . . .

Sincerely,

Kenneth D. Hill
Vice President

cc: E. Impriano
L. Wilson

1091PHSA

BETZ

Betz Laboratories Inc.
4636 Somerton Road
Trevose, PA 19053-6783
215 355 3300

May 24, 1993

Dr. William S. Gaither
President
Weston Institute
1 Weston Way
West Chester, PA 19380

Subject: Support of High School Academies

Dear Dr. Gaither:

I am writing to indicate my personal support, and the support of Betz Laboratories, Inc., for the Environmental Technology Academy at Abraham Lincoln High School and for Philadelphia High School Academies, Inc. As you are aware, I have recently joined the Governing Board. I can say without hesitation that the Environmental Technology Academy is one of the most exciting and effective educational efforts I have ever encountered.

There are several reasons for the ETA's effectiveness. First is its leadership under David Kipphut, the Academy Coordinator. Second, the teachers, half of whom are from industry, are capable and dedicated to the success of the students.

Another reason for the success of the ETA is the organization and leadership of the Philadelphia High School Academies, Inc. It is now completely clear to me that this private, not-for-profit organization is vital to the operation of the ETA. They provide a discipline and structure for the academy which makes the students proud of what they are doing and what they are a part of. A school, or school district, could not operate such an academy without this independent organization through which business and industry support is attracted.

As to the support of Betz Laboratories, Inc., no educational program in the Philadelphia area receives as much of our financial support, or the time of top level executives. Not only do we provide time and money, we are also pleased to give equipment and supplies whenever they are needed. I am confident that other school systems in other cities could be strengthened if they were to replicate the Philadelphia H.S. Academy structure.

Please include this letter of endorsement in the Department of Energy proposal you are submitting soon.

Sincerely,

Edmund J. Bockowski

Edmund J. Bockowski
Research Fellow

Waste Management of North America - East
Three Greenwood Square
3329 Street Road
Bensalem, Pennsylvania 19020
215/244-9514 • FAX: 215/244-1308

June 4, 1993

Dr. William S. Gaither
President
Weston Institute
1 Weston Way
West Chester, PA 19380

RE: Support of High School Academies

Dear Dr. Gaither:

I am writing to indicate my personal support, and the support of Waste Management Inc. - East for the Environmental Technology Academy at Abraham Lincoln High School and for Philadelphia High School Academies, Inc. As you are aware, I have been on the Governing Board for some time and I can say without hesitation that the Environmental Technology Academy is one of the most exciting and effective educational efforts I have every encountered.

There are several reasons for the ETA's effectiveness. First is its leadership under David Kipphut, the Academy Coordinator. Second, the teachers, half of whom are from industry, are capable and dedicated to the success of the students.

Another reason for the success of the ETA is the organization and leadership of the Philadelphia High School Academies, Inc. It is now completely clear to me that this private, not-for-profit organization is vital to the operation of the ETA. They provide a discipline and structure for the academy which makes the students proud of what they are doing and what they are a part of. A school, or school district, could not operate such an academy without this independent organization through which business and industry support is attracted.

As to the support of Waste Management Inc. - East, we provide financial support and time of top level executives. I am confident that other school systems in other cities could be strengthened if they were to replicate the Philadelphia H.S. Academy structure.

Please include this letter of endorsement in the Department of Energy proposal you are submitting soon.

Sincerely,

WASTE MANAGEMENT INC. - EAST

Vito N. Galante, P.E.
Vice President - Environmental Management

VNG/bb

Pennoni Associates Inc.
1600 Callowhill Street, Philadelphia, PA 19130, Tel: 215-561-0460, Fax: 215-496-0063

June 7, 1993

Dr. William S. Gaither
President
Weston Institute
1 Weston Way
West Chester, PA 19380

Subject: Support of High School Academies

Dear Dr. Gaither:

This letter expresses my support for the work being done by the Environmental Technology Academy at Lincoln High School and the Philadelphia High School Academies Inc. Having joined your board I am aware of the work being done and its impact on the quality of education in the city.

This effort is unique in that both educators and those in industry work side by side to assure its success. Philadelphia High School Academies Inc. provides the structure necessary for that success to be realized.

Our firm has a history of volunteering to support inner city programs through tutoring, helping run math counts and providing speakers for career days. We are pleased to give equipment and supplies when there is a need. We would like to see other school systems undertake similar programs.

Please include this letter in the Department of Energy proposal your are about to submit.

Very truly yours,

PENNONI ASSOCIATES INC.

Joseph V. Mullin

Joseph V. Mullin, Ph.D., P.E.
Senior Vice President

/mbs

LAW OFFICES
MANKO, GOLD & KATCHER
SUITE 500
401 CITY AVENUE
BALA CYNWYD, PA 19004

JOSEPH M. MANKO
MARC E. GOLD
BRUCE S. KATCHER*
KENNETH J. WARREN
KERMIT L. RADER*
NEIL S. WITKES
MICHAEL M. MELOY
ROBERT D. FOX
STEVEN T. MIANO
DEANE H. BARTLETT
JILL M. HYMAN
JONATHAN E. RINDE°
MARY JO B. GILSDORF*°
RANDI S. STOCK°
* ALSO ADMITTED IN D.C.
° ALSO ADMITTED IN N.J.

(215) 660-570
FAX (215) 660-571

May 25, 1993

Dr. William S. Gaither
President
Weston Institute
1 Weston Way
West Chester, PA 19380

Re: Support of High School Academies

Dear Dr. Gaither:

I am writing to indicate my personal support, and the support of Manko, Gold & Katcher, for the Environmental Technology Academy at Abraham Lincoln High School and for Philadelphia High School Academies, Inc. As you are aware, I have served as a member of the Governing Board since 1989. Our firm makes a special effort to involve itself in environmental education at all levels. I can say without hesitation that the Environmental Technology Academy is one of the most exciting and effective educational efforts I have ever encountered.

There are several reasons for the ETA's effectiveness. First is its leadership under David Kipphut, the Academy Coordinator. Second, the teachers, half of whom are from industry, are capable and dedicated to the success of the students.

Another reason for the success of the ETA is the organization and leadership of the Philadelphia High School Academies, Inc. It is completely clear to me that this private, not-for-profit organization is vital to the operation of the ETA. They provide a discipline and structure for the academy which makes the students proud of what they are doing and what they are a part of. A school, or school district, could not operate such an academy without this independent organization through which business and industry support is attracted.

As to the support of Manko, Gold & Katcher, no educational program in this area receives as much of our financial support, or the time of senior attorneys. We feel a special kinship to the program itself and more importantly to the students. I am confident that other school systems in other cities could be strengthened if they were to replicate the Philadelphia High School Academy structure.

Please include this letter of endorsement in the Department of Energy proposal you are submitting in the near future.

Very truly yours,

Robert D. Fox
For MANKO, GOLD & KATCHER

RDF/kl

DOE F 1600.3
(8-89)
All Other Editions Are Obsolete

U.S. Department of Energy

Assurance of Compliance
Nondiscrimination in Federally Assisted Programs

Philadelphia High School Academies, Inc. (Hereinafter called the "Applicant") HEREBY AGREES to comply with Title VI of the Civil Rights Act of 1964 (Pub. L. 88-352), Section 16 of the Federal Energy Administration Act of 1974 (Pub. L. 93-275), Section 401 of the Energy Reorganization Act of 1974 (Pub. L. 93-438), Title IX of the Education Amendments of 1972, as amended, (Pub. L. 92-318, Pub. L. 93-568, and Pub. L. 94-482), Section 504 of the Rehabilitation Act of 1973 (Pub. L. 93-112), the Age Discrimination Act of 1975 (Pub. L. 94-135), Title VIII of the Civil Rights Act of 1968 (Pub. L. 90-284), the Department of Energy Organization Act of 1977 (Pub. L. 95-91), and the Energy Conservation and Production Act of 1976, as amended, (Pub. L. 94-385). In accordance with the above laws and regulations issued pursuant thereto, the Applicant agrees to assure that no person in the United States shall, on the ground of race, color, national origin, sex, age, or handicap, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity in which the Applicant receives Federal assistance from the Department of Energy.

Applicability and Period of Obligation

In the case of any service, financial aid, covered employment, equipment, property, or structure provided, leased, or improved with Federal assistance extended to the Applicant by the Department of Energy, this assurance obligates the Applicant for the period during which Federal assistance is extended. In the case of any transfer of such service, financial aid, equipment, property, or structure, this assurance obligates the transferee for the period during which Federal assistance is extended. If any personal property is so provided, this assurance obligates the Applicant for the period during which it retains ownership or possession of the property. In all other cases, this assurance obligates the Applicant for the period during which the Federal assistance is extended to the Applicant by the Department of Energy.

Employment Practices

Where a primary objective of the Federal assistance is to provide employment or where the Applicant's employment practices affect the delivery of services in programs or activities resulting from Federal assistance extended by the Department, the Applicant agrees not to discriminate on the ground of race, color, national origin, sex, age, or handicap, in its employment practices. Such employment practices may include, but are not limited to, recruitment, advertising, hiring, layoff or termination, promotion, demotion, transfer, rates of pay, training and participation in upward mobility programs; or other forms of compensation and use of facilities.

Subrecipient Assurance

The Applicant shall require any individual, organization, or other entity with whom it subcontracts, subgrants, or subleases for the purpose of providing any service, financial aid, equipment, property, or structure to comply with laws cited above. To this end, the subrecipient shall be required to sign a written assurance form, however, the obligation of both recipient and subrecipient to ensure compliance is not relieved by the collection or submission of written assurance forms.

Data Collection and Access to Records

The Applicant agrees to compile and maintain information pertaining to programs or activities developed as a result of the Applicant's receipt of Federal assistance from the Department of Energy. Such information shall include, but is not limited to the following: (1) the manner in which services are or will be provided and related data necessary for determining whether any persons are or will be denied such services on the basis of prohibited discrimination; (2) the population eligible to be served by race, color, national origin, sex, age and handicap; (3) data regarding covered employment including use or planned use of bilingual public contact employees serving beneficiaries of the program where necessary to permit effective participation by beneficiaries unable to speak or understand English; (4) the location of existing or proposed facilities connected with the program and related information adequate for determining whether the location has or will have the effect of unnecessarily denying access to any person on the basis of prohibited discrimination; (5) the present or proposed membership by race color, national origin, sex, age and handicap, in any planning or advisory body which is an integral part of the program; and (6) any additional written data determined by the Department of Energy to be relevant to the obligation to assure compliance by recipients with laws cited in the first paragraph of this assurance.

The Applicant agrees to submit requested data to the Department of Energy regarding programs and activities developed by the Applicant from the use of Federal assistance funds extended by the Department of Energy. Facilities of the Applicant (including the physical plants, buildings, or other structures) and all records, books, accounts, and other sources of information pertinent to the Applicant's compliance with the civil rights laws shall be made available to inspection during normal business hours on request of an officer or employee of the Department of Energy specifically authorized to make such inspections. Instructions in this regard will be provided by the Director, Office of Equal Opportunity, U.S. Department of Energy.

This assurance is given in consideration of and for the purpose of obtaining any and all Federal grants, loans, contracts (excluding procurement contracts), property, discounts or other Federal assistance extended after the date hereto, to the Applicant by the Department of Energy, including installment payments on account after such date of application for Federal assistance which are approved before such date. The Applicant recognizes and agrees that such Federal assistance will be extended in reliance upon the representations and agreements made in this assurance and the United States shall have the right to seek judicial enforcement of this assurance. This assurance is binding on the Applicant, the successors, transferees, and assignees, as well as the person whose signature appears below and who is authorized to sign this assurance on behalf of the Applicant.

Applicant Certification

The Applicant further certifies that it has or, within 90 days of the date of the grant shall: (a) Designate(d) an individual to serve as Affirmative Action Officer; (b) Establish(ed) complaint procedures for employees and other beneficiaries of the program; (c) Prominently display(ed) posters and other written information publicizing the policy of nondiscrimination; (d) Provide(d) program information in languages other than English (including braille) in a manner to make it accessible to sight impaired persons; (e) Establish(ed) procedures which enable it to notify DOE on a timely basis of any complaints filed against it and of the disposition of those complaints; (f) Require(d) any subrecipient (subgrantee/subcontractor) under this award to comply with the above cited laws and regulations; (g) Require the subrecipient to sign an assurance form, the applicant certifies that it shall monitor subrecipient compliance as appropriate; (h) Establish(ed) a system capable of collecting racial/ethnic/handicap/sex data in accordance with existing Federal requirements cited in the first paragraph of this assurance.

Development of Current Affirmative Action Plan

6/16/93
(Date)

Frank W. Lemmey
Affirmative Action Officer
(Name, Signature and Date)

(215 546-6300
Telephone Number

Most recent onsite Federal Assistance Civil Rights review/audit:

Agency Conducting Review

Date

Philadelphia High School Academies, Inc
Applicant's Name

6/16/93
Date

Address: 230 S. Broad, 18th Floor
Philadelphia, PA 19102

( ) (215) 546-6300
Telephone Number

Authorized Official President, or Chief Executive Officer

Natalie S. Allen
Name and Signature

6/16/93
Date

CERTIFICATIONS REGARDING LOBBYING; DEBARMENT, SUSPENSION AND OTHER RESPONSIBILITY MATTERS; AND DRUG-FREE WORKPLACE REQUIREMENTS

Applicants should refer to the regulations cited below to determine the certification to which they are required to assert. Applicants should also review the instructions for certification included in the regulations before completing this form. Signature of this form provides for compliance with certification requirements under 34 CFR Part 82, "New Restrictions on Lobbying," and 34 CFR Part 85, "Government-wide Debarment and Suspension (Nonprocurement) and Government-wide Requirements for Drug-Free Workplace (Grants)." The certifications shall be treated as a material representation of fact upon which reliance will be placed when the Department of Energy determines to award the covered transaction, grant, or cooperative agreement.

1. LOBBYING

The undersigned certifies, to the best of his or her knowledge and belief, that:

(1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

(3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

2. DEBARMENT, SUSPENSION, AND OTHER RESPONSIBILITY MATTERS

(1) The prospective primary participant certifies to the best of its knowledge and belief, that it and its principals:

(a) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;

(b) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

(c) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (1)(b) of this certification; and

(d) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

(2) Where the prospective primary participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

3. DRUG-FREE WORKPLACE

This certification is required by the Drug-Free Workplace Act of 1988 (Pub. L. 100-690, Title V, Subtitle D) and is implemented through additions to the Debarment and Suspension regulations, published in the Federal Register on January 31, 1989, and May 25, 1990.

ALTERNATE I
(GRANTEES OTHER THAN INDIVIDUALS)

(1) The grantee certifies that it will or will continue to provide a drug-free workplace by:

(a) Publishing a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the grantee's workplace and specifying the actions that will be taken against employees for violation of such prohibition;

(b) Establishing an ongoing drug-free awareness program to inform employees about:

(1) The dangers of drug abuse in the workplace;

(2) The grantee's policy of maintaining a drug-free workplace;

(3) Any available drug counseling, rehabilitation, and employee assistance programs; and

(4) The penalties that may be imposed upon employees for drug abuse violations occurring in the workplace;

(c) Making it a requirement that each employee to be engaged in the performance of the grant be given a copy of the statement required by paragraph (a);

(d) Notifying the employee in the statement required by paragraph (a) that, as a condition of employment under the grant, the employee will:

PA-CERTS (6/91)

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(1) Abide by the terms of the statement; and

(2) Notify the employer in writing of his or her conviction for a violation of a criminal drug statute occurring in the workplace not later than five calendar days after such conviction;

(e) Notifying the agency, in writing, within ten calendar days after receiving notice under subparagraph (d)(2) from an employee or otherwise receiving actual notice of such conviction. Employers of convicted employees must provide notice, including position title, to every grant officer or other designee on whose grant activity the convicted employee was working, unless the Federal agency has designated a central point for the receipt of such notices. Notice shall include the identification number(s) of each affected grant;

(f) Taking one of the following actions, within 30 calendar days of receiving notice under subparagraph (d)(2), with respect to any employee who is so convicted:

(1) Taking appropriate personnel action against such an employee, up to and including termination, consistent with the requirements of the Rehabilitation Act of 1973, as amended; or

(2) Requiring such employee to participate satisfactorily in a drug abuse assistance or rehabilitation program approved for such purposes by a Federal, State, or local health, law enforcement, or other appropriate agency;

(g) Making a good faith effort to continue to maintain a drug-free workplace through implementation of paragraphs (a), (b), (c), (d), (e), and (f).

(2) The grantee may insert in the space provided below the site(s) for the performance of work done in connection with the specific grant:

Place of Performance:
(Street address, city, county, state, zip code)

230 S. Broad Street 18th Fl.

Philadelphia, PA 19102

☐ Check if there are workplaces on file that are not identified here.

ALTERNATE II (GRANTEES WHO ARE INDIVIDUALS)

(1) The grantee certifies that, as a condition of the grant, he or she will not engage in the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance in conducting any activity with the grant;

(2) If convicted of a criminal drug offense resulting from a violation occurring during the conduct of any grant activity, he or she will report the conviction, in writing, within 10 calendar days of the conviction, to every grant officer or other designee, unless the Federal agency designates a central point for the receipt of such notices. When notice is made to such a central point, it shall include the identification number(s) of each affected grant.

As the duly authorized representative of the applicant, I hereby certify that the applicant will comply with the above certifications.

NAME OF APPLICANT	PR/AWARD NUMBER AND/OR PROJECT NAME
Philadelphia High School Academies, Inc.	
PRINTED NAME AND TITLE OF AUTHORIZED REPRESENTATIVE	
Frank W. Remmey, Director of Operations	6/16/93
SIGNATURE	DATE

Frank W. Remmey

6.2 HIGHER EDUCATION

6.2.1 Energy and Environmental Education Minority Fellows Program

6.2.2 Science - Community Support Links

6.2.3 Summer/Inservice Institutes for Inner-City School Teachers in Energy/Environmental Technology

6.2.4 Extending Environmental Science from the Ivory Tower to the Inner-City

6.2.5 Summer Workshops in Environmental and Energy Sciences for Primary and Secondary Teachers

6.2.1 ENERGY AND ENVIRONMENTAL EDUCATION MINORITY FELLOWS PROGRAM

Proposed by
The American University

Summary

The American University Energy and Environmental Education Minority Fellows Program (EEEMF) has been designed to provide a multifaceted, effective, program that will increase the successful graduate school participation of students interested in energy/environmental studies. Fellows will be from low income populations[1], currently underrepresented in graduate education. The EEEMF program's principal focus will be on the preparation, enrollment, support needs of the participants. The program will identify, recruit, and provide students with the skills, research experience, and support network crucial to graduate studies. In order to allow for maximum impact on the pool of eligible participants and to create a finely tuned program that will enhance replicability, the program is designed to run over three years.

Background and Importance

Proper preparation can help insure the successful completion of degree studies. Nettles' survey of 953 Ph.D. students showed that factors such as undergraduate preparation, uniqueness of cultural background, economic status, and instructional environment strongly affect student persistence (NCPG, 1989). One of the key conclusions of that study was that the production of Ph.D.'s begins at the undergraduate level. Thus the need to create a preparatory program that readies students both academically and psychologically is clear.

Researchers and practitioners note that many of the best minority candidates for graduate school are not proceeding immediately to post-baccalaureate study (e.g., Isaac, 1986; Nettles, 1987). The American University's Energy and Environmental Education Minority Fellows Program seeks to intervene in the decision making process of undergraduates at a point where the option to attend graduate school will be seen as viable. Adams (1988) suggests identifying undergraduate minority students early and channelling them into experiences that offer exposure to academic life.

Native Americans, African Americans, and Hispanics are the most underrepresented groups in graduate education. The combined number of these groups constituted only 4.5 per cent of the recipients of doctoral degrees in 1988.

The American University (TAU) has had a successful history of projects designed to prepare students for graduate education and has administered the Ronald McNair Post-Baccalaureate Achievement and the Fulbright Pre-Academic programs. TAU's Office of Continuing Studies has had substantial experience with programs that are customized to strengthen academic skills. A Return to School program designed to support reentry by adults into the academic community has been in place since 1979.

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[1] The program will establish formal admissions guidelines, based on income and lack of representation in the graduate community.

Work Plan

The first objective of the Energy and Environmental Education Minority Fellows Program will be to identify eligible students within the Washington, DC, Baltimore, and Philadelphia Metropolitan Areas. Participant nominees will be recruited through members of the Inner City Energy and Environmental Education Consortium, local colleges and universities, and through TAU's ongoing contacts with the Washington Area's African-American churches. There will also be a series of seminars and workshops to publicize the EEEMF program. Posters and flyers will be sent to colleges and universities and other members of the consortium. Advertisements will be placed in appropriate student newspapers. Other information will be distributed through community organizations.

The American University Energy and Environmental Education Minority Fellows Program will hold a summer institute for participants. The use of a summer program will enable students on both trimester and semester systems to attend and will allow for the maximum use of university facilities.

This summer program will have as its focus the students' three principal needs; preparation, enrollment, and support. Preparation concerns the psychological and academic dimensions that contributes to a students ability to effectively make an informed personal choice to pursue graduate studies. The enrollment facet of the program will support the student through the application process, financial aid options, and the graduate admission process. The support category encompasses both external and internal factors necessary to the students survival and success in the graduate environment.

Through a series of workshops and seminars, students will also be exposed to the wide range of subjects which currently comprise energy and environmental studies. These topics will include biology, chemistry, economics, political science, mathematics and statistics, and environmental policy.

Preparation Needs: The EEEMF program will address these needs in the following ways:

- Information - providing students with facts about the doctoral training process and career options, including exposure to professionals working in environmental fields
- Motivation - creating a sense of desire, purpose, and significance about receiving a terminal degree
- Curriculum - advising students on coursework and academic preparations necessary for graduate admissions
- Technical Skills - teaching students research as well as other relevant technical skills such as statistical methods
- Research Practicum - a series of workshops are planned to assist participants to strengthen their research skills
- Cultural Expectations - preparing students for cultural accommodation to the social as well as the academic milieu

Enrollment Needs: The project will address the enrollment process for its students by providing information and guidance in the following areas:

- Institutional Suitability - assisting students to select the graduate program most congruent with their interests
- Exam Preparation - providing test-taking strategies, GRE preparation, tutoring in content areas, and information/guidance on entrance exam deadlines and processes
- Application Process - guiding students through the various admissions procedures

of institutions, and ensuring completeness, promptness, and quality of submissions
- Campus Visits - funds will be made available for students to make site visits to graduate schools
- Financial Aid - assisting students in identifying and applying to a variety of financial assistance sources.
- Acceptance Decision - encouraging students to make a selection and follow-through with appropriate confirmation processes

Support Needs: Students in the project will be immersed in a support system that helps preparation for graduate training through the following:

- Success Strategies - providing students with nuts and bolts information and techniques required for success in graduate school
- Mentoring - making students aware of the significance and positive role of a mentor.
- Preparation of the Academic Department - Providing information, advice, and strategies that departments can use to prepare for project students who will be enrolling in their programs.

Students will attend seminars on environmental issues and career opportunities. Participants will hear both speakers from Federal agencies (such as the Department of Energy, the Environmental Protection Agency, the National Institutes of Health, the National Oceanographic and Atmospheric Administration, the National Research Council) and the private sector on the TAU campus. They will also visit appropriate sites where environmental scientists practice their professions, this will serve to expose participants to the ever widening range of career opportunities in the field.

Students will take classes on research methods in the environmental sciences. This course will address research design, statistical design, bibliographic research, and the use of computer based research tools.

A research practicum will be an intrinsic part of the program, Students will be involved as research/interns in positions appropriate to both real life application of graduate studies and in a graduate level research environment. Advantage will be taken of those businesses in the Washington area that utilize experts in the energy and environmental sciences. Linkages will be forged with appropriate corporations in the private sector that utilize this type of expertise.

The internship is a critical component of the Fellowship program not only for the hands-on experience it provides, but for the way that it provides a reference point and resource for the seminars the students will take.

Faculty mentors will serve in a variety of roles. They will directly supervise the research experiences. Faculty members will provide advice on the personal and career aspects of graduate education. Wherever possible participants and their mentors will be matched based on their areas of interest, using a Keirsy type indicator to measure the cognitive/personal style of both students and faculty. They will also supervise the Fellows' research and internship activities.

Mentors will be encouraged to listen to student concerns regarding research topics, to assist students in formulating a research action plan, and to encourage students to develop professional work habits. Mentors will also encourage students to pursue graduate studies.

Academic Year Program During the academic year following the summer session the

participants will be expected to attend a series of workshops at TAU. The Fellows will continue to receive career focused counseling and to have the opportunity to maintain ongoing relationships with their mentors and TAU faculty. They will also be able to hear and speak with other Ph.D.'s in the energy/environmental sciences about career opportunities.

Demographic Composition of Students and Teachers:

Students will be drawn from the Philadelphia, Baltimore, and Washington Metropolitan Areas. They will be selected from those groups which are traditionally underrepresented in graduate education, i.e., African-Americans, Native Americans, and Hispanics. These candidates will be juniors in postsecondary institutions. All Fellows must demonstrate that they are economically disadvantaged and can provide substantiation through their institution's financial aid office.

Potential participants must meet a variety of criteria to be admitted to the program. They must have a grade point average of at least 2.8 in a 4.0 grading system. Students must present two letters of recommendation from faculty or academic advisors with whom they have worked. Applicants must write a 500-700 word "statement of purpose" articulating their goals and reasons for wishing to participate in the program. Students must submit documents from their colleges' financial aid office verifying financial need.

Every effort will be made to use minority faculty members and staff members. Additional faculty and mentors will be drawn, where feasible from consortium members. The mentors selected, from the public and private sectors, will represent the same cross-section of the population.

Expected Outcomes

It is expected that two thirds of the participant population will enroll in and complete a program of postgraduate study. Through follow-up questionnaires, the number of students who successfully complete a course of study for an advance degree will be tracked. Among those who do not complete their degrees further research will be conducted to determine the need for programmatic improvements.

Each year a formative evaluation will be conducted by Rhoda Wells-Wilbin, MSW, and former Director of the TAU McNair Program. Ms. Wells-Wilbin is currently Director of Minority Student Affairs at George Mason University. These formative evaluations will be used as a guideline for program improvement during the second and third years of the program. Ms. Wells-Wilbin will also formulate a summative evaluation at the end of the three year cycle. Ms Wells-Wilbin's CV is attached.

Leadership and Management:

The Energy and Environmental Education Minority Fellows Program will be administered through The American University's Office of Continuing Studies (OCS). OCS has administered programs in graduate preparation such as The Ronald McNair Post-Baccalaureate Achievement Program and the Fulbright Pre-Academic program. Since 1969, the Community Studies Program, formerly called PRIDE has enabled over five hundred students to receive associate and bachelors degrees (associate degree no longer offered). The Community Studies Program reflects the university's commitment to serving the underrepresented. Based on the spring 1992 student profile, 66% of the participants are African-Americans, 27% are Hispanics, 2% are Native Americans, and 5% are Caucasians. Women constitute 82% of those enrolled. This program was developed in partnership with several of the areas African-American churches. OCS has also developed three masters level programs for working professionals, and specializes in designing customized courses of study.

- Robert L. Norris, Vice Provost for University Programs, will act as liaison between the university and the consortium. Dr. Richard A. Roughton, Executive Director of the Office of Continuing Studies, will act as the Principal Investigator for the program in partnership with faculty from the natural and quantitative computer sciences.

The Energy and Environmental Education Minority Fellows program is a reflection of the university's long term interest in and support of the educational needs of underrepresented populations. The American University's faculty is capable of providing depth of instruction in the ever widening spectrum of energy and environmental studies. The location of the TAU campus in Washington, DC, will allow the Fellows access to key personnel in both the Federal government and the private sector.

Budget

The budget requested for the first year of program operation (1994-95) is $135,860. The total project cost for three years is $417,596. Cost sharing of $37,067 (8.8%) is provided. Details of the budget are provided in Appendix 6.2.1 A.

APPENDIX 6.2.1 A

BUDGETS

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APPENDIX 6.2.1 B

BIOGRAPHIES OF PROJECT LEADERSHIP

Richard Allen Roughton, Ph.D.

Education:

Ph.D.	University of Maryland (History)	1972
M.A.	University of Maryland	1963
B.A.	Westminster College (Missouri)	1960
Certificate - Harvard University, Institute for Lifelong Education		1986

Professional History:

The American University 1987-

Executive Director, Office of Continuing Studies

Provide university-wide leadership for continuing education programs, including the development, marketing, and administration of select credit and non-credit courses. These include undergraduate return to school programs, masters programs, access programs for underprepared adults and youth, and a degree completion partnership with the Xerox Corp. International programs include orientation for students coming to the U.S. and for study and preparation for U.S. Citizens studying or teaching overseas.

University of Rhode Island 1965-87

Director of Special Programs, College of Continuing Education

In this position, developed and managed a number of off-campus credit programs. These included an Executive MBA Program, Certificate Programs for Professionals in Communication, Behavioral Psychology, Marine Studies, English as a Second Language, distance learning courses, and study abroad. I also initiated a partnership with New England Telephone for postsecondary study by their employees.

Associate Professor of History

Developed and taught courses focusing on North Africa, the Middle East, the expansion of Europe/America, and graduate seminars on imperialism and it impact.

Assistant to the Dean, University College

In this capacity, worked with university's advisement programs.

University of Orleans-Tours, Visiting Asst. Professor 1967-68

University of Algiers, Visiting Lecturer, part-time 1966-67

Publications (abbreviated):

"Office of Continuing Studies, The American University", in A. Mandell and E. Michelson, Portfolio Development and Adult Learning, Chicago, CAEL, 1990

Review of Gilbert Grandguillaume, Arabisation et Politique Linguistic au Maugreb in Middle East Journal, Autumn 1985

"Evaluating an Internship Program: The University of Rhode Island", with K. Birt-Bisson in A. Balutis and J. Honan, Public Affairs Internships: Theory and Practice, Boston, 1984

"Helping Interns Learn From Experience", with K. Birt-Bisson, Synergist, Spring, 1982

Presentations at Professional Meetings (abridged):

"The American University/Xerox Corporation Partnership", NUCEA National Conference, San Diego, CA, April 1992

"African-American Participation- Degree Completion Programs for Adults" with Rodney at CAEL 1990 International Assembly, Chicago, IL, November 1990

"Adult Minority Students: Recapturing the Talent Pool" with R. Dennis and I. DasGupta, AAHE National Meeting, San Francisco, CA, April 1990

"Making Curriculum Responsive: Cross Cultural Models for Multi-Cultural Audiences" with R.W.Dennis, A.V. Gormly, and L. Levy, ACHE National Conference, Charleston, SC, November 1989

"Program Development in Professional Continuing Studies" with R. Norris, NUCEA National Conference, Philadelphia, PA, April 1988

"Managing an Internship Program", With K. Birt-Bisson, Convention of the National Society of Internship Programs of the National Society for Internships and Experiential Education, Nashville,TN, October 1982

Professional Memberships:

National University Continuing Education Association
Association of Continuing Higher Education
Alliance of Alternate Degree Programs

Foreign Language: French (fluent)

VITAE

RHONDA WELLS-WILBON

13548 Lord Baltimore Place
Upper Marlboro, MD 20772

(301) 627-8074 (home)
(703) 993-2699 (office)

EDUCATION

Doctorate Candidate, School of Social Work
Howard University, Washington, D.C. Expected completion Fall 1993

Master of Social Work, emphasis in administration, child and family welfare
Howard University, Washington, D.C. Conferred May 1989

Bachelor of Arts in Social Work, specializing in child development
Michigan State University, East Lansing, MI. Conferred August 1986

Minor in Women's Studies
Michigan State University, East Lansing, MI. Completed June 1985

CERTIFICATION

LICSW, Washington, D.C.
Myers-Briggs Type Indicator Trainer

WORK EXPERIENCE

ASSISTANT DIRECTOR
Office of Minority Student Affairs
George Mason University, Fairfax, Virginia

CONSULTANT
Psychological Support Services Institute
Washington, D.C.

PROGRAM MANAGER
The Ronald E. McNair Post Baccalaureate Achievement Program and
The GradPrep Summer Research Program
The American University, Washington, D.C.
December 1990 to present

EXECUTIVE DIRECTOR
The Arlington Community Temporary Shelter Inc.
Arlington, Virginia
August 1988 to December 1990

RHONDA WELLS-WILBON

WORK EXPERIENCE

COORDINATOR OF VOLUNTEER SERVICES
Howard County Sexual Assault Center
Columbia, Maryland
June 1987 to June 1988

GROUP HOME SUPERVISOR
Institute for Behavioral Resources Inc.
Washington, DC
September 1986 to January 1987

STUDENT INTERN
Council Against Domestic Assault Inc.
Lansing, Michigan
September 1985 to August 1986

RESIDENT ASSISTANT
Holden Hall
Michigan State University
East lansing, Michigan

PUBLICATIONS

EXECUTIVE VICE PRESIDENT AND EDITOR
Wilbon Associates
Washington, D.C.

HONORS & ACTIVITIES

- Volunteer Mentor (1992-present)
- Council of Social Work Education (1990-present)
- Pi Delta Sigma Honor Society (1989)
- NAACP (1988-present)
- Delta Sigma Theta, Inc. (1988-present)
- National Association of Black Social Workers (1986-present)
- Volunteer Big Sister (1986)
- Outstanding Young Women of America (1986)
- National Association of Social Workers (1986-present)
- Students for Social Work (Academic Year 1985-86)
- Council Against Domestic Assault (1985-87)
- Holden Hall Black Caucus (1983-85)

APPENDIX 6.2.1 C

CERTIFICATIONS

DOE F 1600.5
(05-80)
All Other Copies Are Obsolete

U.S. Department of Energy

Assurance of Compliance
Nondiscrimination in Federally Assisted Programs

The American University (Hereinafter called the "Applicant")

HEREBY AGREES to comply with Title VI of the Civil Rights Act of 1964 (Pub. L. 88-352), Section 16 of the Federal Energy Administration Act of 1974 (Pub. L. 93-275), Section 401 of the Energy Reorganization Act of 1974 (Pub. L. 93-438), Title IX of the Education Amendments of 1972, as amended, (Pub. L. 92-318, Pub. L. 93-568, and Pub. L. 94-482), Section 504 of the Rehabilitation Act of 1973 (Pub. L. 93-112), the Age Discrimination Act of 1975 (Pub. L. 94-135), Title VIII of the Civil Rights Act of 1968 (Pub. L. 90-284), the Department of Energy Organization Act of 1977 (Pub. L. 95-91), and the Energy Conservation and Production Act of 1976, as amended, (Pub. L. 94-385). In accordance with the above laws and regulations issued pursuant thereto, the Applicant agrees to assure that no person in the United States shall, on the ground of race, color, national origin, sex, age, or handicap, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity in which the Applicant receives Federal assistance from the Department of Energy.

Applicability and Period of Obligation

In the case of any service, financial aid, covered employment, equipment, property, or structure provided, leased, or improved with Federal assistance extended to the Applicant by the Department of Energy, this assurance obligates the Applicant for the period during which Federal assistance is extended. In the case of any transfer of such service, financial aid, equipment, property, or structure, this assurance obligates the transferee for the period during which Federal assistance is extended. If any personal property is so provided, this assurance obligates the Applicant for the period during which it retains ownership or possession of the property. In all other cases, this assurance obligates the Applicant for the period during which the Federal assistance is extended to the Applicant by the Department of Energy.

Employment Practices

Where a primary objective of the Federal assistance is to provide employment or where the Applicant's employment practices affect the delivery of services in programs or activities resulting from Federal assistance extended by the Department, the Applicant agrees not to discriminate on the ground of race, color, national origin, sex, age, or handicap, in its employment practices. Such employment practices may include, but are not limited to, recruitment, advertising, hiring, layoff or termination, promotion, demotion, transfer, rates of pay, training and participation in upward mobility programs; or other forms of compensation and use of facilities.

Subrecipient Assurance

The Applicant shall require any individual, organization, or other entity with whom it subcontracts, subgrants, or subleases for the purpose of providing any service, financial aid, equipment, property, or structure to comply with laws cited above. To this end, the subrecipient shall be required to sign a written assurance form, however, the obligation of both recipient and subrecipient to ensure compliance is not relieved by the collection or submission of written assurance forms.

Data Collection and Access to Records

The Applicant agrees to compile and maintain information pertaining to programs or activities developed as a result of the Applicant's receipt of Federal assistance from the Department of Energy. Such information shall include, but is not limited to the following: (1) the manner in which services are or will be provided and related data necessary for determining whether any persons are or will be denied such services on the basis of prohibited discrimination; (2) the population eligible to be served by race, color, national origin, sex, age and handicap; (3) data regarding covered employment including use or planned use of bilingual public contact employees serving beneficiaries of the program where necessary to permit effective participation by beneficiaries unable to speak or understand English; (4) the location of existing or proposed facilities connected with the program and related information adequate for determining whether the location has or will have the effect of unnecessarily denying access to any person on the basis of prohibited discrimination; (5) the present or proposed membership by race, color, national origin, sex, age and handicap, in any planning or advisory body which is an integral part of the program; and (6) any additional written data determined by the Department of Energy to be relevant to the obligation to assure compliance by recipients with laws cited in the first paragraph of this assurance.

The Applicant agrees to submit requested data to the Department of Energy regarding programs and activities developed by the Applicant from the use of Federal assistance funds extended by the Department of Energy. Facilities of the Applicant (including the physical plants, buildings, or other structures) and all records, books, accounts, and other sources of information pertinent to the Applicant's compliance with the civil rights laws shall be made available to inspection during normal business hours on request of an officer or employee of the Department of Energy specifically authorized to make such inspections. Instructions in this regard will be provided by the Director, Office of Equal Opportunity, U.S. Department of Energy.

This assurance is given in consideration of and for the purpose of obtaining any and all Federal grants, loans, contracts (excluding procurement contracts), property, discounts or other Federal assistance extended after the date hereto, to the Applicants by the Department of Energy, including installment payments on account after such data of application for Federal assistance which are approved before such date. The Applicant recognizes and agrees that such Federal assistance will be extended in reliance upon the representations and agreements made in this assurance and the United States shall have the right to seek judicial enforcement of this assurance. This assurance is binding on the Applicant, the successors, transferees, and assignees, as well as the person whose signature appears below and who is authorized to sign this assurance on behalf of the Applicant.

Applicant Certification

The Applicant further certifies that it has or, within 90 days of the date of the grant shall: (a) Designate(d) an individual to serve as Affirmative Action Officer; (b) Establish(ed) complaint procedures for employees and other beneficiaries of the program; (c) Prominently display(ed) posters and other written information publicizing the policy of nondiscrimination; (d) Provide(d) program information in languages other than English (including braille) in a manner to make it accessbile to sight impaired persons; (e) Establish(ed) procedures which enable it to notify DOE on a timely basis of any complaints filed against it and of the disposition of those complaints; (f) Require(d) any subrecipient (subgrantee/subcontractor) under this award to comply with the above cited laws and regulations; (g) Require the subrecipient to sign an assurance form, the applicant certifies that it shall monitor subrecipient compliance as appropriate; (h) Establish(ed) a system capable of collecting racial/ethnic/handicap/sex data in accordance with existing Federal requirements cited in the first paragraph of this assurance.

Development of Current Affirmative Action Plan — Oct. 1992 (Date)

Dennis Lisko — (202) 885-2448

Affirmative Action Officer (Name, Signature and Date) — Telephone Number

---

Most recent onsite Federal Assistance Civil Rights review/audit:

OFCCP — 1988

Agency Conducting Review — Date

The American University

Applicant's Name — Date

Address: 4400 Mass. Ave. NW
Washington, DC 20016

(202) 885-3440

Telephone Number

Authorized Official President, or Chief Executive Officer

Keith Osterhage — 5/26/93

Name and Signature — Date

CERTIFICATIONS REGARDING LOBBYING; DEBARMENT, SUSPENSION AND OTHER RESPONSIBILITY MATTERS; AND DRUG-FREE WORKPLACE REQUIREMENTS

Applicants should refer to the regulations cited below to determine the certification to which they are required to attest. Applicants should also review the instructions for certification included in the regulations before completing this form. Signature of this form provides for compliance with certification requirements under 34 CFR Part 82, "New Restrictions on Lobbying," and 34 CFR Part 85, "Government-wide Debarment and Suspension (Nonprocurement) and Government-wide Requirements for Drug-Free Workplace (Grants)." The certifications shall be treated as a material representation of fact upon which reliance will be placed when the Department of Energy determines to award the covered transaction, grant, or cooperative agreement.

1. LOBBYING

The undersigned certifies, to the best of his or her knowledge and belief, that:

(1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

(3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

2. DEBARMENT, SUSPENSION, AND OTHER RESPONSIBILITY MATTERS

(1) The prospective primary participant certifies to the best of its knowledge and belief, that it and its principals:

(a) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;

(b) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

(c) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (1)(b) of this certification; and

(d) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

(2) Where the prospective primary participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

3. DRUG-FREE WORKPLACE

This certification is required by the Drug-Free Workplace Act of 1988 (Pub. L. 100-690, Title V, Subtitle D) and is implemented through additions to the Debarment and Suspension regulations, published in the Federal Register on January 31, 1989, and May 25, 1990.

ALTERNATE I
(GRANTEES OTHER THAN INDIVIDUALS)

(1) The grantee certifies that it will or will continue to provide a drug-free workplace by:

(a) Publishing a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the grantee's workplace and specifying the actions that will be taken against employees for violation of such prohibition;

(b) Establishing an ongoing drug-free awareness program to inform employees about:

(1) The dangers of drug abuse in the workplace;

(2) The grantee's policy of maintaining a drug-free workplace;

(3) Any available drug counseling, rehabilitation, and employee assistance programs; and

(4) The penalties that may be imposed upon employees for drug abuse violations occurring in the workplace;

(c) Making it a requirement that each employee to be engaged in the performance of the grant be given a copy of the statement required by paragraph (a);

(d) Notifying the employee in the statement required by paragraph (a) that, as a condition of employment under the grant, the employee will:

(1) Abide by the terms of the statement; and

(2) Notify the employer in writing of his or her conviction for a violation of a criminal drug statute occurring in the workplace not later than five calendar days after such conviction;

(e) Notifying the agency, in writing, within ten calendar days after receiving notice under subparagraph (d)(2) from an employee or otherwise receiving actual notice of such conviction. Employers of convicted employees must provide notice, including position title, to every grant officer or other designee on whose grant activity the convicted employee was working, unless the Federal agency has designated a central point for the receipt of such notices. Notice shall include the identification number(s) of each affected grant;

(f) Taking one of the following actions, within 30 calendar days of receiving notice under subparagraph (d)(2), with respect to any employee who is so convicted:

(1) Taking appropriate personnel action against such an employee, up to and including termination, consistent with the requirements of the Rehabilitation Act of 1973, as amended; or

(2) Requiring such employee to participate satisfactorily in a drug abuse assistance or rehabilitation program approved for such purposes by a Federal, State, or local health, law enforcement, or other appropriate agency;

(g) Making a good faith effort to continue to maintain a drug-free workplace through implementation of paragraphs (a), (b), (c), (d), (e), and (f).

(2) The grantee may insert in the space provided below the site(s) for the performance of work done in connection with the specific grant:

Place of Performance:
(Street address, city, county, state, zip code)

_____

_____

_____

☐ Check if there are workplaces on file that are not identified here.

ALTERNATE II (GRANTEES WHO ARE INDIVIDUALS)

(1) The grantee certifies that, as a condition of the grant, he or she will not engage in the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance in conducting any activity with the grant.

(2) If convicted of a criminal drug offense resulting from a violation occurring during the conduct of any grant activity, he or she will report the conviction, in writing, within 10 calendar days of the conviction, to every grant officer or other designee, unless the Federal agency designates a central point for the receipt of such notices. When notice is made to such a central point, it shall include the identification number(s) of each affected grant.

As the duly authorized representative of the applicant, I hereby certify that the applicant will comply with the above certifications.

NAME OF APPLICANT	PR/AWARD NUMBER AND/OR PROJECT NAME
The American University	Minority Fellows Program
PRINTED NAME AND TITLE OF AUTHORIZED REPRESENTATIVE	
Keith Osterhage, Director Office of Research Services	
SIGNATURE	DATE
	5-/26/57

6.2.2 SCIENCE - COMMUNITY SUPPORT LINKS

Proposed by
The George Washington University
in conjunction with the
American Association for the Advancement of Science

Summary

The Washington, DC area has several significant non-government organizations who are actively working to encourage science and math education among community young people. These organizations are operating in a rather loosely-knit way and recognize the need and value of a sharper focus. They welcome the opportunity to participate in a solidly supported framework and are amenable to collaborating on energy, environmental science, and waste management career building activities. The proposed work will provide leadership by The George Washington University (GWU) and the American Association for the Advancement of Science (AAAS), working in conjunction with local science and technology membership organizations. Major joint activities will be to:

- Develop and hold a series of short,"hands-on" energy and environment oriented experiences to increase the involvement of inner-city students within their local neighborhoods.
- Lead "hands-on" energy and environment workshops for high school students at/by the GWU.
- Set-up career fairs at GWU to expose young people, their parents or guardians, and teachers to relevant role models, experiential activities, scholarship information, and college admission procedures.
- Conduct competitions for high school students to raise motivation and encourage continued participation in energy and environment oriented studies (e.g., the designing, building, and racing of model solar cars and/or human-powered hovercraft). Programs will be encouraged in the sister Consortium cities with the objective of building on the cooperative and competitive aspects, leading to a well publicized grand race or contest to attract the attention of additional youth, their parents, teachers, and potential volunteers.
- Expand content and distribution of existing newsletters to ensure that students and teachers receive timely and enticing notice of events and other special information.
- Prepare a compiled directory, on disk and in hard copy, containing summaries of available and evolving programs useful to students, teachers, and mentoring volunteers. It will contain contact information on selected volunteers and technical advisors available for activities such as science fairs, classroom demonstrations, tours/field trips, and other assistance.
- Expand an existing high quality electronic bulletin board to provide another route for access to the foregoing information. Special sessions on procedures for access will be conducted at selected schools, libraries, museums, and other relevant sites.

Background and Importance

Principal organizations that have been especially vigorous in activities to promote, assist, and encourage the expansion of technology education programs and activities include the Washington Academy of Sciences, DC Council of Architectural and Engineering Societies, Washington Junior Academy Sciences, Joint Board on Science and Engineering Education, El Ingeniero, and Minorities in Science and Technology Network. Other interested organizations to be solicited for formal commitment upon grant receipt include the American Association of Blacks in Energy, Howard University, Minority Women in Science, National Technical Society and National Capital Area Access Network (CAPAccess).

Participation by other established community organizations, including black church student improvement groups, will be encouraged if they have acceptable program correspondence. These groups, usually operating relatively independently, are working to encourage the cooperation, assistance, and participation of the business/industry/government community in the strengthening of technology education in elementary and secondary schools, with particular emphasis on the inner-city schools. These efforts have met with varying degrees of success but all agree that there is much to be done and readily acknowledge that their organization cannot "do it all alone".

One underlying problem has been the tendency to take on "too big a bite", i.e., to address the broadest of issues rather than concentrate on the individual student as product. This has led to deep frustration and set the scene for more focussed action. The opportunity to concentrate within an energy and environment career building context has become much more acceptable to these organizations than it was in recent years.

Further driving the situation is the evolving recognition that the traditional major source of eligible students for science and engineering, namely white males, is eroding. Recent data published by the Bureau of Labor Statistics, among others, projects significant demographic changes in the labor force for the time 2000 and beyond. In the relatively near term the U.S. African-American and Hispanic populations will become significantly larger in both percentages and total numbers. At the same time national test scores demonstrate that the present student population at all levels but particularly in the inner cities is declining in measurable knowledge of science, math, and technology. Yet these subjects remain more than ever before in the nation's history a vital ingredient for future jobs. Even the poorest of jobs increasingly require at least a modest technological understanding. The ability of the nation to ensure its defense and economic security is subject to great risk unless the current education situation can be offset. Actions are essential to ensure both adequate *quality* and *quantity* in the science and engineering work force in general and in specific technology areas such as energy and environment.

It is essential that young people develop the ability to ***THINK CRITICALLY*** — including both logically and creatively. The key to such thinking is knowledge about the physical world around them and some understanding of relationships between core elements (*nature's realities are the best teacher:* Dr. George Washington Carver). It is the guided exploration of these realities that are at the heart of this proposed program. Involvement with local community resources will teach students to value their city and its neighborhoods. A respect for the physical nature of things and their impact on the urban environment is essential to encourage students to develop deeper community sensitivity.

Making programs created to increase the involvement of inner-city youth in energy and environment technology based careers readily available and more appealing early in their academic lives can capture and sustain student interest. This is critically important to offset the current drop-out trend during high school and the first two years of college. Teachers will have more resources *at hand* to enhance their daily classes and bolster their own current knowledge. The reference guide containing a roster of volunteer contact scientists and tested field trips and activities will promote and encourage increased teacher flexibility in terms of subject matter presentation. By linking activities at different locations, the sequential utilization of each local resource will help create and sustain the enthusiasm needed to encourage inner-city students to pursue increased understanding of scientific and technical areas underlying Consortium interest.

Work Plan

The CAPAccess electronic bulletin board already in trial operation at the GWU will be available so that all science and technology related societies, associations, and local universities may input meeting and other notices of possible interest to students and their associates. Additionally, a

database of Energy and Environmental Resources will be prepared and entered on-line for easy access by interested students through their school, library, or community center.

The AAAS will develop and print a book of recommended resources for energy and environmental education. This will be provided on disk and in loose leaf binder form after review of accuracy and appropriateness in a multicultural setting. Production and design will be done by AAAS/EHR Publications staff.

Career Fairs and similar events promoting student exposure to suitable role models in academia, government, and industry, will be organized and included in individual school career days as well as at the George Washington University and the American Association for the Advancement of Science Annual Meeting(s).

An inter-high school team competition involving the design, fabrication, testing, and racing of model solar cars will be undertaken in several interested schools during the first year. Publicity will stimulate many other schools to enter the competition during the second year. To the extent practicable other contests, such as the design of an energy efficient home, will be undertaken during ensuing years.

Curriculum-based adjunct materials and activities will be developed by the GWU and the AAAS involved departments in conjunction with the DC Public School Science Department and curriculum representatives from the Archdiocese of Washington. These energy and environment related exposures will be presented in local neighborhoods as far as possible for elementary and middle school students, at a time when students in the DC system are studying each general topic. For secondary school students, the GWU will be the scene of more sophisticated activities.

The following specific activities will be initiated within 30 days of grant receipt:

> George Washington University. Saturday seminars on various topics in engineering will be augmented to include a Saturday School of Energy and Environmental Sciences. This outreach program will be designed to convincingly demonstrate to inner-city youth and their *teachers* that energy, environmental restoration and waste management can be exciting fields in which they can participate.
>
> Anacostia Museum. Local environmental projects giving at-risk youngsters an outdoor learning laboratory in a community-based museum will be enhanced. The sense of curiosity and fun in learning science will help improve basic academic/scientific skills and general literacy while teaching ecological and environmental values. Both teacher and environmental student training in interdisciplinary outdoor education will be included in activities centered around the museum and the Dr. George Washington Carver Nature Trail.
>
> Washington Navy Yard Museum. The principal thrust will relate current museum exhibits and activities to specific learning experiences. One example, already well proven to be effective, will be the use of physical measurement of triangles of varying size to determine ratios of one side to another. Students can see that the ratios are independent of size. This discovered fact is then related to the exhibit on the sextant as a navigational aid and to the practical problem of measuring the height of the tallest mast on the USS Barry at anchor adjacent to the museum. This can be a challenge for teams of students who might otherwise never know that learning trigonometry can be both fun and useful.
>
> Martin Luther King Library. The exemplary existing projects using library computer basics to encourage and assist students to do science fair project research will be

expanded. Student development of trivia word games on topics including mineral and energy resources, forests, climate, and additional energy and environment related topics will be encouraged and results shared.

Demographic Composition of Students and Teachers to be Affected

The Washington, DC area is a complex metropolitan organism which is continually expanding. It encompasses several hundred elementary and secondary schools. The District of Columbia proper constitutes the core and its student population, although diverse, are primarily in the DC public school system. The corresponding public school breakouts are as follows (for October 1992):

Total number of students:	80,937
Male	40,422
Female	40,515

Grade 7.....5,333	African-Americans.....	72110	89.1%
Grade 8.....5,000	Asians.....	1032	1.3%
Grade 9.....5,068	Hispanics.....	4547	5.6%
Grade 10..... 5,382	Caucasian (non-Hispanic).....		4.0%
Grade 11..... 4,290	Native Americans (Indian).....		0.02%
Grade 12..... 3,433			

Review of this data makes it readily apparent that a substantial number of students not shown above exist and attend private schools or schools outside DC. The public school teacher cadre are estimated to be about 67 percent African American and 3 percent Hispanic.

Expected Outcomes

- Teach that science can be fun
- Increase awareness of careers based on scientific and technological activities
- Induce participation in science fair and other activities based on experience gained by exposure to the diverse stimulants of this project
- Involve students with community resources and people, possibly leading to local, part-time jobs
- Increase interest in science and math study
- Improve grades and general academic performance
- Improve self image by success and mastery of fun science experiences
- Develop pride in local community resources and people
- Increase teacher utilization of existing outside resources
- Increase student participation in science and math projects
- Increase awareness of careers based on scientific and technological activities
- Increase involvement of students with outside resources to broaden perspectives & ambition

- Increase interaction between the technical societies and the students leading to increased mentoring and possible financial and academic support.

Measurement of Results

The initial principal metric will be the actual number(s) of students who attend Saturday sessions, number(s) of teachers who participate, and number(s) of students who undertake science fair projects. Increased student self-esteem will be apparent by student influence on peers and younger students. Students who volunteer to be peer-mentors or enlist others in their school to participate in science related activities will be designated Team Leaders, be eligible to participate in special additional programs, and will be individually monitored. The number(s) of students who choose more math and science courses as they proceed through their academic years and their ultimate career orientation will tell the true worth of these efforts.

The actual usage of the database and resource book by teachers and students will be monitored. The attendance at Career Fairs and competitive events of students, their parents, and their teachers will indicate the success of this approach.

Leadership and Management

The basic leadership of this program will consist of dedicated and recognized professional women with extensive experience in the education of inner-city youth: Judy Kass and Maria Sosa of the AAAS's Directorate for Education and Human Resources (a new unit of the AAAS) and Lin Krupsaw, the GWU Director of the Science and Engineering Apprentice Programs, in close collaboration with each of the cooperating organizations.

The GWU will serve as the grant facilitator for this task in close conjunction with the Weston Institute. Internal staffing will be kept at a minimum consistent with project goals and objectives. Insofar as appropriate the tasking will take advantage of any relevant aspects of the ongoing DoD Science and Engineering Apprenticeship Program (SEAP) for High School Students and its new element the SEAP-CQL program, which involves SEAP alumni who are in science or engineering college education (including attendance at historically black colleges). Thereby, the tasking will be concerned primarily with the age group from grade 7-12 but will have the additional managerial perspective gained from the GWU's conducting of the SEAP-CQL grade 13-16 group.

References

U.S.Bureau of the Census, *Current Population Reports*, Washington, DC, 1992

The Joint Board on Science and Engineering Education Directory, JBSEE, 1991

Community Directory of DC Area Science Resources, AAAS, 1990

The TORCH, JBSEE newsletter, 1992-93 monthly issues

Commission on Professionals in Science and Technology, *Professional Women and Minorities, Human Resource Compendium*, June 1992

National Science Foundation, *Human Resource Development for Minorities in Science and Engineering*, 1992

Budget

Budget details are provided in Appendix 6.2.2 A.

APPENDIX 6.2.2 A

BUDGETS

removed.

APPENDIX 6.2.2 B

BIOGRAPHIES OF PROJECT LEADERSHIP

Maria Sosa
1333 H Street, NW, Washington, DC 20005
202-326-6453

EDUCATION

M.S., Education, Teachers College, Columbia University, New York, NY

B.A., Humanities, Shimer College, Mount Carroll, IL

PROFESSIONAL EXPERIENCE

August 1989 to present
American Association for the Advancement of Science, Directorate for Education and Human Resources, Washington, DC.
Editor, Science Books & Films (SB&F)
Project Director, Science + Literacy for Health, NIH, Public Health Service.
Peer Review Manager, Earth Explorer Project, a CD-ROM-based encyclopedia of Environmental Science
Film Festival Coordinator, AAAS Annual Meeting, Washington, DC, February, 1991
Coordinator, Children's Science Book Fair, Chicago Academy of Sciences, Chicago, IL, February, 1992.

1984 - 1989
Freelance Writer, Producer, and Editor of audiovisual and print materials for K-12 education.

1980 - 1984
Society For Visual Education (SVE), Chicago. IL 60614. Executive Producer for Microcomputer Software

---

Judy Kass

321 Tennessee Avenue NE
Washington, DC 20002

(202) 326-6667 (Work)
(202) 544-2182 (Home)

EDUCATION

M.Ed., Howard University, Washington, DC
B.A., (Education and History), Antioch University, Ohio

PROFESSIONAL EXPERIENCE

1989 to Present
American Association for the Advancement of Science, Washington DC. (AAAS)
Project Director, Science Museums project for staff, board, audience diversity.
Director, Outreach Activities such as Public Science Day and Senior Scientist Program.
Liaison with groups like Urban League, Schools, Museums, Cooperative Extension Services.

1987-1989
Senior Program Associate, Office of Opportunities in Science, AAAS, Washington, DC.
Developed and directed minority disability program: research, strategy planning, outreach, and marketing.
Organized and conducted workshops and symposia on education and issues.
Represented education and career issues to Congress, Federal and State agencies and with community-based programs.

1984-1987
Program Coordinator, Office of Opportunities in Science, AAAS, Washington, DC

Facilities Administrator, Washington Public Affairs Center, Washington, DC campus, University o Southern California.
Planned, scheduled, and managed the Center's meetings, seminars, and special events.
Coordinated all administrative and support functions, including supervising support staff an implementation of policies and procedures.

1980-1981
Administrative Director, National Women's Health Network, Washington. DC.

1965-1979
Positions in Social Welfare and Educational Organizations

Marylin (Bolten) Krupsaw; (Mrs. Stanley C.)
10208 Windsor View Dr., Potomac, MD 20854
(301) 299-7352 (H) (202) 994-2234 (W)

EDUCATION

Ph.D., Science Education
The American University
Washington, D.C. - pending
MSST, The American University,
Washington, DC - 1972
Patent Law, Columbia University,
New York, NY- 1954
B.Ch.E, City College of New York,
School of Engineering,
New York, NY- 1948

TEACHING EXPERIENCE

1986 -present Research Engineer, EMgt 298,
The George Washington Univ.
Washington, DC
1976 - 1986 Associate Professor, Physics
Univ. of District of Columbia Washington, DC
1968 - 1976 Assistant Professor, Physics, Federal City
College, Washington, DC
1964 - 1968 Teacher (Physics, Chemistry, Physical Science, Math)
Dunbar Senior High School, Washington, DC

SUMMER PROGRAMS RELATED TO TEACHING

1986 - Present
Director of Department of Defense funded Science and Engineering Apprentice Programs for juni and senior high school students and teachers at The George Washington University. Directs and coordinat high school students and teachers at research laboratories in various areas. Prepares workshops for local hi school teachers of mathematics at the George Washington University. Funded by National Security Agen

Director of DoD funded Science Technology and Research students career guidance program for D Public School students. Conducts three day career workshops in science for 7th and 8th grade student

Director of DoD funded Teaching New Technology program for secondary school science teache Presents graduate credit spring course and summer laboratory research opportunity to local science teache

1982 - 1986
Director of the DoD funded Science and Engineering Apprentice Programs (as detailed above) at t University of the District of Columbia.

1976 - 1981
Assistant, then Associate Director of Summer Institute providing research experience for high abili high school students. NSF funded at American University. Supervised and directed high school students various research laboratories, such as Goddard Space Flight Center.

APPENDIX 6.2.2 C

LETTERS OF SUPPORT AND CERTIFICATIONS

American
Association
for the Advancement of
Science

1333 H STREET, N.W., WASHINGTON, D.C. 20005 (202) 326-6670
CABLE ADDRESS: ADVANCESCI
FAX (202) 371-9849

Directorate for Education & Human Resources Programs

May 25, 1993

Ms. Marilyn Krupsaw
Program Director
Science & Engineering Apprentice Program
George Washington University
707 22nd Street, NW
Washington, DC 20052

Dear Ms. Krupsaw:

I am gratified to hear that the "Science-Community Support Links" project is being considered for funding, and that we are included as a subcontractor.

I believe it is of the utmost importance that every opportunity be taken to reach and inspire our children to excel in science and math, especially minority, female and disabled children. This project provides just such an opportunity, and I know my staff is well prepared with both the skills and the enthusiasm to help bring this effort to fruition.

I am also pleased that this project is directed toward the youth of the District of Columbia. Although we run informal math and science projects all over the country, it is particularly satisfying to address the issue here at home, where so many students and teachers stand in need of our initiative.

Thank you for allowing us to assist you in this important work.

Sincerely,

Shirley M. Malcom
Head, Directorate for Education and Human Resources

American
Association
for the Advancement of
Science

[illegible] H STREET, N.W. WASHINGTON, DC [illegible]
CABLE ADDRESS ADVANCENCE
FAX (202) 371-9849

Directorate for Education & Human Resources Programs

March 31, 1993

Ms. Marilyn Krupsaw
Program Director
Science & Engineering Apprentice Program
George Washington University
707 22nd Street, NW
Washington, DC 20052

Dear Marilyn:

We are very pleased to be included as a subcontractor to the "Science-Community Support Links" Project. The goals of this project are clearly consistent with those of AAAS.

We have a number of programs that make strong use of hands-on science and informal education to reach and inspire students, especially underserved groups such as minorities, girls, and the disabled. We have a great deal of experience in producing publications and developing workshops, and are eager to bring this experience to bear on the "Science-Community Support Links" Project.

We look forward to the opportunity to further our mutual goals through this combined effort.

Sincerely,

Judy Kass

Judy Kass
Director of Outreach Programs

DOE F 1600.5 (11-90)

OMB Control No.
1910-0400

U.S. DEPARTMENT OF ENERGY

ASSURANCE OF COMPLIANCE

Nondiscrimination of Federally Assisted Programs

The George Washington University (Hereinafter called the "Applicant") HEREBY AGREES to comply with Title VI of the Civil Rights Act of 1964 (Pub. L. 88-352), Section 16 of the Federal Energy Administration Act of 1974 (Pub. L. 93-275), Section 401 of the Energy Reorganization Act of 1974 (Pub. L. 93-438), Title IX of the Education Amendments of 1972, as amended (Pub. L. 92-318, Pub. L. 93-568, and Pub. L. 94-482), Section 504 of the Rehabilitation Act of 1973 (Pub. L. 93-112), the Age Discrimination Act of 1975 (Pub. L. 94-135), Title VIII of the Civil Rights Act of 1968 (Pub. L. 90-284), the Department of Energy Organization Act of 1977 (Pub. L. 95-91), and the Energy Conservation and Production Act of 1976, as amended (Pub. L. 94-385). In accordance with the above laws and regulations issued pursuant thereto, the Applicant agrees to assure that no person in the United States shall, on the ground of race, color, national origin, sex, age, or handicap, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity in which the Applicant receives Federal assistance from the Department of Energy.

Applicability and Period of Obligation

In the case of any service, financial aid, covered employment, equipment, property, or structure provided, leased, or improved with Federal assistance extended to the Applicant by the Department of Energy, this assurance obligates the Applicant for the period during which Federal assistance is extended. In the case of any transfer of such service, financial aid, equipment, property, or structure, this assurance obligates the transferee for the period during which Federal assistance is extended. If any personal property is so provided, this assurance obligates the Applicant for the period during which it retains ownership or possession of the property. In all other cases, this assurance obligates the Applicant for the period during which the Federal assistance is extended to the Applicant by the Department of Energy.

Employment Practices

Where a primary objective of the Federal assistance is to provide employment or where the Applicant's employment practices affect the delivery of services in programs or activities resulting from Federal assistance extended by the Department, the Applicant agrees not to discriminate on the ground of race, color, national origin, sex, age, or handicap, in its employment practices. Such employment practices may include, but are not limited to, recruitment, recruitment advertising, hiring, layoff or termination, promotion, demotion, transfer, rates of pay, training and participation in upward mobility programs; or other forms of compensation and use of facilities.

Subrecipient Assurance

The Applicant shall require any individual, organization, or other entity with whom it subcontracts, subgrants, or subleases for the purpose of providing any service, financial aid, equipment, property, or structure to comply with laws cited above. To this end, the subrecipient shall be required to sign a written assurance form, however, the obligation or both recipient and subrecipient to ensure compliance is not relieved by the collection or submission of written assurance forms.

Data Collection and Access to Records

The Applicant agrees to compile and maintain information pertaining to programs or activities developed as a result of the Applicant's receipt of Federal assistance from the Department of Energy. Such information shall include, but is not limited to, the following: (1) the manner in which services are or will be provided and related data necessary for determining whether any persons are or will be denied such services on the basis of prohibited discrimination; (2) the population eligible to be served by race, color, national origin, sex, age, and handicap; (3) data regarding covered employment including use or planned use of bilingual public contact employees serving beneficiaries of the program where necessary to permit effective participation by beneficiaries unable to speak or understand English; (4) the location of existing or proposed facilities connected with the program and related information adequate for determining whether the location has or will have the effect of unnecessarily denying access to any person on the basis of prohibited discrimination; (5) the present or proposed membership by race, color,

national origin, sex, age, and handicap, in any planning or advisory body which is an integral part of the program; and (6) a additional written data determined by the Department of Energy to be relevant to its obligation to assure compliance recipients with laws cited in the first paragraph of this assurance.

The Applicant agrees to submit requested data to the Department of Energy regarding programs and activities developed the Applicant from the use of Federal assistance funds extended by the Department of Energy. Facilities of the Applica (including the physical plants, buildings, or other structures) and all records, books, accounts, and other sources of informati pertinent to the Applicant's compliance with the civil rights laws shall be made available for inspection during normal busine hours on request of an officer or employee of the Department of Energy specifically authorized to make such inspection Instructions in this regard will be provided by the Director, Office of Equal Opportunity, U.S. Department of Energy.

This assurance is given in consideration of and of the purpose of obtaining any and all Federal grants, loans, contract (excluding procurement contracts), property, discounts, or other Federal assistance extended after the date hereto, to A Applicants by the Department of Energy, including installment payments on account after such date of application for Feder assistance which are approved before such date. The Applicant recognizes and agrees that such Federal assistance will b extended in reliance upon the representations and agreements made in this assurance and the United States shall have th right to seek judicial enforcement of this assurance. This assurance in binding on the Applicant, its successors, transferees and assignees, as well as the person whose signature appears below and who is authorized to sign this assurance on beha of the Applicant.

6/24/93
(Date)

93-106

The George Washington University
(Name of Applicant)

Office of Sponsored Research
2121 I Street, NW 6th Floor
Washington, DC 20052
(Address)

Helen Spencer, Director
Office of Sponsored Research
(Authorized Official)

(202) 994-6255
(Applicant's Telephone Number)

CERTIFICATIONS REGARDING LOBBYING; DEBARMENT, SUSPENSION AND OTHER RESPONSIBILITY MATTERS; AND DRUG-FREE WORKPLACE REQUIREMENTS

Applicants should refer to the regulations cited below to determine the certification to which they are required to attest. Applicants should also review the instructions for certification included in the regulations before completing this form. Signature of this form provides for compliance with certification requirements under 34 CFR Part 82, "New Restrictions on Lobbying," and 34 CFR Part 85, "Government-wide Debarment and Suspension (Nonprocurement) and Government-wide Requirements for Drug-Free Workplace (Grants)." The certifications shall be treated as a material representation of fact upon which reliance will be placed when the Department of Energy determines to award the covered transaction, grant, or cooperative agreement.

1. LOBBYING

The undersigned certifies, to the best of his or her knowledge and belief, that:

(1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

(3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

2. DEBARMENT, SUSPENSION, AND OTHER RESPONSIBILITY MATTERS

(1) The prospective primary participant certifies to the best of its knowledge and belief, that it and its principals:

(a) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;

(b) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

(c) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (1)(b) of this certification; and

(d) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

(2) Where the prospective primary participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

3. DRUG-FREE WORKPLACE

This certification is required by the Drug-Free Workplace Act of 1988 (Pub. L. 100-690, Title V, Subtitle D) and is implemented through additions to the Debarment and Suspension regulations, published in the Federal Register on January 31, 1989, and May 25, 1990.

ALTERNATE I
(GRANTEES OTHER THAN INDIVIDUALS)

(1) The grantee certifies that it will or will continue to provide a drug-free workplace by:

(a) Publishing a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the grantee's workplace and specifying the actions that will be taken against employees for violation of such prohibition;

(b) Establishing an ongoing drug-free awareness program to inform employees about:

(1) The dangers of drug abuse in the workplace;

(2) The grantee's policy of maintaining a drug-free workplace;

(3) Any available drug counseling, rehabilitation, and employee assistance programs; and

(4) The penalties that may be imposed upon employees for drug abuse violations occurring in the workplace;

(c) Making it a requirement that each employee to be engaged in the performance of the grant be given a copy of the statement required by paragraph (a);

(d) Notifying the employee in the statement required by paragraph (a) that, as a condition of employment under the grant, the employee will:

(1) Abide by the terms of the statement; and

(2) Notify the employer in writing of his or her conviction for a violation of a criminal drug statute occurring in the workplace not later than five calendar days after such conviction;

(e) Notifying the agency, in writing, within ten calendar days after receiving notice under subparagraph (d)(2) from an employee or otherwise receiving actual notice of such conviction. Employers of convicted employees must provide notice, including position title, to every grant officer or other designee on whose grant activity the convicted employee was working, unless the Federal agency has designated a central point for the receipt of such notices. Notice shall include the identification number(s) of each affected grant;

(f) Taking one of the following actions, within 30 calendar days of receiving notice under subparagraph (d)(2), with respect to any employee who is so convicted:

(1) Taking appropriate personnel action against such an employee, up to and including termination, consistent with the requirements of the Rehabilitation Act of 1973, as amended; or

(2) Requiring such employee to participate satisfactorily in a drug abuse assistance or rehabilitation program approved for such purposes by a Federal, State, or local health, law enforcement, or other appropriate agency;

(g) Making a good faith effort to continue to maintain a drug-free workplace through implementation of paragraphs (a), (b), (c), (d), (e), and (f).

(2) The grantee may insert in the space provided below the site(s) for the performance of work done in connection with the specific grant:

Place of Performance:
(Street address, city, county, state, zip code)

The George Washington University

Dept. of Engineering Management

Washington, D.C. 20052

☐ Check if there are workplaces on file that are not identified here.

ALTERNATE II (GRANTEES WHO ARE INDIVIDUALS)

(1) The grantee certifies that, as a condition of the grant, he or she will not engage in the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance in conducting any activity with the grant.

(2) If convicted of a criminal drug offense resulting from a violation occurring during the conduct of any grant activity, he or she will report the conviction, in writing, within 10 calendar days of the conviction, to every grant officer or other designee, unless the Federal agency designates a central point for the receipt of such notices. When notice is made to such a central point, it shall include the identification number(s) of each affected grant.

As the duly authorized representative of the applicant, I hereby certify that the applicant will comply with the above certifications.

NAME OF APPLICANT	PR/AWARD NUMBER AND/OR PROJECT NAME
The George Washington University	Science-Community Support Links
PRINTED NAME AND TITLE OF AUTHORIZED REPRESENTATIVE Helen Spencer, Director, Office of Sponsored Research	
SIGNATURE Helen S. 93-108	DATE 6/24/93

6.2.3 SUMMER/INSERVICE INSTITUTES FOR INNER CITY SCHOOL TEACHERS IN ENERGY/ENVIRONMENTAL TECHNOLOGY

Proposed by
Center for Excellence in Mathematics and Science Education
Morgan State University

Summary

Space and environmental technology education has made significant contributions to the instruction of mathematics and science throughout the United States and many foreign countries in recent years. The adoption of environmental satellite data receiving equipment in classrooms and new approaches to interdisciplinary teaching of science, emphasizing energy and the environment, have proven to be effective instructional tools. The best way to learn science is to do science. With this premise in mind, the Center for Excellence in Mathematics and Science Education (CEMSE) proposes to use this satellite technology to educate teachers in its classroom uses. The teachers will transfer the excitement of this "authentic" technology to teach mathematics and science, thereby arousing student interest in local, regional, national and global environmental and social issues. Specifically, this technology will call attention to social, ecological, and biological practices that have affected our environment. The Center proposes a bolder, more innovative approach to transfer this technology through the Earth Observation Laboratory (EOL) to be established at Morgan State University.

The program activities include teacher preparation and teacher enhancement, student/teacher research projects, and an educational network. An intense two-week annual summer institute will be designed to educate 20 teachers in the application of digital images from environmental satellites through the use of simple earth receiving stations. The participants will be able to track weather/environmental and geostationary satellites which capture live images of earth transmitted from space. These pictures can be displayed, analyzed, and enhanced to teach science (integrating the concepts of geology, meteorology, oceanography, geography, mathematics, social studies, and computer science), with respect to energy, environmental restoration, and waste management. The Institute will be followed by inservice workshops and follow-up classroom visits for effective implementation. An educational network will be established to ensure a continuing process for introducing satellite technology into member institutions. As part of this network, a newsletter will be published, follow-up seminars will be held, an annual conference will be planned, and a teacher activity guide will be developed, tested, and published. A team of ten (10) high school students and five (5) Morgan students will develop research projects using Landsat data to determine the various types of ground cover across the city and surrounding counties. This data will be used to increase the effectiveness of land use management efforts to reduce local environmental and soil erosion problems.

Background and Importance

Morgan State University is a historically black institution with the unique designation as Maryland's Public Urban University and serves an ethnically and culturally diverse student population. The University's mission comprises the three classical functions of teaching, research and service. The teaching, the University's curricula are designed to meet the educational needs of city residents and the needs of the city and the sate for professionals trained in many areas, including teacher education, business, science and engineering. A major focus of the curriculum is on the social, economic and political characteristics of a megalopolis so that the capacity to

understand urban phenomena is a central part of the education of students. The research program of the University involves both basic and applied research. Because of the urban emphasis, however, a substantial amount of research is focused on urban problems and environmental phenomena with a bent toward education, service, and policy development. In fulfilling its service function, the University is committed to serving the professional communities represented by academia, while also assisting government, business and community groups in addressing the environmental problems they face in urban Baltimore.

The Center for Excellence in Mathematics and Science Education (CEMSE) at Morgan State University was established in 1988 to develop programs to increase the quality and quantity of mathematics and science teachers, both at pre and inservice levels. Efforts are focused on strategies to increase the number of qualified science and mathematics teachers in inner city schools.

Since the Center was established, it has been utilized for conducting: (1) annual summer/inservice teacher institutes followed by weekend workshops, (2) ongoing pre-service teacher activities, (3) secondary school science olympiads and mathematics marathons, (4) pre-college mathematics-science fairs, (5) an annual mathematics-science conference, and (6) SAT preparation student workshops.

The Center's director was instrumental in the development of a space science graduate course and an Earth Observations From Space graduate course for Space Science Internship Program (SSIP) sponsored by The Johns Hopkins Space Grant Consortium. The program objectives provide teachers with a broad understanding of earth and planetary science, astronomy, astrophysics, satellite technology, and provides a four-week internship to update their research capabilities. The program emphasizes strategies for interdisciplinary connections and application s of technology in the classroom.

As never before, the public is being exposed to scientific evidence that suggests the earth's environment may be in jeopardy. Irrefutable evidence indicated that human activity has altered the nature of our environment. Research has indicated a rapid rise in the concentration of greenhouse gases, a decrease in rainfall, and an increase in temperature due to tropical deforestation, and concern for environmental restoration and waste management. As the demography of the country is rapidly changing, there is a great need for increasing opportunities for inner city youth to take control over their environment and pursue careers in energy, environmental restoration, and waste management programs. Dr. Clyde W. Frank Office of Environmental Restoration and Waste Management, stated "that a critical shortfall in technically trained environmental management personnel exists nationwide and the Department anticipates a projected shortage of over 10,000 scientist, engineers, and technicians in Environmental Restoration and Waste Management in future years." Another source, Rawls, in "*Minorities in Science*" in Chemical and Engineering News, reports that 42% of the new entries in the U.S. labor force are expected to be minorities by the fist decade of the 21st century, but currently minorities represent only 4% of the natural scientists or engineers.

This report implies that greater scientific literacy must be promoted nationally, particularly among minority populations since therein lies the greater potential of untapped human resources.

Work Plan

This proposal is based on the premise that: (1) teachers are the key to motivating and nurturing students' interest in mathematics and science, (2) the best way to learn science is to do science, and (3) student-teacher-mentor interaction plays a significant role in student academic performance and student involvement in solving local environmental issues.

The use of weather satellite technology, remote sensing and direct readout capability, is very appropriate and practical for classroom use. The project will educate teachers with respect to the use of satellite technology to understand energy and environmental issues. The teachers will then be able to transfer their understanding and knowledge to motivate, excite, and involve students so that they might develop into well-informed decision makers. An intense two-week annual summer institute will be designed to educate 20 inner city school teachers in the application of digital images from weather/environmental and geostationary satellites through the use of simple ground receiving stations. Every effort will be made to integrate the concepts of geography, geology, mathematics, social sciences, computer science, chemistry, biology, physics, and atmospheric sciences. The instructional emphasis will be on local and regional environmental issues so that teachers can guide students toward solving real problems and to think critically.

The Institute format will include lectures, guest speakers, "hands on" experiences in the operation of the earth observations systems and participants will work in teams to begin the infusion of the course information into their individual classroom curriculum. Selection of computer hardware and software, use of radio receivers and transmissions from a variety of satellites, terminology, and the availability of regional resources will also be stressed. Class projects require each participant to develop and present lesson plans and activities appropriate to their school setting. These lesson plans will be designed in accordance with the school performance assessment standards established by the city and the State of Maryland. There will be two follow-up workshops/sharing sessions after the Institute. The implementation of the teachers' experiences from the Institute will be closely monitored by CEMSE personnel. Every effort will be made to provide immediate feedback to the teachers. A plan for the dissemination of lesson plans and activities developed during the Institute will be established to ensure a continuing process for communication and sharing among participants. These enthusiastic and excited teachers will share course materials and activities through newsletters, workshops, seminars, conferences, and publications. The information will be disseminated among consortium member institutions, so that successful components can be replicated or adapted, thereby reaching more underrepresented young people.

During the academic year for undergraduate students, particularly those in teacher education programs, ongoing remote sensing sessions will be offered. Pre- and post questionnaires will be given to these students to assess their knowledge and use of this technology. Possible uses of this technology in methods courses will be explored. Monthly lectures will be established involving area weather experts, environmental scientists, energy and waste management agencies, business, and other government agencies.

Aerospace education research indicated that young people should have three types of education in order to be prepared for the next century: (1) a basic functional education; (2) technological grounded education; and (3) an awareness of the implication of the human effect on the natural environment and the effect of travel into space on humans. Every year twenty (20) schools will be outfitted with satellite receiving equipment so that students (along with trained teachers) can work directly with data as it comes down from the satellites. The center will monitor the progress and follow-up with the appropriate evaluation process of these trained teachers. Immediate feedback will then be transmitted back to the teachers.

In addition, a team of ten (10) high school students and (5) undergraduate students, guided by some of the best minds in the space industry and in the teaching profession, will develop research projects. Landsat data will be used to develop an understanding of a remote sensing soil classification problem. The team will learn the mathematical and computer skills necessary to interpret data about the Earth's surface in Baltimore and surrounding counties in algorithms. This project will involve professionals such as systems analysts, conservationists, and teacher educators. Appropriate hardware and software will be made available for student use so that they can investigate ways to solve soil erosion problems. The students will develop a working

knowledge of optics, local biomes and ecology, agriculture, forestry, biology of wetlands, environment, mathematical, and computer skills for interpretation of data. This project demonstrates an awareness of the challenges of a changing environment and sincere interest in developing strategies to deal with the issues. The students will participate in sharing their projects at mathematics and sciences conferences. The objectives of this phase are to: (1) identify students with a sincere interest in space/satellite technology by individual application and teacher recommendation. (2) October through December, students will be provided with specialized training in data graphing techniques, basic programming skills and field trips. (3) From January to March, students will actually do the research and share their research projects in April during Technology/Science/Math month. Students will be awarded three college credits as an incentive. This effort is a cooperative venture between the schools, the University, and the business sector. Student efforts may provide a prototype that can be used by other students to use satellite data for solving additional problems.

Approach The Earth Observations Laboratory (EOL) will be set up at Morgan State University. The laboratory will include computer hardware, software, and an antenna to pull down the satellite information. This laboratory will serve as a prototype teaching facility for educating teachers and students both in summer institutes and in ongoing workshops. Fifteen stations will be established in the laboratory, including computer hardware and supporting satellite acquisition software. The laboratory will be maintained by a trained professional who will also help teachers to establish the stations in their schools. The program will be designed to offer three two-week summer institutes to be held during the summers of 1994, 1995 and 1996 with 20 teachers in each session. The laboratory will be established by the Fall of 1993; a laboratory coordinator/instructor will be hired thereafter; 20 teachers will be selected from the inner city schools, and the first Institute will be conducted in Summer 1994. Ongoing workshops will be planned before and after the Institute. Successful Institute activities will be replicated for the Summer of 1995. Procedures for teacher networking will be implemented. The work plan can be summarized in terms of objectives and actions as follows:

A. Summer Phase: The objectives are to develop the Earth Observations Laboratory. *Actions* include: (1) select twenty (20) inner city school teachers based on their interest and recommendations; (2) two-week intensive program beginning every day at 8:00 a.m. to 4:30 p.m. (3) lectures, guest speakers from the aerospace industry, hands-on experiences; (4) participants develop lesson plans and teaching activities; (5) field trips; (6) invite consortium members for oral and written presentation of projects; (7) participants earn three graduate credits from Morgan State: and (8) plans for follow-up workshops and educational network.

B. Inservice Phase: The objectives are to promote immediate feedback and to develop an effective implementation process. *Actions* include: (1) effective implementation procedures: (2) visitations to schools; (3) pre- and post-questionnaires to teachers and students; (4) content and attitude evaluation of both teachers and students; (5) career awareness; and (6) teacher continuing education.

C. Undergraduate Phase: The objectives include: integrating EOL concepts into teacher education methods courses and invite all interested Morgan students to discuss the importance of energy and environmental awareness. *Actions* include: (1) faculty education workshops; (2) seminars for education majors and interested students; and (3) invite guest speakers from industry and business.

D. Precollege Phase: The objectives include developing learning activities and lessons and inviting industry experts for mentoring. *Actions* include: (1) Institute teachers will incorporate summer experiences into their classroom curriculum; (2) pre- and post-student evaluation s to assess the effectiveness of the instruction; and (3) career

awareness activities.

E. Precollege/college Research Phase: The objectives include: develop research activities for high school students by establishing a mentor program with undergraduates, educators, and professionals from industry. *The actions* include: (1) high school students will work with undergraduate mentors, experts and their teachers; (2) students will learn remote sensing techniques from the month of October through December every year and do research on energy and environmental issues during the following semester; (3) career awareness; and (4) students will participate in science/technology fairs.

F. Educational Network: The objectives are to develop newsletters, seminars, annual conferences, and a teaching guide. The *actions* include: (1) instructional development; (2) quarterly newsletters to all consortium schools, particularly to institute participants; (3) inviting community and consortium members to annual conferences and science/technology fairs; and (4) planning extended visits to EOL by consortium school districts.

The following activities are planned for the first three years of project operation:

Year I (1993-94)

Fall, 1993

September October, 1993~Establish earth observation lab at Morgan State University (plan, equipment, space and set up procedures)
~Hire laboratory coordinator/instructor.
October, 1993~Dissemination of Institute description and application procedures to Baltimore City teachers and students.
~Meet science and mathematics coordinators at School System.
~Meet and disseminate information to School Board.
November-December, 1993~Provide workshops/experiences to Morgan's undergraduate education majors.
~Invite Inservice teachers for workshops to motivate them about the importance of the program.
~Student mentor/research for Baltimore City Public Schools students.

Spring, 1994

January, 1994~Prepare brochures, applications, flyers for the Summer Institute.
February, 1994~Selection of participants.
March, 1994~Details of the curriculum for two week Summer Institute.
April, 1994-May, 1994~Finalize the procedures for the Institute.
~Continue working with high school students and education majors.

Summer, 1994

June 27 - July 8, 1994~Summer Institute (8:30 am - 4:30 pm)

Institute Follow-up Workshops/Activities

October 29, 1994~Workshop presentations by Institute participants at Annual Baltimore Mathematics and Science Education Conference.
~Sharing seminars.
~Student research for Science-Mathematics Fairs.

~Mail post questionnaires to Summer Institute participants.
November, 1994~Visitations to schools.
December, 1994~Evaluation of Summer Institute participants questionnaires.
~Evaluation of effectiveness of the Institute on student performance and attitudes.

Year II (1994-95)

Fall, 1994

October, 1994~Dissemination of Institute description and application procedures to Baltimore City teachers and students.
~Meet science and mathematics coordinators at School System.
~Meet and disseminate information to School Board.
November-December, 1994~Provide workshops/experiences to Morgan's undergraduate education majors.
~Invite Inservice teachers for workshops to motivate them about the importance of the program.
~Student mentor/research for Baltimore City Public Schools students.

Spring, 1995

January, 1995~Prepare brochures, applications, flyers for the Summer Institute.
February, 1995~Selection of participants.
March, 1995~Details of the curriculum for two week Summer Institute.
April, 1995-May, 1995~Finalize the procedures for the Institute.
~Continue working with high school students and education majors.
Summer, 1995

June 26 - July 7, 1995~Summer Institute (8:30 am - 4:30 pm)

Institute Follow-up Workshops/Activities

October 28, 1995~Workshop presentations by Institute participants at Annual Baltimore Mathematics and Science Education Conference.
~Sharing seminars.
~Student research for Science-Mathematics Fairs.
~Mail post questionnaires to Summer Institute participants.
November, 1995~Visitations to schools.

December, 1995~Evaluation of Summer Institute participants questionnaires.
~Evaluation of effectiveness of the Institute on student performance and attitudes.

Year III (1995-96)

Fall, 1995

October, 1995~Dissemination of Institute description and application procedures to Baltimore City teachers and students.
~Meet science and mathematics coordinators at School System.
~Meet and disseminate information to School Board.
November-December, 1995~Provide workshops/experiences to Morgan's undergraduate education majors.
~Invite Inservice teachers for workshops to motivate them about the importance of the program.

~Student mentor/research for Baltimore City Public Schools students.

Spring, 1996

January, 1996~Prepare brochures, applications, flyers for the Summer Institute.
February, 1996~Selection of participants.
March, 1996~Details of the curriculum for two week Summer Institute.
April, 1996-May, 1996~Finalize the procedures for the Institute.
~Continue working with high school students and education majors.
Summer, 1996

June 25 - July 6, 1996~Summer Institute (8:30 am - 4:30 pm)

Institute Follow-up Workshops/Activities

October 27, 1996~Workshop presentations by Institute participants at Annual Baltimore Mathematics and Science Education Conference.
~Sharing seminars.
~Student research for Science-Mathematics Fairs.
~Mail post questionnaires to Summer Institute participants.
November, 1996~Visitations to schools.
December, 1996~Evaluation of Summer Institute participants questionnaires.
~Evaluation of effectiveness of the Institute on student performance and attitudes.

Demographic Composition Of Students/Teachers To Be Affected

According to 1991 statistics, 88,788 of the 108,663 (82%) public school students serviced by Baltimore, the state's largest city, were underrepresented minorities. The median income of this population was well below the national average. Improved access to careers in energy, environment, and technology will require economics as it related to education, exposure to intensive science-related programs, and improving knowledge of career opportunities through literature, field trips, mentoring, well-informed teachers and internships. The inner city schools are composed of more than 50% African American teaches. The resource materials are scarce. Even though teachers are dedicated to their profession, exposure to technology is greatly needed. By the end of the third year of the proposed program, it is anticipated that at least 50% of the students of participant teachers will increase their awareness of energy and environmental issues and will be influenced by the implementation of the proposed activities.

Expected Outcomes

The following outcomes are expected as a result of this project:

- Preparation of more qualified students for energy and environmental careers.
- Promote public and private industry linkages with minority K-16 educational institutions.
- Develop and institute energy and environmental program sf or minority K-12 and precollege teachers
- Infusion of state-of-the-art technology to improve science instruction in schools.
- Student research and development skills to address the environmental restoration problems.
- Increase student empowerment to tak environmental action.
- Increase in student performance according to Maryland State Performance Program (MSPP).

The desired outcome of this program is to provide a focus in the preparation of inner city students for energy, environmmental restoration and waste management issues.

Measurement of Results

The following measures of results are planned in conjunction with the evaluation process which will be established for the entire Consortium Program Plan:

- Pre and post evaluations of summer institutes with regard to content, environmental awareness, use of technology and teacher effectiveness in the classroom.
- Progress in student learning measured by pre- and post-evaluations.
- Increase in positive student attitudes.
- Increase in student awareness of environmental and energy issues.
- Increase in the number of quality research projects.
- Increase in the number of participants in workshops, seminars and conferences.
- Quality increase in learning materials and publications.
- Increase in linkages with industry, educational institutions and other technology centers.

References

The Aerospace Education Foundation, *America's Next Crisis: The Shortfall in TechnicalManpower,* Arlington, VA 1989.

Underwood Craig, *Satellites in Education: A Guide for Teachers,* Scarborough Sixth Form College, 1985.

Weather Tips, Education Office of the American Meteorological Society, Winter 1990.

"Satellites Can Watch for Disasters Brewing," ISY News, U.S. International Space Year Association.

Computers Processing of Landsat Data: An Introduction, Satellites and Education Conference V Annual Meeting, West Chester University, March 18-20, 1992.

"Minorities in Science," Chemical and Engineering News, April 15, 1991.

Leadership and Management

Morgan State University (CEMSE) will assume the leadership to establish the EOL Laboratory, to conduct summer institutes, to establish a mentoring program for student research and to monitor follow-up activities with regard to outcomes and effectiveness of the program. CEMSE will work closely with The Johns Hopkins Space Grant Consortium drawing on its expertise in training, research and public service programs related to aerospace. The Consortium members include: The Johns Hopkins University, The Johns Hopkins University Applied Physics Laboratory, Morgan State University, and the Space Telescope Science Institute. The Baltimore Public School System will provide assistance in recruiting teachers and administering needs assessment evaluations, and in monitoring the implementation strategies.

The key elements in the organization and management of the EOL and its program objectives will be the advisory committee, director, laboratory coordinator and the science resources specialist. The advisory committee will include Morgan's Vice President for Academic Affairs, administrators from The Johns Hopkins Space Grant Consortium, supervisors from the Office of Science and Mathematics, and representatives form the energy and environmental industries.

Dr. Anasuya Swamy, Director, will be responsible for managing funds, maintaining the database

on program participants, and fulfilling stated objectives. The science resources specialist Ms. Corliss Riddick, will assist in supervising the daily activities. The laboratory coordinator will plan and conduct the Summer Institute, be responsible for the implementation process and school visitations. Morgan students will act as mentors for high school students, assisting them in the development of energy/environmental-related research projects. The Johns Hopkins Space Grant Consortium Space Scholars (undergraduate students studying at Morgan and The Johns Hopkins University) will also provide mentorship to high school students.

Budget

The project budget for the first three years of operation in given in Appendix 6.2.3 A which follows immediately after this page.

APPENDIX 6.2.3 A

BUDGETS removed. ds

APPENDIX 6.2.3 B

BIOGRAPHIES OF PROJECT LEADERSHIP

CURRICULUM VITAE

Anasuya N. Swamy

Home Address:

10813 Meadowlea Road
Baltimore, Maryland 21117

Telephone (410) 581-9161

Office Address:

Morgan State University

Baltimore, Maryland 21239

Telephone (301) 444-3134

EDUCATION:

1986	Ph.D.	- Chemistry Education, Departments of Chemistry/ Curriculum and Instruction, University of Maryland, College Park, Maryland.
1978	M.S.	- Science Education with Chemistry emphasis, Morgan State University, Baltimore Maryland.
1970	M. Phil.	- Organometallic Chemistry, Birbeck College, University of London England.
1962	M.S.	- Chemistry (emphasis in Industrial Chemistry) Mysore University, India.
1960	B.S.	- Chemistry (honors) Mysore University India.

PROFESSIONAL EXPERIENCE

1988 - Present	- Director of the Center for Excellence in Mathematics and Science Education.
Aug. 1987 - April 88	- Director, Pre-professional Health and Science Resources Program, Morgan State University, Baltimore, Maryland 21239.
1981 - 1987	- Assistant Professor, Department of Comprehensive Science and Science Education, Baltimore. Taught science to Baltimore City Teachers. Taught Introductory Physics, Chemistry, Earth and Planetary Science at the undergraduate level.
1980 - 1981	- Research Associate & Assistant Professor, Institute for Urban Research/Department of Comprehensive Science, and Science Education, Morgan State University.
1976-1980	- Assistant Professor, Department of Comprehensive Science and Science Education, Morgan State University.
1974-1976	- Science Teacher, Baltimore City Schools. Taught Science with an interdisciplinary approach in open school environment at Fallstaff Middle School.

PROFESSIONAL EXPERIENCE (Cont.)

1972-1973	- Assistant Professor, College of Notre Dame, Baltimore, Maryland. Taught Organic Chemistry.
1970-1972	- Math Teacher, Archbishop Curley High School, Baltimore, Maryland. Taught Modern Introductory Analysis to college bound students.
1968-1970	- Graduate Teaching Fellow, Department of Chemistry, Birbeck College London University. Taught undergraduate labs in general chemistry.
1962-1967	- Lecturer, Department of Chemistry, University College of Engineering, Bangalore, India. Taught chemistry to first and second year engineering students.

RESEARCH PUBLICATIONS:

Reactions of Triarylphosphines, Triphenylarsine, and Triphenylstibine with Thionyl Chloride and Sulphur Dichloride. Journal of the Chemical Society, 1972. pp.1326-1329.

Triphenyl Derivatives of Fifth Group Elements with Thionyl and Sulphuryl Chloride. Unpublished research, Birbeck College, London, 1971.

Ph behavior or para, meta and ortho derivatives of Benzene. Unpublished research, 1977, Morgan State University.

Trends in Science Education during Post-Sputnik Era in Countries of the Third World. Journal of Scientific and Industrial Research. August, 1986.

"An Analysis of Students' Conceptions of Pressure Related Gas Behavior". Paper presented at the 60th meeting of the National Association for Research in Science Teaching, Washington, D.C., April 23-25, 1987.

FELLOWSHIPS AND AWARDS:

Merit Scholarship in Chemistry, 1968.

Other Race Scholarship, 1983-1986, University of Maryland, College Park, Maryland.

Award of Excellence in Teaching, School of Education and Urban Studies, Morgan State University, Academic Years 1985 and 1986.

ELECTIVE/SUPPORTIVE POSITIONS:

Course Administrator from **1990 till present** for Space Scholars Internship Program (SSIP) sponsored by **Johns Hopkins Space Grant Consortium.** This graduate program is of interdisciplinary in nature providing secondary teachers the content and process to teach space science related concepts.

Course Administrator for Earth Observations Laboratory 1991-1992: The responsibilities include educating teachers to remote sensing and satelite technology Interdisciplinary approach to teach science concepts.

Member of Planning and Working Committee on Statewide Systemic Initiative- 1991-1992 participated in developing goals and objectives for this statewide systemic initiative in science education.

Member of Teacher's Standing Committee for the Inner-City Energy and Environmental Education Consortium (Weston Institute): The responsibilities include organizing institutional support and recruit teachers to participate, develop curriculum materials, and excite and empower students to enter and succeed in energy and environmental careers.

Consultant for Baltimore City STARS Program 1990 till present: The responsibilities include providing guidence to teach hands on science content and process skills.

Member of Task Force on Multicultural Education for Baltimore City Public Schools1990-till present: *researched for pertaining science information and provided guidance to infuse* information into regular curriculum.

School of Education and Urban Studies Recruitment Committee: Activities involve strengthening the linkage between area schools and the University, providing mechanisms for early cultivation of the interest of students in the University-Recruitment Cluster.

Annual Science-Mathematics Fair: The responsibilities include writing proposals, working with steering committee, making necessary arrangements for successful event.

Application Reviewer / Evaluator for Identifying and selecting science teachers the State and National for **Excellence in Teaching Awards 1992.**

Reviewer /Panelist for Teacher Enhancement proposals submitted to the National Science Foundation 1989.

Member of General Chemistry Examination Writing Committee during Summer 1989 - Summer 1992. General Chemistry Examinations were developed, pilot tested and adopted by American Chemical Society.

Panelist. Conference on "Computer Networking in Science, Mathematics, and Technology Education" sponsored by Triangle Coalition, National Science Foundation and The Johnson Foundation. July 26 - July 28, 1989.

NASA - Educational Affairs Division September 21 - 22 1989, represented to the Deans of Education Advisory Meeting to create, implement and evaluate a pilot that will provide student teachers with skills and knowledge for integrating aerospace concepts and information into their teaching of traditional subject matter.

Chairperson, Committee on Recruiting Science Education Majors: 1985-87. Duties involved recruiting science education majors, upgrading communications between students and national organizations, conducted seminars to improve and sustain relations between educators and students.

Member of the Professional Development Committee 1983-86 and contributed ide s to professional growth based on trends and issues in Science Education.

As a member of the Curriculum/Graduate Studies Committee, I was involved in evaluating curriculum both at the undergraduate and graduate levels. Worked on to fulfill a Recommended Approach to the Natural Science Requirements in the General Education Program at Morgan State University. **Presented Position Paper in Open Forum on December 4, 1986 to the Task Force on general education requirements.**

Routines Committee--As a member, established schedules for summer teaching assignments and other routines of the department 1983-1986

Maryland Network for Teaching Science (MINTS)--As a member I offered expertise on college level instruction and curriculum, to provide workshops and teacher training activities.

Cordinator for Science 105 (1985): have developed an evaluative instrument for student placement.

PROFESSIONAL ORGANIZATIONS:

Member of the American Chemical Society.

Member of the National Science Teachers Association.

Member of the Maryland Association for Higher Education.

Member of National Association for Research in Science Teaching.

Member of Maryland Association for Science Teachers.

Member of International Science Association.

Member of Indian Association for Science and Technology.

COMMUNITY ORGANIZATIONS/WORKSHOPS:

Advisory Council for Baltimore County Public Schools as a parent representative.

Parent-Teacher Organization member at Parkville Middle School and Parkville High School, Baltimore County.

Mentor, Morgan State University Science Fair, 1984-1992

Member of Executive Board, Indian cultural Association Baltimore, Maryland.

American Education Week Observance (Nov., 1986). Participated to highlight Morgan's teacher education program with the theme "School and Community: United for Excellence."

Standardized Testing Workshop (SREB/FIPSE). Participated on April 28, 1987 at Coppin State College, Baltimore, Maryland.

Morgan State University Learning Resources Center Faculty Workshop on Instructional Design, 1983.

In-service/Science Enrichment program for Elementary School Teachers--involved in teaching science (Teaching Methodology, Techniques, Processes, and Knowledge) to elementary school teachers under this program since January, 1986 till present.

National Science Teachers Association--35th National Convention 3/26-29/87. Workshops participated: Science Training for cooperating teachers--a cooperative effort between University and school district.

Reviewed modular materials 1987 (air module, clean water, streams and fish) Science through Science, Technology and Society--A National Program for Pre-college Education in STS supported by the National Science Foundation.

RICHARD CONN HENRY

[redacted] [redacted]

Citizenship: United States of America (nat. 1973)

Marital Status: Married, 1975

[redacted] [redacted]

Address: Dept. of Physics & Astronomy
The Johns Hopkins University
Baltimore, MD 21218
301-338-7350

12515 Meadowood Drive
Silver Spring, MD 20904
301-622-0725

Education:

1957 Ridley College, St. Catherines, Canada

1961 B.Sc., Physics and Astronomy
University College, University of Toronto

1962 M.A., Astronomy (S. van den Bergh)
University of Toronto

1967 Ph.D., Astronomy (B. Stromgren)
Princeton University, Princeton, New Jersey

Professional and Honor Societies:

American Physical Society*

Royal Astronomical Society of Canada*

Canadian Astronomical Society

American Astronomical Society

Fellow of the Royal Astronomical Society

International Astronomical Union

Astronomical Society of the Pacific*

Fellow of the American Association for the Advancement of Science*

American Geophysical Union*

National Space Club

*Life Member

RICHARD CONN HENRY

Experience:

1991 -	Member, Principal Professional Staff, Applied Physics Laboratory, The JohnsHopkins University
1989-	Director, The Johns Hopkins Space Grant Consortium
1979-	Collaborator, Los Alamos National Laboratory
1977-	Professor, Department of Physics & Astronomy, The Johns Hopkins University
1976-1978	Deputy Director, Astrophysics Division National Aeronautics and Space Administration, Washington, D. C.
1974-1977	Associate Professor The Johns Hopkins University
1969-1976	Research Physicist (intermittent) E. O. Hulburt Center for Space Research Washington, D. C.
1968-1974	Assistant Professor The Johns Hopkins University
1967-1969	Research Appointee, E. O. Hulburt Center for Space Research, Naval Research Laboratory, Washington, D.C.
1967	Research Associate, Institute for Advanced Study, Princeton, New Jersey

CURRICULUM VITAE

Corliss Y. Riddick

OFFICE ADDRESS:

Center for Excellence in Mathematics and Science Education
Morgan State University
Cold Spring Lane and Hillen Road
Baltimore, Maryland 21239
Telephone: (301) 444-3134

HOME ADDRESS:

2820A Gatehouse Drive
Baltimore, Maryland 21207
Telephone: (301) 448-3140

EDUCATION

1968	B. S.	Biology Norfolk State University Norfolk, Virginia
1974	M. ED.	Earth Science Virginia State University Petersburg, Virginia

ADDITIONAL EDUCATION/WORKSHOPS

University of Maryland National Science Foundation Chatauqua-type Short Course ("Laboratory Science for the Physically Handicapped"), 1978-79.

Norfolk State University Physical Science Workshop ("Teaching Analytical Reasoning and Problem Solving in the Physical Sciences"), 1981.

Morgan State University Learning Resources Center Faculty Workshop ("Instructional Design"), 1983.

Morgan State University Academic Computing Center VAX: M. S. A. Workshop, 1987.

EXPERIENCE

1989-Present	Curriculum Resources Specialist Center for Excellence in Mathematics and Science Education. Morgan State University Baltimore, Maryland.
1972-1989	Earth Science Instructor, Department of Comprehensive Science and Science Education Morgan State University, Baltimore, Maryland. Taught Meteorology, Physical Geology, Historical Geology, Introduction to Earth Science, Introduction to Physical Science and Basic Mathematics.

1975-1979	Part-time Instructor of Geography, Community College of Baltimore, Liberty Heights Campus, Baltimore, Maryland. Taught The World: An Ecosystem and of Earth and Man.
1969-1971	Science Teacher. George W. Carver High School, Newport News, Virginia. Taught Earth Science, Life Science and Physical Science.
1968-1969	Science Teacher. Russell Grove High School, Amelia, Virginia. Taught Chemistry, Physical Science and 8th Grade Mathematics.

ELECTIVE/SUPPORTIVE POSITIONS AND ACTIVITIES

Member of the Elementary Science Leadership Cadre for Baltimore City Public Schools (1990). This cadre is actively involved in the revision of the elementary science curriculum of Baltimore City Public Schools .

Facilitator for Baltimore City Public Schools Elementary Teacher Training Workshop (March, 1990). Conducted an earth science workshop entitled " Earth Science Learning Experiences."

Co-initiated Family Science in Baltimore City at Lexington Terrace Elementary School (February-March, 1990). Family Science is an innovative national outreach program designed to teach science skills by having children and parents learn and enjoy science together.

Workshop facilitator at the Baltimore City Public Schools Science and Health Teachers' Professional Development Day (September,1989). Conducted an earth science workshop entitled "Meteorology Fun with the Sun ."

Morgan State University/Baltimore City Public Schools Program for Retraining Teachers for Certification in Earth Science (1984-1986). Taught Physical Geology, Historical Geology, Meteorology and Environmental Science with laboratories specifically designed to be used in the secondary classroom.

Morgan State University/Baltimore City Public Schools Inservice/Summer Science Enrichment Program for Elementary School Teachers (1986-1987). Taught laboratory knowledge, techniques and processes in earth science. The graduate level course involved the use of laboratories designed for the elementary classroom.

Morgan State University Workshop for Elementary and Middle School Science and Mathematics Teachers (Summer, 1983). Conducted the earth science portion of the workshop and quest lectured in the seminar class speaking on "Science Activities for Handicapped Students" and "Making Science More Interesting - Getting Students Involved".

Co-originator of the Morgan State University Science Fair in 1981.

Panel Judge for Validation of National Teachers Examination (in general science/biology) for the Maryland State Department of Education, 1985.

Developed the Earth Science Emphasis Senior Level Examination for comprehensive Science an Science Education majors with an emphasis in earth science. Morgan State University.

As a member of the Basic Mathematics faculty, helped to construct an evaluative test of mathematical skills for the placement of incoming freshmen in appropriate math classes at Morgan State University.

Member of Department of Comprehensive Science and Science Education Curriculum/Graduate Studies Committee (evaluating new courses and programs at the undergraduate and graduate levels, reviewing departmental programs for visitations by accrediting institutions), Recruitment Committee (Recruiting Science Education Majors), Social/Courtesy Committee (organizing departmental activities such as, the annual Homecoming Brunch) and Awards Committee (evaluating candidates for outstanding departmental graduating senior).

Guest lecturer for the Summer Upward Bound Science Students. Lecturing on "The Earth's Materials". Morgan State University, 1978-1980.

GRANTS AND AWARDS

National Science Foundation Academic Year-Institute in Earth Science, Virginia State University, Petersburg, Virginia, 1971-1972.

Selected as an Outstanding Young Woman by the Board of Advisors of Outstanding Young Women of America, 1979.

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS

National Association of Geology Teachers.
National Science Teachers Association.
National Earth Science Teachers Association.

Biography

ROBERT W. POPHAM

HOME: 4810 North Reyburn Court
Mt. Airy, Maryland 21771
Tel: (301) 865-5151

PROFESSIONAL EXPERIENCE:

1989 (August - Present) Vice President, Educational Affairs, Information Processing Systems of California, Belmont, CA

1989 (January-July) Director, Business Development, General Sciences Corporation, Laurel, MD

1969-88 Director, Environmental Satellite Direct Readout Program, National Environmental Satellite, Data, and Information Service, NOAA, U.S. Department of Commerce, Washington, DC

1959-69 Physical Scientist, U.S. Weather Bureau, Suitland, MD

1976-78 Commanding Officer, Naval Reserve Weather Squadron 2186, Norfolk, Va.

ORGANIZATIONAL MEMBERSHIPS:

International Space Year - US & International Chairman, Earth Sciences Working Group, Sub-Committee on Education
American Meteorological Society - Member, Board of School and Popular Meteorological and Oceanographic Education
National Weather Association
National Geographic Society
National Science Teachers Association
Society of Satellite Professionals (INTERNATIONAL)
American Astronautical Society
Marine Technology Society
United States Naval Institute
Past President, National Sojourners (Military Masons)

AWARDS, HONORS, SPECIAL RECOGNITION:

1989 Recipient, Secretary of Commerce Institutional Award for Special Achievements in Satellite Technology.

1988 First national ROBERT W. POPHAM Plaque for Outstanding Contributions to Education and Satellite Technology, designed by West Chester University, presented to outstanding astronauts, Pennsylvania congressmen & representatives contributing to space science education.

1986 Invited after-dinner speaker, Third International AVHRR Data Users Conference, Jesus College, Oxford University, Oxford, England.

1975-1987 Keynote speaker for annual Weather Satellite Forum, Dayton Hamvention, Dayton, Ohio.

EDUCATION:

1959 BS, Meteorology, Pennsylvania State University, State College, Pennsylvania

RECORD OF EXPERIENCE:

1989 (August) - Present

Position: Vice President, Educational Affairs, Information Processing Systems of California

Description of work: Develop/market a program to synthesize high resolution weather satellite observations with college & university undergraduate, graduate, & visiting scientist training and education relating to U.S. Global Change Research, Earth Observation System, Mission to Planet Earth, and International Space Year objectives. Encourage adaption and use of similar but modified programs for pre-college students to enhance space science and technology literacy.

Supervisor and Address of Employer: Mr. Clarence Boice, President, Information Processing Systems of California, 77 Glenn Way, Belmont, CA 94002

January-July 1989

Position: Director, Business Development, General Sciences Corporation

Description of work: Chair meetings of the company's senior level managers forming the Business Development Group; organize and track new business developments in software applications, especially in areas relating to space data acquisition, and for office and medical data management.

Supervisor and Address of Employer: Dr. Jeffrey Chen, President, General Sciences Corporation, 6100 Chevy Chase Drive, Laurel, MD 20707

1969-1988

Position: Coordinator, Direct Readout Services, NOAA/NESDIS

Description of work: As Federal Government focal point, coordinated the activities of NOAA's satellite direct readout program and services, facilitating an exchange of information between operators of the system and a global user community of more than 5,000 stations and thousands of end users. This involved domestic and foreign government, commercial, and academic organizations and individuals in over 120 countries. It entailed identifying international vendors or source documents for procuring, building, and operating such systems, supplying orbital prediction data, sat-

ANNE ANIKIS

1961 to 1982

Fisher Body Division
Engineering Staff
General Motors Corporation
GM Technical Center
Warren, Michigan

ADMINISTRATIVE ASSISTANT

Provided administrative support in diverse assignments to Program Managers in the Comptroller's Staff, Engineering Staff, Engineering & Computer Support, and Product Investigations areas. Responsibilities included editing, data gathering and analysis, external and internal scheduling, composition of memos, letters and reports, dissemination of information, supervision, and liaison with divisional personnel and outside agencies.

PROFESSIONAL AFFILIATIONS

Maryland Initiative in Leadership in Education (MILE)
National Science Teachers Association (NSTA)
Mathematics, Engineering, Science Achievement (MESA) Program Advisory Board

AWARDS

Certificates of Appreciation, Baltimore City Public Schools, 1985, 1986, 1987, and 1988.

Certificate of Appreciation, Maryland State Department of Education, Division of Vocational Technical Education, June, 1987.

Certificate of Appreciation, National Association of Minority Engineering Program Administrators (NAMEPA), April, 1988.

Owen Brown Middle School, Howard County, June, 1988
Owen Brown Middle School, Howard County, June 1989

REFERENCES

Available upon request.

APPENDIX 6.2.3 C

LETTERS OF SUPPORT AND CERTIFICATIONS

MORGAN STATE UNIVERSITY

BALTIMORE, MARYLAND 21239

OFFICE OF THE PRESIDENT

March 31, 1993

Dr. William S. Gaither
Weston Institute
One Weston Way
West Chester, Pennsylvania 19380

Dear Dr. Gaither:

I am submitting herewith an application for a grant under the Inner-City Energy and Environmental Education Consortium. Morgan State University is in the midst of a renaissance which includes major initiatives in the area of mathematics and science education. In the past three years, we have developed many partnership initiatives with the Baltimore City Public Schools as well as state and private agencies to improve mathematics and science education. If this grant is funded, we will continue our efforts to help prepare our urban youth to address energy and environment related social issues.

Sincerely,

Earl S. Richardson
President

ESR/ANS/deh

Enclosure

THE JOHNS HOPKINS SPACE GRANT CONSORTIUM

Morgan State University | The Johns Hopkins University | Space Telescope Science Institute

March 30, 1993

Director
Dr. Richard C. Henry
The Johns Hopkins University
(410) 516-7350

Associate Director for Interdisciplinary Programs
Dr. Vincent L. Pisacane
The Johns Hopkins Applied Physics Laboratory
(410) 792-5100

Associate Director for Public Outreach
Dr. Laura Danly
Space Telescope Science Institute
(410) 338-4422

Associate Director for Undergraduate Programs
Dr. Jerome Atkins
Morgan State University
(410) 444-3621

Assistant Director
Anne Anikis
The Johns Hopkins University
(410) 516-7106

Dr. Anasuya Swamy
Director, Center for Excellence
in Mathematics & Science Education
Morgan State University
Coldspring Lane & Hillen Road
Baltimore, Maryland 21239

Dear Ana:

Two objectives of The Johns Hopkins Space Grant Consortium are to promote a strong science, math, and technology educational base from elementary through university levels and to recruit and train professionals, especially women and underrepresented minorities, for careers in aerospace science, technology, and allied fields.

The success of the two-year old Space Science Internship Program for Secondary Mathematics and Science teachers can be attributed to your role as the Course Administrator for the Program. Your ability to provide the necessary guidance and support for the participants has resulted in many attitudinal and instructional changes made by the teacher participants. The strong course content, the development of lesson plans which infuse state and national required mathematics and science goals and objectives and the encouragement provided to the teachers to reach for their potential has strengthened the credibility of the program.

Environmental education should be a learning process that continues through all stages of life. We fully support the vision of the proposal to establish Summer/Inservice Institutes for Inner City School Teachers in Energy/Environmental Technology. This Institute would serve as a model for a statewide program which utilizes environmental education as the hook to stimulate student interest in mathematics and science.

On behalf of the Consortium, we trust that you will support this proposal with your continued enthusiasm for promoting excellence in mathematics and science through teacher education and enrichment programs.

Yours sincerely,

Anne Anikis

Anne Anikis
Assistant Director

205 Bloomberg Center for Physics and Astronomy 34th and Charles Streets Baltimore, Maryland 21218
Phone (410) 516-7351 Fax (410) 516-4109

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All Other Copies Are Obsolete

U.S. Department of Energy

Assurance of Compliance
Nondiscrimination in Federally Assisted Programs

_____ (Hereinafter called the "Applicant")
HEREBY AGREES to comply with Title VI of the Civil Rights Act of 1964 (Pub. L. 88-352), Section 16 of the Federal Energy Administration Act of 1974 (Pub. L. 93-275), Section 401 of the Energy Reorganization Act of 1974 (Pub. L. 93-438), Title IX of the Education Amendments of 1972, as amended, (Pub. L. 92-318, Pub. L. 93-568, and Pub. L. 94-482), Section 504 of the Rehabilitation Act of 1973 (Pub. L. 93-112), the Age Discrimination Act of 1975 (Pub. L. 94-135), Title VIII of the Civil Rights Act of 1968 (Pub. L. 90-284), the Department of Energy Organization Act of 1977 (Pub. L. 95-91), and the Energy Conservation and Production Act of 1976, as amended, (Pub. L. 94-385). In accordance with the above laws and regulations issued pursuant thereto, the Applicant agrees to assure that no person in the United States shall, on the ground of race, color, national origin, sex, age, or handicap, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity in which the Applicant receives Federal assistance from the Department of Energy.

Applicability and Period of Obligation

In the case of any service, financial aid, covered employment, equipment, property, or structure provided, leased, or improved with Federal assistance extended to the Applicant by the Department of Energy, this assurance obligates the Applicant for the period during which Federal assistance is extended. In the case of any transfer of such service, financial aid, equipment, property, or structure, this assurance obligates the transferee for the period during which Federal assistance is extended. If any personal property is so provided, this assurance obligates the Applicant for the period during which it retains ownership or possession of the property. In all other cases, this assurance obligates the Applicant for the period during which the Federal assistance is extended to the Applicant by the Department of Energy.

Employment Practices

Where a primary objective of the Federal assistance is to provide employment or where the Applicant's employment practices affect the delivery of services in programs or activities resulting from Federal assistance extended by the Department, the Applicant agrees not to discriminate on the ground of race, color, national origin, sex, age, or handicap, in its employment practices. Such employment practices may include, but are not limited to, recruitment, advertising, hiring, layoff or termination, promotion, demotion, transfer, rates of pay, training and participation in upward mobility programs; or other forms of compensation and use of facilities.

Subrecipient Assurance

The Applicant shall require any individual, organization, or other entity with whom it subcontracts, subgrants, or subleases for the purpose of providing any service, financial aid, equipment, property, or structure to comply with laws cited above. To this end, the subrecipient shall be required to sign a written assurance form, however, the obligation of both recipient and subrecipient to ensure compliance is not relieved by the collection or submission of written assurance forms.

Data Collection and Access to Records

The Applicant agrees to compile and maintain information pertaining to programs or activities developed as a result of the Applicant's receipt of Federal assistance from the Department of Energy. Such information shall include, but is not limited to the following: (1) the manner in which services are or will be provided and related data necessary for determining whether any persons are or will be denied such services on the basis of prohibited discrimination; (2) the population eligible to be served by race, color, national origin, sex, age and handicap; (3) data regarding covered employment including use or planned use of bilingual public contact employees serving beneficiaries of the program where necessary to permit effective participation by beneficiaries unable to speak or understand English; (4) the location of existing or proposed facilities connected with the program and related information adequate for determining whether the location has or will have the effect of unnecessarily denying access to any person on the basis of prohibited discrimination; (5) the present or proposed membership by race, color, national origin, sex, age and handicap, in any planning or advisory body which is an integral part of the program; and (6) any additional written data determined by the Department of Energy to be relevant to the obligation to assure compliance by recipients with laws cited in the first paragraph of this assurance.

The Applicant agrees to submit requested data to the Department of Energy regarding programs and activities developed by the Applicant from the use of Federal assistance funds extended by the Department of Energy. Facilities of the Applicant (including the physical plants, buildings, or other structures) and all records, books, accounts, and other sources of information pertinent to the Applicant's compliance with the civil rights laws shall be made available to inspection during normal business hours on request of an officer or employee of the Department of Energy specifically authorized to make such inspections. Instructions in this regard will be provided by the Director, Office of Equal Opportunity, U.S. Department of Energy.

This assurance is given in consideration of and for the purpose of obtaining any and all Federal grants, loans, contracts (excluding procurement contracts), property, discounts or other Federal assistance extended after the date hereto, to the Applicants by the Department of Energy, including installment payments on account after such data of application for Federal assistance which are approved before such date. The Applicant recognizes and agrees that such Federal assistance will be extended in reliance upon the representations and agreements made in this assurance and the United States shall have the right to seek judicial enforcement of this assurance. This assurance is binding on the Applicant, the successors, transferees, and assignees, as well as the person whose signature appears below and who is authorized to sign this assurance on behalf of the Applicant.

Applicant Certification

The Applicant further certifies that it has or, within 90 days of the date of the grant shall: (a) Designate(d) an individual to serve as Affirmative Action Officer: (b) Establish(ed) complaint procedures for employees and other beneficiaries of the program: (c) Prominently display(ed) posters and other written information publicizing the policy of nondiscrimination: (d) Provide(d) program information in languages other than English (including braille) in a manner to make it accessible to sight impaired persons: (e) Establish(ed) procedures which enable it to notify DOE on a timely basis of any complaints filed against it and of the disposition of those complaints; (f) Require(d) any subrecipient (subgrantee/subcontractor) under this award to comply with the above cited laws and regulations; (g) Require the subrecipient to sign an assurance form, the applicant certifies that it shall monitor subrecipient compliance as appropriate; (h) Establish(ed) a system capable of collecting racial/ethnic/handicap/sex data in accordance with existing Federal requirements cited in the first paragraph of this assurance.

Development of Current Affirmative Action Plan

6/1/93
(Date)

Affirmative Action Officer
(Name, Signature and Date)

(410 319-3195
Telephone Number

Most recent onsite Federal Assistance Civil Rights review/audit:

U.S. Department of Energy — 2/28/91
Agency Conducting Review — Date

Dr. Anasuya Swamy — 6/23/93
Applicant's Name — Date

Address: Morgan State University
Center Excellence-Key Hall 162
Baltimore, Maryland 21239

(410) 319-3134
Telephone Number

Authorized Official President, or Chief Executive Officer

Name and Signature

6/23/93
Date

CERTIFICATIONS REGARDING LOBBYING; DEBARMENT, SUSPENSION AND OTHER RESPONSIBILITY MATTERS; AND DRUG-FREE WORKPLACE REQUIREMENTS

Applicants should refer to the regulations cited below to determine the certification to which they are required to attest. Applicants should also review the instructions for certification included in the regulations before completing this form. Signature of this form provides for compliance with certification requirements under 34 CFR Part 82, "New Restrictions on Lobbying," and 34 CFR Part 85, "Government-wide Debarment and Suspension (Nonprocurement) and Government-wide Requirements for Drug-Free Workplace (Grants)." The certifications shall be treated as a material representation of fact upon which reliance will be placed when the Department of Energy determines to award the covered transaction, grant, or cooperative agreement.

1. LOBBYING

The undersigned certifies, to the best of his or her knowledge and belief, that:

(1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

(3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

2. DEBARMENT, SUSPENSION, AND OTHER RESPONSIBILITY MATTERS

(1) The prospective primary participant certifies to the best of its knowledge and belief, that it and its principals:

(a) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;

(b) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

(c) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (1)(b) of this certification; and

(d) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

(2) Where the prospective primary participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

3. DRUG-FREE WORKPLACE

This certification is required by the Drug-Free Workplace Act of 1988 (Pub. L. 100-690, Title V, Subtitle D) and is implemented through additions to the Debarment and Suspension regulations, published in the Federal Register on January 31, 1989, and May 25, 1990.

ALTERNATE I
(GRANTEES OTHER THAN INDIVIDUALS)

(1) The grantee certifies that it will or will continue to provide a drug-free workplace by:

(a) Publishing a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the grantee's workplace and specifying the actions that will be taken against employees for violation of such prohibition;

(b) Establishing an ongoing drug-free awareness program to inform employees about:

(1) The dangers of drug abuse in the workplace;

(2) The grantee's policy of maintaining a drug-free workplace;

(3) Any available drug counseling, rehabilitation, and employee assistance programs; and

(4) The penalties that may be imposed upon employees for drug abuse violations occurring in the workplace;

(c) Making it a requirement that each employee to be engaged in the performance of the grant be given a copy of the statement required by paragraph (a);

(d) Notifying the employee in the statement required by paragraph (a) that, as a condition of employment under the grant, the employee will:

(1) Abide by the terms of the statement; and

(2) Notify the employer in writing of his or her conviction for a violation of a criminal drug statute occurring in the workplace not later than five calendar days after such conviction;

(e) Notifying the agency, in writing, within ten calendar days after receiving notice under subparagraph (d)(2) from an employee or otherwise receiving actual notice of such conviction. Employers of convicted employees must provide notice, including position title, to every grant officer or other designee on whose grant activity the convicted employee was working, unless the Federal agency has designated a central point for the receipt of such notices. Notice shall include the identification number(s) of each affected grant;

(f) Taking one of the following actions, within 30 calendar days of receiving notice under subparagraph (d)(2), with respect to any employee who is so convicted:

(1) Taking appropriate personnel action against such an employee, up to and including termination, consistent with the requirements of the Rehabilitation Act of 1973, as amended; or

(2) Requiring such employee to participate satisfactorily in a drug abuse assistance or rehabilitation program approved for such purposes by a Federal, State, or local health, law enforcement, or other appropriate agency;

(g) Making a good faith effort to continue to maintain a drug-free workplace through implementation of paragraphs (a), (b), (c), (d), (e), and (f).

(2) The grantee may insert in the space provided below the site(s) for the performance of work done in connection with the specific grant:

Place of Performance:
(Street address, city, county, state, zip code)

_____

_____

_____

☐ Check if there are workplaces on file that are not identified here.

ALTERNATE II (GRANTEES WHO ARE INDIVIDUALS)

(1) The grantee certifies that, as a condition of the grant, he or she will not engage in the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance in conducting any activity with the grant.

(2) If convicted of a criminal drug offense resulting from a violation occurring during the conduct of any grant activity, he or she will report the conviction, in writing, within 10 calendar days of the conviction, to every grant officer or other designee, unless the Federal agency designates a central point for the receipt of such notices. When notice is made to such a central point, it shall include the identification number(s) of each affected grant.

As the duly authorized representative of the applicant, I hereby certify that the applicant will comply with the above certifications.

NAME OF APPLICANT	PR/AWARD NUMBER AND/OR PROJECT NAME
Original on File	
PRINTED NAME AND TITLE OF AUTHORIZED REPRESENTATIVE	
SIGNATURE	DATE

6.2.4 EXTENDING ENVIRONMENTAL SCIENCE FROM THE IVORY TOWER TO THE INNER-CITY

Proposed by
Delaware State College

Summary

Environmental science as an academic discipline has finally come of age, and Delaware State College has fostered its development for over a quarter century. The challenge now is to develop a curriculum which answers the needs of inner-city minority youth and to attract and retain them in this rigorous science program. Delaware State College has the expertise and experience -- the faculty and facilities -- to nurture the students and the program. As an 1890 Land Grant institution, Delaware State College is committed to providing opportunities for all citizens in the areas of science. We seek to support and expand programs consistent with our mission and heritage: "An opportunity for students to investigate the content and method of the sciences and mathematics as well as the humanities and social sciences is an important part of the liberal learning activity." We are committed to placing high priority on the application of knowledge to the understanding and solution of human problems. And as an historically black institution, we are particularly sensitive to the needs of the minorities living in the inner-cities.

Background and Importance

Before these times of *modern education*, the idea of placing special emphasis on *environmental sciences* would have seemed to many societies absurd. Some societies whose people lived close to the land had a respect for and knowledge of their immediate environment which far surpasses that of even our most experienced outdoor people today. Other societies were bent on industrial development, and natural resources were seen to be limitless and the exploitation of nature a national right.

From stream origins in the highest mountains to coastal waters at sea level, the gradual accumulations of "reasonable" inputs of pollutants all along our watersheds intensify or magnify effects, destroy homeostatic balances and overload natural systems. Air pollution increases with the growth of cities, industry, and automobile travel. Energy demands are reflected in the steady increase in greenhouse gases. Increased demands on natural resources have generated the need for scientific solutions to waste management. Indeed, a large part of our gross national product must be invested negatively to correct environmental disasters. In this respect Stuart Chase has pointed out that GNP is a measure of "illth" as well as wealth. Moreover, our "environmental illth" has had a disproportionate effect on minorities and poor people prompting the USEPA to issue a report, "Environmental Equity: Reducing Risks For All Communities." Blood levels of lead, cancer incidence, air and water pollution, hazardous waste sites, and a host of other conditions are high among minorities and poor people who make up the majority of the inner-city populations of the Consortium's demographic corridor from Philadelphia to Baltimore to Washington, D.C.

In Silent Spring, Rachel Carson's quiet voice was heard with a clarity that has increased in the last three decades. Indeed, Miss Carson's influence has been so great that many attribute our present readiness to confront these "questions without easy answers" to the serious debate which followed publication of Silent Spring in 1962.

How do we resolve the conflict between the human need to develop resources and the equally human need to preserve nature? The answer seems to lie in knowing more about the biosphere and our role in it. If we are to prevent worldwide environmental chaos and provide a good life for all, we must come to view the biosphere as "the common heritage of mankind." A primary goal for environmental science education will be to show that a good quality of life can be achieved without a profligate use of the world's resources. A primary goal of the Consortium will be to move toward "environmental equity" through increased understanding of environmental science. For America this

will be a tough job.

And yet, consider the environmental understanding which leads to the following insight expressed by a Nigerian chieftain: "I conceive that land belongs to a vast family of which many are dead, few are living, and countless numbers are unborn."

Environmental Science at Delaware State College Delaware State College developed an interest in environmental studies a quarter-century ago by establishing curricula in the Department of Agricultural and Natural Resources and environmentally related courses in the Department of Chemistry. In recognition of the strong life sciences foundation, two professors were jointly appointed in both Biology and Natural Resources, and the traditional administrative walls separating the Biology and Agriculture and Natural Resources Departments were effectively eliminated. The following interrelated courses are listed in both departments: Ecology (for Life Sciences majors), Mammalogy, Ornithology, Limnology, Ichthyology, Biometrics, seminars in Scientific Writing and Applying for Jobs and Graduate School, and Basic Ecology (for non-majors General Education requirements). The Biology Department has drawn on the botany/plant strengths of the Department Agriculture and Natural Resources to teach Systematic Botany and Plant Physiology and to develop a course in General Botany. A course in Urban Forestry has recently been added to complement course in Dendrology and Introduction to Forestry. At the graduate level, courses in Population Biology and Evolution of Vascular Plants are taught by a botanist who is a Research Professor of Agriculture. Recently, the Department of Biology and the Faculty Senate approved the following Natural Resources courses for joint listing as graduate courses in Biology: Environmental Toxicology, Wetlands Biology, Marine Biology, Advanced Wildlife Biology, Ecological Land-Use Planning, People and the Planet, Interpreting the Natural Environment, Population-Environment Curriculum K-12, and Environmental Education Workshop.

During this quarter century, three faculty members of the Department of Chemistry have fostered environmental studies in General and Elementary Analytical Chemistry, Elementary Quantitative Analysis, Instrumental Analysis, and Biochemistry courses. At the same time, they established undergraduate courses in Basic Principles of Water Chemistry, Advanced Techniques in Water Chemistry I and II, Forensic Chemistry, Introductory Chemical Engineering, and seminars covering environmental laws and regulations. The Chemistry curriculum is approved by the Committee on Professional Training of the American Chemical Society. The Agricultural and Natural Resources Department is seeking accreditation from the National Environmental Health Association.

In 1987, Master of Science degree programs in Chemistry and Applied Chemistry were established. Courses related to environmental studies include Environmental Chemistry, Chemical Toxicology, Environmental Laws seminars, Theory and Application of Spectroscopy, and Theory and Application of Chromatography. Many of the department's graduates are employed in industrial and government environmental laboratories. Some chemistry graduates have supervisory industrial and administrative positions in industry.

Some research programs related to environmental problems conducted by members of the Department of Chemistry and Department of Agriculture and Natural Resources at Delaware State College are:

- Environmental Health Study of Lead in Teeth.
- Some Effects of Agricultural Drainage on Natural Systems.
- An Improved Method using Flameless Atomic Absorption, for Analyzing Low Levels of Lead in Blood.
- Developing Strategies for Managing Pests and Stress in Urban Forests.
- Identification and Determination of Trace Amounts of Organic and Inorganic Contaminants in the Delaware River and Bay, Lakes, and Ponds in Delaware.
- Automated Micro-Kjeldahl Nitrogen Determination.
- Assessing Potential for Biological Control of Gypsy Moth and Other Invertebrate Pests

in Urban Forests.
- The Reduction of Nitrate Levels in Sewage Water, Through the Use of Aluminum Metal Powder in Basic Solution.
- Urban Forestry Shade Tree Surveys in Nine Delaware Communities.
- Attenuation of Noise by Plants and Associated Barriers and Land Forms.
- The Status of Rare and Endangered Plants on the Del-Mar-Va Peninsula.

Chesapeake Bay Field Station The Chesapeake Bay is one of the world's great inland bodies of water--it has a tidal shoreline of over 6,000 miles and its salinity varies from totally freshwater to ocean water. The 1000-acre Rodney Scout Reservation lies at the Head of the Bay directly opposite the mouth of the Susquehannah River in the mid-region of the Elk Neck Peninsula. The Reservation is, therefore, in the inner coastal plain bordering the Piedmont of the larger Del-Mar-Va Peninsula. It is midway along the Philadelphia to Washington, D.C. corridor of the Consortium.

The Reservation contains a diverse assemblage of ecological habitats including three wetlands: a magnificent freshwater strand marsh, an old forested swamp, and a large swamp recently flooded by beaver. In addition, there are fields, roadside and power line ecotones, and the 285-foot Bull Mountain which contains 150 acres of Wilderness Area set aside three decades ago for nature studies. Long-term studies include geographical affinities of the flora (since 1959), forest productivity of eight slopes of Bull Mountain (since 1963), vegetation management along power lines and roadside (since 1958), and effects of shrubs in attenuating environmental noise (since 1974).

The long history of these research investigations makes them singularly appropriate for studies by undergraduate students. Students live in the midst of the areas studied. Facilities to bring field studies into laboratory settings are provided. In addition, the recreational facilities of the Rodney Scout Reservation available to college students include swimming, boating, canoeing, sailing, surfboarding, archery, and riflery. Many students who have little contact with "wild" areas learn to overcome their fears and uncertainties of nature and join in proclaiming the area "the most beautiful spot in the world."

Work Plan

1. To develop an Environmental Science curriculum with options ranging from 8-10 semesters of quality educational experiences designed to meet the needs of inner-city youth.

2. To retain students majoring in the environmental sciences once they have been recruited to Delaware State College via various existing enrichment programs and the mentorship potential existing in the Consortium membership.

3. To *enrich* inner-city youth with environmental science activities and developmental skills during the summer.

To be effective, our focus must be broad and complementary, seeking to build on existing strengths and to strengthen existing weaknesses. The Environmental Sciences curriculum has been selected not only for the need to promote access for minorities into the sciences but also to recognize our science students' needs for special and continual nurturing once they have matriculated at Delaware State College.

The great disparity between the number of science students recruited and number of science students retained and graduated is common to many institutions of higher education, particularly those which are state-supported. Delaware State College is concerned about the loss of science students, and we want to do something about it.

Students enter college with weak backgrounds in basic science, and they often do not recognize this weakness in the context of success in college, let alone success in life. Students try to finish

programs on an unrealistic four year (8-semesters) schedule and end up with ad hoc programs of five or more years. These unplanned programs fail to recognize the benefits of proper course sequencing, and even "successful students" in this category often spend their college years scrambling from semester to semester.

We need to continue to address this problem of retention at basic levels immediately after the students are admitted! We need to plan a successful course sequence that accommodates the needs of individual students, with particular attention to minorities. We need to take advantage of the summer school "window" of opportunity and the opportunity to distribute difficult courses over a five-year curriculum sequence.

Environmental Sciences Major:

- Survey science requirements for employment and graduate school.
- Prepare draft curriculum to meet needs of inner-city youth.
- Have draft reviewed internally and externally by a cross-section of Consortium experts representing science educators and science employers.
- Incorporate appropriate results of review and submit curriculum for approval.

Establish a communications network with existing campus science enrichment programs:

- Gather information on campus science enrichment programs at DSC and Consortium member campuses, including progress reports on this enrichment program, and desktop publish an informative newsletter twice a year throughout this 3-year grant period. Distribute the newsletter to all faculty and staff involved, key administrators and cooperators, the granting institution, and Consortium members.
- Convene an annual progress meeting at DSC with additional representatives from other institutions, cooperators, the granting institution, and Consortium members.

Organize curricula for alternative sequencing which:

- Allow students to spread out major courses -- reducing heavy science academic loads during regular semesters, thereby providing a course framework which builds steadily on a succession of successful academic performances.
- Allow students to finish course work in a five-year period consisting of ten semesters and four summer sessions, as necessary.
- Bring students into major environmental science courses earlier in their academic careers and strengthen their interests and commitment to environmental sciences.

Develop field studies-to-laboratory experiences providing:

- Complementary theoretical topics taught in field and laboratory settings, eliminating artificial separation of "lecture" from "laboratory."
- Role-playing -- students undertake "real world" problems which parallel later professional experiences in the environmental sciences.
- Increased hands-on experience, emphasizing direct contact with professors.
- Further develop opportunities for inner-city minorities with cooperators for coop and intern programs to provide linkages to waste management, energy conservation, and environmental restoration.
- Enrich environmental science experiences for inner-city minorities by bringing students to Delaware State College Campus for week-long summer program

Project Timetable	1=Sep 2=Dec 3=Mar 4=Jun											
	Year 1				Year 2				Year 3			
Tasks	1	2	3	4	1	2	3	4	1	2	3	4
1. Augment communications network with: high school teachers and counselors, school districts and archdioceses, DSC Learning Skills Center, DSC special programs for pre college students and other Consortium members.	•	•	•	•	•	•	•	•	•	•	•	•
2. Organize cooperative intramural committee to plan "environmental sciences major" curricula -- Consult Consortium Members	•											
• Survey science requirements for employment and graduate school	•	•										
• Review draft: I=Internal E=External			I	E								
• Submit curriculum for approval					•							
3. Build communications skills exercises into formal course work and informal environmental activities				•	•	•	•	•				
4. Develop programs to increase the use of the Chesapeake Bay field station by extending existing science activities and developing new ones:			•	•	•	•	•	•	•	•	•	•
• Offer additional science courses during summers								•				•
• Adapt academic year courses to take advantage of field station facilities and environment during the weekends					•	•	•		•	•	•	
5. Conduct Pre-professional summer enrichment programs for 60 high school students/year.				•				•				•

Demographic Composition of Students/Teachers to be Affected

The target audience is Black, Hispanic, Asian, Native American, and other inner-city minority youth. The vehicle to reach the youth is the K-16 academic community of the consortium.

In order to assure the project will address the full cross-section of inner-city minority youth, help and counsel will be sought from inner-city organizations in the Washington, D.C., Baltimore, and Philadelphia Corridor. Discussions and workshop topics will seek assurance that environmental education needs and concerns of inner-city youth are met.

Contacts will include:

- Public, Archdiocese, and college-level school officials representing a cross section of K-4, 5-8, 9-12, and 13-16 grade levels.
- Church organizations which are active with inner-city youth.
- Youth organizations, service organizations, and neighborhood associations concerned with the welfare of inner-city youth, environmental restoration, and environmental equity.
- Park officials, garden clubs, other interested public and private natural resource oriented organizations.
- Public and private waste management groups and organizations, including Keep America Beautiful, and TerraVisions' Adopt-A-Spot Program.
- Energy organizations, businesses, and services.
- Department of Energy national headquarters (including their Adopt-A-High School Program) and the Pittsburgh Energy Technology Center.
- Inner city business people, museums, and professionals.
- USDA Forest Service -- Urban Forestry, Woodsy Owl, energy programs.
- USDA Cooperative Extension Program -- Inner-City 4-H/Youth development (In-school youth enrichment programs).
- Existing inner-city environmental improvement/education programs such as: Philadelphia -- Environmental Technical Academy at Abraham Lincoln High School and the Eco-Science Institute at South Philadelphia High School.

Expected Outcomes

Delaware State College will increase the flow of underrepresented ethnic minorities and women into the sciences by developing an environmental science curriculum which builds on the experiences of the Consortium and carries both students and faculty into the 21st Century. The curriculum will incorporate requirements for graduate schools and for employment in state, federal, and private sectors which will emphasize basic sciences and communications skills.

Specific outcomes:

- Recruitment of minority youth to environmental sciences from Consortium Philadelphia, Baltimore, Washington Corridor
- Retention of minority students, once they have been recruited via various enrichment programs, will be a key focus of the program designed to stimulate interest and commitment through monitored and mentored curricular and extra-curricular activities.
- The great disparity between number of students recruited and number graduated will be reduced. Science opportunities will be increased by sharing faculty expertise, facilities, and minority students among Consortium members.
- Cooperative "feeder programs" of graduating DSC students to graduate programs emphasizing environmental sciences will be established.
- Mentor 60 inner-city minority youth in pre-professional enrichment programs each year.

Measurement of Results

We will determine the educational value of the activities by addressing three educational domains which strengthen accomplishment of the scientific method: (1) *cognitive* -- knowledge, comprehension, application, analysis, synthesis, and evaluation; (2) *affective* -- appreciation, interests, motivations, commitments, career choices; and (3) *psychomotor* -- use of field survey devices, microscopes, environmental monitoring instruments, photographic devices, and computers.

Accomplishment of objectives:

- Track retention rates of students through program.
- Periodically survey faculty on student improvement in sciences and communication skills.
- Survey advisors to determine credit-hour-overload reduction.
- Interview faculty and students at end of the second year to determine attitudes toward the program, its strengths, and how the program can be improved.
- Publish environmental curriculum materials.

Measurement of project impact:

- Recruit a prominent science educator and an industry environmental scientist to evaluate program at the end of the second year.
- Ask mentors of students in research experiences to evaluate on-the-job work experiences and report needs for improvement of basic science and communication skills.
- Report the number of participating students, faculty, cooperators, and mentors.

References

Carson, R. 1962. Silent Spring. Houghton Mifflin Co.,Boston, MA.

USEPA. 1991. Environmental Equity: Reducing Risks for All Communities. Washington, D.C.

Daniels, W.L., J.R. McKenna, and J.C. Parker. 1992. Development of a B.S, Degree Program in Environmental Science. J. Nat. Res. Life Sci. Educ. 21:(1)70-74

Leadership and Management

Dr. Ronald C. Machen, chair of the Department of Chemistry, will direct this project and will draw on his considerable experience in both private industry and academia. His active participation in Consortium programs makes him especially qualified for this administrative role. Senior leadership will be augmented by Dr. Norman H. Dill, Professor of Biology and Natural Resources, and Dr. Donald R. Wilkinson, Professor of Chemistry. These professors jointly constitute the basic foundation on which Delaware State College has built its environmental teaching, research, and public service over the past 25 years.

Budget

Budget details are given in Appendix 6.2.4 A.

APPENDIX 6.2.4 A

BUDGETS

APPENDIX 6.2.4 B

BIOGRAPHIES OF PROJECT LEADERSHIP

Faculty Vitae: Delaware State College

Ronald C. Machen, *Professor, Chemistry, Department Chairperson, Director of Master of Science Graduate Program,* Delaware State College (1989...)

Education: ***B.S.***, University of Illinois, 1952. *Chemistry.* ***M.S.*** Ohio State University, 1963. *Analytical Chemistry.* ***Ph.D.*** Ohio State University, 1967. *Minor-Physical Chemistry.*

Work Experience: *Professor of Chemistry, Department Chairperson, Director of Master of Science Graduate Program*, Delaware State College (1989 - present). *Professor of Chemistry,* Delaware State College (1972-1978). *Senior Teaching Assistant,* Department of Chemistry, Ohio State University (1957-1966). *Principal Staff Engineer,* Ford Motor Company, Polymer Science Department and Analytical Sciences Department, Research Staff, Dearborn, Michigan (1978-1990). *Senior research Chemist,* Sun Oil Company, research and Development, Marcus Hook, Pennsylvania (1966).

Honors: *Sigma Xi, Phi Lambda Upsilon & Philadelphia Section Service Award, American Chemical Society.* Participant in the *National Aeronautical Science Administration/* Goddard Space Center 1977 Faculty Summer Research Program; University of California Lawrence, Livermore Laboratory's Chemistry and Materials Science 1976 Summer Institute; Research Program at DuPont Company, Jackson Laboratory; National Urban League 1975 Summer Fellow at Mobile Oil Research and Development Company.

Norman H. Dill, *Professor, Biology and Natural Resources,* Del-State College (1964...)

Education: ***M.S., Ph.D.,*** Rutgers University, The State University of New Jersey, 1962 and 1964. *Botany: Plant Ecology.* ***B.A.,*** University of Delaware, 1960. *Biology.*

Work Experience: *Teaching Assistant,* at Rutgers, New Brunswick (1962-64). *Consultant USAID/NSF* Science Education Improvement Program for India (summers) (1968-69).

Honors: *B.A.* with Distinction in *Biology* and Honors in course. *Phi Kappa Phi, Phi Beta Kappa, Beta Beta Beta, Alpha Chi, Sigma Xi* (Elected to associate membership as an undergraduate). *Woodrow Wilson Fellow* in *Botany* 1960-61. *Fellow:* Society of Biosciences (India). *Excellence in Teaching Award* 1989, Delaware State College.

Selected Research Experience: Some Effects of Agricultural Drainage on Natural Systems. Attenuation of Noise by Plants and Associated Barriers and Land Forms. Assessing Potential for Biological Control of Gypsy Moth and Other Invertebrate Pests in Urban Forests. Agricultural Ecosystems: Water Quality, Land Use, and Impact/Control Mitigation. Design and Establishment of Tree Barriers for Control of Wind on the Mid-Atlantic Coastal Plain. Forest productivity in Relation to Slope Exposure. Geographical Affinities of a Local Flora. Rightofway Vegetation Management. Microtemperature Distribution Along Rightofways. The Status of Rare and Endangered Plants on the Del-Mar-Va Peninsula. A Resurvey of the Vascular Flora of the Del-Mar-Va Peninsula. History of Del-Mar-Va Botany and Horticulture. Evaluation of Shrubs for Possible Use in Habitat Management for Suburban Songbirds. Sleep Movements of the Prayer Plant, *Maranta leuconeura.* Periodic Cicada Studies on the Del-Mar-Va Peninsula. Urban Forestry Surveys in Delaware.

Donald R. Wilkinson, *Professor, Chemistry,* Delaware State College (1975...).

Education: ***Ph.D,*** University of Delaware, 1971. *Analytical Chemistry.* ***M.S.,*** University of Oklahoma, 1965. *Inorganic Chemistry,* ***M.Ed.,*** Temple University, 1962. *General Education.* ***B.S.,*** Millersville State College, 1957. *Science Education.*

Honors: *Excellence in Research Award 1988,* Delaware State College.

Work Experience: *President, Toxtrap, Inc.,* Dover, Delaware (1982-present). *Associate Professor of Chemistry,* Delaware State College (1972-75). *Assistant Professor of Chemistry,* Delaware State College (1971-72). *Graduate Teaching Assistant* Department of Chemistry, University of Delaware (1967-69). *DuPont Teaching Fellowship,* Department of Chemistry, Delaware State College (1969-71). *Assistant Professor of Chemistry,* Shippensburg State College. *Instructor of Chemistry,* Manheim Central High School (1957-65).

Selected Research Experience: Improved Techniques in Drug Analysis. Environmental Health Study of Lead in Teeth. Preservation of the Alcohol Content of Breath Samples in DUI Cases. Isolation and Identification of Metabolites in Urine Samples from Cystic Fibrosis Patients. Looped Simulator on the Intoxilyzer Model 5000. Improved Method for Analyzing Low Levels of Lead in Blood Using Flameless Atomic Absorption Techniques. The Effect of Temperature and Hematocrit Levels on BAC Readings. The Reduction of Nitrate Levels in Sewage Water, Through the Use of Aluminum Metal Powder in Basic Solution. More Sensitive Methods for Analyzing Marijuana in Saliva. Toluene as a Possible Interferent in Breath Testing. Determination of Alcohol Content in Blood Using Thermal Desorption and Infrared Analyzer. A Toxicological Study of the N-Oxide Metabolites of DUP996.

William A. Palmer: *Director, Chemistry Laboratories,* Delaware State College (1989 ...)

Education: ***M.S.,*** Delaware State College, Dover, 1989. *Applied Chemistry.* ***B.S.,*** Delaware State College, Dover, Delaware, 1973. *Chemistry.*

Work Experience: *Departmental Assistant in Chemistry,* Delaware State College (1983-1989). *Adjunct Assistant Professor,* (1989 to present). *Instructor of Chemistry,* Dover High School, Dover, Delaware (1982-1983). *Assist Supervisor of Organic Analysis Area,* Richardson Associates, Dover, Delaware (1975-1976).

Charles J. Newlon, *Adjunct Professor, Forestry,* Delaware State College (1992...)

Education: **B.S.,** Colorado State University, 1956. *Forest Utilization and Marketing with a minor in Forest Management.*

Work Experience: *USDA Forest Service: Liaison Forester* between all state Foresters and national Forests in 20 Northeastern States (1988-1992). *National Director of Public Involvement,* Environmental Education and Woodsy Owl Programs (1984-1988). *Head of Information Services,* Northern Region--16 National Forests (1971-1974). *Research Information Officer,* for 10 Research Headquarters in Oregon, Washington and Alaska (1967-1971). *Colorado State-wide Marketing and Utilization Forester,* Colorado State Forest Service (1964-1967). *District Forester* (1956-1964).

Honors: *Civil Rights Awards of Excellence* 1991-1992, USDA Forest Service.

APPENDIX 6.2.4 C

LETTERS OF SUPPORT AND CERTIFICATIONS

DELAWARE STATE COLLEGE
DOVER, DELAWARE 19901

OFFICE OF THE PRESIDENT

302/739-4901 & 4902
FAX # 302/739-6292

June 10, 1993

Dr. William S. Gaither, President
Weston Institute
1 Weston Way
West Chester, Pennsylvania 19380

Dear Dr. Gaither:

Enclosed is the final draft of the proposal "Extending Environmental Science from the Ivory Tower to the Inner City," to be included in the Inner City Energy and Environmental Education Consortium program plan to the the Department of Energy as a product of grant number DEFG02-92ER75778. Delaware State College requests $533,143 for a three year period to establish a B.S. degree program in Environmental Science and to work with students and teachers of the school districts and archioceses of the Consortium's demographic corridor from Philadelphia to Delaware to Baltimore to Washington, D. C.

Delaware State College faculty and staff is committed to the development of projects and programs of the college and consortium that will achieve the mission and goals pertaining to the training of youth in careers in energy-related scientific and technical areas and in environmental restoration and waste management.

If you need additional information, please contact Ronald C. Machen, Chairman of the Department of Chemistry.

Sincerely,

William B. DeLauder
President

cm

Enclosure

Delaware State College is an equal opportunity employer and does not discriminate because of race, creed, national or ethnic origin, sex or disability.

DISTRICT OF COLUMBIA
PUBLIC SCHOOLS

Office of the Superintendent

415 12th Street, N.W.
Washington, D.C. 20004

(202) 724-4222
FAX (202) 727-1516

June 9, 1993

Dr. William S. Gaither, President
Weston Institute
1 Weston Way
West Chester, Pennsylvania 19380

Dear Dr. Gaither:

We are supporting the proposal, Extending Environmental Science From The Ivory Tower To The Inner City, submitted by Delaware State College offering a quality curriculum for District of Columbia Schools students to pursue at the undergraduate level and providing hands-on experience-based environmental science activities on the college campus for selected high school youth.

Like Delaware State College, we are committed to placing a high priority on the application of knowledge to the solutions of human problems. We join them as a Consortium partner in an effort to bring a challenging and rigorous curriculum to our schools. We hope its mentorship programs will attract, retain, and motivate our inner-city young people to enter careers and professions in the environmental fields.

We welcome and accept the challenge to collaborate with Consortium members to bring the best in energy and environmental education with business and government outreach projects to benefit the educational community from Philadelphia to Baltimore to Washington, D. C.

Joan W. Brown
Joan W. Brown
Executive Assistant
to the Superintendent

JWB:vat

DOE F 1600.5 (11-90)

OMB Control No
1910-0400

U.S. DEPARTMENT OF ENERGY

ASSURANCE OF COMPLIANCE

Nondiscrimination of Federally Assisted Programs

Delaware State College (Hereinafter called the "Applicant") HEREBY AGREES to comply with Title VI of the Civil Rights Act of 1964 (Pub. L. 88-352), Section 16 of the Federal Energy Administration Act of 1974 (Pub. L. 93-275), Section 401 of the Energy Reorganization Act of 1974 (Pub. L. 93-438), Title IX of the Education Amendments of 1972, as amended (Pub. L. 92-318, Pub. L. 93-568, and Pub. L. 94-482), Section 504 of the Rehabilitation Act of 1973 (Pub. L. 93-112), the Age Discrimination Act of 1975 (Pub. L. 94-135), Title VIII of the Civil Rights Act of 1968 (Pub. L. 90-284), the Department of Energy Organization Act of 1977 (Pub. L. 95-91), and the Energy Conservation and Production Act of 1976, as amended (Pub. L. 94-385). In accordance with the above laws and regulations issued pursuant thereto, the Applicant agrees to assure that no person in the United States shall, on the ground of race, color, national origin, sex, age, or handicap, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity in which the Applicant receives Federal assistance from the Department of Energy.

Applicability and Period of Obligation

In the case of any service, financial aid, covered employment, equipment, property, or structure provided, leased, or improved with Federal assistance extended to the Applicant by the Department of Energy, this assurance obligates the Applicant for the period during which Federal assistance is extended. In the case of any transfer of such service, financial aid, equipment, property, or structure, this assurance obligates the transferee for the period during which Federal assistance is extended. If any personal property is so provided, this assurance obligates the Applicant for the period during which it retains ownership or possession of the property. In all other cases, this assurance obligates the Applicant for the period during which the Federal assistance is extended to the Applicant by the Department of Energy.

Employment Practices

Where a primary objective of the Federal assistance is to provide employment or where the Applicant's employment practices affect the delivery of services in programs or activities resulting from Federal assistance extended by the Department, the Applicant agrees not to discriminate on the ground of race, color, national origin, sex, age, or handicap, in its employment practices. Such employment practices may include, but are not limited to, recruitment, recruitment advertising, hiring, layoff or termination, promotion, demotion, transfer, rates of pay, training and participation in upward mobility programs; or other forms of compensation and use of facilities.

Subrecipient Assurance

The Applicant shall require any individual, organization, or other entity with whom it subcontracts, subgrants, or subleases for the purpose of providing any service, financial aid, equipment, property, or structure to comply with laws cited above. To this end, the subrecipient shall be required to sign a written assurance form, however, the obligation or both recipient and subrecipient to ensure compliance is not relieved by the collection or submission of written assurance forms.

Data Collection and Access to Records

The Applicant agrees to compile and maintain information pertaining to programs or activities developed as a result of the Applicant's receipt of Federal assistance from the Department of Energy. Such information shall include, but is not limited to, the following: (1) the manner in which services are or will be provided and related data necessary for determining whether any persons are or will be denied such services on the basis of prohibited discrimination; (2) the population eligible to be served by race, color, national origin, sex, age, and handicap; (3) data regarding covered employment including use or planned use of bilingual public contact employees serving beneficiaries of the program where necessary to permit effective participation by beneficiaries unable to speak or understand English; (4) the location of existing or proposed facilities connected with the program and related information adequate for determining whether the location has or will have the effect of unnecessarily denying access to any person on the basis of prohibited discrimination; (5) the present or proposed membership by race, color,

national origin, sex, age, and handicap, in any planning or advisory body which is an integral part of the program; and (6 additional written data determined by the Department of Energy to be relevant to its obligation to assure compliance recipients with laws cited in the first paragraph of this assurance

The Applicant agrees to submit requested data to the Department of Energy regarding programs and activities develope the Applicant from the use of Federal assistance funds extended by the Department of Energy. Facilities of the Appl (including the physical plants, buildings, or other structures) and all records, books, accounts, and other sources of inform pertinent to the Applicant's compliance with the civil rights laws shall be made available for inspection during normal busi hours on request of an officer or employee of the Department of Energy specifically authorized to make such inspect Instructions in this regard will be provided by the Director, Office of Equal Opportunity, U.S. Department of Energy.

This assurance is given in consideration of and of the purpose of obtaining any and all Federal grants, loans, cont (excluding procurement contracts), property, discounts, or other Federal assistance extended after the date hereto, to Applicants by the Department of Energy, including installment payments on account after such data of application for Fe assistance which are approved before such date. The Applicant recognizes and agrees that such Federal assistance w extended in reliance upon the representations and agreements made in this assurance and the United States shall have right to seek judicial enforcement of this assurance. This assurance in binding on the Applicant, its successors, transfer and assignees, as well as the person whose signature appears below and who is authorized to sign this assurance on be of the Applicant.

June 11, 1993
(Date)

Delaware State College
(Name of Applicant)

1200 N. DuPont Hwy

Dover, Delaware 19901
(Address)

Will B. DeLauder

Dr. William B. DeLauder, President
(Authorized Official)

(302) 739-4901
(Applicant's Telephone Number)

CERTIFICATIONS REGARDING LOBBYING; DEBARMENT, SUSPENSION AND OTHER RESPONSIBILITY MATTERS; AND DRUG-FREE WORKPLACE REQUIREMENTS

Applicants should refer to the regulations cited below to determine the certification to which they are required to attest. Applicants should also review the instructions for certification included in the regulations before completing this form. Signature of this form provides for compliance with certification requirements under 34 CFR Part 82, "New Restrictions on Lobbying," and 34 CFR Part 85, "Government-wide Debarment and Suspension (Nonprocurement) and Government-wide Requirements for Drug-Free Workplace (Grants)." The certifications shall be treated as a material representation of fact upon which reliance will be placed when the Department of Energy determines to award the covered transaction, grant, or cooperative agreement.

1. LOBBYING

The undersigned certifies, to the best of his or her knowledge and belief, that:

(1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

(3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

2. DEBARMENT, SUSPENSION, AND OTHER RESPONSIBILITY MATTERS

(1) The prospective primary participant certifies to the best of its knowledge and belief, that it and its principals:

(a) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;

(b) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

(c) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (l)(b) of this certification, and

(d) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

(2) Where the prospective primary participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

3. DRUG-FREE WORKPLACE

This certification is required by the Drug-Free Workplace Act of 1988 (Pub. L. 100-690, Title V, Subtitle D) and is implemented through additions to the Debarment and Suspension regulations, published in the Federal Register on January 31, 1989, and May 25, 1990.

ALTERNATE I
(GRANTEES OTHER THAN INDIVIDUALS)

(1) The grantee certifies that it will or will continue to provide a drug-free workplace by:

(a) Publishing a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the grantee's workplace and specifying the actions that will be taken against employees for violation of such prohibition;

(b) Establishing an ongoing drug-free awareness program to inform employees about:

(1) The dangers of drug abuse in the workplace;

(2) The grantee's policy of maintaining a drug-free workplace;

(3) Any available drug counseling, rehabilitation, and employee assistance programs; and

(4) The penalties that may be imposed upon employees for drug abuse violations occurring in the workplace;

(c) Making it a requirement that each employee to be engaged in the performance of the grant be given a copy of the statement required by paragraph (a);

(d) Notifying the employee in the statement required by paragraph (a) that, as a condition of employment under the grant, the employee will:

(1) Abide by the terms of the statement; and

(2) Notify the employer in writing of his or her conviction for a violation of a criminal drug statute occurring in the workplace not later than five calendar days after such conviction.

(e) Notifying the agency, in writing, within ten calendar days after receiving notice under subparagraph (d)(2) from an employee or otherwise receiving actual notice of such conviction. Employers of convicted employees must provide notice, including position title, to every grant officer or other designee on whose grant activity the convicted employee was working, unless the Federal agency has designated a central point for the receipt of such notices. Notice shall include the identification number(s) of each affected grant.

(f) Taking one of the following actions, within 30 calendar days of receiving notice under subparagraph (d)(2), with respect to any employee who is so convicted:

(1) Taking appropriate personnel action against such an employee, up to and including termination, consistent with the requirements of the Rehabilitation Act of 1973, as amended; or

(2) Requiring such employee to participate satisfactorily in a drug abuse assistance or rehabilitation program approved for such purposes by a Federal, State, or local health, law enforcement, or other appropriate agency;

(g) Making a good faith effort to continue to maintain a drug-free workplace through implementation of paragraphs (a), (b), (c), (d), (e), and (f).

(2) The grantee may insert in the space provided below the site(s) for the performance of work done in connection with the specific grant:

Place of Performance
(Street address, city, county, state, zip code)

_____

_____

_____

☐ Check if there are workplaces on file that are not identified here.

ALTERNATE II (GRANTEES WHO ARE INDIVIDUALS

(1) The grantee certifies that, as a condition of the grant, he or she will not engage in the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance in conducting any activity with the grant.

(2) If convicted of a criminal drug offense resulting from a violation occurring during the conduct of any grant activity, he or she will report the conviction, in writing, within 10 calendar days of the conviction, to every grant officer or other designee, unless the Federal agency designates a central point for the receipt of such notices. When notice is made to such a central point, it shall include the identification number(s) of each affected grant.

As the duly authorized representative of the applicant, I hereby certify that the applicant will comply with the above certifications.

NAME OF APPLICANT	PR/AWARD NUMBER AND/OR PROJECT NAME
Delaware State College	Extending Environmental Science From The Ivory Tower To The Inner-City
PRINTED NAME AND TITLE OF AUTHORIZED REPRESENTATIVE	
Dr. William B. DeLauder, President	
SIGNATURE	DATE
William B. DeLauder	June 11, 1993

6.2.5 SUMMER WORKSHOPS IN ENVIRONMENTAL AND ENERGY SCIENCES FOR PRIMARY AND SECONDARY TEACHERS, 1994-1996

Proposed by
La Salle University

Summary

La Salle University proposes summer workshops for dissemination of information and hands-on laboratory and field exercises concerning environmental and energy related issues for primary and secondary teachers, in the summers of 1994-1996. These workshops will be conducted by faculty in the departments of geology/physics, chemistry, and biology at La Salle University, and one participating primary or secondary teacher from the public or parochial schools in the Philadelphia district. The workshop is designed to help teachers develop lessons for their students, and consequently, for students to learn about the problems facing our Nation, and possible solutions. Each year a different group of teachers from primary or secondary inner-city schools (no mixing of levels) will be selected to participate. The program goals will be achieved through lectures, laboratory experiences, guest speakers, and field trips. The workshops will provide the participants with materials for lessons and laboratory exercises for their classes, and thus, should improve the quality of instruction at the primary and secondary levels.

Each year a new group of teachers will be selected to participate in the event. It is anticipated that approximately 80 science teachers will be helped by these experiences. The number of elementary and high school students indirectly benefitted by these workshops is incalculable. Teachers will be given stipends of $300 per week for attending. The possibility of offering graduate credit to the teachers is being explored.

Background and Importance:

La Salle University is an urban, coeducational, Catholic liberal arts institution located in northwestern Philadelphia. Founded by the Christian Brothers in 1863, the University is accredited by the Middle States Association of Colleges and Secondary Schools. The day division undergraduate enrollment is about 3000 and in a study of 200 top liberal arts institutions, La Salle University is ranked in the top 21% as originating school for doctorates in the arts and humanities and in the upper 30% overall. Our mission is to educate sons and daughters of lower to moderate income households.

Over the course of the past ten years the science departments at La Salle University have run a number of workshops covering the topics of environmental and energy science, and forensic science. These events were designed for high school students and teachers. Through contact with teachers, it has become increasingly obvious that additional science exposure is desperately needed in this community. Many teachers have not continued significant formal study in the sciences, and most have never had training in the energy or environmental sciences. This problem has become increasingly critical in primary and secondary schools, considering the importance of science education in today's curricula.

In recent years few issues have dominated the media and the minds of students as the crisis developing in the environment and energy fields. To help clarify these concerns, in October, 1990 the geology and physics department of La Salle University began a series of workshops designed

to enlighten high school teachers and their students in these areas. Approximately 120 students and teachers attended the first workshop and listened to a series of lectures given by environmental and energy scientists (mostly geologists) working primarily on water pollution, waste management problems, and energy generation concerns. Although well received, this workshop model did not address many of the concerns teachers and students had. Participants on evaluation forms indicated that they wanted more information on air pollution, recycling, deforestation, nuclear energy generation, oil production, ozone depletion, etc.

To address these needs, the October, 1991 workshop included additional scientists. Representatives from Atlantic Richfield Corporation, Environmental Resources Management, Philadelphia Electric Company, Sun Oil Company, Philadelphia Water Department, Bucks County Conservation Department, Delmarva Power and Light, and Montgomery Board of Health participated and covered a wider range of topics.

The much improved model of the workshop was held this past October 3, 1992. Once again scientists from Environmental Resources Management,Inc., Philadelphia Electric Company, and Delmarva Power and Light participated, but the workshop was modified to include laboratory activities (no small task considering that approximately 220 teachers and students attended). The workshop model involved moving the twelve subgroups from lecture to lecture, and from lab to lab. Each period was timed at approximately one hour and provided time for participants to solve the lab problem, or hear the discussions presented. This format has generated much interest from a number of colleagues in different institutions who are quite interested in the workshop's impact within the community.

The workshop has become an important resource for those that attended and it fills a gap perceived by many in education. The workshop puts teachers and students in contact with those scientists that are working on, and solving, many of the problems facing our Nation today. Teachers are given brochures, business cards, articles about energy and environmental issues and laboratory materials for their classes, and are encouraged to contact the experts that participated in the workshop. In previous years, as a follow-up, representatives from industry have been invited into the classroom for additional information. The workshop has served as an information source, bringing energy and environmental issues closer to the people.

From our experiences offering workshops for teachers and students we have learned that many teachers are either poorly trained in the areas of energy and environmental science, or have little confidence in their ability to teach these areas. Over the years teachers who have attended the workshops have communicated their problems and frustrations to us. Teachers have welcomed the chance to attend the October workshops, with more than 25 in attendance in each of the previous three years. Many teachers have found the event so helpful that they have returned every year. The high attendance of students who have attended this past workshop, with nearly 40% of those coming from the traditionally under-represented minority group from inner city schools, indicates that students feel they need and/or want additional experiences in these areas as well. La Salle University has always had a commitment to the community, and we recognize that minorities are especially under-represented in the sciences. We have a solid record in helping this segment of the population, and the University hopes to continue this mission through experiences such as this workshop.

The proposed summer workshops will have an influence on students through contact with the teachers who attend. There is no better way to help students than by improving the quality of the teachers in the schools. Additionally, this proposal is in concert with the Department of Energy's new initiative to provide teachers and students with opportunities to improve their scientific and technical skills and knowledge.

In the 1990/1991 annual report of the Historically Black Colleges and Universities/Minority

Institutions Dr. Kofi B. Bota, Director, states a need to acknowledge that the United States is moving into the next century with serious problems related to energy and the environment. Yet, he goes on to say, the production of scientists and engineers is lagging behind because of an educational system that has failed to keep pace.

Traditionally under-represented groups such as Hispanics, and African Americans will make up more than one-third of the population by the early 21st century, yet they are but a minor portion of the enrollment in our colleges and universities; and those that do attend rarely study sciences. This proposal will attempt to help, albeit in a small way, to rectify this problem by targeting teachers and their students from inner-city schools, both public and parochial, with high minority enrollments.

Work Plan

The objective of the workshop is to provide information on energy and environmental issues as diverse as air pollution, water pollution, energy generation, alternative energy sources, ozone depletion, natural resources, recycling, radiation, and radon. The proposed workshop will be held during the last week in June and the first week in July, 1994-1996. The sessions will start at 8:30 AM and continue to 4:30 PM, Monday through Friday. Participants will be instructed in lecture and laboratory, as well as field trips (field trips will probably run longer than eight hours). Discussion of the activities is found below. A follow-up session will be conducted on a Saturday (the first Saturday in November) in the Fall semester after the workshop. At this time, teachers will be required to distribute lesson plans developed from the workshop, and will communicate their ideas with colleagues. A teacher from primary or secondary school will be part of the instructional staff each summer. This component should help the workshop keep focused and address those areas of greatest need in the schools. The workshop will emphasize the wealth and diversity of materials available in the urban setting including the diversity of biology and geology in the area. Most of the participants will be teachers from inner city schools. Even in these restricted city locations, parks, streams, outcrops, and energy-related and environmental problems are available for study. Field trips will include visits to museums, waste treatment facilities, power plants (nuclear and conventional), as well as study of outcrops, streams, etc. Emphasis throughout this project will be placed on the urban environment, its development, and the role teachers should play in guiding students to an understanding of the problems in this unique energy-ecosystem.

Geology Activities will include lab study in soil science, map construction and reading, microscope study, weathering, earth materials, recycling, waste management, energy production including geothermal energy and other alternate sources, fossil fuels, and water transport. In addition, field trips will be included to provide practical experiences related to these topics. Trips will each be one day in length, leaving La Salle at 8:00 AM and returning by 5:00 PM. We will include trips to inner-city locations for study of streams, outcrops, soil stability, energy generation, waste management, and pollution. These sites will expose teachers to readily available locations for trips with their own students in their science classes. An emphasis will be placed on the inner-city environment as a resource, not liability, to learning!

Trips will also be conducted to see waste treatment facilities, oil and gas refineries, and coal and nuclear generating facilities. Trips will include the geologic setting of coal deposits, so plentiful in the Pennsylvanian coal measures. The environmental impact of mining and coal burning will be addressed, including runoff, acid rain, and strip mining. Risk assessment and economic impact will be a major consideration of the workshop.

Biology Some of our study in biology will be at our Penllyn Biostation, located on the

Wissahickon Creek, in Penllyn, Pennsylvania. These studies will include investigations in the physical, chemical, and biological aspects of the stream. Focus would be on macroscopic identifications, and emphasis would be on activities which can be accomplished with a minimum of equipment. In addition to these, a trip to the Upper Gwynedd Wastewater Treatment Facility will be taken to see how it operates, assess its impact on the stream, etc. Additional trips will focus on the urban environment and its biological impact. Extensive study will focus on the ecology of local streams and the impact of urbanization. Study will emphasize terrestrial plants, insects, and other common organisms stressing identification, ecologic value and interactions, relationship to habitat, function in the ecosystem, etc.

Study will also focus on data collection such as temperature, humidity, light intensity, etc. for the purpose of relating the relationship of these factors to the organisms present. These studies will be done on our campus and in city parks to show the wealth and diversity of materials available in the urban setting (e.g. the diversity of planted or naturally occurring woody plants, insects and other animal life, etc).

Alternative bio-energy systems will be studied including, methane production from trash, biomass energy, and health issues.

Chemistry Chemistry experiences will focus on environmental pollutants in the atmosphere, soil, and water. In addition, topics such as production and depletion of ozone, ultraviolet absorption by ozone, energy and fossil fuels, alternative energy sources, and toxic materials in the environment will be discussed. Emphasis will be on alternative energy sources such as solar and wind energy, fusion, and solar energy. Lab experiences will be designed to supplement discussions. Typical labs will include: analysis of oxygen, nitrogen, phosphate, and metals in soils and water, photochemistry and chemical energy, heat of combustion, and photovoltaic cells and electricity.

Demographic Composition of Students/Teachers Affected

Minority students make up a large percentage of the student population in the City of Philadelphia. Most of the participants in the target audience for the proposed workshops will be teachers of these students. We hope that many of the teachers will be minority members as well. La Salle University has always had a keen interest in working with minorities and under-represented students in the sciences, as previous workshops will attest (please see attached letter in Appendix 6.2.5 C from Mr. Donald Snyder at South Philadelphia High School). In previous outreach workshops, more than 40% of those attending were from minority groups.

Expected Outcomes:

Through the workshops teachers will become better prepared in the sciences of geology, chemistry, and biology. Field trips and laboratory experiences will provide them with studies that would be suitable for their students, including lecture materials and lab exercises. Teachers that are better prepared in the sciences are likely to present better experiences to their students and be better teachers. Previous workshops have evolved into lessons and labs that teachers have used to revise and supplement their existing programs.

A major theme of the workshop will be risk reduction and pollution prevention. Participants will be taught about energy efficiency in the home, in industry, and in transportation, recycling of household items and waste, as well as global issues such as ozone depletion, global warming, destruction of tropical rain forests, etc. In addition, participants will learn about the potential of energy and environmental science as a possible career path for their students and the preparation

required in science, mathematics, and writing communications skills for such an endeavor. Hopefully, this outcome will be communicated to their primary and secondary students.

Measurement of Results

The effectiveness of the summer workshops will be assessed by giving the participants the opportunity to evaluate the experiences for immediate feedback. In previous workshops one of the methods used to evaluate the success of the project involved giving the participants the opportunity to comment on their perceptions. As in the past, La Salle University faculty will try to maintain contact with the teachers who have attended and provide them with any information or ideas that they may need.

Teachers will be asked to provide us with additional data on the program's effectiveness by monitoring the number of students that have graduated and continue on to college, noting student interest in energy or environmentally related study, and keeping data on the number of students that have found employment in energy and/or environmental science fields. Admittedly, such study will extend beyond the period of the grant, however, we will try to keep in contact with the teachers and the school districts who track the students.

References

Appendix 6.2.5 C contains a copy of an article from the Philadelphia Daily News on the environmental workshop (October, 1992). Workshops have been held during the previous three years. Also included is a letter (Appendix 6.2.5 C) from Mr. Donald Snyder, a teacher who attended all three workshops since 1990. In addition, supporting letters from high schools expressing interest in the program are included.

Additional References:

Felder, Richard, "Reaching the Second Tier-Learning and Teaching Styles in College Science Education," Journal of College Science Teaching, Vol. 22, 1993.

Hrabowski, F., and Willie Pearson, Jr., "Recruiting and Retaining Talented African-American Males in College, Science and Engineering," Journal of College Science Teaching, Vol. 22, 1993.

Hoff, Darrel, and Patrick Leiker, "A National Teacher Network to Improve Earth Science Teaching," Journal of Geological Education, 1992, v. 40, p. 104.

Martin, Laurie, "Improving Teacher Attitudes Toward Science and Increasing their Knowledge Of Earth Science," Journal of Geological Education, 1992, v. 40, p. 216-221.

Nuhfer, Edward, "Anyone Can Teach Earth Science!," Journal of Geological Education, 1990, Vol. 38, p. 4.

Leadership and Management

Appendix 6.2.5 B contains the curriculum vitae of the project leader and lists his background in working with teachers and students at the secondary level. Dr. Bart has devoted most of his professional life to education; not only at the college level, but in outreach programs for secondary school students as well.

This summer Dr. Bart has been invited to work with a group of faculty at Temple University on a grant from the Eisenhower Foundation. The grant was written with the help of PATHS/PRISM of Philadelphia to train teachers in environmental and energy science. Dr. Bart will train 20 secondary

teachers in topics such as those mentioned in the above sections. This project should provide Dr. Bart with additional experiences in working with teachers, and will help to prepare him to continue this training during the grant period requested.

Additional faculty:

Dr. Norbert Belzer, biology
Dr. Alice Hoersch, geology
Dr. George Shalhoub, chemistry
A teacher from primary or secondary school

Budget

Each annual budget shown in Appendix 6.2.5 A is based on a 40 hour week; equivalent to a full semester course/week. Included is also a follow-up day on a Saturday during the Fall semester, and preparation time for instructors.

APPENDIX 6.2.5 A

BUDGETS removed

APPENDIX 6.2.5 B

BIOGRAPHIES OF PROJECT LEADERSHIP

APPENDIX 6.2.5 B

Biography of Project Leader

Henry A. Bart, Ph.D.
Department of Geology and Physics
La Salle University
Philadelphia, PA 19141
(215) 951-1268

EDUCATION:

Institution	Dates	Degree
University of Nebraska Lincoln, Nebraska	9/71 - 8/74	Ph.D. Geology
State University of New York, Buffalo	9/66 - 6/68	M. A. Geology
State University of New York College, New Paltz, New York	9/63 - 6/66	B. S. Earth Science

AREAS OF INTEREST:

Doctoral Degree- Major emphasis was the sedimentology of fluvial sandstones of the lower Miocene in western Nebraska and eastern Wyoming. My research included a detailed petrographic study and computerized statistical analysis of these rocks to distinguish source, fluid transport and environmental conditions of the lower Miocene.

Thesis Advisor: Kenneth O. Stanley

Masters Degree- My major area of interest was sedimentology and glacial geology. My thesis, "A sedimentological study of the Niagara Falls Moraine", included the mapping, textural and petrographic study of a glacial deposit. The objective of the study was to locate the provenance of the deposit and to learn the pattern of ice movement in the Ontario basin during the Port Huron Stade of the Wisconsin Glaciation.

Thesis Advisor: Parker E. Calkin

B.S. Undergraduate Degree- My major area of interest was Earth Science/secondary education including geology, astronomy, meteorology and oceanography. I am certified to teach earth science (7-12 grade) in New York State.

EXPERIENCE:

Dates/Institution	Location	Responsibility
8/75 - present, La Salle University,	Philadelphia,Pa.	Chairman, Assoc Prof, Geology
6/74 - 6/75, University of Nebraska,	Lincoln, NE.	Assist. Prof. Geology
9/73 - 7/74, University of Nebraska,	Omaha, NE.	Instructor of Geology
9/71 - 6/73, University of Nebraska,	Lincoln, NE	Teaching and research assist.
6/70 - 6/71, Nassau Co. Comm. College,	Garden City, New York	Part-time Inst. Geology
9/68 - 6/71, Smithtown Central High School	St. James, New York	Teacher, Earth Sciences
9/66 - 6/68, State University of New York	Buffalo, New York	Teaching and research assist.

UNIVERSITY SERVICE:

I organized and led discussions concerning an environmental workshop for the sciences (1986-87). My plan was to invite students from high schools for a scientific study of the Wissahickon Valley. From this evolved the environmental video tape that was shown to the students, and the plan for the workshop was developed. This event was held for three years before the format was changed to "Forensic Science."

I have conducted environmental science workshops for the past three years, as well as participated in science workshops (involving biology, chemistry, geology) for the past five years. In one year alone I participated in more than seven workshops, most of which were held on Saturday.

I have given my time for high school and elementary school science fairs (judging), as well as visiting schools to give talks and recruit students.

PROFESSIONAL MEMBERSHIPS:

Geological Society of America
Society of Economic Paleontologists and Mineralogists
Clay Mineral Society

GRANTS:

1966 - 1968: Sigma Xi grant for support of research for thesis study.

1971 - 1972: Sigma Xi grant for support of sedimentology study of Miocene rocks of western Nebraska and eastern Wyoming for Ph.D. dissertation.

1972 - 1974: Sigma Xi grant, Geological Society of America grant, for continuing research of dissertation.

1975 - 1976: Sigma Xi grant to support study of the petrography of the Sand Hills of western Nebraska.

1980: National Science Foundation grant for purchase of closed-circuit television equipment and Nikon research microscope.

1991 - 94: National Science Foundation, ILI grant for purchase of a Philips X-ray diffractometer for geology and chemistry students and faculty.

1992: International Center for Diffraction Data grant for study of diffraction techniques

1992: ARCO Chemical Company and Philadelphia Electric Company grant for supporting my Environmental Science Workshop

PUBLICATIONS:

Bart, H. A., 1975, Environmental analysis of Cross-stratification in the Miocene Arikaree Group of Southeastern Wyoming: Abstract in Geological Society of America Annual Meeting, v. 7, No. 7, p. 991.

Bart, H. A., 1975, Downward injection structures in Miocene sediments, Arikaree Group, Nebraska: Journal of Sedimentary Petrology, v. 45, No. 4, pp. 944-950.

Bart, H. A., 1975, Miocene sediment dispersal for western Nebraska and Southeastern Wyoming: Contributions to Geology, University of Wyoming, Laramie, Wyoming, v. 14, No. 1, pp. 27-39.

Bart, H. A., 1977, Sedimentology of Cross-stratified sandstones in Arikaree Group, Miocene, Southeastern Wyoming, Sedimentary Geology, v. 19, pp. 165-184.

Breyer, J. A. and H. A. Bart, 1978, The Composition of fluvial sands in a Temperate Semiarid Region: Journal of Sedimentary Petrology, v. 48, No. 4, pp. 1311-1320.

Stanley, K. O. and H. A. Bart, 1973, Sedimentary Structures in Glaciofluvial deposits: Abstract in Geological Society of America Annual Meeting (7th), v. 5, No. 4.

Bart, H. A., 1991, A Hands-on Approach to Understanding Topographic Maps and Their Construction, Journal of Geological Education, v. 39, No. 4, pp. 303-305.

APPENDIX 6.2.5 C

LETTERS OF SUPPORT AND CERTIFICATIONS

PROSPECTS FOR OTHER SUPPORT

At this time it is unclear which organizations will help financially. Philadelphia Electric Company, Atlantic Richfield Company, and K.W. Brown Environmental Services Company have helped in the past and will probably contribute some funding again.

The primary matching source of support, however, will be La Salle University. The administration is committed to the community, and has provided educational services to Delaware Valley residents for many years. La Salle has been the only resource for the first two workshops, and only recently has funding from extramural sources become available. La Salle University will provide matching funds should private industry not contribute support this proposal.

In addition, primary and secondary school affiliation will also be required because a teacher from one of these schools will be part of the instructional staff. Included are supporting letters from Central High School and Girls High School in Philadelphia. Faculty at these institutions are interested in attending the workshop, and in taking an active part in developing programs for it.

Students solve environmental problems at La Salle Workshop

The nation's environmental future looks a little brighter thanks to a La Salle University workshop on "Living Within Nature" that attracted 220 high school students earlier this month.

"I think we started some people down the career path toward environmental science," said Dr. Henry Bart, who coordinates La Salle's annual environmental workshop. "I heard a lot of students saying that now they know what they want to do. They want to become sc entists and work to save the environment."

The students came from more than 25 high schools in Pennsylvania and New Jersey to take part in a series of lectures and laboratories. They got hands-on experience attacking the problems of water pollution, radiation exposure, and ozone depletion.

La Salle's environmental workshop has become increasingly popular since the first one brought 120 students to campus in 1990. Dr. Bart, who heads the geology department at La Salle, is already hearing from area teachers who want to bring their students to the 4th annual workshop next fall.

"The main purpose of the workshop appears to be succeeding very well," said Dr. Bart. "I want to ignite in students who like science a strong desire to use the sciences to solve the problems of the environment."

Another benefit of the workshop is to help high school teachers do a better job of teaching science.

"More than 20 teachers accompanied their students to the workshop, and I had six other high school teachers actively involved in the labs," explained Dr. Bart. "All of those teachers left here with the ability to use the lab exercises in their own classrooms. They also know they can use La Salle as a science and teaching resource. They can call on us to help with an experiment on stream pollution, to discuss examples of land reclamation, whatever they need."

La Salle has built a national reputation for excellence in teaching and for preparing graduates for careers in medicine, mathematics, science, and education. The University recently announced plans to establish a $30 million Institute for the Advancement of Mathematics and Science Teaching.

Nazareth Academy students celebrate their success in a La Salle University workshop on radiation. The environmental workshop drew nearly 250 high school students and teachers to the campus.

The goals of the Institute, one of the first in the country, are:

- To enhance the teaching of mathematics and science in Delaware Valley schools;
- To strenghten mathematics and science programs at La Salle;
- To enhance student and faculty research opportunities;
- To increase the number of women and minorities majoring in mathematics and science;
- To improve mathematics and science training of elementary, special and secondary education students at the University.

In addition to the environmental workshop, La Salle also runs a popular science workshop in the spring. High school juniors use biology, physics, chemistry, and geology to help solve a make-believe murder mystery.

For more information on La Salle's workshops, call Dr. Henry Bart at (215) 951-1268. To learn more about the science programs, contact the Office of Admissions, at (215) 951-1500.

Reprinted from *The Philadelphia Inquirer*, November 8, 1992.

THE SCHOOL DISTRICT OF PHILADELPHIA
SOUTH PHILADELPHIA HIGH SCHOOL
BROAD STREET AND SNYDER AVENUE
PHILADELPHIA, PENNSYLVANIA 19148-5508

TELEPHONE (215) 952-6220

Science Department
Room 306
October 29, 1992

Brother Joseph Burke
President
LaSalle University
Philadelphia, Pa. 19141

Dear Brother Burke:

Dr. Henry A. Bart of the Department of Geology has done an exceptional job in exposing historically underrepresented students [minorities and women] to Environmental Science and related careers in this discipline. I have had the privilege of working with Dr. Bart during all three of the "Environmental Workshops". Each workshop has been reflective of teacher input from the previous year. Dr. Bart always tries to update and increase the relevancy of his presentations to the students.

My students always discuss the laboratory experiments and lectures on the ride back to Southern. As a result of their positive experience, it is quite easy to recruit students for the Saturday workshop. The students were excited to receive a "personal letter" from Dr. Bart explaining what would be incorporated into the upcoming workshop. Additionally, the tee shirts and personalized certificates were quite a hit. It is quite an elaborate program that Dr. Bart runs for the students in this area.

The exploding potential of careers in Environmental Science has been addressed by Dr. Bart through the recruiting of his former students in the field. This has left quite an impact on my students. Many have expressed interest in pursuing a career in Environmental Science. The relevancy of a college education in the sciences has been demonstrated by Dr. Bart. I believe that LaSalle University may have a few of my seniors as incoming freshmen. This is a direct result of Dr. Bart's efforts.

Mrs. C. Tina Petrone has expressed interest in using many of the experiments and lecturers that Dr. Bart utilized in his past workshops. She is my department head and the **1991-1992 Christa McAuliffe Awardee for the State of Pennsylvania.** Her project was the development of an Environmental Science curriculum [**EcoScience Institute**] for incoming freshmen. It is being expanded this year through grade 12. Chem Com and Biology will have an "environmental" emphasis. As one of the "empowered teachers" in its' implementation, I am always looking for new experiments and presentations to be incorporated. Additionally, the potential for field trips and career opportunities were strengthen by Dr. Bart and his workshop. The participation in the "Environmental Workshops" at LaSalle University are a permanent component of the EcoScience Institute at South Philadelphia High School.

I am extremely grateful that Dr. Bart has developed such a program for students in the area. I am looking forward to attending workshop four in 1993!

Thank you for your time and consideration.

Sincerely yours,

Donald C. Snyder, Jr.
Science Teacher

c.c. - Herbert M. Jung
Principal
C. Tina Petrone
Science Department Head

THE SCHOOL DISTRICT OF PHILADELPHIA
CENTRAL HIGH SCHOOL
OGONTZ AND OLNEY AVENUES
PHILADELPHIA, PENNSYLVANIA 19141

TELEPHONE (215) 270-5202

March 31, 1993

Dr. Henry A.Bart
Associate Professor of Geology
and Physics
La Salle University
Philadelphia, Pa. 19141

Dear Dr.Bart,

As the President of Central High School I support the Summer Workshops in Environmental and Energy Sciences for Primary and Secondary Teachers Project Proposal,submitted by La Salle University.

As our nation is paying attenton to educational reform in Science,Mathematics,and technology, it is important that we provide resources to prepare or current teachers. These workshops will help teachers in the Philadelphia School District improve their skills and knowledge to become better teachers. In addition, the workshops will give teachers from all over the city an opportunity to interact with each other and work with the faculty from La Salle University.

I am committed to providing the support needed to accomplish the goals and objectives outlined in the proposal.

Sincerely,

Sheldon S. Pavel

Sheldon S. Pavel,
President
Central High School

Fax: 951-1488

OMB Control No.
1910-0400

U.S. DEPARTMENT OF ENERGY

ASSURANCE OF COMPLIANCE

Nondiscrimination of Federally Assisted Programs

_____ (Hereinafter called the "Applicant") HEREBY AGREES to comply with Title VI of the Civil Rights Act of 1964 (Pub. L. 88-352), Section 16 of the Federal Energy Administration Act of 1974 (Pub. L. 93-275), Section 401 of the Energy Reorganization Act of 1974 (Pub. L. 93-438), Title IX of the Education Amendments of 1972, as amended (Pub. L. 92-318, Pub. L. 93-568, and Pub. L. 94-482), Section 504 of the Rehabilitation Act of 1973 (Pub. L. 93-112), the Age Discrimination Act of 1975 (Pub. L. 94-135), Title VIII of the Civil Rights Act of 1968 (Pub. L. 90-284), the Department of Energy Organization Act of 1977 (Pub. L. 95-91), and the Energy Conservation and Production Act of 1976, as amended (Pub. L. 94-385). In accordance with the above laws and regulations issued pursuant thereto, the Applicant agrees to assure that no person in the United States shall, on the ground of race, color, national origin, sex, age, or handicap, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity in which the Applicant receives Federal assistance from the Department of Energy.

Applicability and Period of Obligation

In the case of any service, financial aid, covered employment, equipment, property, or structure provided, leased, or improved with Federal assistance extended to the Applicant by the Department of Energy, this assurance obligates the Applicant for the period during which Federal assistance is extended. In the case of any transfer of such service, financial aid, equipment, property, or structure, this assurance obligates the transferee for the period during which Federal assistance is extended. If any personal property is so provided, this assurance obligates the Applicant for the period during which it retains ownership or possession of the property. In all other cases, this assurance obligates the Applicant for the period during which the Federal assistance is extended to the Applicant by the Department of Energy.

Employment Practices

Where a primary objective of the Federal assistance is to provide employment or where the Applicant's employment practices affect the delivery of services in programs or activities resulting from Federal assistance extended by the Department, the Applicant agrees not to discriminate on the ground of race, color, national origin, sex, age, or handicap, in its employment practices. Such employment practices may include, but are not limited to, recruitment, recruitment advertising, hiring, layoff or termination, promotion, demotion, transfer, rates of pay, training and participation in upward mobility programs; or other forms of compensation and use of facilities.

Subrecipient Assurance

The Applicant shall require any individual, organization, or other entity with whom it subcontracts, subgrants, or subleases for the purpose of providing any service, financial aid, equipment, property, or structure to comply with laws cited above. To this end, the subrecipient shall be required to sign a written assurance form, however, the obligation or both recipient and subrecipient to ensure compliance is not relieved by the collection or submission of written assurance forms.

Data Collection and Access to Records

The Applicant agrees to compile and maintain information pertaining to programs or activities developed as a result of the Applicant's receipt of Federal assistance from the Department of Energy. Such information shall include, but is not limited to, the following: (1) the manner in which services are or will be provided and related data necessary for determining whether any persons are or will be denied such services on the basis of prohibited discrimination; (2) the population eligible to be served by race, color, national origin, sex, age, and handicap; (3) data regarding covered employment including use or planned use of bilingual public contact employees serving beneficiaries of the program where necessary to permit effective participation by beneficiaries unable to speak or understand English; (4) the location of existing or proposed facilities connected with the program and related information adequate for determining whether the location has or will have the effect of unnecessarily denying access to any person on the basis of prohibited discrimination; (5) the present or proposed membership by race, color,

national origin, sex, age, and handicap, in any planning or advisory body which is an integral part of the program; and (6) any additional written data determined by the Department of Energy to be relevant to its obligation to assure compliance by recipients with laws cited in the first paragraph of this assurance.

The Applicant agrees to submit requested data to the Department of Energy regarding programs and activities developed by the Applicant from the use of Federal assistance funds extended by the Department of Energy. Facilities of the Applicant (including the physical plants, buildings, or other structures) and all records, books, accounts, and other sources of information pertinent to the Applicant's compliance with the civil rights laws shall be made available for inspection during normal business hours on request of an officer or employee of the Department of Energy specifically authorized to make such inspections. Instructions in this regard will be provided by the Director, Office of Equal Opportunity, U.S. Department of Energy.

This assurance is given in consideration of and of the purpose of obtaining any and all Federal grants, loans, contracts (excluding procurement contracts), property, discounts, or other Federal assistance extended after the date hereto, to the Applicants by the Department of Energy, including installment payments on account after such data of application for Federal assistance which are approved before such date. The Applicant recognizes and agrees that such Federal assistance will be extended in reliance upon the representations and agreements made in this assurance and the United States shall have the right to seek judicial enforcement of this assurance. This assurance in binding on the Applicant, its successors, transferees, and assignees, as well as the person whose signature appears below and who is authorized to sign this assurance on behalf of the Applicant.

_____
(Date)

_____
(Name of Applicant)

_____

_____
(Address)

_____
(Authorized Official)

( )
(Applicant's Telephone Number)

CERTIFICATIONS REGARDING LOBBYING; DEBARMENT, SUSPENSION AND OTHER RESPONSIBILITY MATTERS; AND DRUG-FREE WORKPLACE REQUIREMENTS

Applicants should refer to the regulations cited below to determine the certification to which they are required to attest. Applicants should also review the instructions for certification included in the regulations before completing this form. Signature of this form provides for compliance with certification requirements under 34 CFR Part 82, "New Restrictions on Lobbying," and 34 CFR Part 85, "Government-wide Debarment and Suspension (Nonprocurement) and Government-wide Requirements for Drug-Free Workplace (Grants)." The certifications shall be treated as a material representation of fact upon which reliance will be placed when the Department of Energy determines to award the covered transaction, grant, or cooperative agreement.

1. LOBBYING

The undersigned certifies, to the best of his or her knowledge and belief, that:

(1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

(3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

2. DEBARMENT, SUSPENSION, AND OTHER RESPONSIBILITY MATTERS

(1) The prospective primary participant certifies to the best of its knowledge and belief, that it and its principals:

(a) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;

(b) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

(c) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (1)(b) of this certification; and

(d) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

(2) Where the prospective primary participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

3. DRUG-FREE WORKPLACE

This certification is required by the Drug-Free Workplace Act of 1988 (Pub. L. 100-690, Title V, Subtitle D) and is implemented through additions to the Debarment and Suspension regulations, published in the Federal Register on January 31, 1989, and May 25, 1990.

ALTERNATE I
(GRANTEES OTHER THAN INDIVIDUALS)

(1) The grantee certifies that it will or will continue to provide a drug-free workplace by:

(a) Publishing a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the grantee's workplace and specifying the actions that will be taken against employees for violation of such prohibition;

(b) Establishing an ongoing drug-free awareness program to inform employees about:

(1) The dangers of drug abuse in the workplace;

(2) The grantee's policy of maintaining a drug-free workplace;

(3) Any available drug counseling, rehabilitation, and employee assistance programs; and

(4) The penalties that may be imposed upon employees for drug abuse violations occurring in the workplace;

(c) Making it a requirement that each employee to be engaged in the performance of the grant be given a copy of the statement required by paragraph (a);

(d) Notifying the employee in the statement required by paragraph (a) that, as a condition of employment under the grant, the employee will:

(1) Abide by the terms of the statement; and

(2) Notify the employer in writing of his or her conviction for a violation of a criminal drug statute occurring in the workplace not later than five calendar days after such conviction;

(e) Notifying the agency, in writing, within ten calendar days after receiving notice under subparagraph (d)(2) from an employee or otherwise receiving actual notice of such conviction. Employers of convicted employees must provide notice, including position title, to every grant officer or other designee on whose grant activity the convicted employee was working, unless the Federal agency has designated a central point for the receipt of such notices. Notice shall include the identification number(s) of each affected grant;

(f) Taking one of the following actions, within 30 calendar days of receiving notice under subparagraph (d)(2), with respect to any employee who is so convicted:

(1) Taking appropriate personnel action against such an employee, up to and including termination, consistent with the requirements of the Rehabilitation Act of 1973, as amended; or

(2) Requiring such employee to participate satisfactorily in a drug abuse assistance or rehabilitation program approved for such purposes by a Federal, State, or local health, law enforcement, or other appropriate agency;

(g) Making a good faith effort to continue to maintain a drug-free workplace through implementation of paragraphs (a), (b), (c), (d), (e), and (f).

(2) The grantee may insert in the space provided below the site(s) for the performance of work done in connection with the specific grant:

Place of Performance:
(Street address, city, county, state, zip code)

_____

_____

_____

☐ Check if there are workplaces on file that are not identified here.

ALTERNATE II (GRANTEES WHO ARE INDIVIDUALS)

(1) The grantee certifies that, as a condition of the grant, he or she will not engage in the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance in conducting any activity with the grant.

(2) If convicted of a criminal drug offense resulting from a violation occurring during the conduct of any grant activity, he or she will report the conviction, in writing, within 10 calendar days of the conviction, to every grant officer or other designee, unless the Federal agency designates a central point for the receipt of such notices. When notice is made to such a central point, it shall include the identification number(s) of each affected grant.

As the duly authorized representative of the applicant, I hereby certify that the applicant will comply with the above certifications.

NAME OF APPLICANT	PR/AWARD NUMBER AND/OR PROJECT NAME
PRINTED NAME AND TITLE OF AUTHORIZED REPRESENTATIVE	
SIGNATURE	DATE

6.3 CAREER AND TECHNICAL EDUCATION

6.3.1 Gateway to Environmental Technology

6.3.2 Environmental Studies of the Inner-City

6.3.1 GATEWAY TO ENVIRONMENTAL TECHNOLOGY

Proposed by
Community College of Philadelphia

Summary

Community College of Philadelphia proposes to establish in collaboration with the Environmental Technology Academy at Lincoln High School a fully aligned, sequential 4 + 2 program leading to the Associate in Applied Science degree program in Environmental Technology. This program will be based on the Tech-Prep model. It will increase the college-going rate of inner city youth and produce professionally educated technicians who are ready to enter the labor force in any of a wide range of energy-related environmental occupations.

The Community College of Philadelphia addresses the criteria of the Consortium by creating a program that is highly replicable at other institutions. Key stakeholders beside the Community College include Lincoln High School, the School District of Philadelphia, and the leaders of the Philadelphia business community as they are represented by the Board of Governors of the Environmental Academy at Lincoln High School. The proposed project, development of a fully articulated Tech-Prep 4 + 2 Associate in Applied Science degree program in Environmental Technology, is both innovative and focused specifically on the tensions and challenges of inner-city life. The economic benefit to the region is unmistakable in the job-ready skills that students will develop. The project is lead by experienced administrators and senior faculty having a proven record of achievement. Measures of the program's effectiveness include quantifiable job placement data, program retention and graduation rates, and the college-going rate of Environmental Technology Academy graduates. Institutional commitment is well documented in the attached budget.

Commitment to a multi-cultural work force is demonstrated not only by the structure of the program but also by the demographic distribution of the students and faculty who make up the Community College of Philadelphia and the Environmental Academy at Lincoln High School. Participants will develop "real world" hands-on skills as a result of both formal instruction and participation in the Environmental Summer Camp. Linkages with other Consortium projects are a significant outcome of this project and culminate in a Regional Conference and a week-long institute to be hosted by the College under the sponsorship of the Consortium.

Background and Importance

Background: The plight of urban youth is a national concern. As more and more manufacturing and technical jobs leave the inner city, career opportunities are shrinking at an alarming rate. The inner cities are besieged by economic hardship, and they are also home to some of the worst environmental pollutants and toxic waste storage sites. Both threaten the economic and physical well-being of the urban communities. This proposal will address these problems by recruiting inner city youth and preparing them as environmental technicians ready to enter the job market.

In the New York Times (April 23, 1989), Joseph Deitch, in an article titled "Blue Skies for Environmental Engineering Jobs," states that environmental pollution is reaching epic proportions, and in response, government at all levels and private companies are advertising for trained personnel to help deal with these problems. The article furthers states that in 1980, 16,000 environmental engineers (in addition to technicians) were

needed, but only 10,000 were available for employment. Certainly this need was added to by such legislation as the National Resource Recovery Act, Super Fund, the Clean Air Act and Safe Drinking Water Act, the Toxic Substances Control Act and the Chemical Diversion and Trafficking Act. A report in the July/August 1988 issue of Public Health Reports states that environmental health specialists are in critically short supply, with 15,000 vacancies currently existing. Over 60,000 of the 121,000 environmental health specialists will be needed just in hazardous materials programs. According to a Department of Labor Study, Workforce 2000, the growth rate for jobs in the areas of science, engineering and technology will reach 25% by the year 2000, but the number of students entering these fields is declining. The EPA has recognized that in order to preserve our labor pool, minority groups and women must be attracted into these non-traditional areas.

Public two-year colleges enroll 53% of all Hispanic American, 51% of all American Indian, 38% of all African-American and 38% of all Asian American college students.[1] In sum, 45% of all minority students in higher education enroll in public two-year institutions. Community College of Philadelphia enrolls more minority students than any other higher education institution in Pennsylvania.[2] Increasingly, employers seek technically educated workers who possesses skill and knowledge beyond the level high schools provide but less than may be required for a baccalaureate degree. As Dale Parnell writes: "The associate degree will become an increasingly important credential in helping meet the emerging technical workforce needs of the employer community."[3]

An article in the December 14, 1992 *Philadelphia Inquirer* reports on the growth and demand for job seekers with backgrounds in environmental science and technology. It indicates that these occupations are among the fastest growing in the nation, with salaries ranging from $20,142 for Biological Technicians to $48,776 for Environmental Scientists.

The Community College and the Philadelphia School District are the two primary institutions within the city capable of articulating a curriculum at the associate degree level to prepare Environmental Technicians. The Community College enrolls a large number of minority students and is the critical point of access to higher education for many of the city's residents. Faculty are also keenly aware of the higher level of skills being mandated by employers and the associated educational needs of students. Accordingly, close interaction between the College and the School District is essential if students are to experience a smooth transition from high school to college. A key feature of the program is the link with the Environmental Technology Academy at Lincoln High School.

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[1]"College Enrollment by Racial and Ethnic Groups," The Chronicle of Higher Education, March 18, 1992, A-35.

[2]The Chronicle of Higher Education, March 18, 1992, A-42 and Fall College Enrollment in Institutions of Higher Education in Pennsylvania by Race and Level of Enrollment, 1992. Harrisburg, PA: Pennsylvania Department of Education, Division of Data Services, April 2, 1993, 1-88.

[3]Dateline 2000, The New Higher Education Agenda, Washington, D.C.: The Community College Press-AACJC, 1990, 62.

This is a program that may be replicated by any environmental or science-related academy or charter in the Philadelphia high schools, or by similar schools in other cities.

Importance: An important service the Community College provides to all residents of Philadelphia is access to quality higher education at an affordable cost. Acting in partnership with the Environmental Academy, the College will reach into the high schools and extend access to technical career education to a broader range of students than would otherwise be the case. An important step in achieving this end will be the coordination of high school and college curriculum by faculty-to-faculty contact. The program will increase the retention rate from ninth to twelfth grade of high school students who participate. It will also reduce the number of participating high school graduates who need remediation upon entrance to college.

Work Plan

CCP proposes to develop a 4 + 2 sequential curriculum based on Tech-Prep principles. It will lead to an Associate of Applied Science degree in Environmental Technology. Our partner will be the Environmental Academy at Lincoln High School. Participating students will be prepared for entry-level positions as laboratory technicians to test air, water, wastewater and/or hazardous waste. They will qualify for positions as Air Pollution Inspectors, Stack Samplers, Occupational Health Technicians, or as Field Technicians for on-site sampling and analysis of water, wastewater, solid and hazardous waste. Graduates may also qualify for positions as sanitation or food and drug inspectors. Employers hiring graduates of the program will include environmental consulting firms and laboratories, waste management firms, food, chemical, energy and manufacturing companies, government agencies, environmental clean-up operations, hazardous waste or tank storage and disposal operations, wastewater treatment facilities, and sanitary landfill and incineration operations.

Goals of the Curriculum: The primary goal of the curriculum is to provide graduates with the education necessary to work competently in the major areas of the environmental industry. To meet this goal, the following knowledge and skills for each employment area of the industry will be covered within courses specific to that area:

1. Water and wastewater technology: standard sampling and monitoring methods, laboratory analysis and instrumentation, parameters of water quality, treatment (drinking, wastewater).

2. Air quality technology: standard sampling and monitoring methods, point source emission evaluation, fundamentals of air pollution, air monitoring instrumentation.

3. Solid waste technology: standard sampling procedures and site-specific protocols for the storage and evaluation of solid and hazardous wastes. Physical , chemical and thermal treatment of hazardous wastes.

4. Legal: a review of the pertinent federal, state and local regulations and law enforcement will be incorporated into each of the courses covering the areas listed above.

5. Occupational health and safety: regulations governing worker health and safety, use and monitoring of protective clothing and equipment, public safety, emergency response. Completion of the 40-hour technician-level program to meet the training and response requirements listed in OSHA 29CFR 1910.120 and EPA 40CFR 311 will be

required.

6. Directed Practice: field experience program with an approved city or state monitoring agency or business in the environmental monitoring field.

This technical education will be supported by a solid general education. The College educate students in a balanced fashion. Graduates will have environmental technical expertise and also be grounded in reading, writing, calculation, critical thinking and ethics.

The proposal envisions the development of a curriculum which constitutes a sequential course of study to begin in grade 9 and conclude in community college. It will be distinguished by the application of contextual and applied learning and the use of up-to-date instructional technology. Activities supported by this program will include faculty-to-faculty collaboration to design a comprehensive and sequential curriculum, academic support including academic skills enhancement workshops, on-going skills assessment, and mentoring by CCP faculty and advanced students. Campus visits and other motivational activities will be conducted throughout the year. A key element will be parental involvement. Parents
and prospective students will be invited to the College to learn about career and financial aid/scholarship opportunities. Summer activities will include a bridge program and an opportunity to take college courses for credit. The program will include an Environmental Science Summer Camp. This will focus on a community service project also having instructional value.

The College seeks financial support from the Inner-City and Environmental Education Consortium for the three-year period commencing September 1, 1993.

Program Activities: The first year of the program will focus on faculty-to-faculty collaboration to design a curriculum and align courses in such a way that students experience a seamless transition from high school to college. Faculty will design academic support and assessment activities to be an integral part of the curriculum, not just an add on. An important step will be to prepare both college and high school faculty to teach in the program. Appropriate faculty development activities will be planned and carried out. Prospective students and their parents will be invited to the College to learn about the career and financial aid/scholarship opportunities available to them. A summer bridge program will be offered at the completion of the first academic year to bring recently graduated high school seniors entering the program to a common starting point. Equipment needed for the program will be purchased and set up during the first year.

During the second year attention will focus on curriculum refinement and additional staff development. The summer bridge program will be expanded to include activities for students in grades 9 through 12. The Environmental Summer Camp designed to engage students in environmentally-related community service projects will be developed and offered on a pilot basis. Participating high school students will have an opportunity to complete college-level courses for credit as part of the College's Advanced College Experience (ACE) program.

Year three of the project will continue the activities initiated in the first two years. In addition, the program will seek to expand by establishing a link with one or more high school charters or academies.

Collaborating Organizations: Organizations collaborating with the Community College include the Environmental Technology Academy program at Lincoln High School and Philadelphia High School Academies, Inc. Involvement from industry will be provided through the Board of Governors of the Environmental Technology Academy. It includes many of the region's major players in environmental engineering, waste treatment and related industries.

Dissemination of Results: Between the first and second years of the project, the Community College of Philadelphia, acting under the sponsorship of the Partnership in Environmental Technology Education (PETE), will host a regional conference for all Partnership participants. The purpose will be to share the results of funded activities among participants and interested individuals from other schools, colleges or agencies. Under the aegis of PETE, the College will publish the conference proceedings. In addition, the Community College will host a week-long institute for representatives from secondary schools, Historically Black Colleges and Universities, community colleges and representatives from business and industry. This institute will be held between the second and third years of the project. The purpose will be to teach interested organizations and individuals how to develop an environmental/energy related associate degree program on the 4 + 2 Tech-Prep model.

Milestones: Year One: Begin curriculum design, conduct faculty development activities, hold parent/student workshops, conduct the Summer Bridge Program, develop the instructional laboratories, hold a PETE/CCP sponsored Regional Conference for participating organizations. Year Two: conclude curriculum design and staff development activities, enroll students in the first year of the AAS program, conduct the Environmental Summer Camp, place students in the ACE summer program, conclude the year with a PETE/CCP sponsored Summer Institute for organizations interested in replicating the Tech-Prep model environmental program. Year Three: conduct second-level AAS classes, enroll a new class in the first year of the AAS program, expand the program to a second Charter School or Academy, graduate the first cohort of students.

Demographic Composition

The Environmental Technology Academy at Lincoln High School enrolled 248 students as of December 31, 1992, the most recent period for which data is available. Of these students, 4% (11) are Asian, 33% (82) are Black, 3% (8) are Hispanic and 59% (146) are White. Fifty-five percent (138) are male and 45% (110) are female. During Fall 1992 the Community College of Philadelphia enrolled 14,532 students on campus in credit courses. Of these, 48% (6,947) were Black, 37% (5,434) were White, 7% (945) were Hispanic and 8% (1.206) were Asian. Thirty-five percent (5,130) were male and 65% (9,402) were female. Community College of Philadelphia employs 346 full-time faculty. Of these, 16.8% (58) are minority.

Expected Outcomes

Five outcomes are expected:

1. An Associate in Applied Science degree program in Environmental Technology will be created based on the Tech-Prep 4 + 2 model and aligned with the Environmental Academy program at Lincoln High School. The program will be designed to be replicated at appropriately designated high schools.

2. Comprehensive academic support services to include on-going assessment and mentoring will be established as an essential part of the program.

3. Staff development activities will be provided to prepare faculty to teach in the program.

4. Students graduating from the AAS degree program will have the professional skills and knowledge needed to enter the work force as entry-level Environmental Technicians or to continue in college and complete a four-year degree.

5. The Community College will host a regional conference at which the results of Consortium projects will be shared. Proceedings of the conference will be published. CCP will also host a week-long Institute at which organizations and individuals may learn how to develop an environmental technology program on the 4 + 2 the Tech-Prep model.

Measurement of Results

Four "yardsticks" will be used to measure results:

1. The program will improve the academic performance and the retention and graduation rate of students in the Environmental Academy at Lincoln High School.

2. The program will increase the number of students in the Environmental Academy who go on to college in Environmental Technology.

3. Students who complete the AAS degree program will find employment in their field at a rate not below 75%.

4. The results of the Consortium projects will be disseminated at a regional conference hosted by the College under the sponsorship of the Consortium. The College will also conduct an institute to help other schools to establish an environmental technology program similar to ours.

References

Documents which have contributed materially to the preparation of this proposal include:

1990-91 Annual Report of the HBCU/MI Consortium.

Curricula Standing Committee Workshop published by the Inner-City Energy and Environmental Education Consortium.

Excerpts written by Admiral James D. Watkins (U.S. Navy, retired) and Mr. William K. Reilly from the 1992 FCCSET report.

Program Summary - Partnership for Environmental Technology Education, U.S. DOE, Livermore, CA, October 1, 1992.

Leadership and Management

The Program Director will be Mr. Samuel Hirsch, Dean of the Division of Educational Support Services at Community College of Philadelphia. Curriculum development will be led by Dr. Doug Fenwick, Dean of the Division of Science and Technology. Faculty Coordinator at Community College will be Susan Mogil, Ph.D., an Associate Professor of Chemistry. The liaison at Lincoln High School will be Mr. David Kipphut, Director of the Environmental Academy.

Dean Fenwick has served as a senior-level academic administrator since 1980. Presently, he is Dean of the College's Dean of Science and Technology. Previously, he served as Dean of the

Division of Life Sciences and Allied Health Services and as Interim Vice President for Academic Affairs. Dr. Fenwick has 10 years of experience as a faculty member. He is a member of the Board of Directors of the PATHS/PRISM Philadelphia Partnership for Education, the Advisory Council for Career and Vocational Education of the School District of Philadelphia, and the Pennsylvania Department of Education's State-Wide Advisory Task Force for New Career Paths Through Youth Apprenticeship. Among recent publications, he has co-authored a chapter entitled "Associate Degree Education," Allied Health Education (Charles C. Thomas Publishers, 1989). Dr. Fenwick holds an Ed.D. from Nova University, a Master of Public Administration from Temple University, a B.Sc. from West Chester University, and he is a Graduate Nurse.

Dean Hirsch has served as a senior-level academic officer since 1986. He is also President of the Board of Directors of the Pennsylvania Association of Developmental Education and is a Program Evaluator and Proposal Reviewer with the Higher Education Equal Opportunity Program Office of the Pennsylvania Department of Education. Dean Hirsch is a frequent presenter at professional conferences and a co-author with Judith S. Eaton of the article entitled "An Academic Model for Urban Community College Education," AACJC Journal, April/May, 1988. Mr. Hirsch holds a B.A. in Science from Temple University and an M.A. in Education from Beaver College.

Professor Mogil has 30 years of experience as a classroom instructor at the high school and community college level. Her academic training includes an M.S. in Environmental Engineering from Drexel University, an M.S. in Science Eduction and a B.S. in Chemistry from the University of Pennsylvania, in addition to a broad range of short courses in scientific and technical specialties. Professor Mogil maintains membership in a number of professional associations and is also active as a researcher and environmental consultant.

Budget

Details of the three-year budget request are given in Appendix 6.3.1 A.

APPENDIX 6.3.1 A

BUDGETS

removed.

APPENDIX 6.3.1 B

BIOGRAPHIES OF PROJECT LEADERSHIP

RESUME

DOUGLAS E. FENWICK
P.O. Box 111
348 Manor Road
Miquon, PA 19452

215-751-8431 (Work)
215-834-0984 (Home)

EDUCATION

Nova University, Fort Lauderdale, Florida
Doctor of Education, 1981

Temple University, Philadelphia, Pennsylvania
Master of Public Administration, 1974

West Chester State College, West Chester, Pennsylvania
Bachelor of Science, 1966

Pennsylvania Hospital School of Nursing for Men,
111 North 49th Street, Philadelphia, Pennsylvania
Graduate Nurse, 1961

PROFESSIONAL EXPERIENCE

Community College of Philadelphia
Philadelphia, Pennsylvania

Division of Science and Technology

Division Dean — October 1992 Present

Senior academic and administrative officer of an academic division serving students enrolled in career and academic programs (Sciences, Mathematics, Enginnering, Electronics, Architecture, Automative, Health Careers, Business and Computer Studies) offered by eighteen departments. Oversight responsibility for the design and implementation of Associate of Science and Associate of Applied Science degree programs and for programs which lead to certificates. Major job responsibilities include but are not limited to, recommending faculty hiring, retention, promotion and conducting professional development activities; leading and directing curriculum review efforts; planning, implementing and administering the Division's operational and capital budgets (exceeding $13 million); development of grant proposals to fund programs and projects; oversight of facilities and equipment; adjudication of student and faculty problems/ grievances; representing the Division with the College, the Community, affiliating agencies, accrediting bodies and other educational institutions.

Community College of Philadelphia (continued)

Division of Life Sciences and Allied Health Services

Division Dean	January 1991 to September 1992
	July 1985 to July 1988
Division Director	May 1981 to July 1985
Acting Division Director	May 1980 to May 1981
Division Administrative Intern	July 1976 to May 1980
	July 1974 to January 1975

Responsible for the daily operation of an academic division with an operating budget in excess of $2 million. In addition, the Division provides supervision for special projects and grants of approximately $200,000 annually. The Division's nine departments serve approximately 4,000 biology students and 650 health career students annually. Personal duties include, but are not limited to, development and management for the Division; participation in program development and revision; participation in faculty hiring, retention, promotion, evaluations, and professional development; adjudication of student problems; advocate for and representative of the Division within the College, the community, affiliating agencies, accrediting bodies and other educational institutions.

Academic Affairs Office

Interim Vice President for Academic Affairs	July 1988 to January 1991

Administered the Academic Affairs Office of a major comprehensive urban community college serving 37,000 students through career and academic programs in eight divisions: Community Services and Continuing Education; Economics and Business Administration; Educational Resources: Educational Support Services; Humanities and the Arts; Life Sciences and Allied Health Services; Mathematics, Physical Sciences and Engineering Technologies; and Social and Behavioral Sciences and Human Service Careers. Operationally responsible for: all instruction (Main Campus, two Regional Centers, and more than 20 neighborhood locations); 357 full-time and 500 part-time faculty; and an operating budget of $23 million.

Division of Economics and Business Administration

Acting Dean	January 1987 to September 1987

Department of Nursing

Head	January 1975 to January 1976
Nursing Faculty	September 1970 to July 1974

Lutheran Home for Orphans and Aged at Germantown
Philadelphia, Pennsylvania

Director of Health Care Services	1965 to 1970

Community College of Philadelphia (continued)

Eugenia Hospital, Whitemarsh, Pennsylvania

Supervising Nurse	1962 to 1964

Institute of the Pennsylvania Hospital
Philadelphia, Pennsylvania

Head Nurse and Relief Supervisor	1961 to 1962

United States Army

Classification and Assignment Specialist	1956 to 1958

PROFESSIONAL ACTIVITIES

American Medical Association
- Member of the National Advisory Committee on Evaluation of Registered Care Technologist Project, 1988 to 1990
- Member of the Committee on Allied Health Education and Accreditation's Coordinating Committee for the Assembly of Institutional Administrators, 1985 to 1991
- Member of the Committee on Allied Health Education and Accreditation, 1991 to Present
- Member of the Committee on Current Levels of Nursing Education and Licensure, 1991 to Present

PATHS/PRISM - The Philadelphia Partnership for Education
- Member, Board of Directors, 1988 to 1991

American Association of Medical Assistants' Endowment
- Member, Curriculum Review Board, 1985 to 1990

School District of Philadelphia
- Member of Advisory Council for Career and Vocational Education, 1987 to Present

National Network of Health Career Programs In Two Year Colleges
- Member and President of the National Network, 1990 to Present

Pennsylvania Department of Education
- Member of State-Wide Advisory Task Force For New Career Paths Through Youth Apprenticeship, 1991 to Present

Pennsylvania Bureau of Vocational and Adult Education
- Appointed Member of Program Reimbursement Committee, 1989-1994

The Ohio Board of Regents
- External Consultant for Program Excellence Evaluation, 1987

Community College of Philadelphia (continued)

Department of Health and Human Services, The Bureau of Health Professions and the American Society of Allied Health Professions
- Member of Task Force on Financing Allied Health Education, 1985

American Society of Allied Health Professions
- Member of Society's Research Committee, 1983 to 1987
- Member of Program Committee, 1988 to 1989

Mathematics Policy Research, Inc., Princeton, New Jersey
- Trends in Allied Health Clinical Education Study sponsored by the Department of Health and Human Services - Member of Advisory Panel, 1987 to 1988

Alpha Eta Society (National Scholarship Society in Allied Health)
- Member of the Society's National Board of Directors, 1984 to 1986
- Treasurer, Community College of Philadelphia Chapter, 1985 to 1987

PRESENTATIONS

"Improving Allied Health Education Articulation Between Two and Four Year Colleges," Winter Deans' Meeting, Palm Springs, 1989

"Significant Trends Affecting the Market for Health Services and Health Career Education," Meeting of National Network of Deans and Directors of Health Career Programs in Two Year Colleges, Philadelphia, 1988

"Response to the Allied Health Services: Avoiding Crises Report," A Panel Presentation at the Pennsylvania State University's Vocational and Adult Education Conference, 1989

"Articulation Between Two and Four Year Colleges," Meeting of National Network of Deans and Directors of Health Career Programs in Two Year Colleges, Fort Worth, 1989

"Accreditation Strategies That Work," Meeting of National Network of Deans and Directors of Health Career Programs in Two Year Colleges, Columbia, South Carolina, 1991

PUBLICATIONS

Co-author, "Associate Degree Education," chapter in Allied Health Education, Charles C. Thomas, Publishers, 1989.

Co-author, "Back to Basics: What Department/Division Chairpersons Can Do to Enhance Occupational Program Services," Community College Review, Spring 1985.

mn-1/92

RESUME

Samuel Hirsch
Pier 5 - No. 114
7 N. Columbus Blvd.
Philadelphia, PA 19106
Home: (215) 928-5709
Work: (215) 751-8491

PROFESSIONAL EXPERIENCE:	Community College of Philadelphia
1987 - Present	Dean, Division of Educational Support Services
1986-1987	Acting Dean, Division of Educational Support Services
1985 - Present	Associate Professor, Department Head Learning Laboratory
1982-1985	Coordinator, Learning Laboratory
1984-1985	Part-Time Instructor, Data Processing
1978-1982	Assistant Coordinator, Learning Laboratory
1979-1981	Part-Time Instructor, Mathematics
1977-1978	Supervisor of Tutors

ADDITIONAL PROFESSIONAL ACTIVITIES:

President, Board of Directors, Pennsylvania Association of Developmental Educators

Program Evaluator and Proposal Reviewer, Higher Education

Equal Opportunity Program, Pennsylvania Department of Education

Treasurer, Board of Directors, Philadelphia Young Playwright's Festival

Board of Directors, Citizens Committee on Public Education in Philadelphia

PRESENTATION AND PUBLICATIONS:

Publication: "An Academic Model for Urban Community College Education", with Judith S. Eaton, et al., AACJC Journal, April/May 1988

Presentations: "Considerations of Basic Skills and Developmental Programs." Pennsylvania Association of Developmental Educators Annual Conference, 1986

Presentation: "Considerations For The Effective Computer Learning Center.

"City University of New York Conference on Microcomputers, New York, 1985

Presentation: "Computers and Administration." Women in Education Spring Leadership Conference, Philadelphia, 1984

Presentation: "The Computer Lab Within A Learning Center." Microcomputer and Basic Skills in College Conference, New York, 1984

Presentation: "Microcomputers and Software." Act 101 Directors Conference, Lancaster, 1984

Publication: "A Program of Computer Assisted Instruction For A Personalized Instructional Course in Statistics." Teaching of Psychology, December 1983

Presentation: "Evaluation: A Way to Improve Your Center." Institute."
Institute on Learning Support Programs and Services, Philadelphia, 1981

Presentation: "Supportive Programs for the Non-Traditional Student in an Urban Setting."
Middle States Association Annual Convention, Philadelphia, 1980
Presentation: "How to Develop and Implement a Learning Laboratory."
Community College Conference on Education for the Non-Traditional Student, Philadelphia, 1978

SIGNIFICANT ACTIVITIES/ACCOMPLISHMENTS:

Administration

- Direct all academic support services (all remedial, developmental and literacy programs).
- Hold full operational responsibility for three Learning Laboratories which employs over 250 individuals serving over 3,000 students per semester.
- Serve on various Standing, Ad Hoc Committees and Task Forces (Academic Affairs Committee, Student Appeals Committee, Computer Selection Committee, Innovations and Professional Growth, Strategic Planning Committee, Institutional Climate Committee, Student Flow, Enrollment Management).
- Lead Division of Educational Support Services which includes 25 full-time faculty and administrators, 80 part-time instructors and 100 support staff.
- Responsible for academic planning and administration for all academic support services and encompassing all remedial and developmental programs, English-as-a-Second Language/ Bilingual Programs, and Adult Basic Education programs which enroll over 5,000 students per semester.
- Design and install resources to specific areas of new physical plant.
- Develop and manage a budget of over $2,000,000.
- Evaluate and procure media hardware and audio-visual materials, as well as microcomputers and software.
- Develop model procedure for placement of special program students with appropriate support services.
- Develop and supervise Center for Business and Industry unit which offers credit and non-credit courses in contracted services to over 100 clients.
- Serve as consultant to other institutions in the areas of program development and placement testing procedures.
- Serve during a part-time evening position as an administrator and college spokesman at a continuing education facility located off-campus.

Curriculum and Instruction

- Redesign support programs for Nursing and Allied Health students
- Establish a comprehensive Learning Laboratory serving math and business students
- Plan and implement a National Conference for the National Conference for the National Association for Developmental Education
- Plan and chair two state-wide conferences on developmental education
- Develop and implement the College mathematics placement test
- Develop a tutor's manual and tutor training tapes
- Design and offer numerous faculty in-service programs
- Introduce computer technology in Learning Laboratories
- Implement services for learning disabled adults in technology curricula
- Develop and implement orientation program for developmental students

EDUCATION:

M.A. - Beaver College, 1982
Major - Education
Concentration - Mathematics

B.A. - Temple University, 1976
Major - General Science

CURRICULUM VITAE SUSAN R. MOGIL

Personal Data :

Home Address 60 Llanfair Circle
Ardmore, PA 19003
215-896-6098

Office Address Community College of Philadelphia, W4-15
1700 Spring Garden St.
Philadelphia, PA 19130
215-751-8598

Education :

School District of Philadelphia, K-12

Philadelphia High School for Girls, 1958
Summa Cum Laude
Awarded Board of Education Scholarship to University of Pennsylvania

University of Pennsylvania, 1962
Bachelor of Science, College for Women
Major: Chemistry

University of Pennsylvania, 1974
Master of Science: Science Education

Drexel University, 1990
Master of Science: Environmental Engineering

Additional Training:

Philadelphia College of Pharmacy and Science, 1975
"Theory and Applications of Radioimmunoassay Techniques"

St. Joseph's University, 1979
"Instrumental Analysis"

Beaver College, 1981-82
Computer Programming: Basic, Cobol, Fortran

American Chemical Society Short Courses, 1983-87
Fundamentals of Biochemistry
Chemical Engineering and Process Fundamentals
Laboratory Safety and Health
Gas Chromatography - Mass Spectroscopy
Analytical Infra - Red Spectroscopy

Departmental Short Courses, 1987-89
Electronics for Chemists
Instrumental Analysis
Organic Micro - laboratory Techniques

Professional Teaching Experience:

School District of Philadelphia, 1962-64
Olney High School: chemistry and physics

Beth Jacob Middle School, 1965-67
General science

School District of Philadelphia, 1967-72
Permament substitute teacher: physical sciences

Akiba Academy, 1974-75
Chemistry

Community College of Philadelphia, 1975- present
Part-time instructor and Visiting Lecturer in Chemistry : 1975 - 1984
Assistant Professor, Chemistry : appointed 1984
Associate Professor, Chemistry : appointed 1991 and
Program development and Director : Environmental Technology
(Program begins September, 1993)

Research and Consultation:

Surgical Research Assistant, Jefferson University, 1960
Research Assistant in Microbiology and Pharmacology,
Hahnemann University, 1961-62
Master's Research Project in Environmental Engineering,
Drexel University,1990
" Analytical methods for detection of low-levels of toluene diisocyanate and generation of test atmospheres of TDI "
Consultation: Indoor air quality analysis, CCP 1989
Lead toxicity cases - literature reviews and statistical analysis of epidemiological studies
Morgan,Lewis and Bockius,1988-90

Professional Associations:

American Chemical Society- active in the following divisions:
Chemical Education, Chemical Health and Safety, Environmental Chemistry, Campaign for Chemistry

American Institute of Chemists
American Water Works Association
National Association for the Advancement of Science
American Institute of Chemical Engineers
American Society for Testing of Materials (ASTM)
American Federation of Teachers, AFL - CIO

Memberships:

The Franklin Institute
Philadelphia Academy of Natural Sciences
Zooological Society of Philadelphia
Philadelphia Museum of Art
Sierra Club
National Wildlife Federation
Audobon Society
Main Line Reform Temple, Beth Elohim
United States Tennis Association- Lower Merion Women's 4.0 Team
The Albert Einstein Society, A E Healthcare Foundation

APPENDIX 6.3.1 C

LETTERS OF SUPPORT AND CERTIFICATIONS

Philadelphia
High School
Academies
Inc.
PARTNERS IN EDUCATION

(215) 546-6300
FAX
(215) 546-9174

RECEIVED
FEB - 8 1993

4 February 1993

Samuel Hirsch, Dean
Educational Support Services
Community College of Philadelphia
1700 Spring Garden Street
Philadelphia, PA 19130

Dear Mr. Hirsch:

It is with pleasure that I write in support of your preliminary proposal to the Inner City Energy and Environmental Education Consortium.

The proposed 4 + 2(grades 9-14) articulated course of study in environmental science and technology is strongly desired on our part as an extension of the Environmental Technology Academy(ETA) operated by our organization in partnership with regional business/industry and the School District of Philadelphia. This would fill a void by providing a local post-secondary option to ETA graduates, particularly those with limited financial resources. Furthermore, the comprehensive scope of your proposal, i.e. provision for such key components as summer bridge programs; strengthening occupational skills training and deepening academic studies; financial aid counseling and direct services to parents, is commendable.

I assure you that our industry partners will lend their full support to the success of the proposed program. The Board of Governors of the Environmental Technology Academy includes many of the region's major players in environmental engineering, waste treatment and related industries. The quite serious shortage of candidates qualified for entry level technical positions leads to an especially keen interest on industry's part

Sincerely,

Johannes Ponsen
Program Director

c: Natalie S. Allen, President, Phila. High School Academies, Inc.
William S. Gaither, Chairperson, Board of Governors
David Kipphut, ETA Coordinator, Lincoln High School
John E Master, Vice Chairperson, Board of Governors

230 South Broad Street, 2nd Floor
Philadelphia, PA 19102

Environmental Technology Academy
ABRAHAM LINCOLN HIGH SCHOOL
ROWLAND AND RYAN AVENUES
PHILADELPHIA, PA 19136
PHONE/FAX 215-333-8450

FEB 22 1993

February 18, 1993

Mr. Samuel Hirsch, Dean
Division of Educational Support Services
Community College of Philadelphia
1700 Spring Garden Street
Philadelphia PA 19130-3991

Dear Sam:

I have reviewed your proposal to the Inner City Energy and Environmental Education Consortium and whole heartedl endorse this proposal. We here at the Environmental Technology Academy at Abraham Lincoln High School look forward to working with the Community College of Philadelphia if this proposal is accepted.

I invite you to visit Lincoln to tour the Academy at your convenience to observe the outstanding work that our students and teachers are doing. Please call me to schedule your visit.

Sincerely,

David M. Kipphut
Coordinator

c. D. Hughes

A PROGRAM OF THE PHILADELPHIA HIGH SCHOOL ACADEMIES, INC
AND THE SCHOOL DISTRICT OF PHILADELPHIA

DOE F 1600.5
(03-89)
All Other Copies Are Obsolete

U.S. Department of Energy

Assurance of Compliance
Nondiscrimination in Federally Assisted Programs

Community College of Philadelphia (Hereinafter called the "Applicant")

HEREBY AGREES to comply with Title VI of the Civil Rights Act of 1964 (Pub. L. 88-352), Section 16 of the Federal Energy Administration Act of 1974 (Pub. L. 93-275), Section 401 of the Energy Reorganization Act of 1974 (Pub. L. 93-438), Title IX of the Education Amendments of 1972, as amended, (Pub. L. 92-318, Pub. L. 93-568, and Pub. L. 94-482), Section 504 of the Rehabilitation Act of 1973 (Pub. L. 93-112), the Age Discrimination Act of 1975 (Pub. L. 94-135), Title VIII of the Civil Rights Act of 1968 (Pub. L. 90-284), the Department of Energy Organization Act of 1977 (Pub. L. 95-91), and the Energy Conservation and Production Act of 1976, as amended, (Pub. L. 94-385). In accordance with the above laws and regulations issued pursuant thereto, the Applicant agrees to assure that no person in the United States shall, on the ground of race, color, national origin, sex, age, or handicap, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity in which the Applicant receives Federal assistance from the Department of Energy.

Applicability and Period of Obligation

In the case of any service, financial aid, covered employment, equipment, property, or structure provided, leased, or improved with Federal assistance extended to the Applicant by the Department of Energy, this assurance obligates the Applicant for the period during which Federal assistance is extended. In the case of any transfer of such service, financial aid, equipment, property, or structure, this assurance obligates the transferee for the period during which Federal assistance is extended. If any personal property is so provided, this assurance obligates the Applicant for the period during which it retains ownership or possession of the property. In all other cases, this assurance obligates the Applicant for the period during which the Federal assistance is extended to the Applicant by the Department of Energy.

Employment Practices

Where a primary objective of the Federal assistance is to provide employment or where the Applicant's employment practices affect the delivery of services in programs or activities resulting from Federal assistance extended by the Department, the Applicant agrees not to discriminate on the ground of race, color, national origin, sex, age, or handicap, in its employment practices. Such employment practices may include, but are not limited to, recruitment, advertising, hiring, layoff or termination, promotion, demotion, transfer, rates of pay, training and participation in upward mobility programs, or other forms of compensation and use of facilities.

Subrecipient Assurance

The Applicant shall require any individual, organization, or other entity with whom it subcontracts, subgrants, or subleases for the purpose of providing any service, financial aid, equipment, property, or structure to comply with laws cited above. To this end, the subrecipient shall be required to sign a written assurance form, however, the obligation of both recipient and subrecipient to ensure compliance is not relieved by the collection or submission of written assurance forms.

Data Collection and Access to Records

The Applicant agrees to compile and maintain information pertaining to programs or activities developed as a result of the Applicant's receipt of Federal assistance from the Department of Energy. Such information shall include, but is not limited to the following: (1) the manner in which services are or will be provided and related data necessary for determining whether any persons are or will be denied such services on the basis of prohibited discrimination; (2) the population eligible to be served by race, color, national origin, sex, age and handicap; (3) data regarding covered employment including use or planned use of bilingual public contact employees serving beneficiaries of the program where necessary to permit effective participation by beneficiaries unable to speak or understand English; (4) the location of existing or proposed facilities connected with the program and related information adequate for determining whether the location has or will have the effect of unnecessarily denying access to any person on the basis of prohibited discrimination; (5) the present or proposed membership by race, color, national origin, sex, age and handicap in any planning or advisory body which is an integral part of the program; and (6) any additional written data determined by the Department of Energy to be relevant to the obligation to assure compliance by recipients with laws cited in the first paragraph of this assurance.

The Applicant agrees to submit requested data to the Department of Energy regarding programs and activities developed by the Applicant from the use of Federal assistance funds extended by the Department of Energy. Facilities of the Applicant (including the physical plants, buildings, or other structures) and all records, books, accounts, and other sources of information pertinent to the Applicant's compliance with the civil rights laws shall be made available to inspection during normal business hours on request of an officer or employee of the Department of Energy specifically authorized to make such inspections. Instructions in this regard will be provided by the Director, Office of Equal Opportunity, U.S. Department of Energy.

This assurance is given in consideration of and for the purpose of obtaining any and all Federal grants, loans, contracts (excluding procurement contracts), property, discounts or other Federal assistance extended after the date hereto, to the Applicants by the Department of Energy, including installment payments on account after such date of application for Federal assistance which are approved before such date. The Applicant recognizes and agrees that such Federal assistance will be extended in reliance upon the representations and agreements made in this assurance and the United States shall have the right to seek judicial enforcement of this assurance. This assurance is binding on the Applicant, the successors, transferees, and assignees, as well as the person whose signature appears below and who is authorized to sign this assurance on behalf of the Applicant.

Applicant Certification

The Applicant further certifies that it has or, within 90 days of the date of the grant shall: (a) Designate(d) an individual to serve as Affirmative Action Officer; (b) Establish(ed) complaint procedures for employees and other beneficiaries of the program; (c) Prominently display(ed) posters and other written information publicizing the policy of nondiscrimination; (d) Provide(d) program information in languages other than English (including braille) in a manner to make it accessible to sight impaired persons; (e) Establish(ed) procedures which enable it to notify DOE on a timely basis of any complaints filed against it and of the disposition of those complaints; (f) Require(d) any subrecipient (subgrantee/subcontractor) under this award to comply with the above cited laws and regulations; (g) Require the subrecipient to sign an assurance form, the applicant certifies that it shall monitor subrecipient compliance as appropriate; (h) Establish(ed) a system capable of collecting racial/ethnic/handicap/sex data in accordance with existing Federal requirements cited in the first paragraph of this assurance.

Development of Current Affirmative Action Plan — 6-16-93 (Date)

Alfred Nicholson — Affirmative Action Officer (Name, Signature and Date)

(215) 751-8039 — Telephone Number

Most recent onsite Federal Assistance Civil Rights review/audit:

Pennsylvania Dept. of Education — Agency Conducting Review — 2/86 Date

Community College of Philadelphia — Applicant's Name — Date

Address: 1700 Spring Garden Street — ( ) Telephone Number

Philadelphia, PA 19130

Authorized Official President, or Chief Executive Officer

Ronald J. Temple — Name and Signature — 6/16/93 Date

CERTIFICATIONS REGARDING LOBBYING; DEBARMENT, SUSPENSION AND OTHER RESPONSIBILITY MATTERS; AND DRUG-FREE WORKPLACE REQUIREMENTS

Applicants should refer to the regulations cited below to determine the certification to which they are required to assert. Applicants should also review the instructions for certification included in the regulations before completing this form. Signature of this form provides for compliance with certification requirements under 34 CFR Part 82, "New Restrictions on Lobbying," and 34 CFR Part 85, "Government-wide Debarment and Suspension (Nonprocurement) and Government-wide Requirements for Drug-Free Workplace (Grants)." The certifications shall be treated as a material representation of fact upon which reliance will be placed when the Department of Energy determines to award the covered transaction, grant, or cooperative agreement.

1. LOBBYING

The undersigned certifies, to the best of his or her knowledge and belief, that:

(1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

(3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

2. DEBARMENT, SUSPENSION, AND OTHER RESPONSIBILITY MATTERS

(1) The prospective primary participant certifies to the best of its knowledge and belief, that it and its principals:

(a) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;

(b) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

(c) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (1)(b) of this certification; and

(d) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

(2) Where the prospective primary participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

3. DRUG-FREE WORKPLACE

This certification is required by the Drug-Free Workplace Act of 1988 (Pub. L. 100-690, Title V, Subtitle D) and is implemented through additions to the Debarment and Suspension regulations, published in the Federal Register, on January 31, 1989, and May 25, 1990.

ALTERNATE I (GRANTEES OTHER THAN INDIVIDUALS)

(1) The grantee certifies that it will or will continue to provide a drug-free workplace by:

(a) Publishing a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the grantee's workplace and specifying the actions that will be taken against employees for violation of such prohibition;

(b) Establishing an ongoing drug-free awareness program to inform employees about:

(1) The dangers of drug abuse in the workplace;

(2) The grantee's policy of maintaining a drug-free workplace;

(3) Any available drug counseling, rehabilitation, and employee assistance programs; and

(4) The penalties that may be imposed upon employees for drug abuse violations occurring in the workplace;

(c) Making it a requirement that each employee to be engaged in the performance of the grant be given a copy of the statement required by paragraph (a);

(d) Notifying the employee in the statement required by paragraph (a) that, as a condition of employment under the grant, the employee will:

PA-CERTS (9/91)

(1) Abide by the terms of the statement; and

(2) Notify the employer in writing of his or her conviction for a violation of a criminal drug statute occurring in the workplace not later than five calendar days after such conviction;

(e) Notifying the agency, in writing, within ten calendar days after receiving notice under subparagraph (d)(2) from an employee or otherwise receiving actual notice of such conviction. Employers of convicted employees must provide notice, including position title, to every grant officer or other designee on whose grant activity the convicted employee was working, unless the Federal agency has designated a central point for the receipt of such notices. Notice shall include the identification number(s) of each affected grant;

(f) Taking one of the following actions, within 30 calendar days of receiving notice under subparagraph (d)(2), with respect to any employee who is so convicted:

(1) Taking appropriate personnel action against such an employee, up to and including termination, consistent with the requirements of the Rehabilitation Act of 1973, as amended; or

(2) Requiring such employee to participate satisfactorily in a drug abuse assistance or rehabilitation program approved for such purposes by a Federal, State, or local health, law enforcement, or other appropriate agency;

(g) Making a good faith effort to continue to maintain a drug-free workplace through implementation of paragraphs (a), (b), (c), (d), (e), and (f).

(2) The grantee may insert in the space provided below the site(s) for the performance of work done in connection with the specific grant:

Place of Performance:
(Street address, city, county, state, zip code)

1700 Spring Garden Street

Philadelphia, PA 19130

☐ Check if there are workplaces on file that are not identified here.

ALTERNATE II (GRANTEES WHO ARE INDIVIDUALS)

(1) The grantee certifies that, as a condition of the grant, he or she will not engage in the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance in conducting any activity with the grant.

(2) If convicted of a criminal drug offense resulting from a violation occurring during the conduct of any grant activity, he or she will report the conviction, in writing, within 10 calendar days of the conviction, to every grant officer or other designee, unless the Federal agency designates a central point for the receipt of such notices. When notice is made to such a central point, it shall include the identification number(s) of each affected grant.

As the duly authorized representative of the applicant, I hereby certify that the applicant will comply with the above certifications.

NAME OF APPLICANT	PR/AWARD NUMBER AND/OR PROJECT NAME
Community College of Philadelphia	
PRINTED NAME AND TITLE OF AUTHORIZED REPRESENTATIVE	
Phyllis Della Vecchia, V.P. for Academic Affairs	
SIGNATURE	DATE
P. Della Vecchia	6/16/93

6.3.2 ENVIRONMENTAL STUDIES OF THE INNER CITY

Proposed by
Baltimore City Community College

Summary

Baltimore City Community College (BCCC), in partnership with Morgan State University, Howard University, and two Baltimore City Public elementary schools, Robert W. coleman and Ashburton, will provide an environmental science program for 5th grade students from the tow schools. Approximately 100 minority students will participate annually.

The project will build upon tow current BCCC Partnership programs: the highly successful Elementary Scientist Program, a pilot project now being conducted by BCCC and the Robert W. Coleman School; and the upcoming 1993 Summer Teacher Training Program funded by the National Science Foundation in which BCCC will train teachers from the partner schools to implement and expand the Baltimore City Public Schools science curriculum, STARS (Science, Thinking, Application, and Research Skills).

The Environmental Studies program will include hands-on science experiments and activities, computer training, mentoring by the students and faculty of the colleges, career exploration with community scientists, and field trips. Parents will be encouraged to attend and assist in all activities and to serve as chaperons for the field excursions. All aspects of the program will be evaluated by project staff and an outside evaluator.

The program will address tow fundamental needs of the Baltimore City Schools: the need to encourage minority youth to remain in school (50% of city high school students do NOT graduate), to study science, and to go on to college; and the need to train students to understand the special problems of the urban environment of the inner city, thus joining the learning of science and civic responsibility within a framework of issues and problems familiar to all inner city students.

To address these needs, project planners have set these goals: to provide 5th grade minority students with campus-based experiences that support the efforts of their elementary schools to develop aspirations for higher education, to strengthen students' problem solving and critical thinking skills, and to foster an interest in the sciences as a means to personal, professional, and educational achievement. In meeting these goals, BCCC and its partners will make a significant local contribution to the national goals of producing students with excellent math and science skills, engaging parents and the community in math and science education efforts, and encouraging the full participation of minorities in math and science careers.

Background and Importance

The study of science is not only a recognized national need, it is a critical local need. Studies show that science is of crucial importance to the economic and environmental future of the City of Baltimore. Science will ge the major force driving the region's economy by the year 2000. Baltimore schools must begin now to train the elementary school students who will be the scientist of this promising future. But the City schools cannot do the job alone. Lack of resources limit the amount of teacher training and science equipment available. To help the schools overcome these deficiencies, local educational and business organizations have formed partnerships to help individual schools and to increase public awareness of the importance of science education.

All of the partners in this project are committed to this effort, and all play important roles in urban minority, and environmental educational. Both of the participating elementary schools have 100% African American enrollments and faculties that are nearly all female and African American. Each school has instituted the new, hands on Stars Science Curriculum, and each is committed to integrating computer technology across the curriculum. Both of the schools have special science and environmental programs directly related to the goals of this project and extensive networks of community partners, from which they will draw volunteers to serve as mentors and guest speakers for the program. Robert W. Coleman partners include the U.S. Department of Energy, Westinghouse, and Diversified Engineering.

BCCC is in a unique position to help the schools address their needs and met the challenges of preparing for the 21st century. the college has taken a leadership role in developing partnerships with the Baltimore city Public Schools, other higher education institutions, and area businesses and industries to develop educational programs that will train Baltimore's future scientist, engineers, and mathematicians.

BCCC is the city's only two-year community college. It serves over 6,000 students annually at tow main campuses and at more than 50 off-campus sites. Students enroll in degree, certificate, transfer, and developmental studies programs. Two "bridge" programs with transfers to bachelor degree programs and beyond.

The student population at BCCC is 78% African American and 70% female. Their average age is 28, and the majority (68%) attended BCCC as part-time students. In 1992, 48% of the students enrolled in degree programs qualified for need-based financial assistance.

The 1990 Bureau of Census and a 1991 report by the Maryland Higher Education Commission (MHEC) illustrates the central role of BCCC to city minority residents seeking access to education. Although the African American population of the City is 59.2%, of the City residents that attend BCCC, 83.3% are African American. MHEC reports that of all African American City residents that enroll in <u>any</u> public tow-year institutions, 77% enroll at BCCC. thus, BCCC represents a single source of higher education for minority students such as those who will participate in the Environmental Studies of the Inner City program.

As the chief provider of such educational opportunity, BCCC is well aware that it cannot wait until students appear at its door to educate them. Baltimore's future needs and the problems facing the school system in meeting them have prompted the college to develop and participate in a number of partnership programs, all of which have given BCCC the experience and skills need to develop and operate the proposed environmental studies project effectively and efficiently.

Currently, BCC 's Department of Natural and Physical Sciences sponsors or participates in several programs that are designed to enhance the science and mathematics skills and career interests of the city's public school minority students. Using hands-on science activities and the process of discovery learning, BCCC faculty nd student mentors serve over 200 students each year in the following programs:

(1) <u>Five-Week Summer Scholars Science Enrichment Program</u> provided by BCCC for the <u>Academic Champions of Excellence (ACE)</u>, funded by MHEC through Morgan State University. Designed to raise the level of academic preparedness among historically disadvantaged students in grades 6-12 and to encourage them to go on to college.

(2) <u>Project RAP</u>, funded by RJR-Nabisco. Designed to expose middle school minority

students to the excitement of mathematics, science, and technology and the opportunities awaiting them at the high school and college levels through work with college professors, college students, and high school mentors on selected science and math projects.

(3) Project PRIME , funded by REaders Digest-DeWitt Wallace. Designed to recruit and inspire minorities to pursue careers in teaching and education.

(4) Elementary School Scientist Program, supported by the volunteer efforts of the BCCC science faculty and BCCC's Life Science Institute. Designed to expose minority students at the elementary school level to the world of science and computers though weekly visits to campus involvement in a series of hands-on science projects, and activities in the departments's MacIntosh computer lab.

(5) Tech Prep Biotech Program, funded through a federal Perkins Grant. A college and carer track, internship-based Biotechnology program designed to move students through an integrated course of study from high school to college and/or which qualified students are provided with summer courses, enrichment activities, and financial support that will enable them to enter BCCC's Biotechnology p program.

(6) BCCC Life Sciences Institute. The institute works through partnerships with corporations, the Greater Baltimore Committee, and local and state economic agencies and academic institutions. In conducting the Environmental Studies program, BCCC will call upon all of the resources it has developed in these programs.

Work Plan

The Environmental Studies Program will consist of one 12-week session in the fall and one in the spring. Activities for the sessions are described below.

8/93 FALL SEMESTER: Weeks 1-3, BCCC faculty and student mentors, student mentors from Howard and Morgan State Universities, and the outside project evaluator will works at the elementary schools with the 5th grade teachers tow hours per week to become acquainted with the students, administer pre-program tests, and explain the program. Each of the schools also will host an evening meeting for parents, in which the school administrators and teachers, and the program faculty and mentors will explain the program and encourage parents to participate.

Week 4-9, The 5th graders will come to the BCCC campus every Friday afternoon for two hours. In week 4 they will attend an opening program and tour the BCCC science department. They will be divided into groups of 10 students, with 1 professor and 2 mentors for each group. The mentors will minority students majoring in science (see below). Each group will undertake a six-week project on which they will work (including writing reports about the experiments), and field trips. Topics will include stream ecology (with pollution studies of 3 Baltimore streams, sampling city soil for lead content, nutrients in the soil, and Chesapeake By environmental Exploration. Minority scientist from area businesses, industries, and other colleges will give presentations, and representatives from the BCCC financial aid office will explain how to finance a college education.

Activities in all of the study areas will include hands-on field and laboratory work. In the stream ecology component, for example, students will test the quality of water in three urban streams. A local environmental testing company will serve as

a resource for career exploration and "shadow scientist" mentoring activities, in which member of the company's staff will work with the students. Activities may include: Stream field trips (collection); Introduction to ecology (discussions); Introduction to the MacIntosh laboratory; Building a steam ecosystem in the laboratory; Monitoring the laboratory stream; Tests of stream water; Classification of stream organisms; Kick Seine sample data (riffles) in the streams; and MacIntosh simulation activity.

11/93 Weeks 10-12. Students will analyze and graph data using MacIntosh computers and will write reports on their projects. They will make an oral presentation at a closing ceremony at BCCC. The audience will include school and community leaders area scientist, and parents. Students will tour Howard University or Morgan State University (see below). Evaluation activities, including pre- and post-testing, will be done throughout the program by the project staff, teachers, and the outside evaluator.

1/94 SPRING SEMESTER: Weeks 1-3. Program faculty and mentors again will work at the elementary schools. They will review the projects that were done in the fall and introduce new topics for the spring semester projects

Weeks 1-3. Program faculty and mentors again will work at the elementary schools. They will review the projects that were done in the fall and introduce new topics for the spring semester project.

Weeks 4-9. Students groups will work on projects as they did in the fall.

Weeks 10-12 Projects will be completed, evaluation activities will be conducted, and students will tour Howard University or Morgan State University (see below). A closing ceremony will be held. At the end of the project, the program faculty, the elementary school teachers and administrators, the outside evaluator, parents,and mentors will go on a three-day retreat to evaluate the entire program and to develop a model that may be adapted by other urban elementary schools. Activities will include presentation of papers by members of the project team, discussions, andplanning for a regional workshop for other colleges with large numbers of minority urban schools in their communities. The full schedule for dissemination of results is discussed under Expected Outcomes, below.

The Role of Howard University and Morgan State University. Howard University and Morgan State University will assist BCCC in Presenting the program. Both of these historically black university black universities have well-educated, highly skilled, scientific and technical personnel who will participate as advisors and mentors. Both universities actively involved with the Department of Energy and Environmental Protection Agency in programs that encourage minority students to consider careers in awareness of urban environmental waste management issues.

Students who are majoring in engineering and science at the two universities will serve as mentors to the elementary school students. The Howard and Morgan students will work with BCCC Biotechnology majors to mentor the youngsters. All of the mentors will assist the BCCC faculty with hands-on activities in the labs, on the field trips, and will work with the elementary school teachers in the preliminary activities that will introduce the students to the program.

As part of the program, each university also will host a tour of its campus and science labs so that the students may observe scientists at work and compare different educational environment.

Demographic Composition of Program Participants

The 100 fifth grade students who will participate in this program annually come from two elementary schools located near BCCC's Liberty Campus. The student population is 100% African American women predominate in teaching, staff, and administrative positions at both schools. The schools, and the issues they face, reflect the demographics of the city.

The population of Baltimore City comprises nearly 40% of the people in the Baltimore Standard Metropolitan Statistical Area (SMSA), but, as census data reveal, much larger percentages of special populations are concentrated here: 86% of the Black population; 68% of families headed by female; 60% of the working poor; 58% of the unemployed; 72% of those below the poverty level; 53% of juveniles cited in delinquency cases; and 70% of unemployed black youth. The median income for residents of the City is significantly below the median income of residents of the surrounding suburbs. About 50% of the City's residents receive some form of public assistance or social service grant.

The City's public school system is more than 75% black. Only about 50% of the students that begin ninth grade graduate from high school. According to the 1990 Census, 21.3% of city residents age 16-19 were not enrolled in school nd were not high school graduates. Citywide, only 18.97% of persons age 25 and over have an A.A. degree or higher. Among the 20 largest cities in the U.S., Baltimore had the lowest percentage of adults over 25 years of ge with a high school degree and the third lowest percentage with a college degree.

The data clearly indicate that City minority children have limited opportunities to develop values that include educational achievement. This program will provide such opportunities.

Expected Outcomes

Based on the outcomes of the similar programs it conducts, BCCC expects this program to yield significant results. It will increase the likelihood that students will continue their education through college; increase the likelihood that the students; skills in math and science will improve; increase the likelihood that students will pursue upper level studies in math and science; familiarize elementary school teacher with hands-on science activities; increase the number of hands -on science activities that are implemented in the elementary school classroom; increase the BCCC student mentors' understanding of scientific concepts through the assistance they will provide to young learners; increase the BCCC student mentors' self-esteem and confidence in their academic ability through interaction with young learners and with the Howard and Morgan students mentors.

The project also will result in a fully field-tested, evaluated, and documented model program that can be reproduced or adapted by any urban school system in the country. To inform potential users, BCCC and its partners will conduct the following dissemination activities. BCCC will disseminate news of the project regularly through the college's office of public relations. Media coverage of the program will promote the interest of the community and parents in this and other science education programs. the project staff will produce a comprehensive final report, which BCCC will circulate to other educational institutions, the Greater Baltimore Committee (a group of business and industry leaders which promotes science education in the City), and other groups. BCCC and its partners will plan and conduct a one-day regional workshop on the project for representatives of school districts, community colleges, and higher education institutions with large minority constituencies in Maryland, Pennsylvania, Delaware, and Virginia. The workshop will be held at the end of the third year of the project (June 1969) at the BCCC Harbor Campus, which is adjacent to staff also will present their findings at professional conferences and in articles for professional journals.

Measurement of Results

The project staff, faculty advisors, and the classroom teachers will work with outside evaluator to develop evaluation instruments for all aspects of the program. Dr. Sandra Nettles, nationally recognized expert, will construct a plan specifically for this project based on the Program Development Evaluation (PDE) plan, which is a structured approach to be applied concurrently with program implementation. (Gottfredson, G., Nettles, S.M., and McHugh, B., 1991, Meeting the challenges of multicultural education: A report from the evaluation of Pittsburgh's Prospect Multicultural Education Center. Baltimore: Johns Hopkins University, Center for Social Organization of Schools.) this approach consists of nine steps that form a cycle of activities that recur throughout the program. Within each cycle, the evaluator provides information to program implementers regarding: 1) whether critical benchmarks of adoption and implementation are being met; 2) the extent to which program components are being implemented as planned and are achieving the anticipated objectives; and 3) where the program stands in meeting its goals.

For the Environmental Studies program, tests and other exercises will be conducted, and data will be gathered and analyzed throughout the course of the program to measure students; acquisitions of knowledge, changes in attitude toward science and the environment, and development of communication and computer skills. Data also will gathered and analyzed to measure changes in the attendance and promotion rates of the participants compared to students who were not in the program and to Baltimore City attendance rates in general. Students will take the Maryland State Performance and Achievement Program (MSPAP) test to document growth in concept attainment. Grade level comparisons will be made within each participating school to prior performances, and MSPAP performance will be compared among the two program schools and other Baltimore schools. Dr. Nettles will produce a comprehensive evaluation report at the end of each program year.

References

Baltimore City Public Schools, 1992. Summary of Mathematics and Science Programs.

Greater Baltimore Committee, Baltimore: Where Science Comes to Life. Baltimore, 1991.

Maryland State Department of Education, 1990 Teacher Supply and Demand in Maryland 1990-1992.

Maryland State Board of Community College, 1992. 1992 Databook.

Leadership and Management

The director and other staff for this project have a proven track record of successful project management and leadership. They have extensive experience in working directly with public school administrators, principals, teachers, and students, as well as in documenting and disseminating program results. Qualifications of the key personnel for the project are described briefly below. Their biographies are presented in Appendix B.

> Project Director. Michelle Bondima a minority scientist, is the Director of the BCCC Science Learning Center and a member of the faculty of the Department of Natural and Physical Science. She initiated, developed, and directed the 1992 pilot Elementary Scientist Program with the Robert W. Coleman School. Ms. Bondima will coordinate all phases of the project including the development of curricula, the director will choose the BCCC student mentors for the program and will consult with Howard University and Morgan State University as they choose their mentors for the program.

Project Co-director. Dr. Joanne Settel is Assistant Professor of Biology at BCCC, where she teaches Human Anatomy and Physiology and Introductory Biology. She is an expert in writing science books and presenting science materials to young people and has worked on environmental projects for EPA and other federal agencies. She will work with the director to develop and implement the environmental studies curriculum and will serve as an instructor.

Project Evaluator Dr. Sandra Murray Nettles, a minority scientist is Principal Research Scientist, Center for Social Organization of Schools, Johns Hopkins University. Dr. Nettles will work with the Project Director, elementary school faculty and administrators, and the faculty advisors from the college and the universities to develop and implement evaluation instruments for all phases of the project. She will compile and analyze all evaluation data and write an evaluation report at the end of the year's activities.

Project Administrator and Instructor. Dr. Jack Taylor is Chair of the BCCC Department of Natural and Physical Science. He holds a Ph.D. in Physics with a concentration in Biophysics as well as an MBA degree. Dr. Taylor will monitor the budget and expenditures and will serve as an instructor for the project.

Project Advisor and Instructor Dr. Jerome A. Atkins, Assistant Dean, School of Engineering, Morgan State University, is a minority scientist. He will choose the Morgan State student mentors for the program and will serve as an instructor and mentor.

Project Advisor and Instructor. Dr. James E. Johnson, Jr., a minority scientist, is professor of Civil Engineering, Howard University, and Assistant Director, Great Lakes and Mid-Atlantic Hazardous Substance Research Center. he will choose the Howard student mentors and will serve as an instructor and mentor.

Budget

The budgets for this project are included as Appendix 6.3.2 A.

APPENDIX 6.3.2 A

BUDGETS

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APPENDIX 6.3.2 B

BIOGRAPHIES OF PROJECT LEADERSHIP

APPENDIX B

Biographies of Project Leadership

Project Director

MICHELLE HARRIS-BONDIMA

EDUCATION
A.A., Premedical, Community College of Baltimore (now Baltimore City Community College), 1975.
B.A., Biopsychology, University of Maryland-Baltimore County, 1978.
Candidate, M.S., Environmental Science, Johns Hopkins University (anticipated 1994).

Additional graduate work in public relations (Goucher College), Advanced Organic Chemistry (Morgan State University), Advanced Sexual Biology (Johns Hopkins University), and Organic Chemistry (Coppin State College).

PROFESSIONAL EXPERIENCE
1989-present: Director of the BCCC Science Learning Center.

1979-present: Chemistry Laboratory Lecturer in Inorganic Chemistry, Organic Chemistry, and Biochemistry for health science majors.

1989-91: Coordinator of the BCCC Science Laboratories (Microbiology, Chemistry, Anatomy and Physiology, Physics, and General Biology).

1988-92: Research Assistant, Johns Hopkins University School of Medicine, Division of Behavioral Biology, Department of Psychiatry and Behavioral Sciences.

1977-78: Research Assistant, University of Maryland at Baltimore, Department of Psychology and Adolescent Psychology.

PUBLICATION
Co-author, The New Community College of Baltimore Allied Health Chemistry Laboratory Manual. 1985.

SELECTED PROFESSIONAL AND COLLEGE SERVICE
1992-present: BCCC coordinator for Project RAP.

1992: Participant, Oklahoma High School Teacher Cadet and Middle School Program, Team Curriculum Training Program. Oklahoma State Regents for Higher Education, University of Central Oklahoma.

1991-present: Designer and coordinator of the Elementary School Scientists Program with the Robert W. Coleman Elementary School.

1991-92: BCCC representative to the consortium for developing Project PRIME.

1990-present: Faculty liaison and sponsor and BCCC coordinator for the Morgan State University ACE program (Academic Champions of Excellence); Vice-Chair of the Advisory Board (1991).

1990: Coordinator for the Science/Math Career Day.

1983-present: Chair of the BCCC Science Department Recruitment Committee.

1980-present: Member of numerous college service and academic search committees.

PROFESSIONAL AFFILIATIONS
American Chemistry Society.
National Science Teachers Association.
Smithsonian Institution.

SELECTED COMMUNITY SERVICE
Lifetime Member, NAACP.
Member, St. Ambrose Catholic Church.
National Council on Negro Women.

AWARDS
1992: BCCC Celebration of Achievement Award.

1992: Baltimore City Citizens Award.

1991: Robert W. Coleman Elementary School VIP Award.

1991: Morgan State University School of Education and Urban Studies Certificate of Outstanding Community Involvement Award.

Project Co-director

JOANNE SETTEL

EDUCATION
B.A., Zoology, Connecticut College, 1971.
M.A., Biology, State University of New York at Buffalo, 1973.
Ph.D., Biology, State University of New York at Buffalo, 1977.

PROFESSIONAL EXPERIENCE
1991-present: Assistant Professor of Biology, BCCC Department of Natural and Physical Science. Courses: Human Anatomy and Physiology; Introductory Biology.

1980-present: Professional Science Writer. Author of four science books for 8-12 year olds: A Kids' Computer IQ Book; Why Does My Nose Run?; How Do Ants Know You're Having A Picnic?; and Why Do A Cat's Eyes Glow In The Dark?

1986-91: Senior Scientist and Deputy Project Manager, Technical Resources, Inc. Provided educational materials and technical support in health and environmental risk assessment for the EPA. Produced training modules, instructor and student manuals, case studies, and interactive training software for the EPA Risk Assessment Training courses. Developed fact sheets on health effects and toxic waste cleanup for use at EPA Superfund sites.

Developed health and environmental risk assessment reports for EPA that included toxicological profiles, risk assessment guidelines, and risk assessment frameworks.

Provided technical support for the Division of Acquired Immunodeficiency Syndrome (DAIDS), National Institute of Allergy and Infectious Diseases. Produced technical articles on AIDS research and briefing materials, press releases, fact sheets, and background pieces. on AIDS and opportunistic infections.

1980-86: Assistant Professor of Biology, Hood College, Frederick, Maryland. Courses and labs in Vertebrate Anatomy, Vertebrate Physiology, Wildlife Ecology, Vertebrate Zoology, Endangered Species, and Introductory Biology.

1978-79: Lecturer, Department of Biology, State University College at Buffalo. Courses: Animal Behavior, Man and Evolution.

1977-79: Lecturer, Department of Biology, State University of New York at Buffalo. Taught Mammalian Biology; organized Mammalian Biology lab and supervised teaching assistants.

1976-77: Visiting Assistant Professor, Department of Biology, Rochester Institute of Technology. Courses: Anatomy and Physiology, Animal Behavior, General Biology, and Contemporary Science.

SELECTED PUBLICATIONS

Settel, J. et al., 1991. The use and development of environmentally controlled chambers (mesocosms) for evaluating biotechnology products. U.S. EPA Contract No. 69-CO-0021.

Settel, J., 1989. Polymerase chain reaction project exploring potential clinical applications. AIDS Research Exchange, July/Aug.

Settel, J., 1989. ACTG to study maternal-infant transmission of HIV. AIDS Research Exchange, May/June.

Mittelman, A., Settel, J., et al., 1989. A new methodology for the ecological assessment of mining wastes (MEAMS). U.S. EPA Contract No. 68-W8-0082.

Mittelman, A., Strauss, H., Condit, R., Settel, J., et al., 1988. Biotechnology--A risk assessment framework: Bioremediation and environment release of natural or genetically engineered microorganisms. U.S. EPA Contract No. 68-03-3258.

Mittelman, A., Settel, J., et al., 1988. A review of laws, regulations and guidelines as they pertain to the NASA Occupational Health Program. NASA Contract No. NASA-4265.

Mittelman, A., Bush, B., Settel, J., et al., 1988. Ecological risk assessment guidelines. U.S. EPA Contract No. 68-02-4199.

Mittelman, A. and Settel, J., 1988. Ecological endpoint selection criteria. U.S. EPA Contract No. 68-02-4199.

Mittelman, A., Fulton, R., and Settel, J., 1988. Application of risk assessment guidelines: Case study for Atrazine. U.S. EPA Contract No. 68-02-4199.

Mittelman, A., Settel, J., et al., 1987. Ecological endpoint selection criteria. U.S. EPA Contract No. 68-02-4199.

Mittelman, A., Stoner, S., Mooney, E., Cannon, D., Settel, J., and Brown, R., 1987. Gut absorption of heavy metals. U.S. EPA Contract No. 68-02-4199.

Settel, J., 1985. Study of animal behavior in the zoo. American Biology Teacher, 47, 5.

PROFESSIONAL AFFILIATIONS

American Association for the Advancement of Science.
The Human Anatomy and Physiology Society.

Project Evaluator

SAUNDRA MURRAY NETTLES

EDUCATION

B.A., Magna Cum Laude, Philosophy, Howard University, 1967.
M.S., Library Science, University of Illinois, 1968.
M.S., Psychology, Howard University, 1974.
Ph.D., Psychology, Howard University, 1976.

PROFESSIONAL EXPERIENCE

1988-present: Principal Research Scientist, Center for Social Organization of Schools; Co-Director, School, Family, and Community Connections Program Center for Research on Effective Schooling for Disadvantaged Students; and Project Director, Center on Families, Communities, Schools and Children's Learning, Johns Hopkins University.

1987-88: Director, Program Planning, Fairfax County (Va.) Department of Community Action. Responsible for strategic and operational planning for the Department and for design and implementation of annual household survey to assess needs of low-income populations.

1983-87: Director, Office of Field Services Operations, United Planning Organization, Washington, D.C. Responsible for administration, supervision, and coordination of $9 million in programs funded by Head Start, Community Services Block Grant, and the D.C. government.

1978-82: Senior Research Scientist and Research Scientist, American Institutes for Research, Washington, D.C. Director, National Evaluation of the PUSH for Excellence Program (funded by National Institute of Education). Site Manager, Technical Assistance for the School to Work Action Program (funded by the Edna McConnell Clark Foundation).

1976-78: Assistant Professor University of Maryland, Baltimore County. Courses taught: Research Design and Documentation; Introduction to Methodology and Research in African American Studies; Academic Achievement of Black Students; The Black Family in the United States; and Women's Issues in Black and White Communities.

SELECTED PUBLICATIONS

Young Astronaut Council, 1992. Blueprint for integrated science, mathematics, and technology education. Washington, DC.

Nettles, S. M. and Pleck, J., 1992. Risk, resiliency, and development: The multiple ecologies of black adolescents. Haggerty, R. J., Garmezy, N., Rutter, M., and Sherrod, L.R., eds. Stress, coping and development: Risk and resilience in children. New York: Cambridge University Press.

Nettles, S.M. and Scott-Jones, D.. 1992, in press. The role of sexuality and sex equity in the education of minority adolescents. Klein, S. ed., Sex equity and sexuality in education. SUNY Press.

Gottfredson, G., Nettles, S. M., and McHugh, B., 1991. Meeting the challenges of multicultural education: A report from the evaluation of Pittsburgh's Prospect Multicultural Education Center. Baltimore: Johns Hopkins University, Center for Social Organization of Schools.

Nettles, S.M. and Greenberg, B., 1991. Evaluation of the Baltimore Science/Math Enrichment Program. New York: National Executive Service Corps.

Nettles, S.M., 1990. Community involvement and disadvantaged students: A review. Report No. 8. Baltimore: Johns Hopkins University Center for Research on Effective Schooling for Disadvantaged Students.

Nettles, S.M., 1990. Academic performance. The Consortium for Research on Black Adolescence. Black Adolescence, 69-78. New York: G.K. Hall.

Murray (Nettles), S.R., 1982. Investigating and understanding the educational needs of black girls. (ERIC Document, Reproduction No. ED267166).

Murray (Nettles), S.R., Murray, C.A., Gragg, F.E., et al., 1982. National Evaluation of the PUSH for Excellence Project: Final report. (ERIC Document Reproduction Service No. ED240225), Washington, D.C.: American Institutes for Research.

In addition to these and many other publications, Dr. Nettles has presented papers at conferences throughout the U.S. and Canada. One of the most recent was "Community involvement," presented at the Conference on Perspectives on Social Reasoning and Motivational Factors for Black Males. Brown University, November 1991.

SELECTED PROFESSIONAL, UNIVERSITY, AND COMMUNITY SERVICE

Peer Review Panels for the National Science Foundation and the National Institute of Mental Health; Associate Editor, Evaluation Review; Consulting Editor, Journal of Negro Education; Chair, Section on the Psychology of Black Women, Division 35, American Psychological Association; Consulting Editor, Sage: A Scholarly Journal on Black Women; National Advisory Committee, Black Women's Educational Equity Network, a project of the Wellesley College Center for Research on Women.

CONSULTANCIES

Young Astronaut Council, Washington, D.C.; Rockford (Ill.) Public Schools; Department of Community Action, Fairfax Co., Va.; Member of Study Team, Gettysburg College Minority Climate, conducted by Consultants for Design and Analysis, Great Falls, Va.; Race Relations Education and Training Branch, Walter Reed Army Medical Center, Washington, D.C.

Project Administrator and Instructor

JACK W. TAYLOR

EDUCATION
B.S., with honors, Physics, Washington State University, 1962.
M.S., Physics, University of Michigan, 1964.
Ph.D., Physics, University of Michigan, 1969.
M.B.A., Marketing, University of Baltimore, 1980.

PROFESSIONAL EXPERIENCE
1991-present: Chair and Professor, Department of Natural and Physical Science, BCCC.

1989-91: Dean, Division of Science, Mathematics, and Allied Health, BCCC.

1986-89: Chair and Professor, Department of Business, BCCC.

1981-86: Investment Advisor/Financial Planner; Certified Financial Planner.

1970-81: Dean of Science, Towson State University, Towson, Maryland.

1969-70: NIH Postdoctoral Fellow, Department of Biophysics, Johns Hopkins University.

1965-66: Instructor, American School of Paris, France.

1962-63: Scientist, E.G. & G., Inc., Santa Barbara, California.

1963-65: Teaching Fellow, Department of Physics, University of Michigan.

HONORS
Phi Beta Kappa.
Phi Kappa Psi.

PUBLICATIONS
The Early Receptor Potential of the Living Eye. Proceedings of the Fifth International Congress on Photobiology, August 1968.

Blockage of the Recovery of the Fast Photovoltage from the Frog Retina. Abstract of the Biophysical Society, 9, A-243.

Cone and Possible Rod Components of the Fast Photovoltage in the Frog Eye: A New Method of Measuring Cone Regeneration Rates in vivo. Vision Research, 9, 443-52 (1969).

The Fast-Photovoltage and Electrogram of the Frog Eye. Dissertation, University of Michigan, 1969.

RECENT PROFESSIONAL MEETINGS
National Science Foundation Interactive Physics Seminar, Dickinson College, June 1992.

NSF CE/OCS Workshop for Community College Physics Faculty, September 1992.

COLLEGE AND COMMUNITY PROJECTS
Dr. Taylor administers the partnership projects in which the BCCC science department participates and heads the planning for a new 71,000 sq. ft. science building on the college's Liberty Campus.

Project Advisor and Instructor

JAMES H. JOHNSON, JR., P.E.

EDUCATION
B.S., Civil Engineering, Howard University, 1969.
M.S., Sanitary Engineering, University of Illinois, Champaign-Urbana, 1970.
Ph.D., Applied Sciences, University of Delaware.

PROFESSIONAL REGISTRATION
Registered Professional Engineer in the District of Columbia.

PROFESSIONAL EXPERIENCE
Current position: Professor of Civil Engineering, Howard University, and Assistant Director, Great Lakes and Mid-Atlantic Hazardous Substance Research Center.

Dr. Johnson teaches graduate and undergraduate courses in environmental engineering. His major course assignments have been in the areas of: sewage collection and water distribution systems; physical separation methods; and hazardous waste management, treatment, and disposal.

In his research, Dr. Johnson has focused mainly on the reuse of wastewater treatment sludges and the treatment of hazardous substances. During the past six years, Dr. Johnson has been the principal investigator of six U.S. EPA grant projects. He was Co-Conference Director for the 20th Mid-Atlantic Industrial Waste Conference, held in June 1988. Currently, he serves as Assistant Director of the Great Lakes and Mid-Atlantic Hazardous Substance Research Center, an EPA Center serving Regions 3 and 5. (Participating schools include the University of Michigan, Michigan State University, and Howard University.) Dr. Johnson also has served as a technical consultant to the administrator in charge of the Blue Plains Wastewater Treatment Plant in Washington, D.C., and as a consultant to the Pan American Health Organization and to several engineering firms.

SELECTED PUBLICATIONS
Luthy, R.G., Bella, D.A., Hunt, J.R., Johnson, James H., et al., 1992. Future concerns in environmental engineering graduate education. ASCE Journal of Professional Issues in Engineering, 118: 361-80.

Adenuga, A.O., Johnson, James H., et al., 1992. Bioremediation of PAH-contaminated soil via in-vessel composting. Water Science and Technology, 26 (No. 9-11): 2331-34.

Yusuf, M., Johnson, James H., and Wan, L. Detoxification of a contaminated sludge via in-vessel composting. Proceedings of the 23rd Mid-Atlantic Industrial Waste Conference, R.D. Neufeld and L.W. Casson, eds. Lancaster: Technomic Publishing Co., Inc.

Chawla, R.C., Prozucek, C., Cannon, J.N., and Johnson, James H., 1991. Importance of soil-contaminant-surfacant interactions in in situ soil washing. Emerging Technologies in Hazardous Waste Management II. ACS Symposium Series 468, D.W. Tedder and F.G.

Pohland, eds. Washington, D.C.: American Chemical Society.

Schwartzman, D.W., Johnson, James H., et al., 1990. An ion exchange model of lead-210 and lead uptake in a foliose lichen: Application to quantitative monitoring of airborne lead fallout. The Science of the Total Environment, 100 (1991), 319-36.

Diallo, M.S., Johnson, James H., et al., 1990. Recovery of organic compounds from sewage sludge by proton transfer. Emerging Technologies in Hazardous Waste Management II. ACS Symposium Series 422, D.W. Tedder and F.G. Pohland, eds. Washington, D.C.: American Chemical Society, 311-27.

Chawla, R., Johnson, James H., et al., 1990. In-situ treatment of soils contaminated with hazardous organic wastes using surfacants: A critical analysis. Solid/Liquid Separation: Waste Management and Productivity Enhancement. ACS Symposium Series 422, D.W. Tedder and F.G. Pohland, eds. Washington, D.C.: American Chemical Society, 356-67.

Varma, M.M., Niles, F.R., and Johnson, James H., 1989-90. The reaction of organic nitrogen compounds with chlorine and chlorine dioxide. Journal of Environmental Systems, 19 (1), 33-43.

Hazardous and industrial waste. Proceedings of the 20th Mid-Atlantic Industrial Waste Conference, M.M. Varma and J.H. Johnson, eds. Washington, D.C.: Hazardous Materials Control Research Institute.

PROFESSIONAL AFFILIATIONS

Hazardous Materials Control Research Institute.
American Association of Environmental Engineering Professors.
American Water Works Association.
American Society of Civil Engineers.
Tau Beta Pi Engineering Honor Society.

Project Advisor and Instructor

JEROME A. ATKINS

EDUCATION

B.S., Electrical Engineering, Howard University, 1963.
M.S., Astronautics/Space Facilities, Air Force Institute of Technology, Wright-Patterson Air Force Base, Ohio, 1965.
M.S. (Ph.D. candidate), Aeronautics/Astronautics, Purdue University, 1972.
Ed.D., Educational Leadership, Auburn University, 1979.
M.B.A., Management, Marymount University, Arlington, Virginia, 1989.

PROFESSIONAL EXPERIENCE

1990-present: Assistant Dean, School of Engineering, Morgan State University.

1990-present: Executive Vice President, International Management Development and Training, Inc., Springfield, Virginia.

1984-89: Principal Staff Engineer and Program Manager, Textron Defense Systems, Wilmington, Massachusetts, Washington, D.C.

1982-83: Instructor, Department of Mathematics, University College, University of Maryland-College Park.

1981-83: Military Assistant, Defense Science Board, Office of the Under Secretary of Defense for Research and Engineering, Department of Defense, Washington, D.C.

1981: Instructor, Department of Mathematics, UCLA.

1980-81: Research Fellow, Engineering and Applied Sciences Department, Rand Corporation, Santa Monica, California.

1976-80: Operations Research Scientist, Office of the Assistant Chief of Staff/Studies and Analyses, Headquarters, U. S. Air Force, Washington, D.C.

1967-68: Construction Engineer (Electrical), Civil Engineering Squadron, U.S. Air Force, Wright-Patterson AFB, Ohio.

1962-63: Patent Examiner, U.S. Patent Office, Washington, D.C.

COMMUNITY ENVIRONMENTAL PROJECT

Executive in charge of production (television), "Working Together To Save Baltimore," an Urban Environmental Town Meeting. Televised, June 1992.

RESEARCH INTERESTS

Environmental science and engineering research and education; engineering curriculum reform; operations research; project management; intelligent systems; educational innovation

and administration; interdisciplinary engineering/business education and management.

PUBLICATIONS

Intelligent munitions for lethal defense suppression. Proceedings of the 55th Military Operations Research Society Symposium, 1987.

Countermobility munitions. Proceedings of the 54th Military Operations Research Society Symposium, 1986.

The tactical ballistic missile threat to NATO. Proceedings of the 45th Military Operations Research Society Symposium, 1980.

An evaluation of airfield attack. Proceedings of the 45th Military Operations Research Society Symposium, 1980.

Air Base Survivability. Proceedings of the 42nd Military Operations Research Society Symposium, 1978. Also published in the Proceedings of the 43nd Military Operations Research Society Symposium, 1979, and the XVII Army Operations Research Society Symposium, 1979.

The United States Air Force Preparatory School: A historical perspective and an analysis of the performance of its graduates. Doctoral dissertation, Auburn University, 1979.

TAC RESOURCER: A resource allocation model. Proceedings of the 38th Military Operations Research Society Symposium, 1976.

Transmission of electrical power by direct current. Air Force Civil Engineer, 1968.

A theory and a procedure for determining the effects of sputtering on igneous rocks. M.S. thesis, Air Force Institute of Technology, 1965.

HONORS AND ACTIVITIES

Tau Beta Phi (Engineering).
Pi Mu Epsilon (Mathematics).
Sigma Xi (Science).
Who's Who Among Students in American Colleges and Universities.
Who's Who Among Black Americans.
Howard University (Student awards and scholarships).
U.S. Air Force (Awards and decorations).

APPENDIX 6.3.2 C

LETTERS OF SUPPORT AND CERTIFICATIONS

BCCC
Baltimore City Community College

March 30, 1993

Dr. William S. Gaither
President
Weston Institute
1 Weston Way
West Chester, Pennsylvania 19380

Dear Dr. Gaither:

The College is very pleased that our preliminary proposal, "Environmental Studies of the Inner City" was selected for full development by the Weston Institute. As you know, we are committed to the support and implementation of projects that increase the participation of minority students in math and science related careers. Inclusion of our project in the proposal to be submitted to the U. S. Department of Energy furthers this goal.

I am happy to support the efforts of the Department of Natural and Physical Sciences to expand their campus based program with young scientists from two Baltimore City Public Elementary Schools. We believe that our proposed project will serve as a model for other colleges that are equally committed to urban environmental education and to community outreach.

Should our proposal require any modifications, please contact Dr. Diane H. Coleman, Director of Development at (410) 333-8305.

Sincerely,

James D. Tschechtelin
President

Harbor Campus • 600 East Lombard Street • Baltimore, Maryland • 21202-4073
STATE OF MARYLAND • William Donald Schaefer, Governor

Ashburton Elementary School
3935 Hilton Road
Baltimore, Maryland 21215

March 12, 1993

Dear Ms Bondima,

We at Ashburton Elementary School are delighted and excited by the possibility of participating in the Baltimore City Community College Elementary Scientist Program. We are all painfully aware of the under-representation of African-Americans in the fields of science and technology. Your program promises to support our efforts to increase our students' achievement in science and computer technology and to broaden their awareness of scientific and technological fields open to them.

The program as you have described it to me involves a great deal of hands-on activities including experiments in microbiology, chemistry, and computer applications. I am confident that we will be able to coordinate your offerings with our science curriculum. It is well known to educators that this hands-on approach to science instruction is the most effective means of conveying not only the basic concepts of science but it's processes as well.

Please let the Ashburton faculty and myself know when this project is ready to proceed. We are anxious to participate and to offer these enriching experiences to our children.

Many thanks!

Sincerely,

Robert P. Marino,
Principal

ROBERT W. COLEMAN ELEMENTARY SCHOOL

NUMBER 142
2400 Windsor Avenue
Baltimore, Maryland 21216

March 12, 1993

Dr. James D. Tschechtelin
President
Baltimore City Community College
2901 Liberty Heights Avenue
Baltimore, Maryland 21215-7893

Dear Dr. Tschechtelin:

The Robert W. Coleman School is excited about the Young Elementary Scientists Project with NCCB. This activity will encourage our students to study science and to think about college as a reachable goal.

The Elementary Scientists Project has the support of Baltimore City Public Schools because of the hands -on STARS (Science, Thinking, Application and Research Skills) program that has been instituted in most elementary schools. In addition, we are seeking the support of our other partnership, The United States Department of Energy, to supply our students with any materials that would suppport your project.

Again, we feel that the collaborative efforts of all stakeholders will create an environment that is conducive to learning for children and an environment in which all children will be successful learners.

Sincerely,

Addie E. Johnson

Addie E. Johnson

HOWARD UNIVERSITY
WASHINGTON, D.C. 20059

SCHOOL OF ENGINEERING
DEPARTMENT OF CIVIL ENGINEERING

March 15, 1993

James D. Tschechtelin
President
Baltimore City Community College
2901 Liberty Heights Avenue
Baltimore, MD 21215-7893

Dear President Tschechtelin:

The Department is pleased to be a collaborator with BCCC for the proposed project, "Environmental Studies of the Inner City," to be submitted to the Department of Energy via the Inner City Energy and Environment Education Consortium. The activities of the project are complementary to on-going activities being sponsored on a DOE cooperative agreement we are administering. Specifically, our grant activities include a teacher training workshop on career opportunities in the area of environmental management, high school outreach programs, funding environmental projects in high school, and a college bridge program.

We are excited about the opportunity to work with you and your staff on this initiative.

Sincerely,

James H. Johnson, Jr.

James H. Johnson, Jr., Ph.D., P.E.
Professor and Chair

JHJ/jw

RECEIVED
MAR 17 1993
OFFICE OF THE PRESIDENT
BCCC

MORGAN STATE UNIVERSITY

Clarence M. Mitchell, Jr.
Engineering Building
Cold Spring Lane & Hillen Road
Baltimore, Maryland 21239
(410) 319-3231
Fax (410) 319-3843

March 10, 1993

Ms. Michelle Harris-Bondima
Baltimore City Community College
2901 Liberty Heights Avenue
Baltimore, MD 21215-7893

Dear Ms. Harris-Bondima:

I am pleased to support your proposal for "Environmental Studies of the Inner City". This environmental science program for elementary school students is a vital part of comprehensive efforts now being pursued on many fronts to increase the enthusiasm and improve the access opportunities for minority students to technical higher education and professional careers. Your approach of hands-on activities, mentoring and parental involvement is clearly a promising one.

My past experiences with students in your program gives me confidence that the proposed effort will be successful. Our activities at the University last year sponsored by the U.S. Environmental Protection Agency included several public meetings in which your program was highlighted. We produced two Urban Environmental Town Meetings for live television which reached audiences nationally. Your little angels performed admirably at both of those events and clearly stole the show. I will be sure to include them in our future public events on environmental concerns.

Again, I offer my wholehearted support of your environmental study. Please call on me for any resources that the University of the School of engineering can provide. Good luck.

Sincerely,

Dr. Jerome A. Atkins
Assistant Dean

CITY OF BALTIMORE

KURT L. SCHMOKE, Mayor

DEPARTMENT OF EDUCATION

WALTER G. AMPREY
Superintendent of Public Instruction
200 E. North Avenue
Baltimore, Maryland 21202

March 29, 1993

Dr. William S. Gaither
President
Weston Institute
One Weston Way
West Chester, PA 19380

Dear Dr. Gaither:

The Baltimore City Public Schools is pleased to support the Baltimore City Community College's project to be included in the Weston Institute proposal to the **"INNER-CITY ENERGY AND ENVIRONMENTAL EDUCATION CONSORTIUM PROGRAM PLAN"** sponsored by the United States Department of Energy.

This project will supplement our environmental science program in two elementary schools. The program includes hands-on activities as well as computer training, and mentoring and components. This proposal is also supportive of our new initiatives and curriculum in science.

We commend Baltimore City Community College for this proposal and look forward to its implementation.

Sincerely,

Walter G. Amprey
Superintendent

WGA:gs

cc: Clearinghouse

LTREND11

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U.S. Department of Energy

Assurance of Compliance
Nondiscrimination in Federally Assisted Programs

Baltimore City Community College (Hereinafter called the "Applicant")
HEREBY AGREES to comply with Title VI of the Civil Rights Act of 1964 (Pub. L. 88-352), Section 16 of the Federal Energy Administration Act of 1974 (Pub. L. 93-275), Section 401 of the Energy Reorganization Act of 1974 (Pub. L. 93-438), Title IX of the Education Amendments of 1972, as amended, (Pub. L. 92-318, Pub. L. 93-568, and Pub. L. 94-482), Section 504 of the Rehabilitation Act of 1973 (Pub. L. 93-112), the Age Discrimination Act of 1975 (Pub. L. 94-135), Title VIII of the Civil Rights Act of 1968 (Pub. L. 90-284), the Department of Energy Organization Act of 1977 (Pub. L. 95-91), and the Energy Conservation and Production Act of 1976, as amended, (Pub. L. 94-385). In accordance with the above laws and regulations issued pursuant thereto, the Applicant agrees to assure that no person in the United States shall, on the ground of race, color, national origin, sex, age, or handicap, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity in which the Applicant receives Federal assistance from the Department of Energy.

Applicability and Period of Obligation

In the case of any service, financial aid, covered employment, equipment, property, or structure provided, leased, or improved with Federal assistance extended to the Applicant by the Department of Energy, this assurance obligates the Applicant for the period during which Federal assistance is extended. In the case of any transfer of such service, financial aid, equipment, property, or structure, this assurance obligates the transferee for the period during which Federal assistance is extended. If any personal property is so provided, this assurance obligates the Applicant for the period during which it retains ownership or possession of the property. In all other cases, this assurance obligates the Applicant for the period during which the Federal assistance is extended to the Applicant by the Department of Energy.

Employment Practices

Where a primary objective of the Federal assistance is to provide employment or where the Applicant's employment practices affect the delivery of services in programs or activities resulting from Federal assistance extended by the Department, the Applicant agrees not to discriminate on the ground of race, color, national origin, sex, age, or handicap, in its employment practices. Such employment practices may include, but are not limited to, recruitment, advertising, hiring, layoff or termination, promotion, demotion, transfer, rates of pay, training and participation in upward mobility programs; or other forms of compensation and use of facilities.

Subrecipient Assurance

The Applicant shall require any individual, organization, or other entity with whom it subcontracts, subgrants, or subleases for the purpose of providing any service, financial aid, equipment, property, or structure to comply with laws cited above. To this end, the subrecipient shall be required to sign a written assurance form, however, the obligation of both recipient and subrecipient to ensure compliance is not relieved by the collection or submission of written assurance forms.

Data Collection and Access to Records

The Applicant agrees to compile and maintain information pertaining to programs or activities developed as a result of the Applicant's receipt of Federal assistance from the Department of Energy. Such information shall include, but is not limited to the following: (1) the manner in which services are or will be provided and related data necessary for determining whether any persons are or will be denied such services on the basis of prohibited discrimination; (2) the population eligible to be served by race, color, national origin, sex, age and handicap; (3) data regarding covered employment including use or planned use of bilingual public contact employees serving beneficiaries of the program where necessary to permit effective participation by beneficiaries unable to speak or understand English; (4) the location of existing or proposed facilities connected with the program and related information adequate for determining whether the location has or will have the effect of unnecessarily denying access to any person on the basis of prohibited discrimination; (5) the present or proposed membership by race, color, national origin, sex, age and handicap, in any planning or advisory body which is an integral part of the program; and (6) any additional written data determined by the Department of Energy to be relevant to the obligation to assure compliance by recipients with laws cited in the first paragraph of this assurance.

The Applicant agrees to submit requested data to the Department of Energy regarding programs and activities developed by the Applicant from the use of Federal assistance funds extended by the Department of Energy. Facilities of the Applicant (including the physical plants, buildings, or other structures) and all records, books, accounts, and other sources of information pertinent to the Applicant's compliance with the civil rights laws shall be made available to inspection during normal business hours on request of an officer or employee of the Department of Energy specifically authorized to make such inspections. Instructions in this regard will be provided by the Director, Office of Equal Opportunity, U.S. Department of Energy.

This assurance is given in consideration of and for the purpose of obtaining any and all Federal grants, loans, contracts (excluding procurement contracts), property, discounts or other Federal assistance extended after the date hereto, to the Applicants by the Department of Energy, including installment payments on account after such data of application for Federal assistance which are approved before such date. The Applicant recognizes and agrees that such Federal assistance will be extended in reliance upon the representations and agreements made in this assurance and the United States shall have the right to seek judicial enforcement of this assurance. This assurance is binding on the Applicant, the successors, transferees, and assignees, as well as the person whose signature appears below and who is authorized to sign this assurance on behalf of the Applicant.

Applicant Certification

The Applicant further certifies that it has or, within 90 days of the date of the grant shall: (a) Designate(d) an individual to serve as Affirmative Action Officer; (b) Establish(ed) complaint procedures for employees and other beneficiaries of the program; (c) Prominently display(ed) posters and other written information publicizing the policy of nondiscrimination; (d) Provide(d) program information in languages other than English (including braille) in a manner to make it accessbile to sight impaired persons; (e) Establish(ed) procedures which enable it to notify DOE on a timely basis of any complaints filed against it and of the disposition of those complaints; (f) Require(d) any subrecipient (subgrantee/subcontractor) under this award to comply with the above cited laws and regulations; (g) Require the subrecipient to sign an assurance form, the applicant certifies that it shall monitor subrecipient compliance as appropriate; (h) Establish(ed) a system capable of collecting racial/ethnic/handicap/sex data in accordance with existing Federal requirements cited in the first paragraph of this assurance.

Development of Current Affirmative Action Plan

June 8, 1998
(Date)

Sheryl D. Fleming
Affirmative Action Officer
(Name, Signature and Date)

(410) 333-5800
Telephone Number

Most recent onsite Federal Assistance Civil Rights review/audit:

Unknown
Agency Conducting Review

Unknown
Date

Baltimore City Community College
Applicant's Name

6/9/93
Date

Address: 2901 Liberty Heights Avenue
Baltimore, Maryland 21215

(410) 333-5800
Telephone Number

Authorized Official President, or Chief Executive Officer

James Schechter
Name and Signature

6/9/93
Date

CERTIFICATIONS REGARDING LOBBYING; DEBARMENT, SUSPENSION AND OTHER RESPONSIBILITY MATTERS; AND DRUG-FREE WORKPLACE REQUIREMENTS

Applicants should refer to the regulations cited below to determine the certification to which they are required to attest. Applicants should also review the instructions for certification included in the regulations before completing this form. Signature of this form provides for compliance with certification requirements under 34 CFR Part 82, "New Restrictions on Lobbying," and 34 CFR Part 85, "Government-wide Debarment and Suspension (Nonprocurement) and Government-wide Requirements for Drug-Free Workplace (Grants)." The certifications shall be treated as a material representation of fact upon which reliance will be placed when the Department of Energy determines to award the covered transaction, grant, or cooperative agreement.

1. LOBBYING

The undersigned certifies, to the best of his or her knowledge and belief, that:

(1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

(3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

2. DEBARMENT, SUSPENSION, AND OTHER RESPONSIBILITY MATTERS

(1) The prospective primary participant certifies to the best of its knowledge and belief, that it and its principals:

(a) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;

(b) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

(c) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (1)(b) of this certification; and

(d) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

(2) Where the prospective primary participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

3. DRUG-FREE WORKPLACE

This certification is required by the Drug-Free Workplace Act of 1988 (Pub. L. 100-690, Title V, Subtitle D) and is implemented through additions to the Debarment and Suspension regulations, published in the Federal Register on January 31, 1989, and May 25, 1990.

ALTERNATE I
(GRANTEES OTHER THAN INDIVIDUALS)

(1) The grantee certifies that it will or will continue to provide a drug-free workplace by:

(a) Publishing a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the grantee's workplace and specifying the actions that will be taken against employees for violation of such prohibition;

(b) Establishing an ongoing drug-free awareness program to inform employees about:

(1) The dangers of drug abuse in the workplace;

(2) The grantee's policy of maintaining a drug-free workplace;

(3) Any available drug counseling, rehabilitation, and employee assistance programs; and

(4) The penalties that may be imposed upon employees for drug abuse violations occurring in the workplace;

(c) Making it a requirement that each employee to be engaged in the performance of the grant be given a copy of the statement required by paragraph (a);

(d) Notifying the employee in the statement required by paragraph (a) that, as a condition of employment under the grant, the employee will:

(1) Abide by the terms of the statement; and

(2) Notify the employer in writing of his or her conviction for a violation of a criminal drug statute occurring in the workplace not later than five calendar days after such conviction;

(e) Notifying the agency, in writing, within ten calendar days after receiving notice under subparagraph (d)(2) from an employee or otherwise receiving actual notice of such conviction. Employers of convicted employees must provide notice, including position title, to every grant officer or other designee on whose grant activity the convicted employee was working, unless the Federal agency has designated a central point for the receipt of such notices. Notice shall include the identification number(s) of each affected grant;

(f) Taking one of the following actions, within 30 calendar days of receiving notice under subparagraph (d)(2), with respect to any employee who is so convicted:

(1) Taking appropriate personnel action against such an employee, up to and including termination, consistent with the requirements of the Rehabilitation Act of 1973, as amended; or

(2) Requiring such employee to participate satisfactorily in a drug abuse assistance or rehabilitation program approved for such purposes by a Federal, State, or local health, law enforcement, or other appropriate agency;

(g) Making a good faith effort to continue to maintain a drug-free workplace through implementation of paragraphs (a), (b), (c), (d), (e), and (f).

(2) The grantee may insert in the space provided below the site(s) for the performance of work done in connection with the specific grant:

Place of Performance:
(Street address, city, county, state, zip code)

2901 Liberty Heights Avenue

Baltimore, Maryland 21215

☐ Check if there are workplaces on file that are not identified here.

ALTERNATE II (GRANTEES WHO ARE INDIVIDUALS)

(1) The grantee certifies that, as a condition of the grant, he or she will not engage in the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance in conducting any activity with the grant.

(2) If convicted of a criminal drug offense resulting from a violation occurring during the conduct of any grant activity, he or she will report the conviction, in writing, within 10 calendar days of the conviction, to every grant officer or other designee, unless the Federal agency designates a central point for the receipt of such notices. When notice is made to such a central point, it shall include the identification number(s) of each affected grant.

As the duly authorized representative of the applicant, I hereby certify that the applicant will comply with the above certifications.

NAME OF APPLICANT	PR/AWARD NUMBER AND/OR PROJECT NAME
Baltimore City Community College	Environmental Studies for Elementary Education Students
PRINTED NAME AND TITLE OF AUTHORIZED REPRESENTATIVE	
James D. Tschechtelin, President	
SIGNATURE	DATE
James D. Tschechtelin	6/9/93

6.4 LINKAGES

6.4.1 Coordination with Urban Systemic Initiatives

6.4.2 DOE/EPA-Unique SPHERE Program

6.4.3 Improving Inner-City Science Fairs

6.4.4 Partnership for Environmental Technology Education (PETE)

6.4.5 HBCU/MI Curriculum Development Model

6.4.6 Replicating the High School Academies Model

6.4.7 Expanding Science Bowl Competition

6.4.8 PRIME, Inc.

6.4.1 COORDINATION WITH URBAN SYSTEMIC INITIATIVES

Proposed by
Inner-City Consortium, Inc.

Summary

The Urban Systemic Initiative (USI) is a systemic, comprehensive effort designed to cause and enable fundamental reform of K-12 (K-16 in some instances) science and mathematics education in large urban schools. The USI program is sponsored by the National Science Foundation (NSF) and was formally launched in September 1992. Twenty-five of the nation's largest urban school districts have been invited to submit planning grant applications. Philadelphia, Baltimore, and Washington, D.C. have applied. Philadelphia and Baltimore have received grants and Philadelphia is well advanced with its planning. The Inner-City Consortium works closely with each city's USI effort, emphasizing connections through Steering Committee members in each city. The NSF and DOE programs are complementary in mission and goals, with the USI program focusing on systemic reform and the Inner-City Consortium focusing on careers and jobs.

Background and Importance

As high school achievement on standardized tests continues to decline, systemic reform takes on greater importance. Urban school systems enroll approximately half of all public school students in the nation. The USI Program is intended to stimulate partnerships between urban schools, science-rich institutions, and community-based organizations. Cities targeted initially by the NSF will be those 25 cities with the largest number of children (ages 5-17) living in poverty as determined by the 1990 Census. The USI program is an important national initiative which targets the heart of the educational system in large urban areas. It must be supported and reinforced by each federal agency and by the private sector.

The NSF has gained experience in systemic reform over the past several years through their sponsorship of Statewide Systemic Initiatives (SSI). The USI Program will build on experience gained through the SSI Program. Preliminary results from the SSI effort indicate that unique approaches are needed to address the problems and challenges confronting inner-city youth and the schools they attend.

In early 1992, Dr. Luther Williams, Assistant Director of the NSF for Education and Human Resources conducted a number of meetings in major cities to describe the intended scope of the USI program and to coalesce interest among leaders in the various target cities. On September 24, 1992, the National Science Board approved the USI Program.

In Philadelphia, planning had begun in early 1992, led by the President of the Franklin Institute, Dr. James L. Powell, who was also a member of the National Science Board. Dr. Carol Parssinen of PATHS/PRISM was assigned the lead role in planning the USI program, working in cooperation with Catherine Connor, Assistant Superintendent of the School District of Philadelphia. The Philadelphia Science Partnership was formed with a Steering Committee representing academic institutions, labor, government, and the private sector. Philadelphia submitted its planning grant proposal in September 1992 and received a planning award shortly thereafter. Dr. Gaither of Weston Institute and Dr. Curtis Howard, Steering Committee representative from the School District of Philadelphia maintained close contact with the USI planning group. A letter of support from the Philadelphia USI program for the Inner-City Consortium is included in Appendix 6.4.1 C.

In Baltimore, Morgan State University worked closely with the Baltimore City Public Schools. Dr. Clara Adams, Vice President for Academic Affairs and Acting Dean Patricia Moore of the College of Education worked closely with Dr. Walter Amprey, Superintendent, Dr. Lillian Gonzales, Deputy Superintendent, and Dr. Maurice Howard, Assistant Superintendent, to develop a planning grant proposal. The mayor's office and business leaders also participated in the planning grant preparation process. A proposal was submitted to the NSF and a planning grant was awarded in the spring of 1993. Again, Dr. Gaither of the Inner-City Consortium and Dr. Clara Adams, Steering Committee representative from Morgan State University have remained close to the USI planning activity to ensure close coordination between the two programs. A letter of support for the Inner-City Consortium from the representatives of the USI program is copied in Appendix 6.4.1 C.

In Washington, D.C. Dr. Constance Clark, Deputy Superintendent has been assigned the responsibility for preparation of a planning grant request by Dr. Franklin Smith, Superintendent of the District of Columbia Public Schools. Dr. Gaither has maintained close contact with Dr. Clark and has offered coordination services between the two programs. Dr. Joan Brown, Assistant to the Superintendent, is the Inner-City Consortium Steering Committee member representing the DC Public Schools. A letter of support for the Inner-City Consortium from the USI Program in Baltimore is attached in Appendix 6.4.1 C.

To maintain close coordination with the National Science Foundation and the USI Program, Dr. Powell introduced Dr. Gaither to Dr. Luther Williams of NSF in September 1992. Following that initial meeting, Dr. Gaither met with Dr. William and his staff to describe the Inner-City Consortium mission, goals, and calendar of activities for 1992-93. Dr. Williams encouraged Dr. Gaither to be closely involved with the USI effort in each city (see letter dated --- 1993). More recently, Dr. Gaither met with Dr. Williams to brief him on the contents of this Program Plan and to enlist his support for the Inner-City Consortium and its complementary value to the National Science Foundations's USI Program. Dr. William's letter to Dr. Gaither is included in Appendix 6.4.1 C.

The importance of the USI program can hardly be overstated. It will attempt to go to the heart of the problems in urban schools and provide solutions which will create measurable improvements in large systems. It is also the intent of the NSF that the USI provide an umbrella under which all NSF educational supported programs in particular cities will fit. This means that the management of the USI will have a dual roll to: (1) make fundamental improvements in each school system, and (2) manage a number of other NSF supported programs in each city.

Work Plan

The 1993-94 work plan will require several actions:

1. Maintain close contact with the USI programs in Baltimore, Philadelphia, and Washington, D.C.

2. Provide regular progress briefings to the USI staffs in the three cities on the scope and activities being carried out through the Inner-City Consortium.

3. Enlist from the staffs of the USI programs in each of the three cities, project ideas which can be incorporated in the Inner-City Consortium programs to make them more complementary and supportive of the USI program.

4. Suggest to the USI staff how they might modify their programs to make them more effective through closer interaction with the Consortium.

5. Invite program review presentations to the Consortium Steering Committee in each city by the USI staffs in each city.

6. Propose joint planning sessions with the USI staff.

Demographic Composition of Students/Teachers

The demographic composition of students and teachers to be affected should roughly mirror the demographic composition of each of the three public school systems described in general terms in Section 3. of this Plan as well as by the individual project proposals in sections 6.1.1 District of Columbia Public Schools, 6.1.2 Baltimore City Public Schools, and 6.1.3 The School District of Philadelphia.

Expected Outcomes

At this early stage of development of the USI programs in each of three cities it is not possible to state expected outcomes, except in general terms. The most fundamental outcome expected is that money spent on each program (USI and Inner-City Consortium) will have the maximum positive effect on the school system in a particular city. At the more detailed level, the Inner-City Consortium participants will be on the lookout for opportunities to multiply the effects of each program through careful program planning with the USI program projects.

Measurement of Results

The measurement of results will be one of the tasks carried out by The McKenzie Group. By making the coordination of the USI and the Inner-City Consortium Programs a specific and visible task in this Program Plan, it will be assured of receiving appropriate attention during the implementation stage of the program.

References

Massey, Walter E. Letter to the Members of the National Science Board titled *Urban Systemic Initiatives in Science, Mathematics, and Technology Education Program*, National Science Foundation, September 24, 1992: 3p.

Urban Systemic Initiatives Program, A Description of the Urban Systemic Initiatives Program, National Science Foundation, Issued in the fall of 1992: 3p.

National Science Foundation Urban Systemic Initiative (USI) Proposal for a Self-Study Grant, November 1992-January 1993. School District of Philadelphia, The Franklin Institute, and the City of Philadelphia, Circa October 1992: 5p.

*Preliminary Proposal to the National Science Foundation for a Citywide Science Initiative: THE PHILADELPHIA SCIENCE PARTNERSHIP.*Philadelphia Science Partnership Steering Committee, September 3, 1992: 40p.

Urban Systemic Initiative Framework Program Proposal. Weston Institute, 8 December 1992: 4p.

Letter from Dr. Luther S. Williams to Dr. William S. Gaither. June 7, 1993.

Leadership and Management

Overall coordination of this effort will be provided by Dr. William S. Gaither, Director of the

Consortium (see Appendix 6.4.1 A for vita). A small USI Coordinating Committee will be established by the Consortium. It will comprise the Director and the Consortium Steering Committee member from each city. This means that in Philadelphia Dr. Curtis Howard will be involved (see Appendix 6.1.3 B for vita). In Baltimore, both Drs Clara Adams of Morgan State University and Lillian Gonzales of the Baltimore City Public Schools will be involved (see Appendix 6.1.2 B for vita). In Washington, D.C. Dr. Joan Brown will be looked to for information on the status of Washington, D.C.'s UIS program (see Appendix 6.1.1 B for vita).

Budget

The budget will be modest each year and is shown in Appendix 6.4.1 A. It is anticipated that six meetings will be held during the first year of Consortium operation. These meetings will be:

1. One meeting in each city to brief the USI staff on the scope and activities of the Consortium. This will be a total of three meetings.

2. The Consortium's USI Coordinating Committee will meet three times.

APPENDIX 6.4.1 A

BUDGETS

removed, ab.

APPENDIX 6.4.1 B

BIOGRAPHIES OF PROJECT LEADERSHIP

William S. Gaither, Ph.D., P.E.

Dr. Gaither is president and chief executive officer of the Weston Institute. He was born [redacted] and graduated in 1956 from Rose Polytechnic Institute in Terre Haute, Indiana with a Bachelor of Science degree in Civil Engineering. He served in the U.S. Army in 1953. In 1961 he began graduate study in Princeton University's Department of Civil Engineering, specializing in its River and Harbor Program. He received a Master of Science in Engineering in 1962, a Master of Arts in 1963, and the Doctor of Philosophy in 1964.

His business career began in 1954, while still in college, working with the Ayershire Collieries Company of Indianapolis developing their new Gibraltar Mine near Central City, Kentucky. Upon graduation in 1956 he joined the Contracting Division of Dravo Corporation in Pittsburgh, serving as design, field, and research engineer building docks, pumphouses, and other large civil structures on the inland rivers. In 1960 he joined the Myer Corporation of Neenah, Wisconsin supervising projects for the paper industry. In 1965 he became supervising engineer, and later chief engineer for port and coastal development, with the Pipeline Division of Bechtel Corporation in San Francisco responsible for major harbor projects in Algeria, Alaska, Libya, Australia and the United States. In 1974 he was elected a director of Roy F. Weston, Incorporated of West Chester, Pennsylvania and in 1987 became vice chairman of the company. Dr. Gaither is a licensed professional engineer in Alaska, California, Delaware, Florida, Pennsylvania, and Wisconsin. From 1985 through 1990 he served on the board of Philadelphia Electric Company and on its Nuclear Committee from its founding in 1987. He has also served as a trustee of the Mutual Assurance Company of Philadelphia (The Greentree, founded in 1784) since 1985.

His academic career began in 1963 as a lecturer at Princeton University while still a graduate student. In 1964 he was appointed associate professor of coastal engineering at the University of Florida. Dr. Gaither was named associate professor of civil engineering at the University of Delaware in 1967 and was promoted to professor in 1970. Also in 1970 he founded the graduate College of Marine Studies and simultaneously served as the university's Sea Grant college Program Director. In 1976 he was first listed in *Who's Who in America*. Under his 14 years of leadership as dean and professor, the College gained national recognition for the quality and scope of its marine programs. In 1984 Dr. Gaither became president, trustee, and professor at Drexel University. During his three-plus year tenure he expanded the academic programs, initiated long-range planning, initiated enrollment management, doubled sponsored research -- as well as alumni giving, enlarged the campus, secured funds for several major buildings, hired the first-ever minority and women university officers, and re-organized the governance of the university.

In 1988 Dr. Gaither organized and became the founding president of the Weston Institute. The mission of the Institute is *to generate new human resources and knowledge through education and research to create a better and sustainable quality of life*. Institute programs span kindergarten through post graduate education and include the principal sponsorship of the Delaware Valley Science Fairs, the organization and management of an inner-city energy and environmental education consortium in Baltimore, Philadelphia, and Washington, DC for the Department of Energy, and SPHERE -- Student Projects in Higher Education for Research in the Environment. In 1993 he founded Inner-City Consortium, Inc. and serves as its president.

Dr. Gaither has served on the Marine Board of the National Research Council, chairing panels on Polar Ocean Engineering, the Assimilative Capacity of the Oceans, and Alternative Ship Services for NOAA. He is a member of the board of the Philadelphia High School Academies, Inc. He is a member of the vestry of the Episcopal Church of St. Andrew and St. Monica and a member of the Cosmos Club of Washington, DC, the Wilmington Club (Delaware), and the Germantown Cricket Club. He and his wife Robin reside in West Philadelphia.

APPENDIX 6.4.1 C

SUPPORT LETTERS AND CERTIFICATIONS

The Franklin Institute
Science Museum

Benjamin Franklin Parkway
at 20th Street
Philadelphia, PA 19103-1194

Phone 215 448 1200
FAX 215 448 1235

June 8, 1993

Dr. Curtis Howard
Curriculum Coordinator
Office of Curriculum Support
School District of Philadelphia
21st and The Parkway
Philadelphia, PA 19103

Dear Curtis:

I am pleased to write in support of the School District of Philadelphia application to the Department of Energy for the "Energy and Environmental Research Network."

The Energy and Environmental Research Network builds on the School District commitment to inquiry-based teaching and learning in science. The program will open rich opportunities across the district for teachers and students to become actively involved in the exploration of energy and environmental science and to apply their academic study to real-world problems and issues. The program also supports a vital focus on the career potential of these fields, particularly for those urban minority and female students who are dramatically under-represented in science and technology careers.

As director of planning for the Philadelphia Urban Systemic Initiative (USI), the Philadelphia Science Partnership, I have been fortunate to have you serve on the USI Executive Committee. We anticipate the ongoing collaboration between the Energy and Environmental Network and the USI in the systemic reform of science, mathematics, and technology in the School District of Philadelphia.

Sincerely,

Carol

Carol A. Parssinen
Director of Planning
Philadelphia Science Partnership

A copy of our official registration and financial information may be obtained from the Pennsylvania Department of State by calling toll free, within Pennsylvania, 1 800 732 0999. Registration does not imply endorsement.

CITY OF BALTIMORE

KURT L. SCHMOKE, Mayor

DEPARTMENT OF EDUCATION

ASSISTANT SUPERINTENDENT
Division of Curriculum and Instruction
200 East North Avenue
Baltimore, Maryland 21202

June 8, 1993

Dr. William Gaither, President
Weston Institute
1 Weston Way
West Chester, Pennsylvania 19380

Dear Dr. Gaither:

Baltimore is among the first three cities to receive an Urban Systemic Change Planning Grant from the National Science Foundation. Our plan indicates that we will be seeking assistance from a variety of sources to move many more of our students, especially minorities, through high school with adequate preparation for continuing study and careers in the sciences, mathematics and technology.

The Baltimore proposals for the Inner City Energy and Environmental Consortium are certainly consistent with the Urban Systemic Initiative goals. Morgan State University's Space and Environmental Technology Education component extends a valuable program to more teachers and students. Morgan State University has a long-standing partnership with Northern High School and will work with the E6 Project. Baltimore City Community College and Morgan State University cooperate with Baltimore City Public Schools in offering teacher training and supplemental activities for students which enrich the science, mathematics, and technology program. Baltimore City administrative and support staff in central office work closely with all consortium partners on these and other projects. We anticipate using consortium projects as models for systemic change.

As principal investigators of the Baltimore Urban Systemic Grant, we pledge full cooperation with the Inner-City Energy and Environmental Consortium in its effort to improve the education of students in Baltimore City Public Schools.

Sincerely,

Maurice B. Howard

Maurice B. Howard
Assistant Superintendent
Department of Curriculum and Instruction
Baltimore City Public Schools

Patricia Morris

Patricia Morris
Dean, School of Education and Urban Studies
Morgan State University

Printed on recycled paper with environmentally friendly soy based ink

DISTRICT OF COLUMBIA
PUBLIC SCHOOLS

Office of the Superintendent

415 12th Street, N.W.
Washington, D.C. 20004

(202) 724-4222
FAX (202) 727-1516

June 7, 1993

Dr. William S. Gaither, President
Weston Institute
1 Weston Way
West Chester, Pennsylvania 19380

Dear Dr. Gaither:

The District of Columbia Public Schools will submit a grant application to the National Science Foundation for funding of the Urban Systemic Initiative which will enable us to broaden the impact, accelerate the pace and increase the effectiveness of improvements already underway in mathematics, science and technology education and initiate change for lasting comprehensive reform. The initiative provides a comprehensive framework for systemic change in the way we prepare our students for the 21st century.

The Inner-City Energy and Environmental Education Consortium will submit a grant application to the Department of Energy for funding to provide specialized curriculum and activity-oriented school, college, and university programs linked with government and business to integrate knowledge and develop skills in energy and environmental studies. Students will be prepared to enter careers and pursue professions as an outcome of the systemic effort and specific program focus. The Initiative and the Consortium are compatible and serve to reinforce and enhance new curriculum, integrate technology and provide hands-on experiences all of which are important to promote success and growth in science and related fields.

We are excited about the challenge that both grants present and will work diligently to coordinate efforts and resources so that the multiple benefits will accrue to our students.

Yours truly,

Franklin L. Smith
Superintendent of Schools
Chief State School Officer

FLS:vat

NATIONAL SCIENCE FOUNDATION
1800 G STREET, N.W.
WASHINGTON, D.C. 20550

OFFICE OF THE
ASSISTANT DIRECTOR
FOR EDUCATION AND
HUMAN RESOURCES

June 7, 1993

Dr. William S. Gaither
President
Weston Institute
1 Weston Way
West Chester, PA 19380

Dear Dr. Gaither:

Thank you for keeping me informed about the development of the Inner-City Energy and Environmental Education Consortium Program Plan which you are preparing for submission to the Department of Energy in early June. Following our first meeting in September 1992, and our subsequent meeting in November, I have been impressed with the approach you have taken to developing the Plan and the prospects for it making a real contribution to education in the cities of Philadelphia, Baltimore, and Washington, DC.

When I wrote to you in early December, I encouraged you to become more intimately involved with the Urban Systemic Initiative (USI) in each city. Your framework proposal contains several innovative concepts which also appear to be quite practical.

Since the USI Program is in its formative stages in each of the three cities, Philadelphia being the farthest along, I believe that you are doing the logical thing by working through your consortium's steering committee member who is also on the USI planning committee. I am, through this letter, and a letter I will draft for the Director of the National Science Foundation (NSF) to send to Secretary O'Leary, encouraging the Department of Energy to support the Inner-City Consortium. I believe that it will be a valuable complementary program which will be of material assistance to the NSF's USI Program in each of the three cities.

Thank you for keeping me informed of your progress and your energetic efforts to maintain close communication and cooperation between the Inner-City Energy and Environmental Education Consortium and the Urban Systemic Initiative.

Sincerely,

Luther S. Williams

Luther S. Williams
Assistant Director

Telephone (202) 357-7557 FAX (202) 357-9813

6.4.2 DOE/EPA-UNIQUE SPHERE PROGRAM

Proposed by
Inner-City Consortium, Inc. as a Partnership with the U.S. Department of Energy, the U.S. Environmental Protection Agency and the Consortium of Historically Black Colleges and Universities/Minority Institutions

Summary

Inner-City Consortium, Inc's. SPHERE (Student Projects in Higher Education for Research in the Environment) Program is an innovative education initiative, dedicated to providing leadership in fostering a more viable and exemplary environmental education policy.

The mission of the proposed DOE/EPA-Unique SPHERE Program is to *facilitate the flow of problems of present and future importance in energy-related scientific and technical areas, and in environmental restoration and waste management, from professionals in business, industry, and government, to students at the high school,undergraduate and junior graduate levels.* The DOE/EPA-Unique SPHERE Program will provide a practical and cost-effective mechanism to connect laboratory and field professionals in the DOE and EPA throughout the United States with students in the Inner-City Consortium high schools, colleges and universities, and with students enrolled at member institutions in the DOE-sponsored HBCU/MI Consortium.

Because we recognize that the hope for an environmentally healthy and sustainable future rests on the shoulders of our youth, it is the program's aim to help to develop, in this group, the math, science and research skills necessary to address the growing number of energy and environmental restoration problems that face us.

The program will provide students with access to influential environmental professionals, while creating a nurturing forum in which inner-city youth can develop into engineers and scientists and, in these roles, have a significant impact on the assurance of a sustainable future for society.

Background & Importance

The SPHERE Program was started in 1989 by the Weston Institute. Its primary goal was, as it is today, to provide a practical and easily accessible bridge between environmental professionals and students. The program is based on a principle of bringing together the increasing number of undergraduate or junior graduate students who wish to prepare themselves for careers in fields concerned with energy, the environment, and sustainability, with the many professionals in business, industry, and government who would like to place problems of importance to their organization, or their client's organizations, before interested students. High school students who are enrolled in the Environmental Technology Academy, where research is an integral part of the instruction process, will also benefit from access to these problems. These professionals who originate problems are typically interested in:

- Fresh new ideas and reconnaissance research on upcoming problems, and
- Identification of students who might be hired after graduation.

At the outset, the program was operated on a regional basis. It is now being expanded to a national basis to accommodate such opportunities as the proposed DOE/EPA-Unique SPHERE Program. Support systems and software have been developed by the Institute to permit the SPHERE

Program to be operated nationally and, eventually, internationally. A fee structure has been established that will also permit the program to operate on a self-sustaining basis by the end of the third year of national operation. The program is readily adaptable to a restricted set of academic clients and a restricted set of professionals, as proposed herein.

The primary reason for the proposed DOE/EPA-Unique Sphere Program, is the acknowledgement that there currently exists, in the United States, a critical shortage of technically trained energy/environmental management personnel. It is lamentable that our education system has failed to produce the number of scientists and engineers required to address the problems of safer and more cost-effective waste elimination and reduction, treatment, storage, and disposal. In the future, our nation's ability to develop new and viable energy/environmental technologies to address these problems will depend, to a great extent, on our ability to prepare a large enough, scientifically and technologically trained workforce. This workforce must be adequately trained to pursue energy/environmentally enlightened decision making in the areas of environmental remediation, waste management, pollution prevention, resource use, and man's impact on the environment.

Because minority populations are becoming an increasingly large percentage of our overall population, and because minority groups represent a substantial pool of talent that has, typically, been underrepresented in educational programs at the college level, it is a primary objective of the DOE/EPA-Unique SPHERE Program to attract and retain greater numbers of inner-city youth to pursue educational programs at two and four-year institutions. The DOE/EPA -Unique SPHERE Program will reach out to inner-city youth and provide them access to environmental fields and encourage them to pursue an education and, eventually, a career in scientific and technical disciplines. In this way, the program will play an active role in helping the nation's education system produce a larger stream of well-educated, highly skilled scientific and technical students who are ready to fill their roles as world-class scientists and engineers.

This program also recognizes the increasing trend of inner-city minority high school graduates to select HBCU/MI institutions for their undergraduate studies. One important theme of the Inner-City Consortium in general, and the DOE/EPA-Unique SPHERE Program in particular, is the building of intellectually challenging "research bridges" between the high schools and HBCU/MI institutions.

The program also recognizes that it is equally important for academia to maintain effective relationships with industry and government agencies that are developing technological innovations. Otherwise, it will be impossible for faculty to stay abreast of rapid technological advances and to structure curricula that adequately prepare graduates to effectively address current problems. The SPHERE Program will provide an essential information transfer mechanism that will enable the academic communities to foster and maintain productive alliances with government and industry. This will promote a dialogue that will encourage faculty members to become more active partners in the professional practice of energy/environmental fields. These alliances will also generate collaborative research efforts between students and established professionals in their respective fields. As a result, this process will also stimulate the development of research skills and "real-world" experience necessary to prepare students to have an immediate and meaningful impact within their professions upon graduation.

Consequently, the program will: (1) prepare and encourage more students to enter energy/environmental careers, (2) enhance faculty teaching skills and research experiences, (3) heighten public awareness of critical energy/environmental and waste-management issues, and (4) facilitate the flow of new and innovative solutions to "real-world" problems of importance to society.

Increasing numbers of students are interested in working on these problems as part of their education, thereby strengthening their resumes for future employment. For example, as waste

management and restoration work continues to expand at weapons sites and Superfund sites throughout the nation, increasingly greater demands are being placed on community colleges, four-year baccalaureate institutions, and professional graduate schools to produce larger numbers of individuals prepared to tackle these problems. In addition to the waste site problems connected with the weapons program, there are continued concerns for the disposition of high-level waste now stored on site at commercial nuclear power plants. These problems represent two of the most prominent energy/environmental restoration and waste management issues facing present and future generations. Professionals in the DOE and EPA will be able, through the SPHERE program, to bring these high-priority environmental problems to bright and motivated inner-city students.

While the DOE and EPA laboratories now have programs available to offer government-sponsored problems of interest to students, no mechanism of the type provided by the SPHERE Program currently exists to link governmental laboratories and on-site field personnel with a target set of national colleges and universities as well as inner-city high schools. Another unique feature of the SPHERE Program is that it also solicits problems from business and industry that may be provided to subscribing academic departments in the two consortia, in addition to the problems provided by professionals in the participating government agencies.

The DOE/EPA-Unique SPHERE Program is designed as a pilot program targeted to the three large urban cities covered by the Inner-City Consortium and the HBCU/MI Consortium member institutions. If it proves to be effective in this arena, the program is expected to be replicated in large urban areas in other parts of the United States and in other academic institutions.

Work Plan

This program will establish essential relationships among DOE and EPA laboratories and field personnel throughout the United States that are easily implemented and tested. It will also provide cost-effective and productive working relationships between these professionals and participating departments in the colleges and universities in the Inner-City Consortium and the HBCU/MI Consortium. Suitable projects will be generated by laboratory and field professionals who will be invited to prepare one-page problem descriptions citing: (1) the title of the problem, (2) a statement of the significance of the problem, (3) a statement of the objective of the research or study to be undertaken, and (4) a suggested approach, outlined by several bullets, indicating recommended steps to be taken.

In order to accomplish this, these professionals will first be invited to attend convenient workshops at sites (still to be determined) throughout the country where 10 to 20 individuals will gather to prepare and discuss descriptions of challenging problems. These workshops will require a maximum of a half-day to complete and will be facilitated by the staff of Inner-City Consortium, Inc. (ICCI).

A modified form of the Nominal Group Technique (NGT) will be employed at these workshops. Each workshop will involve four basic steps, including: (1) definition of a concisely worded focus question to be addressed by workshop participants, e.g., *What are the most significant scientific, technological, economic, and policy problems which need to be solved to accelerate the cost-effective cleanup of weapons sites?* (This question will be decided before the workshop and will be distributed to all participants approximately two weeks before the workshop is held.), (2) identification and posting of all problems proposed by participants, (3) individual ranking of the problems in priority order by each participant, and (4) the preparation of a report of the results of the workshop, distributed to participants within one week following the completion of the workshop. An on-site staff of three, provided by Inner-City Consortium, Inc. will be used to facilitate each workshop.

SPHERE staff will be responsible for reviewing and editing each problem description to ensure that the format and content will be attractive to students. Edited descriptions will be reviewed and approved by the originating professionals. Once approved, these one-page descriptions will be sent out in monthly "sets" to participating academic departments.

Students in subscribing departments will select problems that interest them, and, with the approval of their faculty advisor, will submit proposals to Inner-City Consortium, Inc. to solve a particular problem. Following review and approval of the student(s)' proposal by the project originator and the SPHERE staff, funds (up to $1,000 per project) will be transferred to the student(s)' academic department for use in carrying out the project. Funds of $3,000 to support each project submitted by a DOE or EPA laboratory or field professional will be encumbered by the agency at the time the project is submitted. Charges against that encumbrance will be made by Inner-City Consortium, Inc. for: (1) direct student project support (up to $1,000 per project), and (2) placement, oversight, information, and management services of $500 per project for services provided by ICCI.

Participating government professionals will receive: (1) a copy of the complete report submitted by the student, or student team, to fulfill his or her academic requirements, (2) the monthly SPHERE newsletter, and, (3) a copy of the Yearbook containing abstracts of all SPHERE projects carried out nationally.

Academic departments subscribing to the SPHERE Program will pay a $250 annual subscription fee. For that fee, the subscribing department will receive: (1) ten monthly sets of problems, (2) ten issues of the monthly SPHERE newsletter, (3) coordination services from the SPHERE Program staff, and (4) a copy of the yearbook containing abstracts of all problems addressed by students participating in the SPHERE Program nationally.

The SPHERE program will also be coordinated with the community colleges in the Consortium that are active in the PETE (Partnership for Environmental Technology Education) program. If the curriculum developed by the community colleges requires work on energy/environmental problems for student credit, then SPHERE problems would also be offered to these institutions on the same subscription basis as other academic departments.

Special project solicitation literature will be prepared by the SPHERE staff of ICCI for distribution to professionals in DOE and EPA laboratories and field sites nationally. Similar solicitation literature will be prepared to enlist departmental subscribers in the Inner-City Consortium and HBCU/MI Consortium institutions. A commitment will be required from each participating agency or organization to budget a set amount of funds each year to support the SPHERE projects that they submit. The program will be set in motion by Inner-City Consortium, Inc. as soon as project funds are been committed.

Schedule of Milestones The following milestones will guide the first-year's work on this project:

Months 1-2 Establish relationships with ten DOE/EPA laboratory and field site managers to (1) explain program, (2) identify participants, (3) schedule a time for each problem identification workshop. Recruit academic departments to participate.

Month 3 Conduct ten workshops at ten laboratories and/or field sites. Edit selected problems and begin distribution to subscribing departments.

Months 4-12 Solicit problems from businesses and industries in the HBCU/MI Consortium National Congress and distribute these problems, along with DOE/EPA laboratory problems in monthly "batches." Publish newsletter.

Month 12 Publish and distribute first Yearbook containing abstracts of student projects.

Demographic Composition of Students/Teachers to be Affected

The 9 DOE laboratories, the 12 EPA laboratories, and the major weapons and Superfund site managers will be the federal collaborating organizations. Academic collaborators will be the subscribing departments in the 26 Inner-City Consortium colleges and universities in Washington, DC, Baltimore, and Philadelphia, plus the 17 institutions that are members of the HBCU/MI Consortium. In larger academic institutions, several departments may elect to subscribe and receive problem sets directly. Other collaborating organizations may be identified by the DOE and/or the EPA and will be invited to participate on a case-by-case basis.

Census data clearly indicates that the inner-city areas of our nation's large metropolitan centers harbor a large and relatively untapped resource of students. Students from these areas are frequently minorities, many from homes living below the poverty level, and are virtually all without access to more than the barest educational essentials, let alone access to timely and exciting career opportunities in energy/environmental fields.

One of the six largest concentrations of inner-city students in the United States is located in the nearly contiguous metropolitan areas of Washington, DC, Baltimore, and Philadelphia. The Inner-City Consortium has targeted these cities because of their size, their complexity, their large minority student populations, their immediate proximity to the nation's capital, and their track record of conceiving and establishing successful special initiative science and mathematics programs.

Together, these cities have a combined 1990 census population of 2,928,491. The metropolitan areas, of which these cities form the core, have a combined population of just over 12,000,000. Racial composition data from the 1990 census for the areas encompassed by the Consortium show that the white population represents just over 43% of the total population, while the black population is approximately 50%. Philadelphia ranks fourth in the nation in black population, followed by Baltimore (sixth) and Washington, DC (eighth), according to a US. Census report filed in September 1984. Comparable data from the 1990 census are not yet available. However, it is probable that the cities in the Consortium will still rank among the top ten in the nation in minority population.

Total enrollment in colleges, universities, and community colleges in these inner-city regions is approximately 214,000. Not all of these students are, however, enrolled in the member institutions of the Inner-City Consortium or the Historically Black Colleges and Universities/Minority Institutions.

Expected Outcomes

The program's success while operating on a regional basis in Philadelphia has proven it to be an effective means for giving students access to, and the opportunity to solve, real-world environmental problems, as written and described by professionals. Although the program is young, we have already seen its effect in that several participating students who have graduated with engineering or science degrees have elected to pursue careers as environmental professionals, or have gone on to graduate school in environmentally related fields.

As already discussed, the primary goal for the project is to establish it as a catalyst for increasing environmental literacy and environmental career awareness, through the creation of research partnerships between minority students, and professionals in government agencies, and private industry. The program will coordinate these partnerships to: (1) establish a hands-on curriculum

that is personally and culturally relevant for participating students and teachers, (2) help to foster long-term partnership programs in environmental research and technology development, and (3) help to develop and support technology-based environmental-education programs at participating academic institutions. *The project, thereby, expects to establish a leadership role in helping minority students to meet the challenges of energy/environmental restoration and waste management technology.*

Consequently, the first expected near-term outcome will be *a significant increase in the number of problems, identified by professionals in DOE and EPA laboratories and field operations.* The second near-term outcome will be *an increase in the number of high school, undergraduate and junior graduate students in consortia institutions who are tackling a DOE- or EPA-originated problem as part of their academic program.* The longer-term outcome will be *more students graduating and securing responsible career positions as experts in energy, environment, and sustainability fields.*

Measurement of Results

An investment in undergraduate and graduate education can yield relatively quick and tangible results. After attacking SPHERE problems as part of their academic programs, participating students will be better prepared to have an immediate impact in their chosen post-graduation professions. Within 12 to 48 months, the program should demonstrate an increase in the number of trained technical personnel graduating from consortia institutions who are ready to enter the workforce in the fields of environmental restoration and waste management.

The first, and simplest, measures of the program's success in meeting its objectives will, however, be: (1) the number of SPHERE projects submitted and funded by professionals in DOE/EPA, (2) the number of subscribing academic departments, and (3) the number of projects completed and appearing with abstracts in the Yearbook.

References

Copies of the following reference materials are included in Appendix 6.4.2 C:

1. 1990 Symposium Weston Institute Student Research Program

2. 1991 Symposium Weston Institute SPHERE Program

3. The Nuclear Waste Keeps Piling Up. Julia C. Martinez. *The Philadelphia Inquirer*, March 28, 1993, Front page of Business Section.

4. Sample Letters of Commitment.

Leadership and Management

The SPHERE Program will be under the general direction of Dr. William S. Gaither, PE, president of Inner-City Consortium, Inc.. Day-to-day program management will be the responsibility of Kurt Krumpholz, PI, an experienced technical marketing professional. ICCI staff will provide database support and maintenance as well as financial management of the program.

The SPHERE Project has been endorsed by Dr. Kofi Bota, Director of the HBCU/MI Consortium. A copy of his endorsement letter is reproduced in Appendix 6.4.5 C.

Budget

The attached financial model demonstrates how the 1993-94 annual operating budget of approximately $265,623 will cover all startup costs while generating revenues to permit the program to become self-sustaining within a 34-month timeframe. Based on the attached Revenue Projections, the greatest cumulative loss will occur in the 34th month and will be $395,784. Grant funds have been budgeted to cover this greatest projected operating deficit.

This model assumes that the participating DOE and EPA operating units (i.e. laboratories and major field sites) will be responsible, site by site, for generating a dependable and predictable number of problems, or projects each year and that they will encumber $3,000 towards the fulfillment of each project. As the model demonstrates, commitments from participating agencies to collectively fund 30 projects per month will be required to allow the program to sustain itself.

Project revenues (i.e. the $500 billed to the originating organization each time a project is placed with a student, or student team) have not been counted in calculating the 1993-94 budget to accommodate possible delays in establishing the project support disbursement mechanism. When this mechanism is established, and functioning smoothly, project revenues will be claimed and the required annual project support budget requests will be decreased accordingly.

The attached Budget Detail Sheet and Budget Summary provide further details on expected programs costs.

Overhead The SPHERE project will be carried out by Inner-City Consortium, Inc.. The PI, Kurt Krumpholz, and the database support staff will be housed with other ICCI staff. As a consequence of this relationship, SPHERE staff will be served by ICCI services which are part of ICCI's overhead. That overhead calculation is given in Section 10., Budget, of this Plan. The items listed below comprise the only additional overhead charges which will be required to support the SPHERE project.

• Overhead Expense Items	Cost/Person/Unit	Total Cost/Yr.
Space Rental @ $750/office/mo. Assume staff of	$ 9,000/yr	$ 18,000
Telephone @ $10/mo./line Assume 2 lines (incl. FAX)	$ 120/yr	$ 240
Office Supplies @ $1,000/person/yr Assume staff of 2	$ 1,000/yr.	$ 2,000
Postage Staff of 2	$ 800/yr	$ 1,800
Travel - Air, Train, and Local Director @ $200/mo	$ 1,200/yr	$ 1,200
General Printing (Stationery, Cards, Forms, etc)	$ 1,000/yr	$ 1,000
Professional Development	$ 1,000/yr	$ 1,000
Miscellaneous	$ 2,000/yr	$ 2,000
Total Overhead Charges - Fiscal 1994		$ 27,240

APPENDIX 6.4.2 A

BUDGETS

removed. ds

APPENDIX 6.4.2 B

BIOGRAPHIES OF PROJECT LEADERSHIP

KURT C. KRUMPHOLZ
103 Walnut Street
Jenkintown, PA 19046
(215) 884-7686

Current position: Vice President/Account Services
TECHNICAL ADVERTISING SERVICE, INC.
Philadelphia, PA

Specialty: New business development in highly specialized technical/industrial markets

Length at agency: Over six years

Accomplishments: Produced a 300% increase in agency billings in first three years with agency

Directed agency's growth from small to mid-size business-to-business agency

Initiated, manage, and promote agency's new Technical Publications Division to business, government, and academic organizations

Industry-related experience: Capital equipment, environmental services, engineered process systems, process control, specialty chemicals and pharmaceuticals, food and beverage, semiconductor, electronics, publishing, and financial services

Major accounts secured: Bell Atlantic Business Systems Services, Betz Laboratories, DuPont Thermal Analysis Instruments, EnviroSource, Kulicke & Soffa, Moore Products Company, Surgical Laser Technologies

Previous Experience: Traffic Manager
FCB/LEWIS GILMAN & KYNETT, INC.
Philadelphia, PA

Major accounts served include:
ARCO Chemical, FMC Corp., Honeywell, SPS Technologies, Temple University, WPVI-TV

Assistant Editor
The Cable Guide/TVSM, Inc.
Horsham, PA

Related skills:	* Proven track record of developing and expanding profitable business relationships with major corporations * Creative, proactive sales/marketing professional with executive-level profit-generating performance * Pleasantly aggressive, entrepreneurial traits * Goal-oriented, established closing ability * Conceptual, analytical, and strategic thinker * Excellent creative, communication, and interpersonal skills * Highly effective sales and presentation ability
Education:	B.A. Philosophy, Vassar College, Poughkeepsie, NY, May, 1982

APPENDIX 6.4.2 C

LETTERS OF SUPPORT AND CERTIFICATIONS

NOTES

1. The following letters of commitment were obtained when two part-time consultants were marketing the SPHERE Program (Dr. Sloyer and Mr. Sujan).

2. The letters also reflect a price of $2,500 per project submitted instead of the $3,000 shown in this project proposal.

3. Since the SPHERE Project will be carried out under Inner-City Consortium, Inc.duplicate compliance form are not provided for this project.

1990

SYMPOSIUM

WESTON INSTITUTE

STUDENT RESEARCH

PROGRAM

TUESDAY, APRIL 24, 1990
IN THE FORUM, KIRKBRIDE HALL
WIDENER UNIVERSITY

University of Pennsylvania
Philadelphia College of Pharmacy and Science
Temple University
Villanova University
Widener University
West Chester University
Cheyney University
Lehigh University
Philadelphia College of Textiles and Science
University of Pittsburgh
The Council for Solid Waste Solutions
Electric Power Research Institute
U.S. Environmental Protection Agency, Region III
Environmental Resources Management, Inc.
ENTX, Inc.
Hatfield Quality Meats, Inc.
Institute for Interactive Management
Pennsylvania Department of Environmental Resources
Philadelphia Department of Public Health
Philadelphia Electric Company
City of Philadelphia Water Department
Spotts, Stevens & McCoy, Inc.
Sun Company, Inc.
Roy F. Weston, Inc.

SCHEDULED ACTIVITIES

1:00-1:05 PM Introduction by Dr. William S. Gaither, President, Weston Institute

1:05-1:10 PM Welcome by Dr. Thomas G. McWilliams, Dean, Widener University, School of Engineering

1:10-1:15 PM Introduction of the 10 Weston Institute Student Research Project Teams from Widener University, Temple University, University of Pennsylvania, Philadelphia College of Pharmacy and Science, Villanova University and West Chester University
Research Program Manager: Mr. Charles F. Mengers

1:15-1:35 PM **Conceptual Design of an MTR Landfill**

Faculty Advisor:	Dr. David H. T. Chen, Widener University
Sponsor:	Roy F. Weston, Inc.
Sponsor's Advisor:	Dr. Ronald J. Buchanan, Jr.
Students:	Thomas Louis, Jr., Robert Maschke, Lisa Miekley, Mark Nyerges and Matthew Reaney

Numerous hazardous waste landfills, both operating and defunct, exist throughout the country and generate copious quantities of hazardous wastes in the form of leachate. New RCRA regulations set stringent standards for " land ban" hazardous wastes, and the landfill design must meet the Minimum Technology Requirement (MTR). The scope of this project includes the research and design of a landfill cell that will be transferred into a scale model based on the design.

1:35-1:55 PM **Removal of Organic Pollutants from Contaminated Soil**

Faculty Advisor:	Dr. David H. T. Chen, Widener University
Sponsor:	Roy F. Weston, Inc.
Sponsor's Advisor:	Mr. John W. Noland
Student:	David Constant

Accidental spills and leaking underground storage tanks have resulted in the contamination of soil by toxic organics and created a problem of immense magnitude throughout the United States. Studies using the Low Temperature Thermal Treatment (LT^3) system, developed by Roy F. Weston, Inc., have demonstrated a high degree of removal for a wide range of organics from highly volatile to nonvolatile substances. Removal of volatiles is easily explained by vaporization; however, elimination of the nonvolatiles is assumed to be the result of a stripping process involving the vaporized substances. The objective of this project is to screen materials suitable for use as purge streams in order to increase the removal efficiency of nonvolatile organic contaminants from soil.

1:55-2:15 PM **Novel Energy Conservation System**

Faculty Advisor:	Dr. Gopal Nadig, Widener University
Sponsor:	Roy F. Weston, Inc.
Sponsor's Advisor:	Mr. Anuj Saha
Students:	Stephen Evans, John Farber, John Neyer and Keith Svensen

The availability of many of our present sources of energy, such as fossil fuels, is limited; therefore, it is necessary to develop alternate sources. Conversely, solar energy is unlimited and produces no waste. The objective of this project is to design a solar energy space heating system that uses natural zeolites. Because of their high heat of adsorption and steep adsorption isotherms, zeolites may prove to be an efficient heat storage medium that can be used effectively for solar heating.

2:15-2:35 PM **Novel Energy Conservation System**

Faculty Advisor:	Dr. Frederick B. Higgins, Temple University
Sponsor:	Roy F. Weston, Inc.
Sponsor's Advisor:	Mr. Anuj Saha
Students:	Karlene Glover, Michael Vandergast and Jill Zoiss

This project examines two naturally abundant resources: solar energy and natural zeolites. Zeolites, minerals belonging to the family of hydrous silicates, have a high heat of absorption and an ability to lose water at high temperatures and reabsorb it at lower temperatures. A small scale model of a solar energy/zeolite heating system will be designed, constructed, and tested. The results will be used to report on the feasibility of this type of system for practical, full-scale use.

2:35-2:55 PM **The Use of the Analytical Hierarchy Process Technique in Establishing the Optimal Marketing Strategy for Preempting Governmental Regulation of Plastics**

Faculty Advisor:	Dr. Jerry Wind, University of Pennsylvania
Sponsor:	The Council for Solid Waste Solutions
Sponsor's Advisor:	Mr. Peter W. Dinger
Students:	Brad Gandee, Tim Butler, Michael Dansby, Ian Wooten and Andrew Barker

The project will first identify and define the determinants of and criteria important to the creation of a marketing strategy for recycled plastics. These criteria will then be used in the application of the Analytical Hierarchy Process to establish the most effective strategy to avoid restrictive legislation on the use of plastics.

2:55-3:15 PM **INTERMISSION**

3:15-3:30 PM **Reducing Dependence on Automobiles by Increasing the Use of Mass Transit**

Faculty Advisor: Dr. Vukan R. Vuchic, University of Pennsylvania
Sponsor: Philadelphia Department of Public Health
Sponsor's Advisor: Mr. Leonard Mangiaracina
Student: Lynn Eros

This project involves analysis of transit systems, primarily those of Philadelphia and Los Angeles, to identify the opposition to and potential for increased mass transit ridership. A major component of this project includes a trip to Los Angeles, California, which is at the forefront of change in mass transportation, to gain insight and fresh approaches to the problem. The analysis will first examine the current state of both the Philadelphia and Los Angeles transit systems, including policy and funding and their effects on mass transit. In Philadelphia, this information will be balanced with riders' current perceptions of the system. Second, the information on transit systems will be used to recommend ways to increase mass transit ridership by improving mass transportation and creating a disincentive for the automobile. Alternatives, including cost-benefit analyses, will be obtained and solutions provided. The result should be a more efficient, respected and highly used system that ultimately reduces air pollution in Philadelphia.

3:30-3:50 PM **Sewage Treatment Using Sequencing Batch Reactors and an Artificial Wetland**

Faculty Advisor: Dr. Wen K. Shieh, University of Pennsylvania
Sponsor: Pennsylvania Dept. of Environmental Resources
Sponsor's Advisor: Mr. John M. Murtha
Students: Robert Sheker and Robert Aris

Sequencing Batch Reactors (SBRs) have emerged as an innovative technology in wastewater treatment. SBRs can accomplish the tasks of a primary clarifier, biological reactor, and secondary clarifier within a single basin by following the basic cycle of fill, react, settle, decant and idle (when sludge is wasted). This project will consist of the design, fabrication, and operation of a small-scale SBR with the following objectives:

- To study the effectiveness of varying phase times within the sequence.
- To examine the effect of floor slope on sludge concentration.
- To develop preliminary design and operation criteria.

Time variations may suggest optimal values for a given influent condition, and SBRs with floor slope may be desirable alternatives to "no slope" if higher quality sludge and effluent result. A performance evaluation will be submitted to further the development of this alternative method of wastewater treatment.

3:50-4:10 PM **Use of Water Treatment Sludges to Reduce Soil Phosphorus Availability**

Faculty Advisor:	Dr. John R. Porter, Philadelphia College of Pharmacy and Science
Sponsor:	City of Philadelphia Water Department
Sponsor's Advisor:	Mr. William E. Toffey
Students:	John Burns and Mark Peterman

The Philadelphia Water Department needs to find disposal outlets for more than 500,000 cubic yards of a soil-like sludge that is a by-product of its drinking water filtration process. There have been many solutions proposed to eliminate this problem. An investigation has begun of the application of this sludge, which has a high concentration of iron and aluminum, to farmland soils with high phosphorus availability. This may reduce potential phosphorus contamination of such soils.

4:10-4:30 PM **Landscape/Spatial Characteristics of Wetland Resources in Northeastern Pennsylvania**

Faculty Advisor:	Dr. R. Kelman Wieder, Villanova University
Sponsor:	U. S. Environmental Protection Agency, Region III
Sponsor's Advisor:	Ms. Diana A. Esher
Student:	Becky Koch

Loss of wetlands to development is of great concern in northeastern Pennsylvania. Critical data on landscape organization of wetlands within the area are needed to target priority wetlands for increased protection under the Clean Water Act. The objective of this project is to conduct an inventory and spatial analysis of wetland resources in northeastern Pennsylvania. Through a detailed analysis of topographic maps, the study will identify all wetlands and provide information regarding location; mean elevation above sea level; proximity to roadways, residential areas, or other landmarks; and wetland/watershed ratios. Information will be presented in a written atlas containing a general discussion of wetland resources in northeastern Pennsylvania, including the results of a statistical dispersion analysis, followed by single-page detailed descriptions of each wetland.

4:30-4:50 PM **Continuous Containment Measuring of Indoor Air**

Faculty Advisor:	Dr. Maura J. Sheehan, West Chester University
Sponsor:	Spotts, Stevens & McCoy, Inc.
Sponsor's Advisor:	Mr. Charles H. Stevens, P.E.
Students:	Carol Poole and Cynthia Taneri

This study will develop better test methods for using carbon dioxide as an indicator of ventilation adequacy. Real-time monitoring of the carbon dioxide concentration in an occupied room and determining the decrease in the carbon dioxide concentration after people leave the room should provide better understanding of the effective room ventilation. Concentration decay equations developed for tracer gas studies can be used to interpret the concentration versus time data and determine the effective ventilation.

4:50 PM **ADJOURNMENT**

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Washington, DC

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WESTON INSTITUTE STUDENT RESEARCH PROGRAM

The Weston Institute is a not-for-profit, tax-exempt organization incorporated in the Commonwealth of Pennsylvania in 1988. The mission of the Institute is to generate new human resources and knowledge through education and research in the broad fields of environmental science and human health and safety to create a better and sustainable quality of life. To fulfill this mission, the Institute will serve as a catalyst to encourage cooperation, both nationally and internationally, among business, industry, government, and academia.

The main purpose of the Weston Institute Student Research Program is to attract talented individuals to the environmental field by inviting them to participate in challenging research projects. Our objective is to stimulate interest, particularly among advanced undergraduates and junior graduate students, in entering the environmental field and to stimulate interdisciplinary dialogue among individuals in business, government, and academia.

WESTON INSTITUTE
Weston Way
West Chester, PA 19380
215-430-3100

WI-2-90

Printed on recycled paper.

1991 SYMPOSIUM

WESTON INSTITUTE SPHERE PROGRAM

Drexel University
Lehigh University
Penn State University
Philadelphia College of Pharmacy and Science
Temple University
The University of Findlay
University of Pennsylvania
Villanova University
West Chester University
Widener University
Delaware State College
City of Philadelphia Water Department
Environmental Management, Inc.
PA Department of Environmental Resources

Roy F. Weston, Inc.
Science Applications International Corp.
Spotts, Stevens & McCoy, Inc.
The Council for Solid Waste Solutions
U.S. Environmental Protection Agency, Region III
Campbell Soup Company
ECRI
Electric Power Research Institute
ENTX, Inc.
Hatfield Quality Meats, Inc.
Institute for Interactive Management
Philadelphia Department of Public Health
Philadelphia Electric Company
Sterling Drug, Inc.
Sun Company, Inc.

TUESDAY, APRIL 23, 1991
IN THE FORUM
KIRKBRIDE HALL
WIDENER UNIVERSITY

SCHEDULED ACTIVITIES

MORNING SESSION

8:15-8:20 Opening Remarks by Dr. William S. Gaither
President, Weston Institute

8:20-8:25 Welcome by Dr.Thomas G. McWilliams, Dean,
Widener University, School of Engineering

8:25-8:30 Introduction by Dr. John L. Sloyer, Jr.

8:30-8:50 **Development of a Marketing Strategy for Recycled Post-Consumer Plastic Products***
by
Scott Goldthwaite, Drexel University

Faculty Advisor: Dr. Andrew Verzilli
Sponsor The Council for Solid Waste Solutions
Project Originator: P. Dinger

The plastic recycling industry is rapidly expanding in the wake of consumer awareness of our current solid waste management problems. This concern has sparked an industry that is supplying products made from recycled materials, notably paper, glass, aluminum, and plastics. Although plastics represent only about 7% of municipal solid waste, growing public concern and industry research has targeted plastics as a viable material to be recycled. Because plastics do not biodegrade and because volume to weight ratios show that plastics take up the majority of space in landfills, this project was undertaken to address a marketing strategy for products made from post-consumer plastic waste.

*Eligible for Young Investigator's Award

8:50-9:10 **Evaluation of Approaches to Increase the Uses for Recycled Paper***

by

Martin T. Misenhimer, Lehigh University

Faculty Advisor: Dr. Irwin J. Kugelman
Sponsor: Environmental Resources Management, Inc.
Project Originator: Carole Rubley

The recent growth in post-consumer collection programs as a part of the solution to the nation's solid waste dilemma is creating a glut of used paper. New uses for used paper are being developed and implemented at locations across the country. These include fuel pellets, egg cartons, tar paper, fiber for clothing, animal bedding, insulation materials, packaging materials, hydro-seeding, and building materials. Economic comparisons of using virgin materials versus waste paper are drawn and the role of government and institutions in either stimulating or hindering recycling efforts is examined.

9:10-9:30 **Evaluation of Approaches to Increase the Uses for Recycled Paper**

by

Peter W. Klein, Penn State University

Faculty Advisor: Dr. Robert Walker
Sponsor: Environmental Resources Management Inc.
Project Originator: Carole Rubley

The shortage of landfills for the disposal of solid waste and the difficulty in siting new processing and disposal facilities have led to an increased emphasis on the need to recycle more materials. The objective of this research is to assess the current and projected ability of the involved industries to handle the waste paper generated Since the existing volume is greater than the current demand, it appears that innovative uses must be developed to handle the demand. The emphasis of this study will be on determining the economic viability of continuing paper recycling and developing alternative uses for waste paper.

*Eligible for Young Investigator's Award

9:30-9:50 **Etiological Waste Regulations in Ohio**

by

Thomas Czartoski, The University of Findlay

Faculty Advisor: Dr. Michael Homsher
Sponsor: Science Application International Corp.
Project Originator: Maury Walsh

The Ohio Environmental Protection Agency has proposed rules strictly regulating air emissions from Ohio infectious waste incinerators. The proposed rules intend to establish operating requirements, emission limits, recordkeeping guidelines, operator qualifications and monitoring requirements. If adopted, the rules will have a substantial impact on all existing and new infectious waste incinerators in Ohio. The objectives of this research are to (1) determine the probable effect the proposed air emission standard will have on infectious waste generators and (2) delineate alternatives available to generators based on present and anticipated relevant regulatory conditions.

9:50-10:10 **INTERMISSION**

10:10-10:30 **Analysis of Sequencing Batch Reactor Performance Under Various Operating Strategies***

by
Robert E. Sheker & Robert M. Aris
University of Pennsylvania

Faculty Advisor: Dr. Wen K. Shieh
Sponsor: PA Dept. of Environmental Resource
Project Originator: John M. Murtha

In recent years, Sequencing Batch Reactors (SBRs) have emerged as an innovative technology in wastewater treatment. SBRs can accomplish the tasks of primary clarifier, biological reactor, and secondary clarifier within the confines of a single basin. Each SBR provides aeration, sedimentation, and biological nutrient removal. The process follows the sequential steps of FILL, REACT, SETTLE, and DECANT. SBRs may be uniquely suited for intermittent flow, industrial wastewater treatment situations where the influent commonly contains a highly concentrated soluble organic fraction under nutrient rich or nutrient deficient conditions. The goal of this project is to design, fabricate, and operate two small-scale SBRs under conditions similar to those found in industrial situations. One objective was to evaluate operating strategies according to the level of sludge bulking, a problem common to activated sludge treatment processes. A second objective is to suggest preliminary design and operation criteria for full-scale systems, based on bench scale SBR performance.

*Eligible for Young Investigator's Award

10:30-10:50 **Landscape/Spatial Characteristics of Wetland Resources in Northeastern Pennsylvania***

by

Becky Koch, Villanova University

Faculty Advisor: Dr. R. Kelman Wieder
Sponsor: Environmental Protection Agency, Region III
Project Originator: Diana A. Esher

Loss of wetlands to development is of great concern in northeastern Pennsylvania. Critical data on the landscape organization of wetlands within the area are needed to target priority wetlands for increased protection under the Clean Water Act. The main focus of this project entailed a topographic map analysis of a region of northeastern Pennslyvania including Bradford, Sullivan, Susquehanna, Wayne, Wycoming, Lackawanna, and Monroe Counties and parts of Columbia, Luzerne, and Carbon Counties. The data are being synthesized on topographic map, county, and physiographic province levels to develop a landscape-scale description of the wetland resources in the region.

*Eligible for Young Investigator's Award

10:50-11:10 **Lead Field Study***

by

Asim Hamidi, West Chester University

Faculty Advisor: Dr. Roger Mustalish
Sponsor: Philadelphia Water Department
Project Originator: Steven Pugsley

Most field studies have focused on the variability of lead levels among different residences. The variability within each residence has never been addressed. Before analytical results can be used to determine compliance with the new lead regulations, this variability must be quantified. This field study would supplement existing analytical results and has the following objectives: to identify variability in lead concentrations obtained from one plumbing system and to distinguish normal variability from passivation effects; to determine the reliability of lead field sampling for evaluating the water supply, customer exposure, and regulatory compliance; and to determine variability in lead concentrations according to daily water usage patterns.

*Eligible for Young Investigator's Award

11:10-11:30 **Analytical Method for Hexavalent Chromium in Solid Waste and Ash Samples***

by

Steven Werkheiser, West Chester University

Faculty Advisor: Dr. J. Ghoroghchian
Sponsor: Spotts, Stevens and McCoy, Inc.
Project Originator: Jack Kieffer

Chromium and various chromium compounds are carcinogenic and appear on the EPA hazardous substance list. Methodologies do exist for hexavalent chromium in liquid samples. However, the presence of this type of chromium in solid samples and ash samples is very difficult to determine. A method developed for hexavalent chromium in solid samples will aid the environmentalist in predicting the concentration that is possible to be leached from a landfill or enter the atmosphere from either mass burning of the solid waste or the refuse-derived fuel. The objective of this research is to develop an analytical method for the presence of hexavalent chromium in solid samples including soil, sludge, and solid waste and ash.

11:30-1:00 **LUNCHBREAK**

*Eligible for Young Investigator's Award

AFTERNOON SESSION

1:00-1:20 **Determination of Exposure Pathways for Malathion Released into the Environment***

by

Stuart Gold, Trobie Handy, Abdul Mat Rasol, Judeanne Schloss - Widener University

Faculty Advisor: Dr. Charles R. Nippert
Sponsor: Roy F. Weston, Inc. & Environmental Resources Management, Inc.
Project Originator: Judith M. Hushon

The purpose of this project was to determine how well Mackay's fugacity-based equilibrium model predicted the environmental distribution of the pesticide malathion. Three small, self-contained gardens growing bush beans and carrots were inoculated with 8.37 g/m^3 and 19.7 g/m^3 of malathion, with the third serving as a control (about 2, 5, and 0 times the recommended loadings). The malathion in soil, plants, water, and animals living in water gave partition coefficients for the thermodynamic model proposed by Mackay. Mackay's model was incorporated into a general computer simulation written for the project. The results provide an indication of exposure of adjoining environments as equilibrium is approached.

1:20-1:50 **Odor Adsorption on Zeolites***

by

Zuraili A. Rahman Sidek, Bradley Hatt, Robert Herrman, Brian Marcinkus, Dima Pisotti Widener University

Faculty Advisor: Dr. John Hoopes, Jr.
Sponsor: Roy F. Weston, Inc.
Project Originator: Anuj K. Saha

Cheaper and improved processes are needed for the removal of small quantities of organic, odor-producing vapors in vent streams from industrial or municipal operations. The purpose of this project was to evaluate the adsorption of contaminants on the surface of natural zeolites. The work involved equilibrium tests to determine isotherms (amount adsorbed at various concentrations of pollutant in the gas), column tests to simulate real operation, and evaluation of the attractiveness of the method relative to the conventional adsorption on carbon.

*Eligible for Young Investigator's Award

1:50-2:10 **Water Balance for a Residual Waste Landfill***

by

Susan Dreyer, Kevin Haney, Thomas May
Suhaimi Samat, Troy Whittaker
Widener University

Faculty Advisor: Dr. David Chen
Sponsor: Spotts, Stevens, and McCoy, Inc.
Project Originator: William A. Wade

No specific methods of measuring the flow rate of leachate from residual landfills have been developed. The objective of this project was to design and calibrate an open-channel flow system for accurately measuring the leachate flowing from a residual landfill. The system, consisting of several V-notch weirs, will enable operators of residual waste landfills to monitor leachate flow rate and determine requirements for leachate storage facilities.

2:10-2:30 **Removal of Organic Pollutants from Contaminated Soil**

by Weston Institute Fellow

David Constant, Widener University

Faculty Advisor: Dr. David Chen
Sponsor: Roy F. Weston, Inc.
Project Originator: George M. Lane

Accidental spills and leaking underground storage tanks have resulted in the contamination of soil by toxic organics and created a problem of immense magnitude throughout the United States. Studies using the Low Temperature Treatment (LT^3) system, developed by Roy F. Weston, Inc., have demonstrated a high degree of removal for a wide range of organics from highly volatile to nonvolatile substances; however, it is suspected that removal efficiencies for nonvolatile organics could be improved by the introduction of an appropriate purge system. The objective of this project is to screen materials suitable for use in the LT^3 system as a purge stream to increase the removal efficiency of pentachlorophenol, a representative nonvolatile organic chemical, from soil.

*Eligible for Young Investigator's Award

2:30-2:50 **Environmental Exposure and Human DNA Repair**

by Weston Institute Fellow

David J. Mauro, Temple University

Faculty Advisor Dr. Marvin Ziskin

DNA is the basic material in human cells that contains genetic information. Its structure can be compared to an alphabet which forms the words and the sentences specifying the genetic information. Alterations in the DNA can drastically affect cellular function, thus possibly resulting in cell death or uncontrolled replication, as is seen in cancer. DNA is exposed on a daily basis to numerous environmental agents that bind to and modify the DNA. Mechanisms have been developed over the course of evolution that recognize and correct unwanted modifications. The purpose of this study is to examine these defense mechanisms using model DNA repair enzymes.

2:50-3:10 **INTERMISSION**

3:10-3:30 **Selective Substrate Utilization in Immobilized Cell Systems: Steady and Transient-State Kinetics**
by Weston Institute Fellow
Yen Hsu, University of Pennsylvania

Faculty Advisor: Dr. Wen Shieh

Benzene, toluene, ethylbenzene, and xylene are major contaminants associated with known groundwater contamination incidents. They are volatile, flammable, immiscible with water, and highly toxic. The purpose of this research is to investigate the impact of these contaminants on existing anaerobic fluidized bed reactors and to determine the optimum process(es) to decompose these compounds.

3:30-3:50 **Indoor Air Quality**
by Weston Institute Fellow
Carol L. Poole, West Chester University

Faculty Advisor: Dr. Maura Sheehan

Indoor air quality will continue to be a problem of the 1990s as we attempt to conserve energy by limiting the intake of "fresh air" into a building. The measurement of the decrease in carbon dioxide over time is an indicator of real time room ventilation. The purpose of this study is to measure carbon dioxide concentration and concentration decay rate in a college classroom and calculate an effective ventilation rate which can be compared to observed room ventilation.

Presented at FASEB

Role of the Steroid 17α-hydroxylase in Spironolactone-Mediated Destruction of Cytochrome P-450

by Weston Institute Fellow
David C. Kossor, Philadelphia College of Pharmacy & Science

Faculty Advisor: Dr. Howard Colby

Previous investigations have established that spironolactone (SL) is activated by adrenal microsomal enzymes, resulting in the degradation of cytochrome P-450. Deacetylation of SL to 7α-thiospironolactone (7α-thio-SL) appears to be the first step in the activation pathway, but further NADPH-dependent metabolism of 7α-thio-SL is required for P-450 destruction. Studies were done to evaluate directly the role of the steroid 17α-hydroxylase in the activation of 7α-thio-SL by adrenal microsomes. Incubation of guinea pig adrenal microsomes with 7α-thio-SL in the presence of NADPH effected an approximate 40 to 50% decline in cytochrome P-450 content and 90% decrease in 17α-hydroxylase activity, but no change in the rate of 21-hydroxylation. Preincubation of the microsomes with antisera to the 17α-hydroxylase P-450 isozyme (P-$450_{17\alpha}$) decreased 17α-hydroxylase but not 21-hydroxylase activity and prevented the degradation of cytochrome P-450 by 7α-thio-SL. Preimmune IgG had no effect on 17α-hydroxylase activity or on the 7α-thio-SL-mediated destruction of cytochrome P-450. When added to a purified P-$450_{17\alpha}$ preparation, 7α-thio-SL and the endogenous substrate, progesterone, caused typical type I spectral changes, but SL did not. Incubation of a purified and reconstituted 17α-hydroxylase system, consisting of P-$450_{17\alpha}$, NADPH-cytochrome P-450 reductase, cytochrome b_5, and dilauryl phosphatidylcholine with 7α-thio-SL plus NADPH, effected the complete degradation of the P-$450_{17\alpha}$. Neither progesterone nor SL caused P-450 destruction with the reconsituted enzyme preparation. The results provide direct evidence for the activation of 7α-thio-SL by the 17α-hydroxylase and support the hypothesis that a mechanism-based inhibition of the enzyme occurs. The data also provide further evidence that 7α-thio-SL is an obligatory intermediate in the actions of SL on the P-$450_{17\alpha}$.

4:00 **AWARD ANNOUNCEMENT & ADJOURNMENT**

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WESTON INSTITUTE SPHERE RESEARCH PROGRAM

The Weston Institute is a not-for-profit, tax-exempt organization incorporated in the Commonwealth of Pennsylvania in 1988. The mission of the Institute is to generate new human resources and knowledge through education and research in the broad fields of environmental science and human health and safety to create a better and sustainable quality of life. To fulfill this mission, the Institute will serve as a catalyst to encourage cooperation, both nationally and internationally, among business, industry, government, and academia.

The main purpose of the Weston Institute Sphere Research Program is to attract talented individuals to the environmental field by inviting them to participate in challenging research projects. Our objective is to stimulate interest, particularly among advanced undergraduates and junior graduate students, in entering the environmental field and to stimulate interdisciplinary dialogue among individuals in business, government, and academia.

1 Weston Way
West Chester, PA 19380-1499
215-430-3100

WI-2-91

Printed on recycled paper

SmithKline Beecham

May 8, 1992

Mr. Shyam Sujan
SPHERE Program Representative
Weston Institute
One Weston Way
West Chester PA 19380

Dear Mr. Sujan:

SmithKline Beecham is pleased to participate in the 1992 Weston Institute SPHERE Program.

SmithKline Beecham pledges to encumber $2,500. Our company will also authorize the allocation of up to eight hours of time (cumulative) for the originator of a selected project to act as an advisor to students working on the selected project. This pledge will be valid for 12 months from the date of this letter.

We will require an invoice from you after the project has been selected by the students, and we have approved the project for funding. Please direct your invoice to me for payment.

We also understand that SmithKline Beecham will received (1) monthly SPHERE newsletters, (2) a copy of the students' final report, and (3) a copy of the SPHERE Yearbook containing abstracts of all project results and author biographies completed during the year.

Sincerely,

Virginia L. Cunningham, Ph.D.
Director
Environmental Research Laboratory

VLC/egf
MISC/SPHERE

709 Swedeland Road, PO Box 1539, King of Prussia, PA 19406-0939 Telephone (215) 270 7319 Fax (215) 270 7437

WESTON INSTITUTE
SPHERE
PROGRAM

Student Projects in Higher Education for Research in the Environm

PROJECT DESCRIPTION

TITLE: Design and Development of a Standardized Test System for Determining the Inherent Biodegradability/Biotransformability of Complex Organic Molecules

CATEGORY: Pharmaceutical/Environmental

PROJECT DESCRIPTION AND APPROACH

(1) Need:

To establish a standardized microbial testing system which would possess known biotransformation potential using a systematic enzyme approach

(2) Objective:

To use the standardized microbial system to examine the inherent biotransformability of a compound

(3) Suggested Approach:

- Review existing literature on inducible enzyme systems, the plasmids, and chromosomes containing the appropriate DNA, and the species of microorganisms possessing the capabilities
- Identify major enzymes, plasmids, and organisms
- Develop a model to culture the organisms in such a way as to induce these enzymes systems, and to test their activity using known compounds as standards
- Once a system has been defined, a target compound could be tested to determine if such a system might be the basis of a standardized test for inherent biotransformability

Helvoet Pharma

Pharmaceutical rubber parts and aluminum/plastic caps

20 April, 1992

Mr. Shyam Sujan
SPERE Program Representative
Weston Institute
One Weston Way
West Chester, PA 19380

Dear Mr.Sujan,

Helvoet Pharma Inc is pleased to participate in the 1992 Weston Institute SPHERE program. Helvoet Pharma pledges to encumber $2500 upon the satisfactory completion of our agreed upon research project report. The research topic will deal with Helvoet Pharma's need to find secondary uses for its excess rubber material to offset both the cost of raw material and disposal. The project's goal will be to reduce waste material costs by 50%.

Helvoet Pharma's acceptance of the project will be based on the quality of the proposal, the qualifications of the students and university staff working on the project, and the anticipated return on investment. This pledge will be valid for 6 months from the date of this letter.

We also understand that Helvoet Pharma will receive (1) monthly SPHERE newsletters, (2) a copy of the students final reports, and (3) a copy of the SPHERE yearbook containing abstracts of all project results and author biographies completed during the year.

We will require an invoice from you after the project and project team has been selected and Helvoet Pharma has approved the project for funding. Please direct your invoices to Jay Bertsch for payment.

I look forward to our participation and await your reply.

Sincerely,

Brian Seelig
Director of Manufacturing

Helvoet Pharma Inc.

9012 Pennsauken Highway
Pennsauken, N.J. 08110, USA
Phone 609/663-2202
Fax 609/663-2636, Telex 7108920120

Dätwyler

a Subsidiary of Dätwyler Holding Switzerland

PROJECT DESCRIPTION

TITLE: Development of a Marketing Strategy for Recycled Manufacturing Waste Rubber

CATEGORY: Marketing/Solid Waste Management/Chemical

PROJECT DESCRIPTION AND APPROACH

(1) Need:

A major producer of pharmaceutical rubber parts produced approximately 500,000 lbs. of excess bromobutyl, chlorabutyl, and natural rubber which must be disposed. The need is to find secondary uses to offset the financial and environmental impact of this excess material.

(2) Objective:

Investigate alternate uses for excess material and develop a marketing strategy to promote it's sale. Goal is to reduce waste material costs by 50%.

(3) Potential Secondary Uses:

A. Resurfacing tennis courts and running tracks.
B. Binder in manufacture of cutting and grinding wheels.
C. Filler in traffic impact barriers.
D. Sprayed insulation.

(4) Suggested Approach:

- Research and establish the physical/chemical/thermal/etc. characteristics of proposed secondary uses. (Including American Society for Testing Materials specifications.)
- Characterize the properties of the waste rubber.
- Design an alternative secondary use system incorporating several combinations of waste rubber.
- Design laboratory scale test(s) to determine the applicability of waste rubber to alternative secondary use(s).
- Analyze results of tests and report on feasibility on manufacture and sale of alternative secondary use products.
- Propose additional laboratory and market research required.

WESTON
MANAGERS DESIGNERS CONSULTANTS
1 WESTON WAY
WEST CHESTER, PA 19380-1499
PHONE: 215-692-3030
FAX: 215-430-3186

22 September 1992

Dr. William Gaither
Weston Institute
One Weston Way
West Chester, PA 19380

Dear Dr. Gaither:

The Geosciences Department of Weston is pleased to participate as a Business Member in the 1992 Weston Institute SPHERE Program. We enclose 2 projects for distribution to subscribing colleges and universities.

Weston pledges to encumber $5000 ($2,500 x number of projects submitted). Our company will also authorize the allocation of six to eight hours of time for the originator of a selected SPHERE project to act as an advisor to students working on the selected project. This pledge will be valid for 12 months from the date of this letter.

We will require an invoice for project subsidies after they have been selected by student(s) and approved by the project originator for funding. Please direct all invoices to R. Biggs for payment.

We also understand that Weston will receive (1) monthly SPHERE newsletters, (2) a copy of the final student reports, and (3) a copy of the SPHERE Yearbook containing abstracts of all projects results and author biographies completed during the year.

Very truly yours,

ROY F. WESTON, INC.

R B Biggs

Robert B. Biggs, Ph.D., P.G.
Geosciences Department

cc: Pete Marks
Division Manager

BIGGS-BOB\WSLLTR

PROJECT DESCRIPTION

TITLE: Polychlorinated Biphenyls (PCB's) and Pesticides Information Management and Modeling System for the Unsaturated Soil Zone

CATEGORY: Hazardous Waste Management

PROJECT DESCRIPTION AND APPROACH

(1) Need:

PCB's and pesticides have been recognized as a potential source of soil contamination requiring clean-up and disposal to conform with EPA regulations. There is a need for a method to determine the magnitude of soil contamination following a spill and the resulting clean-up requirement.

(2) Objective:

Develop a PC-based information management and modeling system for soil contamination with PCB's and pesticides.

(3) Suggested Approach:

- Review the Seasonal Soil Compartment (SESOIL) model and the Pesticide Root Zone Model.
- Develop PC-based information management and modeling systems with the capabilities of data entry, data management, reporting statistical analysis, graphic presentation and simulation of physical and chemical mechanism affecting the fate of PCB's and pesticides.
- Get familiarity with PC - SAS, d-base III or other date management systems.
- Test and apply the developed system at a spilled or hazardous waste site.

PROJECT DESCRIPTION

TITLE: Development of Fracture Flow and Solute Transport Model

CATEGORY: Groundwater Modeling

PROJECT DESCRIPTION AND APPROACH

(1) Need:

To develop and verify a computational model for economically feasible environmental assessment of waste management practices involving:

(a) fast waste transport through fractures with slow transport through associated porous media, and

(b) the application of the resulting model to field scale sites.

(2) Objective:

To use this practical numerical model for evaluation of new and existing technologies for remedial actions at hazardous wastes sites. The objective of this study is to develop such a practical model using physics-based formulation for investigating flow and solute transport in fractured porous media.

(3) Suggested Approach:

- Review existing fracture flow and solute transport models.
- Compare Literature Survey models based on model features.
- Develop a model using a multi-time scale approach to compute the distribution and evolution of flow and containments in a subsurface media.
- Verify and apply the newly developed model at a hazardous waste site.
- Perform calibration and sensitivity analysis for a given hazardous waste site.

THE COUNCIL
FOR SOLID WASTE
SOLUTIONS

Peter W. D[illegible]
Director of Th[illegible]

February 7, 1992

Dr. John L. Sloyer, Jr.
SPHERE Program Manager
Weston Institute
One Weston Way
West Chester, PA 19380

Dear Dr. Sloyer:

The Council for Solid Waste Solutions (CSWS) is pleased to participate as a Business Member in the 1992 Weston Institute SPHERE Program. We enclose 4 projects for distribution to subscribing colleges and universities.

The CSWS pledges to encumber $10,000. Our company will also authorize the allocation of six to eight hours of time for the originator of a selected SPHERE project to act as an advisor to students working on the selected project. This pledge will be valid for 12 months from the date of this letter.

We will require an invoice for project subsidies after they have been selected by student(s) and approved by the project originator for funding. Please direct all invoices to me for payment.

We also understand that the CSWS will receive (1) monthly SPHERE newsletters, (2) a copy of the final student reports, and (3) a copy of the SPHERE Yearbook containing abstracts of all project results and author biographies completed during the year.

Sincerely yours,

Peter W. Dinger

PWD/bmc

1275 K Street, NW, Suite 400
Washington, D.C. 20005
202.371.5319
FAX: 202.371.5679

A Program of
The Society of the Plastics Industry, Inc.
[illegible]

WESTON INSTITUTE

SPHERE

PROGRAM

Student Projects in Higher Education for Research in the Environmen

PROJECT DESCRIPTION

TITLE: Low-cost modifiers for use with recycled plastics

CATEGORY: Solid Waste Management

PROJECT DESCRIPTION AND APPROACH

(1) Need:

Plastics are being recycled in ever increasing quantities. The majority of post-consumer HDPE being collected is in the form of blow-molded bottles. Many HDPE bottles are recycled back into bottles, but there are many potential additional markets for post-consumer resign (PCT) HDPE in the manufacture of injected molded products. Products manufactured via an injection molding process require a rapid flow of molten material to fill the mold; however, the resign used to make bottles does not flow easily when molten(low melt flow inde. - MFI). Increasing temperature and pressure during processing help somewhat, but are still inadequate. A low-cost flow modifier or technique would greatly expand the market potential for post-consumer HDPE.

(2) Objective:

Develop a technique or formulate an additive which at minimum cost will improve the injection molding capability of PCR HDPE while maintaining material physical properties.

(3) Suggested Approach:

- Study the rheological characteristics of blow molding grade (fractional MFI) and injection molding grade (high MFI) HDPE.
- Research additives and techniques which would improve the melt flow characteristics of HDPE bottle resign.
- Select the best methods with minimum impact on finished product properties and low cost.
- Evaluate the material/technique on a melt flow analyzer.
- Test the proposed technique on a full-scale system if possible.

PROJECT DESCRIPTION

TITLE: Develop techniques or additives to remove or neutralize contaminants present in recycled plastics.

CATEGORY: Solid Waste Management

PROJECT DESCRIPTION AND APPROACH

(1) Need:

Plastics are used to package a wide variety of products. Some of these products contain additives which permeate the polymer (e.g. perfumes used in liquid detergents). Other products leave residues in empty containers which may degrade to form contaminating compounds (e.g. butyric acid from milk). These contaminants result in odors in recycled plastics and have been shown to deteriorate mechanical properties of the polymers.

(2) Objective:

Develop methods which remove the contaminating compounds during the reclamation process or additives which will neutralize the effect of these materials on finished products.

(3) Suggested Approach:

- Develop a list of the primary problem contaminants in recycled HDPE.
- Select one or more contaminants for focused research.
- Research methods for removing or neutralizing the contaminants.
- Propose a process for accomplishing the above complete with method, cost and appropriate place within the recycling process.

WESTON INSTITUTE
SPHERE
PROGRAM

Student Projects in Higher Education for Research in the Environment

PROJECT DESCRIPTION

TITLE: Compare the cost/benefit of recycling for plastics and other recyclable material

CATEGORY: Solid Waste Management

PROJECT DESCRIPTION AND APPROACH

(1) Need:

Recycling is seen by many as the primary solution to the "landfill crisis." It is also viewed as removing valuable raw materials from the waste stream for reuse. This process is assumed to be cost-effective due to avoided landfill costs and revenue generated from material sale but the value is reduced by the amount of energy and other resources expended recover them. There are many hidden costs associated with recycling however, and policy-makers do not have adequate information from an overall economic standpoint.

(2) Objective:

Categorize and quantify all of the economic costs associated with recycling and compare them to alternative disposal options of landfilling and incineration. Compare these options for plastic, paper, metal, and glass.

(3) Suggested Approach:

- Diagram the process and transportation steps associated with recycling.
- Collect the costs of each process step for all o the common recyclable materials.
- Lay the ground work for developing an economic computer model for comparing these costs.

PROJECT DESCRIPTION

TITLE: Develop an economically "smart" system to collect recyclables from rural populations.

CATEGORY: Solid Waste Management

PROJECT DESCRIPTION AND APPROACH

(1) Need:

Recycling has become a key component in strategies for managing solid waste. Many states have established recycling goals for packaging materials. In order to meet these goals a high percentage of the population must participate in recyclable material collection programs. Participation is good in large communities with curbside programs. However over 50% of the U.S. population resides in communities of 10,000 people or less, where such programs are not practical. Rural drop-off sites do not get the participation required to meet stated goals.

(2) Objective:

Develop a system for efficient and cost-effective collection of recyclable materials from rural households which will encourage a high participation level and high recovery rates.

(3) Suggested Approach:

- Review existing rural collection and drop-off programs.
- Document the shortcomings and benefits of such systems.
- Outline the requirements for a successful rural approach for achieving the objectives.
- Outline the details for the proposed system including:
  - household education/communication
  - equipment required: processing, transportation, storage, etc.
  - estimate costs
  - advantages over existing systems
  - required policies, organization, etc. to put into effect

6.4.3 IMPROVING INNER-CITY SCIENCE FAIRS

Proposed by
Inner-City Consortium, Inc. with the School District of Philadelphia and the Franklin Institute

Summary

The Inner-City George Washington Carver Science Fair in Philadelphia has experienced dramatic growth during the past three years, due in significant part to the teacher training workshops which have been conducted by the School District of Philadelphia and the Franklin Institute. It is proposed that three teachers from Baltimore and three teachers from Washington, D.C. be invited to participate in one of the Philadelphia workshops during the 1993-94 school year.

Background and Importance

The first science fair held in Philadelphia was organized and hosted by the Franklin Instititue in 1948. One year later, in 1949, Science Service, Inc. of Washington, D.C. organized the first International Science and Engineering Fair and held it at the Franklin Institute.

During the four-and-one-half decades since these first fairs were held in Philadelphia, literally tens of thousands of students have competed in science fairs. Many times, a science fair project presents a new and inspiring opportunity to a student who otherwise would not be motivated by any other means. The chance to explore a natural phenomenon -- finding a question of real interest, developing a hypothesis, conducting experiments, analyzing data, and presenting the results gives a youngster an intellectual boost that few other experiences can duplicate.

Science Fairs continue to mature with students now competing in fourteen categories which include: (1) Behavioral Sciences, (2) Biochemistry, (3) Botany, (4) Chemistry, (5) Computer Science, (6) Earth/space Sciences, (7) Engineering, (8) Environmental, (9) Mathematics, (10) Medicine and Health, (11) Microbiology, (12) Physics, (13) Zoology, and, new in 1993, (14) Team Projects.

In each of the Consortium cities there are inner-city science fairs. In Washington, D.C. the Citywide Science Fair is franchised by Science Service and send two winners to compete each year. In Baltimore, there are two science fairs franchised by Science Service, the Towson Fair and the inner-city fair hosted by Morgan State University. In Philadelphia, the George Washington Carver Science Fair attracts students from Philadelphia County which is coincident with the City of Philadelphia. It is one of ten "feeder fairs" which send winners to the Delaware Valley Science Fairs (DVSF). The Delaware Valley Science Fairs hold four franchises, one for each of the 9th through the 12th grades. Eight students represent the DVSF at the International Science and Engineering Fair.

The George Washington Carver Fair was started 15 years ago and is held at Temple University in North Philadelphia. During the past three years, through the efforts of Dr. Curtis Howard, Curriculum Coordinator of the School District of Philadelphia, and others, the fair has doubled in size from approximately 500 student participants in 1990 to over 1,000 participants in 1993. This dramatic increase has resulted from the Science Fair Retreats which Dr. Howard has organized and hosts at a conference site in Lancaster, Pennsylvania.

At these weekend retreats, typically two each year, approximately 300 teachers are trained in how

to do science fair projects. They arrive and are instructed in the entire process which students follow. They select a topic or problem, develop a hypothesis, "conduct research", analyze the data, draw conclusions, present the results on boards, and are "judged." Teachers then go back to their classrooms with confidence that they know the process and can lead their students through projects and advise them. The teachers are also provide supplies and equipment to get started back in their own classes.

Work Plan

The work plan for the 1993-94 year is simple. It involves selecting three high school science teachers from Baltimore, and three from Washington, D.C., and arranging for them to have time off and travel expenses to attend one of the Science Fair Retreats in Lancaster, Pennsylvania. Dates have not been set for the 1993-94 retreats however they will be before the end of the summer.

The six teachers will be selected on the basis of their potential to benefit from participation in the Retreat and their potential ability to instruct in similar Retreats to be held in their respective cities. This is a modest first-year plan however, if successful, it can snowball rapidly in the coming years to have the same positive effect on numbers of student participants in Baltimore and Washington, D.C. as it has had in Philadelphia.

Demographic Composition of Students/Teachers Affected

The teachers who will be selected to participate in the Retreat will probably be minorities, reflecting the composition of the school systems and the student populations in the respective cities.

Expected Outcomes

It is expected that the teachers who participate in these Retreats will (1) go back to their schools and encourage their students to participate in local science fair competitions, and (2) become leaders in organizing Retreats in their cities. The effect should be approximately the same as it has been in Philadelphia. Specifically, as more and more teachers participate in these Retreats, they should cause a multiple, possibly from five to twenty students advised by each who will compete in their local science fairs. The personal attention which comes to a student who participates can have a very positive influence on their self-esteem and confidence.

Measurement of Results

Data can be gathered on several levels. First, will be the number of teachers who participate in Retreats. Second, will be the numbers of students in their classes who begin competing in science fairs. Third, will be the numbers of other teachers who are trained in similar retreats in the other two cities. Finally, will be the numbers of students who begin to compete in science fairs in the other two cities under the direction of the newly trained teachers.

References

Program of Entries. George Washington Carver Science Fair, 1993.

Program of Entries. Delaware Valley Science Fairs, 1993.

Leadership and Management

Dr. Curtis Howard will lead the Retreat. Her resume is included with project 6.1.3. She will be assisted by several other individuals including Mr. James Kennedy whose resume is also included

under project 6.1.3. Mr. Henry Disston, Assistant Director of the Franklin Institute and Executive Director of the Delaware Valley Science Fairs will also provide instruction at the Retreat.

Budget

The budget is very modest for this project and is shown in Appendix 6.4.3 A. Assuming a positive reaction from attendees in the first year, the cost is expected to increase in the second and third years to accommodate additional participants from Baltimore and Washington, D.C..

APPENDIX 6.4.3 A

BUDGETS

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6.4.4 PARTNERSHIP FOR ENVIRONMENTAL TECHNOLOGY EDUCATION (PETE)

Proposed by
Inner-City Consortium, Inc. in conjunction with Community College of Philadelphia, Baltimore City Community College and University of the District of Columbia

Summary

The need for broad cooperative effort directed toward the enhancement of science and mathematics education, including environmental science and technology, has been recognized as a national priority by government, industry, and the academic community alike. To meet this need, the Partnership for Environmental Technology Education (PETE) has been established in five western states and is now being expended to a national program. PETE's overall objective is to link the technical resources of the DOE, EPA, and NASA Laboratories and private industry with participating community colleges. The goal of this linkage is to stimulate the development and implementation of curricula for training environmental hazardous materials technicians and to encourage more transfer students to pursue studies in environmental science at four-year institutions. The goal of this project is to develop active programs in the inner-city community colleges which are members of the Inner-City Energy and Environmental Education Consortium.

Background and Importance

The U.S. Department of Energy (DOE) and the U.S. Environmental Protection Agency (EPA) have defined the need for increasing numbers of qualified graduates in areas of environmental science and engineering, including technicians, and fostering improved public literacy in environmental science and waste management. Business and industry has also increased its personnel needs in response to increased government regulations at the local, state, and national levels. In particular, this has resulted in greater numbers of staff employed by industries such as utilities, petrochemical companies, pharmaceutical manufacturers, indeed, every segment of the nation's industrial capacity. In addition, there is a rapidly growing segment of the consulting profession which employs staff with specialty skills to solve the problems which government regulation imposes on industries. Finally, there is the need have greater numbers of individuals in the workforce who are sensitive to, and skilled in, avoiding future environmental and human health problems which will continue to emanate from new industrial processes.

While many community colleges are now establishing environmental technician training programs, some linked with feeder high schools, and some linked with colleges and universities, regional and national coordination can help shorten the learning curve for each institution. Also, since each community college, by definition, serves a community circumscribed by a 30 or so mile radius around the college, a network to serve each area's needs will be required. Start-up funds will be the most effective way to accelerate the introduction of environmental curricula in each college. To wait for the normal budgeting process can delay the introduction of these new curricula by one or two years.

Work Plan

This project comprises three phases designed to bring all community colleges participating in the Consortium into active roles in the northeastern region PETE Program. Consortium community colleges and institutions offering associate degrees include (1) Baltimore City Community College,

(2) Community College of Philadelphia, (3) Dundalk Community College, (4) Montgomery College-Takoma Park Campus, (5) and the University of the District of Columbia.

Phase 1 will occur in the first program year. The Community College of Philadelphia (CCP) (see project 6.3.1) has proposed to lead the first-year activities through involvement with the northeast regional steering committee of PETE, being organized through Brookhaven National Laboratory (BNL). First-year activities include hosting a regional conference in Philadelphia under the sponsorship of the PETE Program. All Consortium institutions will be invited to this conference. CCP also in this phase, CCP will begin its own curriculum design and the development of instructional laboratories.

Phase 2 will occur in the second program year. The other four associate degree-granting institutions in the Consortium will become actively involved in the curriculum planning and development process, benefitting from the guidance and insights offered through PETE participation and the pilot experiences of CCP, working closely with the Environmental Technology Academy at Abraham Lincoln High School. CCP will begin admitting students to its new environmental technology program.

Phase 3 will occur in the third program year. The four associate degree-granting institutions in the Consortium will begin admitting students to their environmental technology associate degree programs. Each organization will tailor its program to obtain optimum interaction with other Consortium institutions. CCP will begin its second-level classes, enroll a new class in the first year of the Associate in Applied Science (AAS) classes, and expand their relationship to a second Charter School or Academy. This school will probably be the second Environmental Technology Academy established in Philadelphia through the efforts of the Philadelphia High School Academies, Inc. (see project 6.1.4).

Collaborating Organizations There will be a large number of collaborating organizations including: (1) the businesses, industries, and government agencies in each community college's service area, (2) the participating community colleges, (3) the regional and national DOE, EPA, and NASA laboratories, (4) feeder high schools serving each participating community college, and (5) colleges and universities participating in 2 + 2+ 2 programs with local community colleges.

Expected Outcomes

Community colleges in the Consortium and in the northeast region will respond with varying degrees of interest to the opportunity to initiate a new, or improved environmental curriculum. The expected outcome is that there will be widespread interest by community colleges and associate degree-granting universities. It is also expected that the Consortium organizations which participate in the project will be able to have new and attractive curricula "up and running" one, two, or even three years earlier than they would have, left to their own devices and resources.

Measurement of Results

Measurement of results will be done directly by counting (1) the number of participating community colleges, (2) the rapidity with which they are able to implement their new environmental curricula, (3) the number of students enrolled in each college, (4) the number of graduates of each college, (5) the cost per graduate, (6) whether the community college internalizes the budget for the program, (7) how many graduates go on to pursue environmental careers.

References

Program Summary - April 1, 1992. Partnership for Environmental Technology Education, A Community College Initiative, P.O. Box 808, L-209, Livermore, California 94551. 10p.

Leadership and Management

Inner-City Consortium, Inc. will be responsible for the management of the PETE-related Inner-City Consortium activities under the direction of Dr. William S. Gaither, President and Consortium Director. Each Consortium organization will be looked to for its own leadership individuals. For example, Mr. Samuel Hirsch, Dean of the Division of Educational Support Services and Dr. Douglas Fenwick, Dean of the Division of Science and Technology, and Dr. Susan Mogil, associate professor of chemistry and Faculty Coordinator at the Community College of Philadelphia, along with Mr. David Kipphut and Mr. James Kennedy of the Environmental Technology Academy at Abraham Lincoln High School (see project 6.1.3) will be the leaders of the Philadelphia PETE effort.

Budget

Appendix 6.4.4 A provides information on the modest budget requested for this project. Time of Dr. Gaither will be provided under the Management budget of this Program Plan. Personnel effort of the Community College of Philadelphia will be provided under Project 6.3.1.

APPENDIX 6.4.4 A

BUDGETS

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6.4.5 HBCU/MI CURRICULUM DEVELOPMENT MODEL

Proposed by
Inner-City Consortium, Inc. in Collaboration with the Consortium of Historically Black Colleges and Universities/Minority Institutions

Executive Summary

A Curriculum Development Model is proposed which will stimulate rapid and lasting improvements in the curricula taught to K-20 students and in the practice of a wide range of disciplines and professions. The project proposed will require five years and provides for two iterations to develop and improve curriculum material in the basic sciences and two iterations to develop and improve curriculum material in the professions. Reports and a reference text will be produced each year. The fifth year will be for evaluation. Separate funding sources will be sought to support this program. The effort proposed for the 1993-94 program year will be to seek the necessary funding.

Background and Importance

As society becomes more aware of the need to value and care for natural resources, to recycle and minimize waste, and to restore the environment to a clean and safe condition, it is clear that education must be refocused to prepare students to play a leading role in creating a better and sustainable quality of life. The philosophy of sustainability will permeate virtually every academic discipline by the year 2000. The following proposal outlines an orderly approach to the complex but important task of curricula revision and the realignment of the major professions.

The proposed approach is tailored to involve experts from the business, industry, government, and academic communities. It will encourage extensive involvement of students whose perspective is different from older people's. The process comprises a series of iterations, each of which can advance curricula rethinking, refocusing, and revision. It does not propose to mandate change. Rather it proposes to stimulate change through the implementation of a process which will involve students and teachers spearheading the thoughtful reexamination of curricula philosophy and content. It will influence change in direct proportion to the quality of the ideas it causes the participants to generate.

Work Plan

The basic approach used in the Curriculum Development Model involves five basic steps:

- Step 1: Define the most serious sustainabiltiy issues confronting society.
- Step 2: Conduct Fundamentals Workshops
- Step 3: Convene Interdisciplinary Conference
- Step 4: Prepare revised curricula in each discipline of major profession
- Step 5: Publish reference text

To ensure that each participant's time is productive, the tested and proven Nominal Group Technique (NGT) workshop format will be employed in Steps 1 and 2. It consists of the following process: (1) Define the workshop question in a single sentence and circulate it to participants before the workshop convenes, (2) Individuals present their highest priority response to the workshop question (in order) until all responses have been presented and posted on the walls of the workroom, (3) consolidate the responses under major concepts, and (4) individuals

rank their top ten highest priority responses to the workshop question. Each of steps is described in greater detail below.

Step 1: Definition of the Most Significant Sustainability Problems Confronting Society. This will require a one-day workshop in which the participants will be asked to address the question *What are the most important issues which need to be addressed now to ensure that future generations will enjoy a better and sustainable quality of life?*. The result will be a 60 to 100 page report which briefly defines each issue, describes its significance, and suggests an approach to its resolution. Between 24 and 30 carefully selected student and adult participants will be invited to participate.

Step 2: Fundamentals Workshops. In each discipline (or profession) a fundamentals workshop will be held. Each workshop will involve youngsters and disciplinary experts (24-30 individuals maximum) from academia, business, industry and government. The question put before each workshop will be *to identify, and rank in priority order, the most important fundamental laws, principles, predictive models and widely accepted current working theories which need to be taught to students in (specific discipline or profession) so that they will be better equipped to help society achieve a better and sustainable quality of life.* The Nominal Group Technique (NGT) will be employed to ensure a useful written report at the end of each 24 hour workshop period. Basic disciplines which would be addressed include (1) behavioral sciences, (2) biochemistry, (3) botany, (4) chemistry, (5) earth and space sciences, (6) mathematics, (7) microbiology, (8) physics, and (9) zoology. These disciplines have been selected, in part, because of their intrinsic importance and in part because they are the areas of competition in the International Science and Engineering Fair and regional feeder-fairs throughout the nation.

Individuals who agree to participate in the disciplinary fundamentals workshops will be expected to continue to participate in the subsequent steps. A modest honorarium, plus travel and out of pocket expenses, will be provided to each participant for each day.

Step 3: Interdisciplinary Conference. Following the completion of the nine disciplinary fundamentals workshops, participants from each workshop will be invited to an Interdisciplinary Conference of four-and-one-half days duration. All participants will receive a binder in advance containing all workshop reports produced to date and will be expected to have read it before the conference. At this conference a half-day session will be devoted to each discipline. The format will consist of the following parts:

- Presentation (15-30 minutes) of the highlights of the disciplinary report by a panel consisting of that discipline's fundamentals workshop participants.

- Discussion (60 - 90 minutes) of fundamentals identified and rationale presented in the workshop report.

- Presentation by panel members of classroom example exercises and problems which illustrate the usefulness of the high priority fundamentals in the solution of the most important sustainability problems confronting society. These examples should be made as simple and easily understood as possible and would be aimed at three age levels: (1) K-6, (2) 7-12, and (3) 13-16.

- Written recommendations by the conference participants to (1) the presenters of the disciplinary report's results (e.g. "here are some points I suggest you consider from the perspective of my discipline."), and (2) to their own disciplinary group (e.g. "what can we learn, or use, from this other discipline?").

Step 4: Design of Model Curricula. Each disciplinary group will next prepare a model curriculum for their discipline. The model curriculum will be drafted by a chair and vice chair selected by the group when it meets for at its fundamentals workshop. The draft model curriculum will be reviewed and improved by the entire group in three or four subsequent meetings. The refinement of classroom examples will be an integral part of the development of each model curriculum. Groups of students will be asked to assist with the conception and presentation of the example problems, particularly in devising hands-on field and laboratory exercises.

Step 5: Preparation of a Reference Text and Electronic Lesson Units. A Reference Text will be published under the direction of an experienced technical editor. The text will contain ten chapters and will be designed to serve as a resource book for teachers, professors, and professionals. The first chapter will be an introductory description of the most significant sustainability problems confronting society as developed in the first workshop. The subsequent nine chapters will each deal with a separate discipline addressed in one of the nine fundamentals workshops. This text will be distributed to teachers/professors in the participating academic organizations to augment other classroom materials. A second edition of this text will be prepared by repeating this process two years later.

In addition to the Reference Text, electronic lesson units will be prepared to teach the high-priority fundamentals identified in each discipline or major profession. This will be done, at least in part, through the Center for Academic Computing at Clark Atlanta University employing their Integrated Comprehensive Instructional Support System (ICISS).

Schedule of Milestones

The following milestones will be achieved in each of the five years of this program:

- Year 1: Prepare sustainability curricula for the basic disciplines.

- Year 2: Prepare sustainability curricula for the major professions. (Possible major professions include: (1) architecture and planning, (2) business and management, (3) communications, (4) education, (5) engineering, (6) law, and (7) medicine.

- Circulate basic disciplinary curricula to professional societies and academic institutions for test use and comment.

- Year 3: Revise sustainability curricula for the basic disciplines, publish a second edition, and recirculate for further test use and comment.

- Circulate the curricula of the major professions to professional societies and academic institutions for use and comment.

- Year 4: Revise sustainability curricula for major professions and circulate to professional societies and academic institutions for use and comment.

- Year 5: Evaluate results and determine the next steps.

Deliverables

At the end of each of the first four program-years specific deliverables will result. These will

include: (1) the sustainability workshop report, (2) the reports of the disciplinary (or professional) workshops (nine for the disciplines and seven for the professions, (3) a reference text, and (4) electronic lesson units.

Collaborating Organizations

Leading this project will be the colleges and universities of the HBCU/MI Consortium, the Inner-city Energy and Environmental Education Consortium, and the business and industry members of the 1993 National Congress for the Advancement of Minorities in the Environmental Professions. Other important collaborating organizations will include the accrediting organizations with oversight in each of the disciplines and the major professions. Professional societies will also be invited to participate through their appropriate committees. They will be the principal link to professional practice.

Representatives from selected foundations which are supporting this project will be invited to participate, as will supporting government agencies. Finally, it will be important to invite outstanding individuals from leading colleges, universities, and not-for-profit organizations.

Demographic Composition of Students/Teachers Affected

As the reference texts and the electronic lesson units are introduced through the two consortia member institutions, the percentage of minority students/teachers affected will be high, possibly 60% - 70% of all students and teachers being minorities. As the reference text and electronic lesson units are used more widely, the number of total students/teacher affected will increase, however, the percentage of minorities may decrease even through the absolute numbers affected will continue to increase.

Expected Outcomes

It is expected that the reference texts and the electronic lesson units will find wide application in the academic institutions associated with the two collaborating consortia, as well as many other schools, colleges, and universities throughout the nation. This approach is also expected to stimulate interdisciplinary interest and understanding. It is a commonly bewailed problem that experts in one field are unable to understand or communicate with experts in other fields.

Measurement of Results

This will be a large, but important, undertaking. Since the products of the project will be reference texts (one for the basic disciplines, and one for the major professions) and electronic lesson units, much material can be incorporated by teachers into existing curricula without changing its nominal content or title. The actual improvement in the quality of learning and teaching should, however, be quite measurable and significant. A special evaluation design will be developed with each discipline and major profession, in collaboration with the principal professional societies and accrediting organizations which are closest to that discipline or profession.

References

Science Literacy: The Enemy is Us. *Science*, vol 251, 18 Jan. 1991: pp 266.

Science's 20 Greatest Hits Take Their Lumps. *Science*, vol 251, 15 Mar. 1991: pp 1308.

New Meetings to Tackle the Knowledge Conundrum. *Science*, vol 259, 26 Feb. 1993: pp 1253.

Delbecq, Andre L., A. H. Van deVen, and D. H. Gustafson, Group Techniques for Program

Planning, Green Tree Press, Middleton, Wisconsin: 1975.

Leadership and Management

This project will be led by Dr. William S. Gaither, President of Inner-City Consortium, Inc. and Director of the Inner-City Energy and Environmental Education Consortium. Dr. Gaither has over two decades of experience with the Nominal Group Technique process.

Also working closely with Dr. Gaither will be Dr. Kofi Bota, Director of the HBCU/MI Consortium. A letter of endorsement from Dr. Bota is included as Appendix 6.4.5 C.

Budget

Since this project's goal in 1993-94 is to obtain commitment for outside funding, the budget is modest, calling for travel funds primarily. No second or third year budgets have been proposed since it is anticipated that new funding sources will be identified by 1994-95 as matching for any funds requested through the Consortium. Only a 1993-94 budget, plus the required multi-year summary is presented in Appendix 6.4.5 A.

APPENDIX 6.4.5 A

BUDGETS removed.

APPENDIX 6.4.5 B

BIOGRAPHIES OF PROJECT LEADERSHIP

NOTE

Dr. Gaither's vita is included as part of Section 10. Management of Consortium. No vita is provided for Dr. Bota.

APPENDIX 6.4.5 C

LETTERS OF SUPPORT AND CERTIFICATIONS

NOTE

Since this project will be carried out by Inner-City Consortium, Inc. the requited certifications are included in Section 10. Management of this Plan.

The Historically Black Colleges and Universities/Minority Institutions
Environmental Technology and Waste Management Consortium (The HBCU/MI Consortium)

c/o Clark Atlanta University
223 James P. Brawley Drive, SW
Atlanta, Georgia 30314
Phone: (404) 880-8597 / Fax: (404) 880-8522

June 10, 1993

Dr. William s. Gaither
President
Weston Institute
1 Weston Way
West Chester, PA 19380

SUBJECT: Collaborative Efforts with the Inner-City Consortium

Dear Dr. Gaither:

Thank you for keeping me apprised of the development of the Program Plan for the Inner-City Energy and Environmental Education Consortium which you expect to submit to the Department of Energy in June. My visit to Philadelphia on May 10th to meet a number of key people responsible for various elements of the Inner-City Plan was most informative.

We have been working together for over two years and have developed several very promising joint activities. The formation of the Inner-City Energy and Environmental Education Consortium, under your leadership, offers the HBCU/MI Consortium opportunities to expand and enrich its programs and to improve further the ability of the Department of Energy to meet its educational mandates.

This letter is written to provide formal endorsement by the HBCU/MI Consortium of four program elements of the Inner-City Consortium Program Plan. In the following paragraphs I will elaborate on each and describe briefly the benefits which I envision collaboration of the two consortia will create.

DOE/EPA-Unique SPHERE Program

This program, which has been pioneered and tested on a regional basis by Weston Institute, should provide an efficient mechanism to facilitate the flow of important energy and environmental problems from professionals in DOE and EPA laboratories and field sites to undergraduate and junior graduate students in the HBCU/MI Consortium and Inner-City Consortium institutions who will develop solutions as part of their academic programs. It also should provide a mechanism for business and industry members of the National Congress to offer similar problems to our students. A particularly exciting feature of the program is that it provides a practical method to become financially self-sustaining after a relatively short start-up period.

CONSORTIUM MEMBER INSTITUTIONS:
Alabama A&M University • Clark Atlanta University • Florida A&M University • Florida International University • Hampton University • Howard University
Jackson State University • New Mexico Highlands University • North Carolina A&T State University • Northern Arizona University • Prairie View A&M University
Southern University at Baton Rouge • Texas A&I University • Texas Southern University • Tuskegee University • University of Texas, El Paso • Xavier University of Louisiana

Curriculum Development Model

I believe this is an extremely important and broad-gage effort which should stimulate both disciplinary and interdisciplinary thinking about curriculum revision at a time when it is increasingly difficult for such discussions to take place through existing organizational structures. The Model's approach does not pre-judge or bias the outcomes. Rather, it provides an efficient framework in which the participants can make contributions to curricula rethinking and refocusing in the basic disciplines and major professions in an organized way. It also provides an attractive and practical means for participation by businesses, academia, government, accrediting organizations, professional societies, and other groups that will be influenced by basic curricula revision. The results of this program should provide important new materials for organizations which are now spending large sums on creating computerized teaching/learning lesson units. The two consortia, together comprising nearly 50 academic institutions, should approach major national foundations to obtain funding. This project, when completed, should benefit the entire nation and its ability to compete in world markets. Only through a consortial effort can this important curricula revision work be accomplished.

Replicating High School Academies

I am very impressed by the scope and effectiveness of the Environmental Technology Academy at Abraham Lincoln High School and by the Philadelphia High School Academies, Inc. While the minority student population is only slightly over 30%, the impact of the graduates on member institutions in the HBCU/MI Consortium is being felt increasingly. They are much sought after as freshmen in our member institutions. Now that I fully appreciate the importance of the independently incorporated not-for-profit organization through which support by business and industry flows, I see exciting opportunities for replication near HBCU/MI member institutions. For example, Houston, Texas would be an ideal site with its rich mix of businesses and industries and two HBCU/MI member institutions located close by. By using the existing environmental academy at Lincoln High School for the conduct of summer institutes for teachers and administrators, and the ability of Weston Institute and the PHSA, Inc. to go to other cities and describe this highly successful arrangement to business and school leaders, I believe that the academy model can be replicated successfully in a number of locations.

Expanding PRIME, Inc.

By augmenting the established PRIME Program in Philadelphia with a specialist counselor to advise students on career opportunities in energy and environmental restoration and waste management and by using DOE and EPA problems developed through the SPHERE Program as classroom examples, this well-established (20 years) program could be of increasing importance to the HBCU/MI Consortium. Now, approximately 50 PRIME students each year enter HBCU/MI Consortium member institutions as freshmen. I believe that this "pipeline" of highly talented students can be enlarged further.

Conclusion

These four projects could have a major positive impact on the success of both consortia. Each project has an impressive track record of accomplishment and/or proven elements to build on so the likelihood of success is high. By working together, we should be able to multiply the beneficial effects of these projects for the Department of Energy and other federal agencies as well as minority students from our inner-cities.

Please feel free to include this letter in the Program Plan which you submit to the Department of Energy, and I look forward to our working together.

Sincerely yours,

Kofi B. Bota
Director, HBCU/MI Consortium

cc: Richard Stephens
DOE

Isiah Sewell
DOE

6.4.6 REPLICATING THE HIGH SCHOOL ACADEMIES MODEL

Proposed by
Inner-City Consortium, Inc. in Collaboration with Philadelphia High School Academies, Inc. and the School District of Philadelphia

Summary

The twenty years of successful operation of the Philadelphia High Schools Academies, Inc. has produced dramatic results in student performance, motivation, and aspirations. Success depends on four critical factors including support of the superintendent, support of the principal of the host high school, the operation of an independent, not-for-profit, tax-exempt organization to provide and enforce operational guidelines and to raise funds, and interest and support of high level executives in local businesses and industries. This project will initiate exploration of forming comparable organizations in Baltimore, Maryland, Washington, D.C., and Houston, Texas where two HBCU/MI institutions are located.

Background and Importance

Major urban school systems spend in the order of $6,000 to $7,000 per pupil per year to educate students in kindergarten through 12th grades. The results of these expenditures are increasingly questioned as not producing students with basic knowledge and skills for everyday living, with capacity to score well on standardized tests, with ability to obtain employment following high school graduation, or with qualifications to pursue higher education.

The High School Academies model as exemplified by Philadelphia High School Academies, Inc. (PHSA, Inc.), provides in the order of $400 per pupil to school system funds and produces dramatically better results because they create a "school within a school." where students feel special and where teachers are able to give them the special attention needed to help them achieve to their fullest potential. The PHSA, Inc. has been operation for two decades and has built a solid not-for-profit corporate structure with operating procedures which, if adopted by the school system, will produce the kinds of students that parents and the community want from their tax dollars. In Philadelphia, the academies now enroll approximately 3,400 students in nine separate academies, operating in 24 schools throughout the city. The goal of the School District of Philadelphia and PHSA, Inc. is to enroll 5,000 students in academies by the 1996 school year. To give a sense of scale, these 5,000 students represent 2.5% of the 200,000, plus, students enrolled in the entire city system.

The key to the Philadelphia High School Academies, Inc's success is a unique and active partnership between business, labor, community organizations, and the Philadelphia School District. Working together, they share responsibility for linking academic skills to occupational training and, in turn, linking education to steady jobs and paychecks for Academy graduates. Measures of the programs's success are:

- Over 90 percent average daily attendance rate,
- A student dropout rate of less than 4 percent,
- A 90 percent employment rate after graduation

There are several unique features of the program's design and operation which set it apart from traditional academic and vocational educational offerings. Among these are:

- Shared responsibility between the private sector and the School District of Philadelphia in every facet of the program's operation, form funding, planning and policymaking to curriculum design and day-to-day management,
- The integration of academic and occupational skills training,
- Students rostered together from grades nine through twelve with their off and regularly scheduled employability enhancement activities,
- Specially designed staff development activities that train teachers in team teaching and planning, individualized student instruction, career counseling and increasing parental involvement,
- Paid work experience for job-ready students, part-time during the school year and full-time in the summer and upon graduation.

The elements of this successful model are replicable in other cities. The five critical factors required to successfully replicate the Academy model are:

- Commitment of the superintendent of the school district
- Commitment of the principal of the host high school
- Commitment of business leaders of the host city
- Commitment to the establishment and operation of an independent not-for-profit High School Academies, Inc. organization.
- Identification of a motivated and capable teacher to lead and coordinate the academy.

Work Plan

The first-year's work plan involves carefully planned visits to the three prospective host cities, Baltimore, Washington, and Houston. Participating in these visits will be representatives from (1) the Philadelphia School District, (2) Abraham Lincoln High School, the home of the Environmental Technology Academy, (3) Philadelphia High School Academies, Inc., and (4) the Inner-City Consortium.

The initial meeting in each city will need to be planned carefully and well in advance to ensure that key representatives attend and are in on the "ground floor." Reconnaissance visits will need to be made to identify the host individual and organization. In this planning process we will draw on personal relationships between individuals in Philadelphia and in the host city to provide assurance that this initiative is worth their time to learn about. Steps envisioned during the first year are:

> Months 1-3: Identify key individuals in each city who will host initial meeting. Schedule a planning meeting with these individuals. Due to their busy schedules, the initial meetings may need to be one-on-one. Set the date for the initial meeting in each city.
>
> Months 4-6: Conduct initial meetings in each of the three cities with key leaders in attendance.
>
> Months 7-8: Arrange visits to the Environmental Technology Academy in Philadelphia for the key leaders from each city.
>
> Months 9-12: Plan steps to be taken in each city to establish an academy structure.

Demographic Composition of Students and Teachers Affected

The goal will be to reach the maximum numbers of inner-city youth in each city. The Environmental Technology Academy at Abraham Lincoln High School in Philadelphia enrolls approximately 250 students in grades 9, 10, 11, and 12. Of these, approximately 30 percent are

minorities. The second ETA which is planned under project 6.1.4 of this program plan will enroll a much high percentage of inner-city students because of its strategic location.

Part of the strategy in each of the three prospect cities will be to establish a school site selection process which will have the potential to make a maximum positive impact on inner-city youth and thereby help fulfill the mission of the Inner-City Consortium.

Expected Outcomes

In the first year, the expected outcome in each of the three cities is an enthusiasm by the four essential sectors, cited above, to move ahead with plans to establish their own academy structure.

One reason to expect enthusiasm from those who we will approach about leading the formation of new academies is the performance of the two graduating classes of students who have come through the Abraham Lincoln High School Environmental Technology Academy in Philadelphia. Remembering that these students are "average" youngsters, not selected because of high test scores but rather on the basis of their interest and parental support, their achievements are impressive. For example, from the first graduating class of seniors in 1992, five of the top ten places in a class of over 300 went to students from the Environmental Technology Academy. In the Class of 1993 which graduated on June 23rd, 18 of the top 20 places in the graduating class of 314 went to ETA students.

Another outcome which should generate enthusiasm in other cities is the record of ETA students and teachers at Lincoln in establishing an academy in Novgorod, Russia. The have made two trips as mentioned in Project 6.1.4. Other cities in Japan, Hungary, and Russia are interested in replicating academies there. As an example of typical enthusiasm of visitors to the ETA is a copy of a letter from Dr. Eugene A. Mareev of the Institute of Applied Physics located in Nizhny Novgorod (a.k.a. Gorky on the other side of Moscow) dated February 6, 1993. The importance of the international component of the ETA students' education can hardly be overstated. Similar opportunities will no doubt be available to other successful academies because the Philadelphia model clearly is successful and should be successful in Baltimore, Washington, D.C., and Houston.

Also included in Appendix 6.4.6 are letters of general support from members of the Board of Governors of the ETA at Abraham Lincoln H.S.

Measurement of Results

Measurement of first year's results will be based on the progress made in establishing clones of the Philadelphia High School Academies model in the three prospect cities.

References

Philadelphia High School Academies, Inc. 230 South Broad Street, 18th Floor, Philadelphia, PA 19102: 1991: 8p.

Kipphut, David M. Environmental Technology Academy, Abraham Lincoln High School, Rowland and Ryan Avenues, Philadelphia, PA 19136: 4p.

Hughes, Dolores, and David M. Kipphut, Curriculum Outlines: Environmental Science/Global Survey and Environmental Testing Technology, Abraham Lincoln High School, Rowland and Ryan Avenues, Philadelphia, PA 19136, 1993: 16p.

Silcox, Harry C. Experiential Environmental Education in Russia: A Study in Community

Service Learning, *Phi Delta Kappan*, May 1993: pp 706-709.

Leadership and Management

Responsibility for leading this project will reside with Dr. William S. Gaither, Consortium Director. He will be assisted by Mrs Natalie Allen, President of Philadelphia High School Academies, Inc. and by Mr. David Kipphut, founder and Coordinator of the Environmental Technology Academy. Dr. Gaither's and Mrs. Allen's vitae are given in Appendix 6.1.4 C. No vita is included for Mr. Kipphut.

Budget

A first year budget only is given in Appendix 6.4.6 A. This is because the cost for the exploratory year can be predicted with reasonable accuracy. The second year budgets for each of the three cities will depend on the reaction of the key players in those cities to the concept of replicating the High School Academies, Inc. model in their cities. Ideally, the budget for the second year, and beyond, should be born by the businesses and industries in the three host cities with little, if any funds required from the Consortium.

APPENDIX 6.4.6 A

BUDGETS

removed.

APPENDIX 6.4.6 B

BIOGRAPHIES OF PROJECT LEADERSHIP

NOTE

Dr. Gaither's and Mrs. Allen's vitae are provided in Appendix 6.1.4 B of this Program Plan.

APPENDIX 6.2.2 C

SUPPORTING LETTERS AND CERTIFICATIONS

Institute of Applied Physics
46, Ulianov Str.
603600 Nizhny Novgorod
Russia

February 6, 1993

Dr.William S.Gaither, President
Weston Institute
Weston Way
West Chester, Pennsylvania 19380

Dear Dr.Gaither,

It was a grate pleasure for me to meet you in Philadelphia, and to visit the Environmental Technology Academy, which is supervised by you. I have found this visit as a very helpful and interesting, and now it is especially important for me in connection with the following circumstances.

Taking into account the importance of environmental education, a few months ago the chair of ecological education had been stated at the Nizhny Novgorod Pedagogical Institute to teach students, who want to work in high scools as a teacher of ecology. 8 persons are involved into this activity on the creation of educational program and a course of laboratory training. However, having not extensive experience in this field, they encounter difficulties with training appliances and equipment for the analysis and monitoring of environment, which could be used in educational process. Being involved in this work as a representative of the Institute of Applied Physics, I try to use my previous experience in elaboration of physical problems of environment and my lecturing at the University. Some materials, which I have recieved from you, particularly, the program overview and curriculum programs of your Academy seem us to be very helpful. We should be grateful if you would send us more detail information about your programs and, may be, some textbooks in this field.

From the other hand, we would be happy to organize the environmental education course (for example, for one month) like the course, which had been held by you in Novgorod (not Nizhny Novgorod!) It could be done just on the base of the noted chair with the involving of students and best scoolars to be interested in environmental problems. I have discussed this question with the officials from the Nizhny Novgorod Department of Education and Sciense , as well as with the leadership of the Pedagogical Institute, including the head of the Institute Prof. I.Kurov. They support this idea and are ready to pay living expences of your groop in Nizhny. We are ready also to recieve one or two your representatives for the previous acquaintance with our conditions and, possibly, for the providing of some consulting advices.

Perhaps, you know that Nizhny Novgorod and Philadelphia are now sister-cities. We think that collaboration in the field so important that environmental research and education would be very useful for the development of mutual relationships between our cities.

Sincerely yours

Eugene A.Mareev, Scientific Secretary of Department

P.S. In the case of your interest the supporting letter from officials could be sent immediately.

Environmental
Resources
Management, Inc.

855 Springdale Drive
Exton, Pennsylvania 19341
(215) 524-3500
(215) 524-7335 (Fax)

4 June 1993

Dr. William C. Gaither
President
Weston Institute
1 Weston Way
West Chester, PA 19380

Subject: Support of High School Academies

Dear Dr. Gaither:

I am writing to indicate my personal support, and the support of Environmental Resources Management, Inc., for the Environmental Technology Academy at Abraham Lincoln High School and for Philadelphia High School Academies, Inc. As you are aware, I have recently joined the Governing Board. I can say without hesitation that the Environmental Technology Academy is one of the most exciting and effective educational efforts I have every encountered.

There are several reasons for the ETA's effectiveness. First, is its leadership under David Kipphut, the Academy Coordinator. Second, the teachers, half of whom are from industry, are capable and dedicated to the success of the students.

Another reason for the success of the ETA is the organization and leadership of the Philadelphia High School Academies, Inc. It is now completely clear to me that this private, not-for-profit organization is vital to the operation of the ETA. They provide a discipline and structure for the academy which makes the students proud of what they are doing and what they are a part of. A school, or school district, could not operate such an academy without this independent organization through which business and industry support is attracted.

As to the support of Environmental Resources Management, Inc., no educational program in the Philadelphia area receives as much of our financial support, or the time of top level executives. Not only do we provide time and money, we are also pleased to give equipment and supplies whenever they are needed. I am confident that other school

A member of the Environmental
Resources Management Group

systems in other cities could be strengthened if they were to replicate the Philadelphia H.S. Academy structure.

Please include this letter of endorsement in the Department of Energy proposal you are submitting soon.

ERM

Sincerely,

Kent E. Patterson, P.E.
President and CEO

KEP/aeh

BCM Engineers
Engineers, Planners and Scientists

Mark Z. Hanlon, P.E., President and C.E.O.

May 25, 1993

Dr. William S. Gaither
President
Weston Institute
One Weston Way
West Chester, PA 19380

Dear Dr. Gaither:

I would like to lend my personal support, and that of BCM Engineers, to the Department of Energy Proposal you are submitting for the Environmental Technology Academy at Abraham Lincoln High School and for Philadelphia High School Academies, Inc.

As a Member of the Board of Governors for the past four years, I have taken a personal interest in the Environmental Technology Academy because it is one of the finest programs I've had the pleasure of being associated with in my thirty-nine years of professional service. I am extremely impressed by the quality of the Staff, many of whom were hired from Industry, as well as the leadership provided by Dave Kipphut.

As Engineer Of The Year for the Delaware Valley in 1991, I had the opportunity in many of my talks to discuss the outstanding ETA programs, as well as highlight the Academy in our Engineering Education booklet distributed to about 1,500 people in the Delaware Valley.

As President of BCM Engineers, I consider the Academy an excellent source of future employees for our Laboratory, as well as environmental engineers and scientists. As you are aware, BCM has donated Laboratory equipment, participated in the employment interview program, and provided professional input for design of Laboratory facilities. We have supported the Environmental Technology Academy because the environmental field needs quality people, and I am convinced that this is one of the finest programs available to High School students anywhere.

One Plymouth Meeting • Plymouth Meeting, PA 19462 • (215) 825-3800

BCM

Please include my wholehearted support in your Proposal for a DOE Grant for this outstanding program.

Sincerely yours,

Mark Z. Hanlon, P.E.
President and CEO

/ghs

WESTON
MANAGERS DESIGNERS CONSULTANTS
1 WESTON WAY
WEST CHESTER, PA 19380-1499
PHONE: 215-692-3030
FAX: 215-430-3186

04 June 1993

Dr. William S. Gaither, President
WESTON INSTITUTE
One Weston Way
West Chester, PA 19380

Subject: Support of High School Academies

Dear Dr. Gaither:

I am writing to indicate my personal support for the Environmental Technology Academy at Abraham Lincoln High School and for Philadelphia High School Academies, Inc. As you are aware, I have been on the Governing Board for some time and I can say without hesitation that the Environmental Technology Academy is one of the most exciting and effective educational efforts I have ever encountered.

There are several reasons for the ETA's effectiveness. First, is its leadership under David Kipphut, the Academy Coordinator. Second, the teachers, half of whom are from industry, are capable and dedicated to the success of the students.

Another reason for the success of the ETA is the organization and leadership of the Philadelphia High School Academies, Inc. It is now completely clear to me that this private, not-for-profit organization is vital to the operation of the ETA. They provide a discipline and structure for the academy which makes the students proud of what they are doing and what they are a part of. A school, or school district, could not operate such an academy without this independent organization through which business and industry support is attracted.

As to the support of Roy F. Weston, Inc., (WESTON®), no educational program in the Philadelphia area receives as much of our financial support, or the time of top level executives. Not only do we provide time and money, we are also pleased to give equipment

WESTON

TO: Dr. W. Gaither
WESTON INSTITUTE

and supplies whenever it has been possible to do so. I am confident that other school systems in other cities could be strengthened if they were to replicate the Philadelphia H.S. SAcademy structure.

Please include this letter of endorsement in the Department of Energy proposal you are submitting soon

Sincerely yours,

ROY F. WESTON, INC.

Peter J. Marks,
Vice President

PJM:af

The Historically Black Colleges and Universities/Minority Institutions
Environmental Technology and Waste Management Consortium (The HBCU/MI Consortium)

c/o Clark Atlanta University
223 James P. Brawley Drive, SW
Atlanta, Georgia 30314
Phone: (404) 880-8597 / Fax: (404) 880-8522

June 10, 1993

Dr. William s. Gaither
President
Weston Institute
1 Weston Way
West Chester, PA 19380

SUBJECT: Collaborative Efforts with the Inner-City Consortium

Dear Dr. Gaither:

Thank you for keeping me apprised of the development of the Program Plan for the Inner-City Energy and Environmental Education Consortium which you expect to submit to the Department of Energy in June. My visit to Philadelphia on May 10th to meet a number of key people responsible for various elements of the Inner-City Plan was most informative.

We have been working together for over two years and have developed several very promising joint activities. The formation of the Inner-City Energy and Environmental Education Consortium, under your leadership, offers the HBCU/MI Consortium opportunities to expand and enrich its programs and to improve further the ability of the Department of Energy to meet its educational mandates.

This letter is written to provide formal endorsement by the HBCU/MI Consortium of four program elements of the Inner-City Consortium Program Plan. In the following paragraphs I will elaborate on each and describe briefly the benefits which I envision collaboration of the two consortia will create.

DOE/EPA-Unique SPHERE Program

This program, which has been pioneered and tested on a regional basis by Weston Institute, should provide an efficient mechanism to facilitate the flow of important energy and environmental problems from professionals in DOE and EPA laboratories and field sites to undergraduate and junior graduate students in the HBCU/MI Consortium and Inner-City Consortium institutions who will develop solutions as part of their academic programs. It also should provide a mechanism for business and industry members of the National Congress to offer similar problems to our students. A particularly exciting feature of the program is that it provides a practical method to become financially self-sustaining after a relatively short start-up period.

CONSORTIUM MEMBER INSTITUTIONS:
Alabama A&M University • Clark Atlanta University • Florida A&M University • Florida International University • Hampton University • Howard University
Jackson State University • New Mexico Highlands University • North Carolina A&T State University • Northern Arizona University • Prairie View A&M University
Southern University at Baton Rouge • Texas A&I University • Texas Southern University • Tuskegee University • University of Texas, El Paso • Xavier University of Louisiana

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Curriculum Development Model

I believe this is an extremely important and broad-gage effort which should stimulate both disciplinary and interdisciplinary thinking about curriculum revision at a time when it is increasingly difficult for such discussions to take place through existing organizational structures. The Model's approach does not pre-judge or bias the outcomes. Rather, it provides an efficient framework in which the participants can make contributions to curricula rethinking and refocusing in the basic disciplines and major professions in an organized way. It also provides an attractive and practical means for participation by businesses, academia, government, accrediting organizations, professional societies, and other groups that will be influenced by basic curricula revision. The results of this program should provide important new materials for organizations which are now spending large sums on creating computerized teaching/learning lesson units. The two consortia, together comprising nearly 50 academic institutions, should approach major national foundations to obtain funding. This project, when completed, should benefit the entire nation and its ability to compete in world markets. Only through a consortial effort can this important curricula revision work be accomplished.

Replicating High School Academies

I am very impressed by the scope and effectiveness of the Environmental Technology Academy at Abraham Lincoln High School and by the Philadelphia High School Academies, Inc. While the minority student population is only slightly over 30%, the impact of the graduates on member institutions in the HBCU/MI Consortium is being felt increasingly. They are much sought after as freshmen in our member institutions. Now that I fully appreciate the importance of the independently incorporated not-for-profit organization through which support by business and industry flows, I see exciting opportunities for replication near HBCU/MI member institutions. For example, Houston, Texas would be an ideal site with its rich mix of businesses and industries and two HBCU/MI member institutions located close by. By using the existing environmental academy at Lincoln High School for the conduct of summer institutes for teachers and administrators, and the ability of Weston Institute and the PHSA, Inc. to go to other cities and describe this highly successful arrangement to business and school leaders, I believe that the academy model can be replicated successfully in a number of locations.

Expanding PRIME, Inc.

By augmenting the established PRIME Program in Philadelphia with a specialist counselor to advise students on career opportunities in energy and environmental restoration and waste management and by using DOE and EPA problems developed through the SPHERE Program as classroom examples, this well-established (20 years) program could be of increasing importance to the HBCU/MI Consortium. Now, approximately 50 PRIME students each year enter HBCU/MI Consortium member institutions as freshmen. I believe that this "pipeline" of highly talented students can be enlarged further.

Conclusion

These four projects could have a major positive impact on the success of both consortia. Each project has an impressive track record of accomplishment and/or proven elements to build on so the likelihood of success is high. By working together, we should be able to multiply the beneficial effects of these projects for the Department of Energy and other federal agencies as well as minority students from our inner-cities.

Please feel free to include this letter in the Program Plan which you submit to the Department of Energy, and I look forward to our working together.

Sincerely yours,

Kofi B. Bota
Director, HBCU/MI Consortium

cc: Richard Stephens
DOE

Isiah Sewell
DOE

6.4.7 EXPANDING SCIENCE BOWL COMPETITION

Proposed by
Inner-City Consortium, Inc.

Summary

The National Science Bowl is a mathematics and science academic competition co-sponsored by the United States Department of Energy and Cray Research Foundation. In 1993 there were forty-three regional and state Science Bowl competitions, with the National Science Bowl being held in Washington, D.C. on April 16-19. Washington, D.C. was represented by a team from Germantown Headquarters. There were no competing teams from either the Philadelphia region or the Baltimore region. The goal of this project is to provide the necessary stimulation in these two cities to initiate Science Bowl competition.

Background and Importance

There are many ways to attract youngsters to careers in energy-related scientific and technical areas and in environmental restoration and waste management. Competition among individuals and among teams of individuals adds another important dimension to the intellectually-rich mileau of wholesome competitions for high school students in our inner-cities. The National Science Bowl, though only a few years old, is taking its place among longer-established events such as science fairs, the Junior Academy of Science, and the Science Olympiad.

It is clear from the enthusiasm among students and teachers who competed in the April 1993 National Science Bowl in Washington, D.C. in April that this particular type of competition is attractive and stimulating to high school students. The principal requirement in each city will be the identification of a resident federal agency to serve as sponsor for that city's (region's) Science Bowl competition.

Our nation's striving to educate our youngsters to be winning competitors in national and international student forums will be successful in direct proportion to the numbers of personallized programs which our teachers, business leaders, parents, and support enthusiastically. The Science Bown competitions are an important aspect of that melieu. Practicing and participating in Science Bowl competitions will build confidence and pride in the youngsters who become part of team.

Work Plan

The following steps will form the principal tasks in the first-year work plan.

<u>Obtain Guidance from Established Programs</u> Contact will be made through the Department of Energy to identify the most successful Science Bowl coaches and teams in the eastern part of the country. Staff from Inner-City Consortium, Inc. will visit several of the coaches and team-members to enlist their guidance on the "do's and don't's" of establishing successful programs in Baltimore and Philadelphia.

<u>Seek Federal Agency Sponsors</u> While most regional Science Bowl competitions are sponsored by a unit of the DOE, other federal agencies are also eligible sponsors. For example, the National Aeronautics and Space Administration (NASA) and the Jet Propulsion Laboratory (JPL) of the California Institute of Technology sponsor a team. In Philadelphia and Baltimore, the Environmental Protection Agency (EPA) Region III could be approached about sponsorship of teams.

Invite Candidate Coaches/Principals to Introductory Meeting With a federal agency sponsor in hand, and information from successful regional fairs, an introductory meeting will be held to interest prospective coaches/teachers, and their school principals.

Establish Working Groups in Each City The next step will be to put shape to a regional Science Bowl competition in Baltimore and Philadelphia. These working groups will comprise prospective coaches/teachers and educational staff from the federal sponsoring agency. Plans will be developed for (1) steps to attract students to participate and the scheduling of the first competion, and (2) approaches to be made to prospective commercial sponsoring organizations. Budgets will be developed so that fund-raising can be started with rationalized goals in hand.

Recruit Volunteer Staff to Conduct First Regional Competions The steps necessary to hold the first competion will be defined. A volunteer organization will be assembled.

Hold First Regional Competion The goal will be to hold the first regional competitions in Baltimore and Philadelphia in 1994. The practicality of this will depend on whether start-up funds can be made available and when actual Inner-City Consortium funding starts. Establishing credibility and respect for the proces will be important so it will be important to establish realistic goals to initiate this program.

Demographic Composition of Students/Teacher

By the nature of the schools, colleges, and universities which are active with the Inner-City Consortium, a regional science bowl competition would reach a high percentage of minority youth in each Baltimore and Philadelphia, if, care is taken to recruit minority coaches and to form teams in inner-city schools. Achieving this goal will be part of the work-plan described below.

Measurement of Results

In the first year, results will be readilly measured by the number of coaches recruited and the number of teams which enter regional competitions in Baltimore and Phildelphia. Refinement of the measurements will be carried out by the MacKenzie Group as part of their evaluation work.

References

National Science Bowl Program of Entries, U.S. Department of Energy/Cray Research Foundation, April 16-19, 1993, Washington, D.C.: 52p.

Leadership and Management

Staff of Inner-City Consortium, Inc. will lead the initiation of this project. Dr. William S. Gaither will assign substantial responsibility for this project to the Assistant Director who will be hired as soon as Consortium funding is awarded.

Budget

A modest budget is anticipated as shown in Appendix 6.4.7 A.

APPENDIX 6.4.7 A

BUDGETS

removed, ds

APPENDIX 6.4.7 B

BIOGRAPHIES OF PROJECT LEADERSHIP

NOTE

A biography of William Gaither has been provided in 10. Management section of this Plan

APPENDIX 6.4.7 C

SUPPORT LETTERS AND CERTIFICATIONS

NOTE

Certifications are provided for Inner-City Consortium, Inc. in the 10. Mangement section of this Plan

6.4.8 INCREASE MINORITY STUDENT PARTICIPATION IN SCIENCE, ENGINEERING AND MATHEMATICS PROFESSIONS

Proposed by
PRIME, Inc.

Summary

PRIME, Inc., the nation's pioneer organization focusing exclusively on bringing minorities into science, mathematics, and engineering (SEM) careers, will mount a special program to interest students in pursuing energy and environmental careers. This project will draw on the SPHERE Program (Project 6.4.2) as a source of current problems confronting DOE and EPA laboratories and superfund field site personnel. The working relationship between the Inner-City Consortium and the HBCU/MI Environmental Technology Consortium will be strengthened in two ways. First, through the PRIME Program, an increased number of highly qualified high school students can be expected to attend HBCU/MI colleges and universities--an increase above the 50 now attending. Second, since both consortia will have students and faculty addressing problems originated through the SPHERE Program, there will be more shared research/educational interests continuing from high school on into college.

Background and Importance

The Philadelphia Regional Introduction of Minorities to Engineering (PRIME) was founded in 1973 as a result of discussions between the General Electric Company and the School District of Philadelphia. the goal was to find ways in which private industry could help increase the number of minorities and women graduating from college in technical fields and subsequently being employed in scientific, engineering, and mathematical professions. PRIME is one of the oldest programs of its type in the United States. Moreover, PRIME has served as the model for nearly a dozen similar programs across the nation.

"In 1973 less than one percent of the professionals in scientific and technical fields were minorities," says Dr. Alexander Tobin, PRIME'S executive director and one of its founders. "Because of PRIME and similar programs, the percentage of minorities in those fields now stands at more than nine percent." During the two decades since the founding of PRIME, Inc. more than 40,000 youngsters have experienced PRIME through is academic year, Saturday and summer programs. However, the long-term value of PRIME has been its impact on the regional and national workforce which has more than 2,500 former PRIME students working as engineers, bankers, chemists, lawyers, insurance analysts and other professionals.

PRIME is also one of the most cost-effective educational programs in the nation, operating a ta total cost of $157 per student. Furthermore, PRIME achieves its goals without cost to students or taxpayers. The extensive list of businesses, industries, professional societies, government agencies, community members, and foundations which contribute to PRIME's $1.25 million annual budget attest to the value which business and industry executive place on the effectiveness of the PRIME approach and its results. A list of supporting organizations is given in Appendix 6.4.2 C. The following data show the reasons for enthusiasm:

Graduation Data

- 100 percent of PRIME students graduate from high school
- 96 percent of PRIME students enroll in college
- 80 percent of PRIME students graduate from college

Employment Data

- 70 percent of PRIME graduates are employed in engineering and technical fields such as nursing, pharmacy and computer science
- 20 percent of PRIME graduates are employed in business-related fields
- 10 percent of PRIME graduates are employed in liberal arts fields

PRIME operates in several modes which have proven successful over the two decades of operation. Each is described briefly below:

Academic Year Program PRIME offers motivational, enrichment and skills development activities to middle school and high school students. At the middle school level, students are enrolled in special PRIME classes where teachers illustrate the application o mathematics and science in solving real-world problems. At the senior high school level, the emphasis of the program is students' developing the skills and knowledge to successfully enter and complete a technical or scientific degree program. At both levels, students receive career information and hands-on experiences from industry/government representatives who make monthly visits to the classrooms

PRIME Universities Program (PUP) PRIME programs are offered during the month of July at 13 college and university sites and other locations. The summer programs help PRIME students in grades 7 to 11 sharpen their skills in mathematics, engineering, written and oral communications, pharmacy, computer science, actuarial science and related mathematical and science-based fields.

Saturday Tutorial and Enrichment Program (STEP) Funded by the William Penn Foundation, the program offers students in grades 9 to 12 extra help in communications, math problem-solving and science laboratory work on Saturday mornings during the academic year. Students also receive instruction in computer science and SAT preparation.

PACT PACT provides career awareness and exploration activities in science and technology to students who fall between the 50th and 70th percentiles academically.

In 1993, there are 88 schools in the Greater Philadelphia area of southeastern Pennsylvania and New Jersey served by PRIME.

School District	Number of Schools	% of Schools
• School District of Philadelphia (Secondary)	48	30
• Archdiocese of Philadelphia (Elem./Secondary)	22	9
• Camden, NJ School District (Secondary)	9	100
• Norristown, NJ School District (Secondary)	2	66
• William Penn School District (Secondary)	3	100
• Private Schools (Elem./Secondary)	4	--

The PRIME, Inc. Summer Programs schedule is attached as Appendix 6.4.8 C.

Work Plan

Since the PRIME program is well established, inclusion of energy and environmental topics as a focus of student instruction and inquiry will be relatively straight-forward. The following schedule defines the principal activities expected in the first year.

February 1994

- Develop energy and environmental program materials for distribution in schools
- Identify counselor to specialize in energy and environmental information
- Identify and invite speakers from energy and environmental organizations
- Select topics from the SPHERE Program to use as real-world example problems

June 1994

- Infuse energy and environmental materials in the summer college programs operated by PRIME

August 1994

- Prepare report on 1st year's activities and plan improvements for 2nd year program

Demographic Composition of Students/Teachers

As of June 11, 1993, there were 7,416 students in PRIMES's Student Database. Of the 7,416 students, there were 4,645 (62.6%) females and 2,771 (37.4%) males. The break-out of the student population by ethnic group was as follows:

Ethnic Group	Number	Percentage
Blacks	5,643	77%
Hispanics	749	10%
Asians	446	6%
Whites	446	6%
Native Americans	30	0%
Other	102	1%

Expected Outcomes

There are two expected outcomes. The first is that a measurably larger number of students will elect to pursue some form of education/research which emphasizes either energy or environmental restoration and waste management. The second expected outcome is that there will be an increasing number of blacks who elect to attend HBCU/MI Consortium colleges due to their growing reputation for respected programs in these two areas (see Appendix 6.4.5 C Bota letter).

Measurement of Results

The measurement of results will be performed against baselines which will be established by the McKenzie Group which is responsible for both project evaluation, and also, overall Consortium evaluation. While there will no doubt be other measures, the two cited in the previous section should provide a reliable assessment of the effectiveness of this project.

References

- 1992 Annual Report. PRIME, Inc., 135 S. 19th Street, Suite 250, Philadelphia, PA 19103-4907: 17p.

- Tobin, A., Factsheet, PRIME, Inc., PRIME, Inc., 135 S. 19th Street, Suite 250, Philadelphia, PA 19103-4907: 2p.

APPENDIX 6.4.8 A

BUDGETS

removed. ds

APPENDIX 6.4.8 B

BIOGRAPHIES OF PROJECT LEADERSHIP

DR. ALEXANDER TOBIN

RESUME

PRESENT POSITION

Executive Director - Philadelphia Regional Introduction for Minorities to Engineering (PRIME, Inc.)

PROFESSIONAL EXPERIENCE

1950-1959	- Teacher of Mathematics, Junior High and Senior High
1959-1961	- Demonstration Teacher, Secondary Mathematics
1961	- Department Head, Secondary Mathematics
1961-1962	- Vice Principal, Junior High School
1962-1970	- Elementary School Principal
1970-1985	- Director of Mathematics Education
1982	- Associate Superintendent for Curriculum and Instruction
1974-Present	- Adjunct Professor, Beaver and Temple Universities

PROFESSIONAL ACTIVITIES

President	- Pennsylvania Council of Supervisors of Mathematics
Past Chairman	- Board of Directors, PRIME, Inc.
Past President	- National Council of Supervisors of Mathematics
Past President	- Pennsylvania Council of Teachers of Mathematics
Past President	- Association of Teachers of Mathematics of Philadelphia and Vicinity
Past Vice President	- Philadelphia Association of School Administrators

HONORS AND AWARDS

Recipient of the Pennsylvania Council of Teachers of Mathematics "Hall of Fame Award for Outstanding Contributions to Mathematics Education and Teaching

Recipient of the National Council of Supervisors of Mathematics Glenn Gilbert Award for Outstanding Contributions to Mathematics Education

Recipient of the Association of Teachers of Mathematics for Philadelphia and Vicinity Award for Outstanding Leadership and Service and Dedication to the Improvement of Mathematics Education in the Delaware Valley

Recipient of the Philadelphia Regional Introduction for Minorities to Engineering Award for Leadership and Personal Commitment to the Goals and Concepts of PRIME

Recipient of the Citizens Committee for Public Education "John N. Patterson" Award for Outstanding Contributions to Public Education

Recipient of the B'nai B'rith - "Man of the Year Award"

Selected as one of 30 grant recipients to represent the United States at the Third International Conference on Mathematics Education held in Karlsruhe, Germany

April 1993
Ref. No: 0000067-4

APPENDIX 6.4.8 C

SUPPORTING LETTERS AND CERTIFICATIONS

PRIME, INC.

SUMMER PROGRAMS - 1993

PHILADELPHIA **PUP Director: Prof. Stanton Woerth**

PUP SEQUENCE - COMMUTER

GRADE LEVEL	LOCATION	FOCUS	STUDENT POPULATION	TYPE	DIRECTOR
Post - 7th & 8th	LISTA (Hispanic Initiative) Edison High	Reading and Communications	7th - 40 8th - 40	Commuter	Ms. Pat Mazzuca Dr. Barbara A. Mitchell
Post - 9th & 10th	Naval Shipyard	Electronics, Computers and Mathematics	25	Commuter	Mr. Frank Palumbo Mr. William Stewart

GRADE LEVEL	LOCATION	FOCUS	STUDENT POPULATION	TYPE	DIRECTOR
Post - 7th	La Salle	Reading and Communications	60	Commuter	Mr. Jimmy Gordon
Post - 8th	Temple University	Mathematics and Computers	105	Commuter	Prof. Stanton Woerth
Post - 8th	St. Joseph's University	Mathematics and Computers	75	Commuter	Mrs. Jacqueline Starks
Post - 9th	University of Pennsylvania	Communications (Oral/Written)	100	Commuter	Ms. Cora Ingrum
Post - 9th	Phila. College of Textiles & Science	Communications (Oral/Written)	75	Commuter	Dr. Charles Bock
Post - 9th, 10th & 11th	Montgomery County Community College	Math & Computers	75	Commuter	Dr. Rita Hodge Sellers
Post - 10th	Drexel University	Engineering Sciences	80	Commuter	Dr. Edwin Gerber
Post - 10th	Drexel University	Actuarial Science and Computer Science	25	Commuter	Dr. Edwin Gerber
Post - 10th	Phila. College of Pharmacy & Science	Pharmacy and Allied Health Science	40	Commuter	Ms. Elizabeth Bressi-Stoppe

PRIME, INC.
SUMMER PROGRAMS - 1993 (continued)

PHILADELPHIA

PUP SEQUENCE - RESIDENTIAL

GRADE LEVEL	LOCATION	FOCUS	STUDENT POPULATION	TYPE	DIRECTOR
Post - 11th	Phila. College of Pharmacy & Science	Pre-Med	25	Residential	Ms. Elizabeth Bressi-Stoppe
Post - 11th	Villanova University	Engineering Sciences	70	Residential	Mr. Jim O'Brien
Post - 11th	Villanova University	Actuarial and Computer Science	15	Residential	Mr. Jim O'Brien
Post - 11th	Franklin and Marshall	Problem Solving and Critical Thinking	~~40~~ 30	Residential	Dr. Page W. Steele

PACT

PUP SEQUENCE - COMMUTER

GRADE LEVEL	LOCATION	FOCUS	STUDENT POPULATION	TYPE	DIRECTOR
Post - 9th & 10th	Gwynedd-Mercy	Allied Health	50	Commuter	Sr. Maureen McCann

NEW JERSEY

PUP SEQUENCE - COMMUTER/RESIDENTIAL

GRADE LEVEL	LOCATION	FOCUS	STUDENT POPULATION	TYPE	DIRECTOR
Post - 7th	Rowan College	Reading and Communications	60	Commuter	Dr. Paul Van Holtz
Post - 8th	Camden County College	Mathematics and Computers	60	Commuter	Ms. Mary Edwards
Post - 9th	Rutgers University/ Camden Branch	Communications (Oral/Written)	60	Commuter	Mr. Philip Bonafiglia
Post - 10th	Camden County College	Science and Technology	50	Commuter	Ms. Mary Edwards
Post - 11th	Rowan College	Mathematics and Technology	40	Residential	Ms. Monica Washington

4/20/93
PUPSUMCHART 401

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E.I. duPont deNemours & Company, Inc.
Rohm and Haas Company

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Boeing Defense & Space Group Helicopters Division
Conrail
General Motors
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Mobil Oil Corporation
PECO Energy Company
The Philadelphia Water Company
US Healthcare, Inc.

Investments of $6,000 to $9,999

Betz Laboratories, Inc.
BP Oil, Inc.
Exxon Corporation
FMC Corporation
General Electric Company
ICI Americas, Inc.
McNeil Consumer Products Company
McNeil Pharmaceutical
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Public Service Electric & Gas Company
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Sun Refining & Marketing Company
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Actuaries Club of Philadelphia
American Association for Artificial Intelligence
American Society of Civil Engineers (ASCE) Philadelphia Section
Archdiocese of Philadelphia
Beaver College
Bucks County Community College
Camden City School District
Camden County College
Camden Education Alliance
Community College of Philadelphia
Delaware County Community College
Drexel University
The Franklin Institute Science Museum
Franklin and Marshall College
LaSalle University
Lehigh University
Lincoln University
Montgomery County Community College
National Organization for the Professional Advancement of Black Chemists and Chemical Engineers
Penn State University—Ogontz Campus
Penn State University—University Park
Philadelphia Association of School Administrators
Philadelphia College of Pharmacy and Science
Philadelphia College of Textiles and Science
Philadelphia Federation of Teachers
Philadelphia Renaissance in Science and Mathematics (PRISM)
Rensselaer Polytechnical Institute
Rowan College of New Jersey
Rutgers University—Camden Branch
St. Joseph's University
School District of Philadelphia
Society of Hispanic Professional Engineers
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Temple University
University of Delaware
University of Pennsylvania
University of Pittsburgh
Villanova University
Widener University
Women and Mathematics

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Executive Service Corps of the Delaware Valley
Fox, Rothschild, O'Brien & Frankel
Hewlett Packard
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William Penn Foundation
Pew Charitable Trusts
Philadelphia Area Combined Federal Campaign
Philadelphia Futures
Quaker Chemical Foundation
United Way Agencies

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Army Corps of Engineers
Department of Energy
Defense Industrial Supply Center
Environmental Protection Agency
National Weather Service
Naval Air Warfare Center
Naval Ship Systems Engineering Station
Naval Shipyard
Northern Division Naval Facilities Engineering (Command)
Tinicum National Environmental Center
U.S. Department of Agriculture

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*Contributions received during campaign period 3/25/92 through 3/25/93

U.S. DEPARTMENT OF ENERGY

ASSURANCE OF COMPLIANCE

Nondiscrimination of Federally Assisted Programs

PRIME, Inc. (Hereinafter called the "Applicant") HEREBY AGREES to comply with Title VI of the Civil Rights Act of 1964 (Pub. L. 88-352), Section 16 of the Federal Energy Administration Act of 1974 (Pub. L. 93-275), Section 401 of the Energy Reorganization Act of 1974 (Pub. L. 93-438), Title IX of the Education Amendments of 1972, as amended (Pub. L. 92-318, Pub. L. 93-568, and Pub. L. 94-482), Section 504 of the Rehabilitation Act of 1973 (Pub. L. 93-112), the Age Discrimination Act of 1975 (Pub. L. 94-135), Title VIII of the Civil Rights Act of 1968 (Pub. L. 90-284), the Department of Energy Organization Act of 1977 (Pub. L. 95-91), and the Energy Conservation and Production Act of 1976, as amended (Pub. L. 94-385). In accordance with the above laws and regulations issued pursuant hereto, the Applicant agrees to assure that no person in the United States shall, on the ground of race, color, national origin, sex, age, or handicap, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity in which the Applicant receives Federal assistance from the Department of Energy.

Applicability and Period of Obligation

n the case of any service, financial aid, covered employment, equipment, property, or structure provided, leased, or improved with Federal assistance extended to the Applicant by the Department of Energy, this assurance obligates the Applicant for the period during which Federal assistance is extended. In the case of any transfer of such service, financial aid, equipment, property, or structure, this assurance obligates the transferee for the period during which Federal assistance is extended. If any personal property is so provided, this assurance obligates the Applicant for the period during which it retains ownership or possession of the property. In all other cases, this assurance obligates the Applicant for the period during which the Federal assistance is extended to the Applicant by the Department of Energy.

Employment Practices

Where a primary objective of the Federal assistance is to provide employment or where the Applicant's employment practices affect the delivery of services in programs or activities resulting from Federal assistance extended by the Department, the Applicant agrees not to discriminate on the ground of race, color, national origin, sex, age, or handicap, in its employment practices. Such employment practices may include, but are not limited to, recruitment, recruitment advertising, hiring, layoff or termination, promotion, demotion, transfer, rates of pay, training and participation in upward mobility programs; or other terms of compensation and use of facilities.

Subrecipient Assurance

The Applicant shall require any individual, organization, or other entity with whom it subcontracts, subgrants, or subleases for the purpose of providing any service, financial aid, equipment, property, or structure to comply with laws cited above. To this end, the subrecipient shall be required to sign a written assurance form, however, the obligation or both recipient and subrecipient to ensure compliance is not relieved by the collection or submission of written assurance forms.

Data Collection and Access to Records

The Applicant agrees to compile and maintain information pertaining to programs or activities developed as a result of the Applicant's receipt of Federal assistance from the Department of Energy. Such information shall include, but is not limited to, the following: (1) the manner in which services are or will be provided and related data necessary for determining whether any persons are or will be denied such services on the basis of prohibited discrimination; (2) the population eligible to be served by race, color, national origin, sex, age, and handicap; (3) data regarding covered employment including use or planned use of bilingual public contact employees serving beneficiaries of the program where necessary to permit effective participation by beneficiaries unable to speak or understand English; (4) the location of existing or proposed facilities connected with the program and related information adequate for determining whether the location has or will have the effect of unnecessarily denying access to any person on the basis of prohibited discrimination; (5) the present or proposed membership by race, color,

national origin, sex, age, and handicap, in any planning or advisory body which is an integral part of the program; and (6) additional written data determined by the Department of Energy to be relevant to its obligation to assure compliance recipients with laws cited in the first paragraph of this assurance.

The Applicant agrees to submit requested data to the Department of Energy regarding programs and activities develope the Applicant from the use of Federal assistance funds extended by the Department of Energy. Facilities of the Appli (including the physical plants, buildings, or other structures) and all records, books, accounts, and other sources of inform pertinent to the Applicant's compliance with the civil rights laws shall be made available for inspection during normal busi hours on request of an officer or employee of the Department of Energy specifically authorized to make such inspecti Instructions in this regard will be provided by the Director, Office of Equal Opportunity, U.S. Department of Energy.

This assurance is given in consideration of and of the purpose of obtaining any and all Federal grants, loans, contr (excluding procurement contracts), property, discounts, or other Federal assistance extended after the date hereto, t Applicants by the Department of Energy, including installment payments on account after such data of application for Fe assistance which are approved before such date. The Applicant recognizes and agrees that such Federal assistance wi extended in reliance upon the representations and agreements made in this assurance and the United States shall hav right to seek judicial enforcement of this assurance. This assurance in binding on the Applicant, its successors, transfer and assignees, as well as the person whose signature appears below and who is authorized to sign this assurance on b of the Applicant.

18 June 1993
(Date)

PRIME, Inc.
(Name of Applicant)

135 S. 19th Street, Suite 250

Philadelphia, PA 19103-4907
(Address)

Alexander Tohn
(Authorized Official)

(215) 561-6300
( )
(Applicant's Telephone Number)

CERTIFICATIONS REGARDING LOBBYING; DEBARMENT, SUSPENSION AND OTHER RESPONSIBILITY MATTERS; AND DRUG-FREE WORKPLACE REQUIREMENTS

Applicants should refer to the regulations cited below to determine the certification to which they are required to attest. Applicants should also review the instructions for certification included in the regulations before completing this form. Signature of this form provides for compliance with certification requirements under 34 CFR Part 82, "New Restrictions on Lobbying," and 34 CFR Part 85, "Government-wide Debarment and Suspension (Nonprocurement) and Government-wide Requirements for Drug-Free Workplace (Grants)." The certifications shall be treated as a material representation of fact upon which reliance will be placed when the Department of Energy determines to award the covered transaction, grant, or cooperative agreement.

1. LOBBYING

The undersigned certifies, to the best of his or her knowledge and belief, that:

(1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

(3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

2. DEBARMENT, SUSPENSION, AND OTHER RESPONSIBILITY MATTERS

(1) The prospective primary participant certifies to the best of its knowledge and belief, that it and its principals:

(a) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;

(b) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

(c) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (1)(b) of this certification; and

(d) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

(2) Where the prospective primary participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

3. DRUG-FREE WORKPLACE

This certification is required by the Drug-Free Workplace Act of 1988 (Pub. L. 100-690, Title V, Subtitle D) and is implemented through additions to the Debarment and Suspension regulations, published in the Federal Register on January 31, 1989, and May 25, 1990.

ALTERNATE I (GRANTEES OTHER THAN INDIVIDUALS)

(1) The grantee certifies that it will or will continue to provide a drug-free workplace by:

(a) Publishing a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the grantee's workplace and specifying the actions that will be taken against employees for violation of such prohibition;

(b) Establishing an ongoing drug-free awareness program to inform employees about:

(1) The dangers of drug abuse in the workplace;

(2) The grantee's policy of maintaining a drug-free workplace;

(3) Any available drug counseling, rehabilitation, and employee assistance programs; and

(4) The penalties that may be imposed upon employees for drug abuse violations occurring in the workplace;

(c) Making it a requirement that each employee to be engaged in the performance of the grant be given a copy of the statement required by paragraph (a);

(d) Notifying the employee in the statement required by paragraph (a) that, as a condition of employment under the grant, the employee will:

(1) Abide by the terms of the statement; and

(2) Notify the employer in writing of his or her conviction for a violation of a criminal drug statute occurring in the workplace not later than five calendar days after such conviction;

(e) Notifying the agency, in writing, within ten calendar days after receiving notice under subparagraph (d)(2) from an employee or otherwise receiving actual notice of such conviction. Employers of convicted employees must provide notice, including position title, to every grant officer or other designee on whose grant activity the convicted employee was working, unless the Federal agency has designated a central point for the receipt of such notices. Notice shall include the identification number(s) of each affected grant;

(f) Taking one of the following actions, within 30 calendar days of receiving notice under subparagraph (d)(2), with respect to any employee who is so convicted:

(1) Taking appropriate personnel action against such an employee, up to and including termination, consistent with the requirements of the Rehabilitation Act of 1973, as amended; or

(2) Requiring such employee to participate satisfactorily in a drug abuse assistance or rehabilitation program approved for such purposes by a Federal, State, or local health, law enforcement, or other appropriate agency;

(g) Making a good faith effort to continue to maintain a drug-free workplace through implementation of paragraphs (a), (b), (c), (d), (e), and (f).

(2) The grantee may insert in the space provided below the site(s) for the performance of work done in connection w the specific grant:

Place of Performance:
(Street address, city, county, state, zip code)

PRIME, Inc.

135 S. 19th. St. Suite 250

Philadelphia, PA 19103-4907

☐ Check if there are workplaces on file that are not identified here.

ALTERNATE II (GRANTEES WHO ARE INDIVIDUAL

(1) The grantee certifies that, as a condition of the grant, he or will not engage in the unlawful manufacture, distributi dispensing, possession, or use of a controlled substanc conducting any activity with the grant.

(2) If convicted of a criminal drug offense resulting fro violation occurring during the conduct of any grant activ he or she will report the conviction, in writing, within calendar days of the conviction, to every grant office other designee, unless the Federal agency designates a c tral point for the receipt of such notices. When notice is m to such a central point, it shall include the identifica number(s) of each affected grant.

As the duly authorized representative of the applicant, I hereby certify that the applicant will comply with the above certificati

NAME OF APPLICANT	PR/AWARD NUMBER AND/OR PROJECT NAM
PRIME, Inc.	Inner-City Consortium
PRINTED NAME AND TITLE OF AUTHORIZED REPRESENTATIVE	
Dr. Alexander Tobin, Executive Director	
SIGNATURE	DATE
Alexander Tobin	18 June 1993

7. EVALUATION PLAN

Proposed by
The McKenzie Group

Introduction

The evaluation strategies outlined in this proposal are designed to accomplish the following three key tasks:

(1) conduct a comprehensive formative evaluation of the Consortium to both document and monitor its implementation during the first three years;

(2) conduct a summative evaluation of the Consortium, focusing on the extent to which the individual projects and the Consortium's efforts lead to increased numbers of youth in the three participating communities who are interested in and prepared to pursue careers in energy and environment-related scientific and technical careers;

(3) assist each of the individual projects develop project-specific evaluation strategies to help them track and monitor implementation, document their efforts, and assess the impact of their projects on targeted youth.

Task I: Design and Conduct Formative Evaluation of Consortium

The McKenzie Group evaluation team, working in close coordination with Consortium leaders, will develop within 30 work-days of project start up an initial design for a formative evaluation of the Consortium. The design will contain: (1) a set of questions that will focus the evaluation effort on critical aspects of the Consortium's operations; (2) a description of proposed data collection strategies, including timing, sources of information, and proposed methods; and (3) communication and information dissemination approaches.

There are two key objectives to be achieved in conducting a formative evaluation of the Consortium. One is to document the steps taken by it to achieve its four goals. The value of carefully documenting implementation efforts is that, if successful, the Consortium can be more readily replicated in other communities. In addition, outcomes may be more easily linked with specific project components. The formative evaluation strategies proposed for this project will seek to describe in a step-by-step fashion exactly how the consortium was established and operated, the factors that influenced it operations, and the perceptions of key stakeholders regarding important lessons learned about implementation.

A second objective is to provide routine evaluative feedback to the leadership of the Consortium regarding: planning and management of activities; interactions among the participants; the impact of Consortium practices and policies on participants; and the progress being made toward achievement of Consortium goals. Essentially, this aspect of the formative evaluation is designed to systematically provide the Steering and Executive Committees and the Council of Chief Executives with on-going, targeted feedback to help inform their management decisions about the Consortium. Senior evaluation personnel will work closely with the leaders of the Consortium to continually identify their information needs. Communication strategies will be developed that promote the collection and use of formative evaluative information as decisions are made and as the project(s) are managed.

In this regard, we anticipate the formative evaluation will focus on critical implementation issues such as the following:

- efforts undertaken to assess the needs of the members and to identify specific needs for technical assistance;
- types of organizational and administrative support provided to members, including how human and fiscal resources are mobilized to support individual projects;
- leadership roles played by members, steering committees standing committees, and others;
- planning and decision-making strategies employed, and how Consortium decisions are coordinated between and among participating institutions and groups;
- processes used to communicate and disseminate information among members;
- contextual and organizational factors that influence implementation, especially linkages between institutions and groups, policies and practices, and organizational culture;
- efforts to effectively communicate information about energy-environment careers to students, teachers, parents, and others in the three participating communities;
- creation of curricular and instructional materials and their dissemination among participants;
- strategies employed to increase the involvement of parents, mentors, and community organizations; and
- the perceptions of key stakeholders regarding planning and implementation activities, and how satisfied they are with those processes.

In conceptualizing how we would conduct this formative evaluation, we anticipate using four data collection strategies:

(1) Interviews with Key Informants The McKenzie Group evaluation team will identify members of the Consortium leadership (i.e., Steering and Executive Committee members) as well as a representative sample of staff from the individual projects who will serve as sources of information about how Consortium activities are implemented and the response of the stakeholders. On-going face-to-face and telephone interviews would be conducted with these persons. In addition, focus group interview techniques would be employed to examine appropriate issues.

(2) Review of Project Documents All project-related documents will be routinely examined by evaluation staff as a means of tracking Consortium policies and practices. Such documents might include: plans developed by standing committees, memoranda, correspondence, public information documents, and formal reports.

(3) Participant Observation To the extent it is appropriate, evaluation staff will participate in meetings of the Steering, Executive, and Standing Committees, plus any other meetings of representatives of participating institutions and groups.

(4) Surveys Questionnaires will be used to obtain information from a variety of persons associated with the Consortium (i.e., leaders of individual projects, participating youth, parents, teachers and other educators, and community leaders). Short, targeted surveys will be used frequently and throughout this formative evaluation

as a means of sampling reactions or of tracking the implementation of a Consortium activity.

Task II: Summative Evaluation of the Consortium

Within 60 work-days of project start up, the McKenzie Group evaluation team will prepare a preliminary summative evaluation design to assess the extent to which the Consortium has achieved its goals. To a large extent, this goal-oriented evaluation of the Consortium's success is dependent upon the evaluations of each of the individual projects. This is especially true of assessing the Consortium's impact on the number of urban, inner-city youth prepared for and pursuing careers related to energy, environmental restoration, and waste management, the key goal of the Consortium initiative.

We anticipate a two-armed study design. One arm would focus on collecting student outcomes information across individual projects. At each project site (i.e, school, university, community organization), data will be collected on an on-going basis regarding key performance indicators such as the number of students enrolled in math/science and energy/environment programs, number of graduates pursuing energy/environment careers, or similar quantitative participant outcomes data. For the second arm The McKenzie Group evaluation team will provide technical assistance to individual projects to help them develop appropriate evaluation designs and to set up a data base at each site that collects a common core of information that is the same across the individual projects. The evaluation staff will take responsibility for collecting the information from individual projects and summarizing it for the Consortium as a whole. Three steps need to be taken to set up this aspect of the evaluation:

(1) Identify Performance Indicators Several methods will be used to identify appropriate performance indicators that can be used in all individual project sites. The planning efforts of the Consortium already have developed a list of prioritized indicators. In addition, the evaluation staff will conduct a review of the literature to identify additional indicators that have been used in other studies. Lastly, we anticipate holding an invitational conference of experts as a means of validating a set of proposed performance indicators for the Consortium. This work will be completed within the first three months of the Consortium's operations.

(2) Create Data Bases at Individual Project Sites Procedures will need to be created to assist each individual project site (i.e., school, university, community organization) set up and maintain a data base on participants. The evaluation staff will create a simple data base management system using commercially available software (i.e., Hypertext, DB 4, FileMaker: Pro), and train site personnel to set up and maintain the program. The data base would include information about participants' personal and background characteristics, extent of their participation in energy-environment-related training activities, and information about specific performance indicators, such as courses taken, involvement with special programs, job/career interests, persistence. Participants will be defined as secondary and postsecondary students, teachers, and other persons taking part in the education, training, or other programs offered by individual projects. This work will be completed by the end of six months of start up of Consortium operations.

(3) Develop Profiles for each Community and for the Consortium Using information from the data bases maintained at each site, the evaluators will develop end-of-year program outcomes profiles for each of the three communities and for the Consortium. Such profiles will include cumulative summary descriptive information about the participants, as well as aggregated outcomes data for each of the key performance

indicators. These profiles, along with an evaluative analysis, will be produced at two junctures: after 24 and 36 months of Consortium operations.

The second arm of the summative evaluation would focus on assessing the extent to which the Consortium is making progress toward achieving the remaining three goals it has set for itself:

(1) Organize administrative support and recruit teachers to participate;

(2) Develop academic and vocational curriculum materials and programs;

(3) Increase involvement of parents, mentors, and community organizations; and

We anticipate that this aspect of the summative evaluation design will use a variety of data collection techniques to assess the progress being made toward achievement of these goals. These techniques will include surveying participant groups (i.e., leaders of individual projects in the three communities, students, teachers, parents, mentors, community partners); conducting individual and focus group interviews with representative samples of participant groups; and using panels of experts to review materials developed for students, parents, and community groups. For each goal listed above, The McKenzie Group evaluation team will prepare a design that contains a set of focusing questions, specific data collection strategies for each question, including subject selection techniques, instrumentation, timing of the data collection, and data analysis procedures.

Task III Provide Technical Assistance to the individual projects

Each of the individual projects will develop project-specific evaluation strategies to track and monitor implementation, document the efforts, and assess the impact of the projects on targeted youth. The McKenzie Group evaluation team will have responsibility for providing technical assistance to the individual projects to help them prepare formative and summative evaluation plans. The McKenzie Group's responsibility also will be to ensure that the individual project evaluation efforts have clear and logical connections to the Consortium's goals and objectives.

Start-Up

During the initial start-up phase and on an ongoing basis The McKenzie Group evaluation team will visit each project site to provide on-site technical assistance and monitor the implementation of their evaluation plans. As part of the start-up activities, the McKenzie Group will identify sources of information on similar types of projects for the project administrators. Where needed, the team will assist the project staff identify appropriate indicators and outcome measures. The McKenzie Group will also assist individual project staff with suggestions for data analysis. These evaluation plans will be developed in tandem with project planning. At this stage The McKenzie Group will provide the individual sites with extensive technical assistance in the areas of selecting appropriate evaluation questions, identifying evaluation methods, data requirements, instrumentation, and data analysis approaches.

Evaluation Design

The McKenzie Group will encourage the individual projects to use a variety of evaluation methods. Both qualitative and quantitative methods should be used to answer different types of questions: those that can best be answered through personal accounts as well as those questions that need to be explained by numbers. Equally important is the need to systematically collect a common core of information across all projects. As part of its oversight responsibility, The McKenzie Group evaluation team will monitor the development of the individual project evaluation plans to ensure that both project-specific and common core data are collected.

It is expected that the summative evaluation designs will evolve during the first year, after the formative designs have been fully developed. The McKenzie Group will assist the project teams develop designs and implementation procedures that have sufficient flexibility for change or adjustments over time. The strength of the formative/summative approach is the expectation that new directions or additional questions will be incorporated into the effort if the data show a need for change.

Workshops

Throughout the course of the Consortium's Initiative, specific kinds of technical assistance and resources will be provided to the staff and leadership of the individual projects. This assistance includes workshops to address critical steps in designing and carrying out evaluations of individual projects. The topics might include identification of sources of information on similar types of projects; development and selection of appropriate outcome measures and indicators; data collection processes; reporting formats; and dissemination strategies.

Workshops will also communicate plans for both the summative and formative evaluations of the Consortium. Since each of the individual project teams has in-house capabilities for developing and designing its evaluation plans, the workshops will be used to obtain agreement about the data to be collected as common core information at each site. Also the workshops will be used as forums for sharing information, ideas, reactions about common interests, goals and objectives, joint or combined planning and areas for replication.

As the individual project teams develop their evaluation designs, The McKenzie Group will assist, review, and provide feedback. One of the basic elements to be considered for each of the projects is its ability to be evaluated. A determination of evaluability will be made for each project. A portion of the evaluability determination will be the type and availability of the data to be collected and an assessment of whether the types of conclusions needed can be obtained from the data.

Personnel

The McKenzie Group is a comprehensive educational consulting firm dedicated to providing assistance to the public and private sector to improve our nation's schools. Our cadre of uniquely qualified education experts offer a wide range of assistance services including finding practical effective approaches to today's complex instructional issues as well as providing the best in management analysis and organizational development. The McKenzie Group tailors its evaluation planning and problem-solving services specifically to client needs and requirements. We strongly believe that important educational decisions must be based on sound objective information; and as a company The McKenzie Group provides information that leads to action.

Contractor's Expertise

Under the leadership of nationally known educator Floretta Dukes McKenzie this comprehensive consulting firm serves both public and private organizations concerned with the successful development and well-being of children and young adults. The McKenzie Group offers a broad range of services and expertise to its clients such as program evaluation and documentation, organizational reviews and performance studies, educational audits, student achievement and equity studies, executive searches, and leadership and development training. During the past five years the firm has provided those services to more than 40 state and local education agencies, foundations, private businesses, and education organizations. The following list represents a sample of the types of similar projects which have been recently undertaken:

Next Century Schools A three-year project to evaluate and document the results of The RJR Nabisco Foundation's $30 million program to identify and support 42 "break the mold" schools across the country.

Ventures In Education,Inc. A multi-year project to document the progress and results of a national effort to develop rigorous academic high school programs emphasizing math and science education.

The Josiah Macy, Jr. Foundation The firm completed a comprehensive evaluation of the original Ventures programs funded by the Josiah Macy Jr. Foundation

The Corridor Initiative A project to provide New york City Public Schools development assistance and an evaluation of its Corridor Program, an initiative in school-based management and social service delivery to feeder pattern schools.

Fairfax County Public Schools An assessment of underachieving students in the Fairfax County Public Schools. The project was a comprehensive, independent examination of the school system's efforts to improve the academic success of underachieving students, particularly, underachieving racial, ethnic and language minority students.

Key Staff

We propose the involvement of a very strong team in assisting the Consortium. The overall supervision of the effort will be Dr. Floretta Dukes McKenzie, assisting Dr. McKenzie will be Mr. David L. Huie, Senior Associate in the firm, and Dr. Dennis Holmes, a professor at The George Washington University.

Floretta Dukes McKenzie, President of the firm, is the former Superintendent and Chief State Schools Officer of the District of Columbia Public Schools. She also has served as Deputy Assistant Secretary for School Improvement in the U.S. Department of Education, Deputy Superintendent of Public Instruction in the State of Maryland, and Area Superintendent in the Montgomery County (MD) Public Schools. She will direct and provide overall management to the firm's work on the project, at no cost.

David Huie will serve as a senior research director on the project. Mr. Huie has experience in program evaluation and project management. He is currently a principle evaluator of the RJR Nabisco's NEXT CENTURY SCHOOLS program and has worked on the evaluation of the Ventures In Education program. Mr. Huie was formerly the Director of Quality Assurance in the District of Columbia Public Schools, where he was responsible for the research and evaluations programs for the school system. Major evaluation efforts were completed in the areas of early childhood education programs, students who left school, and a projection for teacher attrition. During his tenure, the office was cited for excellent work by the American Education Research Association.

Dennis Holmes will serve as the second senior researcher on the project. Dr Holmes has had significant professional experience conducting over 40 program evaluations of education and training programs. He is currently a Professor of Education Policy Studies at the George Washington University, where he teaches coursework in evaluation, research methods, measurement, and policy analysis. Dr. Holmes has served as a consultant on matters related to program evaluation to a number of governmental agencies, including the Department of Education, Defense, Agriculture, Health and Human Services, The General Accounting Office, and most recently The

White House. In addition, he consults with non-profit institutions, foundations, and large urban school districts.

Budget

The project budget is given in Appendix 7.0 A.

APPENDIX 7.0 A

BUDGETS

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APPENDIX 7.0 B

BIOGRAPHIES OF PROJECT LEADERSHIP

NOTE

Brief biographies of key staff are provided on page 614 of this Program Plan.

APPENDIX 7.0 C

CERTIFICATIONS

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All Other Copies Are Obsolete

U.S. Department of Energy

Assurance of Compliance
Nondiscrimination in Federally Assisted Programs

The McKenzie Group, Inc. (Hereinafter called the "Applicant")
HEREBY AGREES to comply with Title VI of the Civil Rights Act of 1964 (Pub. L. 88-352), Section 16 of the Federal Energy Administration Act of 1974 (Pub. L. 93-275), Section 401 of the Energy Reorganization Act of 1974 (Pub. L. 93-438), Title IX of the Education Amendments of 1972, as amended, (Pub. L. 92-318, Pub. L. 93-568, and Pub. L. 94-482), Section 504 of the Rehabilitation Act of 1973 (Pub. L. 93-112), the Age Discrimination Act of 1975 (Pub. L. 94-135), Title VIII of the Civil Rights Act of 1968 (Pub. L. 90-284), the Department of Energy Organization Act of 1977 (Pub. L. 95-91), and the Energy Conservation and Production Act of 1976, as amended, (Pub. L. 94-385). In accordance with the above laws and regulations issued pursuant thereto, the Applicant agrees to assure that no person in the United States shall, on the ground of race, color, national origin, sex, age, or handicap, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity in which the Applicant receives Federal assistance from the Department of Energy.

Applicability and Period of Obligation

In the case of any service, financial aid, covered employment, equipment, property, or structure provided, leased, or improved with Federal assistance extended to the Applicant by the Department of Energy, this assurance obligates the Applicant for the period during which Federal assistance is extended. In the case of any transfer of such service, financial aid, equipment, property, or structure, this assurance obligates the transferee for the period during which Federal assistance is extended. If any personal property is so provided, this assurance obligates the Applicant for the period during which it retains ownership or possession of the property. In all other cases, this assurance obligates the Applicant for the period during which the Federal assistance is extended to the Applicant by the Department of Energy.

Employment Practices

Where a primary objective of the Federal assistance is to provide employment or where the Applicant's employment practices affect the delivery of services in programs or activities resulting from Federal assistance extended by the Department, the Applicant agrees not to discriminate on the ground of race, color, national origin, sex, age, or handicap, in its employment practices. Such employment practices may include, but are not limited to, recruitment, advertising, hiring, layoff or termination, promotion, demotion, transfer, rates of pay, training and participation in upward mobility programs; or other forms of compensation and use of facilities.

Subrecipient Assurance

The Applicant shall require any individual, organization, or other entity with whom it subcontracts, subgrants, or subleases for the purpose of providing any service, financial aid, equipment, property, or structure to comply with laws cited above. To this end, the subrecipient shall be required to sign a written assurance form, however, the obligation of both recipient and subrecipient to ensure compliance is not relieved by the collection or submission of written assurance forms.

Data Collection and Access to Records

The Applicant agrees to compile and maintain information pertaining to programs or activities developed as a result of the Applicant's receipt of Federal assistance from the Department of Energy. Such information shall include, but is not limited to the following: (1) the manner in which services are or will be provided and related data necessary for determining whether any persons are or will be denied such services on the basis of prohibited discrimination; (2) the population eligible to be served by race, color, national origin, sex, age and handicap; (3) data regarding covered employment including use or planned use of bilingual public contact employees serving beneficiaries of the program where necessary to permit effective participation by beneficiaries unable to speak or understand English; (4) the location of existing or proposed facilities connected with the program and related information adequate for determining whether the location has or will have the effect of unnecessarily denying access to any person on the basis of prohibited discrimination; (5) the present or proposed membership by race, color, national origin, sex, age and handicap, in any planning or advisory body which is an integral part of the program; and (6) any additional written data determined by the Department of Energy to be relevant to the obligation to assure compliance by recipients with laws cited in the first paragraph of this assurance.

The Applicant agrees to submit requested data to the Department of Energy regarding programs and activities developed by the Applicant from the use of Federal assistance funds extended by the Department of Energy. Facilities of the Applicant (including the physical plants, buildings, or other structures) and all records, books, accounts, and other sources of information pertinent to the Applicant's compliance with the civil rights laws shall be made available to inspection during normal business hours on request of an officer or employee of the Department of Energy specifically authorized to make such inspections. Instructions in this regard will be provided by the Director, Office of Equal Opportunity, U.S. Department of Energy.

This assurance is given in consideration of and for the purpose of obtaining any and all Federal grants, loans, contracts (excluding procurement contracts), property, discounts or other Federal assistance extended after the date hereto, to the Applicants by the Department of Energy, including installment payments on account after such data of application for Federal assistance which are approved before such date. The Applicant recognizes and agrees that such Federal assistance will be extended in reliance upon the representations and agreements made in this assurance and the United States shall have the right to seek judicial enforcement of this assurance. This assurance is binding on the Applicant, the successors, transferees, and assignees, as well as the person whose signature appears below and who is authorized to sign this assurance on behalf of the Applicant.

Applicant Certification

The Applicant further certifies that it has or, within 90 days of the date of the grant shall: (a) Designate(d) an individual to serve as Affirmative Action Officer; (b) Establish(ed) complaint procedures for employees and other beneficiaries of the program; (c) Prominently display(ed) posters and other written information publicizing the policy of nondiscrimination; (d) Provide(d) program information in languages other than English (including braille) in a manner to make it accessbile to sight impaired persons; (e) Establish(ed) procedures which enable it to notify DOE on a timely basis of any complaints filed against it and of the disposition of those complaints; (f) Require(d) any subrecipient (subgrantee/subcontractor) under this award to comply with the above cited laws and regulations; (g) Require the subrecipient to sign an assurance form, the applicant certifies that it shall monitor subrecipient compliance as appropriate; (h) Establish(ed) a system capable of collecting racial/ethnic/handicap/sex data in accordance with existing Federal requirements cited in the first paragraph of this assurance.

Development of Current Affirmative Action Plan _____
(Date)

_____ ( ) _____
Affirmative Action Officer (Name, Signature and Date) — Telephone Number

---

Most recent onsite Federal Assistance Civil Rights review/audit:

_____ _____
Agency Conducting Review — Date

_____ _____
Applicant's Name — Date

Address: _____ ( ) _____
_____ Telephone Number

Authorized Official President, or Chief Executive Officer

_____ June 9, 1993
Name and Signature — Date

CERTIFICATIONS REGARDING LOBBYING; DEBARMENT, SUSPENSION AND OTHER RESPONSIBILITY MATTERS; AND DRUG-FREE WORKPLACE REQUIREMENTS

Applicants should refer to the regulations cited below to determine the certification to which they are required to attest. Applicants should also review the instructions for certification included in the regulations before completing this form. Signature of this form provides for compliance with certification requirements under 34 CFR Part 82, "New Restrictions on Lobbying," and 34 CFR Part 85, "Government-wide Debarment and Suspension (Nonprocurement) and Government-wide Requirements for Drug-Free Workplace (Grants)." The certifications shall be treated as a material representation of fact upon which reliance will be placed when the Department of Energy determines to award the covered transaction, grant, or cooperative agreement.

1. LOBBYING

The undersigned certifies, to the best of his or her knowledge and belief, that:

(1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

(3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

2. DEBARMENT, SUSPENSION, AND OTHER RESPONSIBILITY MATTERS

(1) The prospective primary participant certifies to the best of its knowledge and belief, that it and its principals:

(a) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;

(b) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

(c) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (1)(b) of this certification; and

(d) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

(2) Where the prospective primary participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

3. DRUG-FREE WORKPLACE

This certification is required by the Drug-Free Workplace Act of 1988 (Pub. L. 100-690, Title V, Subtitle D) and is implemented through additions to the Debarment and Suspension regulations, published in the Federal Register on January 31, 1989, and May 25, 1990.

ALTERNATE I
(GRANTEES OTHER THAN INDIVIDUALS)

(1) The grantee certifies that it will or will continue to provide a drug-free workplace by:

(a) Publishing a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the grantee's workplace and specifying the actions that will be taken against employees for violation of such prohibition;

(b) Establishing an ongoing drug-free awareness program to inform employees about:

(1) The dangers of drug abuse in the workplace;

(2) The grantee's policy of maintaining a drug-free workplace;

(3) Any available drug counseling, rehabilitation, and employee assistance programs; and

(4) The penalties that may be imposed upon employees for drug abuse violations occurring in the workplace;

(c) Making it a requirement that each employee to be engaged in the performance of the grant be given a copy of the statement required by paragraph (a);

(d) Notifying the employee in the statement required by paragraph (a) that, as a condition of employment under the grant, the employee will

(1) Abide by the terms of the statement; and

(2) Notify the employer in writing of his or her conviction for a violation of a criminal drug statute occurring in the workplace not later than five calendar days after such conviction;

(e) Notifying the agency, in writing, within ten calendar days after receiving notice under subparagraph (d)(2) from an employee or otherwise receiving actual notice of such conviction. Employers of convicted employees must provide notice, including position title, to every grant officer or other designee on whose grant activity the convicted employee was working, unless the Federal agency has designated a central point for the receipt of such notices. Notice shall include the identification number(s) of each affected grant;

(f) Taking one of the following actions, within 30 calendar days of receiving notice under subparagraph (d)(2), with respect to any employee who is so convicted:

(1) Taking appropriate personnel action against such an employee, up to and including termination, consistent with the requirements of the Rehabilitation Act of 1973, as amended; or

(2) Requiring such employee to participate satisfactorily in a drug abuse assistance or rehabilitation program approved for such purposes by a Federal, State, or local health, law enforcement, or other appropriate agency;

(g) Making a good faith effort to continue to maintain a drug-free workplace through implementation of paragraphs (a), (b), (c), (d), (e), and (f).

(2) The grantee may insert in the space provided below the site(s) for the performance of work done in connection with the specific grant:

Place of Performance:
(Street address, city, county, state, zip code)

_____

_____

_____

☐ Check if there are workplaces on file that are not identified here.

ALTERNATE II (GRANTEES WHO ARE INDIVIDUALS)

(1) The grantee certifies that, as a condition of the grant, he or she will not engage in the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance in conducting any activity with the grant.

(2) If convicted of a criminal drug offense resulting from a violation occurring during the conduct of any grant activity, he or she will report the conviction, in writing, within 10 calendar days of the conviction, to every grant officer or other designee, unless the Federal agency designates a central point for the receipt of such notices. When notice is made to such a central point, it shall include the identification number(s) of each affected grant.

As the duly authorized representative of the applicant, I hereby certify that the applicant will comply with the above certifications.

NAME OF APPLICANT	PR/AWARD NUMBER AND/OR PROJECT NAME
PRINTED NAME AND TITLE OF AUTHORIZED REPRESENTATIVE Floretta Dukes McKenzie, President	
SIGNATURE Floretta Dukes McKenzie	DATE June 9, 1993

8. MANAGEMENT

Origin of the Consortium

The idea of an Inner-City Energy and Environmental Education Consortium was conceived by individuals in the Department of Energy and given preliminary definition at a meeting in May 1991. The organizations represented at that meeting were, in addition to the DOE, the Environmental Protection Agency, the Nuclear Regulatory Commission, Basic Technologies International, Inc., and Weston Institute. Following an all-afternoon meeting, Dr. William S. Gaither, President of Weston Institute, composed a one-page draft summary containing a mission statement, a description of the geographic extent of the proposed consortium, the grade range (K-16) to be addressed, four goals which would help achieve the mission, and two or three example strategies designed to reach each goal. A summary sheet was composed and circulated to the DOE for comment and improvement. Following receipt of comments, and their incorporation into the summary sheet, Weston Institute set out to secure written expressions of interest from academic institutions in and around the three cities.

Since the public school systems in the three cities were cornerstones necessary to the success of the consortium, Dr. Constance B. Clayton, Superintendent of the School District of Philadelphia, was asked by Dr. Gaither to help enlist the interest of the chief executive officers of nearly 30 diploma and/or degree-granting institutions in the three cities. Through her assistance, letters of support were obtained and a planning grant proposal prepared. This proposal was submitted to the Office of University and Science Education of the DOE on July 24, 1991.

The DOE reviewed the proposal during the fall and winter of 1991, and on 15 February 1992 a briefing was held in Washington at which Dr. Gaither presented the salient features of the planning grant proposal. In attendance at that briefing were representatives of the DOE, the EPA, the Nuclear Regulatory Commission, Dr. Walter Amprey, Superintendent of the Baltimore School District, Dr. Franklin Smith, Superintendent of the District of Columbia Public Schools, and officials of a number of participating academic institutions. Following the briefing, review comments were provided to Weston Institute and a revised proposal was submitted on 22 April 1992. A Letter of Intent was sent to the Weston Institute on May and on 22 August 1992, a planning grant of $249,000 and 12 months duration was awarded to Weston Institute.

Role of Weston Institute

Weston Institute supported the staff time and other costs necessary to crystallize the concept of the Inner-City Consortium, recruit its member organizations, prepare the proposal necessary to obtain a planning grant, and promote the Consortium to ensure its funding. This effort by the Institute required approximately one year and cost in the order of $100,000.

Weston Institute was incorporated by Roy F. Weston on 23 November 1988 as a not-for-profit Pennsylvania Corporation. Later, provisional 501(c)(3) status (tax-exempt, public charity) was granted to the Institute by the U.S. Internal Revenue Service.

The mission of the Institute was *to generate new human resources and knowledge through education and research in the broad fields of environment, human health and safety to create a better and sustainable quality of life*. To fulfil its mission the Institute served as a catalyst to jointly conceive and carry out those education and research programs that business, industry, government, and academia wanted or needed but did not have the means to do for themselves.

Financial support of $2.1 million was provided by Roy F. Weston, Inc. to fund the start-up of the Institute over several initial years. The plan was for the Institute to become self-sustaining through gifts, grants, contracts, and revenues from affiliate organization dues. On 1 December 1988 Dr. William S. Gaither, Vice Chairman of Roy F. Weston, Inc. and a former college dean and university president, was selected as president and chief executive officer of the Institute. A small staff was assembled and educational and research programs were initiated in collaboration with regional businesses, industries, government agencies and academic organizations. Among the programs initiated by Weston Institute were: (1) Student Projects in Higher Education for Research in the Environment (SPHERE), (2) the identification and prioritization of topics to be taught in several collaborative masters degree programs, (3) organization of the Governing Board of the Environmental Technology Academy at Abraham Lincoln High School as part of the Philadelphia High School Academies, Inc., (4) the award of scholarships and fellowships to graduate student advisees of Institute faculty members in affiliated organizations, (5) principal financial sponsorship of the Delaware Valley Science Fairs, and (6) proposals to the U.S. Department of Energy to establish an environmental restoration and waste management consortium and an inner-city energy and environmental education consortium.

During the fifth fiscal year of operation, start-up funds were exhausted and the Institute had not achieved full financial self-sufficiency. Accordingly it was necessary for the trustees of the Institute to terminate operations.

Consortium Organization and Governance

In May 1992, with the DOE letter of intent in hand, Weston Institute scheduled an organizing meeting of the Council of Chief Executives in Washington, D.C. on Friday 5 June at the National Academy of Sciences. At that meeting Bylaws were adopted (see Appendix) which defined the governance procedures of the Consortium and its relationship to the Weston Institute. Also at that meeting Dr. Constance B. Clayton was elected chair, and Dr. William B. DeLauder, President of Delaware State College was elected vice chair, of the Council of Chief Executives, members of the Steering Committee were designated by the chief executive officers of each member institution, an Executive Committee of the Steering Committee was elected and Dr. Ronald Machen of Delaware State College was elected vice chair of the Steering Committee. Dr. Gaither served as chair of the Steering Committee and the Executive Committee through operation of the Bylaws. It was decided by the Chief Executive Officers that no dues would be charged to member organizations during the 1992-93 fiscal year, and a 1993-94 Calendar of Events was adopted (see Appendix).

The Steering Committee met quarterly and the Executive Committee met in each of the other eight months. Weston Institute served as fiscal agent for the Consortium, accepting the DOE grant, disbursing travel expenses to member representatives attending meetings and workshops, and arranging for the conduct of workshops and the printing and distribution of reports. Weston Institute also billed the DOE on a monthly basis in accordance with the work performed in the month just ended. By the 11 June Program Plan submission date, the planning grant funds were substantially exhausted.

On 4 June 1993 the Council of Chief Executives held its second annual meeting in Washington, D.C. to (1) approve the contents of the Program Plan to be submitted on 11 June to the DOE, (2) elect Dr. William B. DeLauder chair of the Council and Dr. Franklin Smith, Superintendent of the District of Columbia Public Schools vice chair, receive written statements of commitment from member institutions, and to approve the role of Inner-City Consortium, Inc. as the management organization and fiscal agent for the Consortium for the 1993-94 fiscal year.

Management of the Consortium During the 1993-94 Fiscal Year

Since Weston Institute would no longer be available to serve in a management capacity for the Consortium, Dr. Gaither established Inner-City Consortium, Inc. in Delaware as a not-for-profit organization on 20 May 1993. This action, and the reasons for its necessity, were presented to the Steering Committee of the Consortium by Dr. Gaither at its meeting on 14 May in Philadelphia. The Steering Committee concurred with this course of action as practical and workable.

The mission of Inner-City Consortium, Inc. is *to attract and retain inner-city youth to pursue careers in energy related scientific and technical areas and in environmental restoration and waste management.* This corporation will be devoted to the management and administrative support of the Inner-City Energy and Environmental Education Consortium. The Certificate of Incorporation is attached as Appendix . Application for tax-exempt status will be made to the IRS following the organizational meeting scheduled at 12:00 noon on Tuesday 22 June 1993.

Trustees of Weston Institute who have agreed to serve as organizing directors of Inner-City Consortium, Inc. include Ms. Natalie Allen, President of Philadelphia High School Academies, Inc., Dr. William B. DeLauder, President of Delaware State College, Dr. William S. Gaither, President of Weston Institute and Director of the Inner-City Consortium, and Dr. A. Frederick Thompson, Chairman of the Board of Roy F. Weston, Inc.. Dr. Gaither will serve as chief executive officer of Inner-City Consortium, Inc.. Following the organization of the new corporation, trustee candidates representing other Consortium cities will be identified and invited to join the board of Inner-City Consortium, Inc.. Bylaws of Inner-City Consortium, Inc. will be patterned on the bylaws of Weston Institute, composed by Dr. Gaither and adopted by the board of the Institute at its organizational meeting in December 1988.

To provide continuity of management functions, image, and programs in the transition from Weston Institute to Inner-City Consortium, Inc., the trustees of Weston Institute have granted a no-cost license to Inner-City Consortium, Inc. for the use of appropriate intellectual property of Weston Institute, including the "open book" logo of Weston Institute.

The offices of Inner-City Consortium, Inc. will be located at the University City Science Center (UCSC)) at 3624 Market Street, Philadelphia, Pennsylvania 19104. The UCSC will provide a variety of support services to the Consortium, including financial services and meeting spaces. An outside auditing firm and legal counsel will be selected by the Board of Directors at the first meeting of that body. Every effort will be made to provide full continuity between Weston Institute and Inner-City Consortium, Inc. so that financial practices and other lessons learned during the program planning phase of the past year will be carried forward, and indeed, improved upon in the coming year. The office of Inner-City Consortium, Inc. is now functional with telephone (215) 386-4500 and FAX (215) 386-3164.

Grants Management ICCI has established a management services agreement with the UCSC for grants and fiscal management. The selection occurred following invitation to three organizations in the spring of 1993. Established in 1963 as the first urban research park in the United States, and oldest business incubator, the Science Center is itself the largest science and technology consortium in the nation. Its ownership is vested in 28 colleges, universities, medical institutions, and community-based organizations located in the Philadelphia region. Several ICCI member organizations are among the shareholders in the UCSC. Further, Dr. William S. Gaither, President of ICCI and Director of the Consortium, served on the board of the UCSC from 1984 through 1992. Dr. A. Fred Thompson, a member of the board of ICCI, was elected to the board of the UCSC in 1992. Due to the in-depth knowledge of the capabilities of the UCSC and its staff, ICCI is quite comfortable working closely with the UCSC as part of the Consortium's management team.

The Science Center has developed extensive expertise in managing consortial activities similar to those proposed by the ICCI. Since 1975, the Center has managed the Department of Energy's Energy Analysis and Diagnostic Center (EADC) Program. Through a network of 22 EADC centers located at 22 universities, the EADC program is structured to help small and medium-size manufacturers to reduce their energy costs and become more efficient. The Science Center also uses its nationwide network of universities that participate in the EADC program to collect, analyze, document and report on waste utilization, another DOE initiative.

The Waste Minimization Assessment Center (WMAC) program is another consortial program managed by the Science Center. Sponsored by the U.S. Environmental Protection Agency, the program establishes WMACs at colleges and universities designed to assist manufacturers who want to minimize their formation of waste. The program offers valuable experience for undergraduate and graduate students who staff each WMAC.

At the secondary school level, the Science Center has several programs to stimulate an interest in the area of science of math. Its major activity is its Minority High School research Apprentice Program sponsored by the National Institutes of Health. This program is similar to ICCI's secondary school initiative, and enrolls students from various Philadelphia inner-city high schools

In addition to managing its own funded consortial activities, the Science Center has been the grants and fiscal manager for several independent organizations receiving federal and other governmental grants and contracts such as:

- The National Diabetes Research Institute, an organization responsible for diabetes research and a grantee of the National Cancer Institute

- The Intersciences Development Agency, a small, high-tech corporation receiving a federal Small Business Innovation Research award.

- The Ben Franklin Technology Center, itself a grantor institution dispersing over $5 million in state funds to small high, tech businesses which are in consortium with colleges and universities.

Drawing upon its strong experience in these and other consortial activities, the Science Center understands the specific requirements of the ICCI and is capable of managing all financial, prime , and subaward aspects of the proposed project including:

- Completing standard financial reporting (quarterly and as required by the DOE Financial Assistance Award)

- Ensuring ICCI's compliance with all requirements of the award

- Managing all subawards for compliance with the specific terms and conditions of each subaward agreement as well as for compliance with ICCI's prime agreement with DOE

- Managing subaward cost share

- Performing routine and special grants accounting functions.

Grants Management Personnel The Science Center has developed an exceptional team responsible for fiscal and project compliance of grants and contracts. Primary responsibility for grants management will be provided by Bernadine Hawes, Director of Research Management. Ms. Hawes has over 15 years in senior grants and contracts management. Financial oversight of the project will be provided by Mr. Jack Shafrin, Controller and Assistant Treasurer for the Science Center who will be assisted by Julia Ford, Director of Financial Planning. Vitae for key financial management staff members are included in Section 11.0 of this Program Plan.

Relationship Between the Unincorporated Inner-City Energy and Environmental Education Consortium and the Incorporated Inner-City Consortium, Inc.

Provision was made in the bylaws of the Consortium, adopted 5 June 1992, for a successor organization to fill the administrative and support roles provided by Weston Institute during the program planning phase in 1992-93. The Consortium is an unincorporated organization, governed by bylaws which spell out its operational relationship with Weston Institute, or is successor organization (i.e. Inner-City Consortium, Inc.). At its second annual meeting held on 4 June 1993 in Washington, D.C., the Council of Chief Executives affirmed the role of Inner-City Consortium, Inc. as responsible for the management and fiscal affairs of the Consortium during the 1993-94 year.

As the Consortium matures, member organizations may conclude that the governance, management, and staff support arrangements should be changed. Provision has been made in the bylaws of the Consortium for orderly changes to be made in the governance of the Consortium and the organization which provides support services. For example, one of the member academic institutions could be selected by the member organizations to serve as the "administrative home" for the Consortium.

Management Personnel in 1993-94

During the 1993-94 year, the Consortium will be directed by Dr. William S. Gaither. The Council of Chief Executive Officers will be chaired by Dr. William B. DeLauder, President of Delaware State College with the vice Chair being Dr. Franklin Smith, Superintendent of the District of Columbia Public Schools. Dr. Gaither's vita is included in Section 11.0 of this Plan.

Availability of Consortium Director

Dr. William S. Gaither, Consortium Director and President of Inner-City Consortium, Inc. will be available up to, and including, Monday 1 November 1993 to lead the Consortium on a full-time basis, or, until written notice is received from the Department of Energy that the Consortium will not be funded and/or that his services will not be needed as proposed in this Plan, whichever date is sooner.

9. SCHEDULE OF MILESTONES & MANAGEMENT MEETINGS

The following schedule of milestones and management meetings lists Consortium-wide activities planned during the 1993-94 year beginning on 1 July 1993 and ending on 30 June 1994. Milestones and/or meetings connected with individual projects are presented under the "Work Plan" section of each project description. Project descriptions are all presented in Section 6.0 of this Program Plan.

Standing Committees of the Consortium will be expected to hold two meetings during the 1993-94 program year. These meetings dates will be set at the Steering Committee meeting on 17 September in Baltimore

1993-94 Calendar of Consortium Events

July 1993

- Week of 20 July Distribute copies of Program Plan to all Consortium Steering Committee Members.
- Provide information to key individuals on the Consortium's mission and goals.
- Propose "bridge" grant to Inner-City Consortium, Inc. from DOE for period 14 August 1993 through 31 December 1993.

August 1993

- No scheduled Consortium meetings.
- Continue to provide information to key individuals on the Consortium's mission and goals.

September 1993

- Receive DOE feedback on Program Plan and resubmit with required modifications.
- 17 September Steering Committee meets in Baltimore.
- Receive Letter of Intent from DOE

October 1993

- 22 October Executive Committee meets in Philadelphia

November 1993

- Receive offer of grant from DOE to fund Year 1 of Inner-City Consortium program.
- 19 November Executive Committee meets in Washington, D.C.
- Joint Meeting of Steering Committees of Inner-City Consortium and HBCU/MI Consortium
- Formalize subgrant relationships with project originating organizations

1993-94 Calendar of Consortium Events (Continued)

December 1993

- 17 December Steering Committee meets in Philadelphia

January 1994

- 21 January Executive Committee meets in Baltimore
- Issue request for Year 2 project proposals and detailed renewal requests

February 1994

- 18 February Executive Committee meets in Washington, D.C.

March 1994

- 18 March Steering Committee meets in Baltimore
- Select continuation projects and new projects for Year 2 Consortium program.

April 1994

- 22 April Executive Committee meets in Philadelphia
- Prepare Year 2 Program Plan
- Year 1 Program Review for DOE

May 1994

- 20 May Steering Committee meets in Washington, D.C.

June 1994

- 3 June Council of Chief Executives meets in Washington, D.C.
- Submit Year 2 Program Plan

11. BIOGRAPHIES OF KEY PERSONNEL AND CERTIFICATIONS

This section contains only those biographies of key management personnel. The biographies of all individuals associated with projects are shown in the appendices (Appendix B, typically) immediately following the project description.

Certifications included in this section are for Inner-City Consortium, Inc., the fiscal representative for the Consortium. Certifications for the organizations proposing projects in this Program Plan are shown in the appendices (Appendix C, typically) immediately following the project description.

William S. Gaither, Ph.D., P.E.

Dr. Gaither is president and chief executive officer of Inner-City Consortium, Inc.. He was [redacted] on a farm in [redacted] and graduated in 1956 from Rose Polytechnic Institute in Terre Haute, Indiana with a Bachelor of Science degree in Civil Engineering. He served in the U.S. Army in 1953. In 1961 he began graduate study in Princeton University's Department of Civil Engineering, specializing in its River and Harbor Program. He received a Master of Science in Engineering in 1962, a Master of Arts in 1963, and the Doctor of Philosophy in 1964.

His business career began in 1954, while still in college, working with the Ayershire Collieries Company of Indianapolis developing their new Gibraltar Mine near Central City, Kentucky. Upon graduation in 1956 he joined the Contracting Division of Dravo Corporation in Pittsburgh, serving as design, field, and research engineer building docks, pumphouses, and other large civil structures on the inland rivers. In 1960 he joined the Myer Corporation of Neenah, Wisconsin supervising projects for the paper industry. In 1965 he became supervising engineer, and later chief engineer for port and coastal development, with the Pipeline Division of Bechtel Corporation in San Francisco responsible for major harbor projects in Algeria, Alaska, Libya, Australia and the United States. In 1974 he was elected a director of Roy F. Weston, Incorporated of West Chester, Pennsylvania and in 1987 became vice chairman of the company. Dr. Gaither is a licensed professional engineer in Alaska, California, Delaware, Florida, Pennsylvania, and Wisconsin. From 1985 through 1990 he served on the board of Philadelphia Electric Company and on its Nuclear Committee from its founding in 1987. He has also served as a trustee of the Mutual Assurance Company of Philadelphia (The Greentree, founded in 1784) since 1985.

His academic career began in 1963 as a lecturer at Princeton University while still a graduate student. In 1964 he was appointed associate professor of coastal engineering at the University of Florida. Dr. Gaither was named associate professor of civil engineering at the University of Delaware in 1967 and was promoted to professor in 1970. Also in 1970 he founded the graduate College of Marine Studies and simultaneously served as the university's Sea Grant college Program Director. In 1976 he was first listed in *Who's Who in America*. Under his 14 years of leadership as dean and professor, the College gained national recognition for the quality and scope of its marine programs. In 1984 Dr. Gaither became president, trustee, and professor at Drexel University. During his three-plus year tenure he expanded the academic programs, initiated long-range planning, initiated enrollment management, doubled sponsored research -- as well as alumni giving, enlarged the campus, secured funds for several major buildings, hired the first-ever minority and women university officers, and re-organized the governance of the university.

In 1988 Dr. Gaither organized and became the founding president of the Weston Institute. The mission of the Institute is *to generate new human resources and knowledge through education and research to create a better and sustainable quality of life.* Institute programs span kindergarten through post graduate education and include the principal sponsorship of the Delaware Valley Science Fairs, the organization and management of an inner-city energy and environmental education consortium in Baltimore, Philadelphia, and Washington, DC for the Department of Energy, and SPHERE -- Student Projects in Higher Education for Research in the Environment. In 1993 he founded Inner-City Consortium, Inc..

Dr. Gaither has served on the Marine Board of the National Research Council, chairing panels on Polar Ocean Engineering, the Assimilative Capacity of the Oceans, and Alternative Ship Services for NOAA. He is a member of the board of the Philadelphia High School Academies, Inc. He is a member of the vestry of the Episcopal Church of St. Andrew and St. Monica and a member of the Cosmos Club of Washington, DC, the Wilmington Club (Delaware), and the Germantown Cricket Club. He and his wife Robin reside in West Philadelphia.

Julia J. Ford

113 Willowbrook Road
Clifton Heights, PA 19018
(215) 626-7769

Summary of Professional Experience

MGA in Public Financial Management; MBA Finance/Banking; BS in Accounting; Extensive experience in financial analysis, budgeting, computer operations and problem solving.

Experience

1986 to Pres. **University City Science Center, Director Strategic Planning**

1986-1989 **University City Science Center, Director, Special Projects**

1984-1985 **City of Philadelphia,** Procurement Department, Graduate Intern, Office of the Commissioner

Rittenhouse Book Distributors, Inc
1977-1981 * Comptroller
1981-1984 * Assistant Treasurer

Education

May, 1986 **University of Pennsylvania,** Master of Governmental Administration Degree, Fels Center of State and Local Government, Concentration in Public Financial Management, Fels Scholar, and Member of the Student Managing Committee

May, 1982 **St. Joseph's University,** Master of Business Administration Degree, Concentration in Finance/Banking

May, 1977 **St. Joseph's University,** Bachelor of Science Degree, Major: Accounting, Minor: Mathematics

Technical Education

Keystone Data Systems, Pennsauken, NJ, Completed one-hundred twenty hours of intensive training on the ADDS MENTOR and MICRODATA REALITY computer systems with emphasis on programming, system maintenance and troubleshooting.

Professional Organizations and Community Affairs

MASLIG (1985-1987)
* A professional organization of management analysts in state and local government

St. Andrew's Players Community Theater (1986-Present)
* Treasurer

Bernadine Hawes

4252 Powelton Avenue
Philadelphia, PA 19104
(215) 387-5720

Summary of Professional Experience

Over 15 years of experience in project administration, management, and grant support services. Responsibilities have included administering a major, multi-center health demonstration project of approximately 280,000 women; developing large scale databases; managing phase IV post marketing pharmaceutical case studies; and ensuring compliance with funding requirements.

In addition, experienced in technology education and training; small business technology development; and technical writing. Excellent written and verbal communication skills.

Experience

1986 - Present **University City Science Center, Philadelphia, Pa.**
Director of Research Management and **Contracts Administrator**
Responsible for managing and controlling all research grants, contracts and subcontracts. Assure compliance with all applicable grant and contract terms and conditions. Responsible for all project reporting to federal and private foundations. Institutional Officer for animal care and human review boards.Report directly to the Executive Vice President.

1980 - 1986 **Liaison Officer,** Data Management and Analysis Center
Responsible for the coordination of multicenter training programs and tasks associated with clinical data management and data entry. Developed and wrote procedure protocols and manuals. Assisted Centers with all data processing support required. Monitored project activities for planning and control. Developed micro-computer data systems for Phase IV post marketing pharmaceutical studies.

1975 - 1980 **Project Administrator,** Data Management Center
Responsible for the overall management and administration of medical information and reporting systems associated with clinical data. Developed a computerized pathology information and reporting systems. Prepared monthly activity reports. Required knowledge of medical data processing systems and computer operationsf medical terminology and some knowledge of biostatistics.

1972 **Lincoln University, Lincoln University, PA,** B.A. (Phi Beta Kappa)

1973 - 1975 **University of Pennsylvania, Philadelphia, PA,** Graduate Teaching Fellow

1980 - Present **Univeresity of Pennsylvania, Philadelphia, PA,** M.A. Sociology, Doctoral Student in Sociology, (ABD).

Jack C. Shafrin

1041 Alpena Road
Philadelphia, PA 19115
(215) 464-8184

Summary of Professional Experience

Since 1970, responsible for the University City Science Center's financial and accounting procedures and fiscal reporting for federal grants and contracts. Manage all internal auditing activities and is the primary interface with outside certified auditing firm for yearly fiscal audit including the A-133 audit.

Experience

1970 - Present **University City Science Center, Philadelphia, Pa.** Assistant Treasurer and Controller Responsible for all accounting policies and accounting functions for UCSC which include the following: supervision of Accounting Staff; preparation of cash flow budget reports; preparation of budgets, preparation of government indirect cost rates and Involved in negotiations of indirect cost rates with Federal government.

1968 - 1970 **FPA Corporation, Wyncote, Pa.** Officer Manager/Controller Responsible for coordinated the accounting functions for all construction operations in three states which include the following responsibilities: supervision of the entire office staff including computer personnel; liaison work with our banks and construction superintendents, review of all major transactions, preparation of cash flow reports reviewing cash balance and preparation of Private Executive Payroll.

1966 - 1968 **Raymond Rosen & Company , Philadelphia, Pa.** Accounts Payable Supervisor and Financial Analyst. Responsible for Audition of all purchases and responsibility for proper discount being taken within the allowed period; Complete responsibility for all of the accounting work relating to one of the firm's subsidiary companies from the Trial Balance through to the completed financial statements; payroll and budget preparations; Maintenance of accounts payable Subsidiary Ledger and Supervision of six employees handling major purchases, and computer operations.

1961-1966 **Cities Service Oil Company, Philadelphia, Pa.** Accountant Responsible for auditing the manufacturing plant records, computation of product costs, and general accounting duties.

Education:

Temple University, School of Business Administration, B.A.

New Jersey College of Commerce, A business school specializing in accounting.

OMB Control No.
1910-0400

U.S. DEPARTMENT OF ENERGY

ASSURANCE OF COMPLIANCE

Nondiscrimination of Federally Assisted Programs

Inner-City Consortium, Inc. (Hereinafter called the "Applicant") HEREBY AGREES to comply with Title VI of the Civil Rights Act of 1964 (Pub. L. 88-352), Section 16 of the Federal Energy Administration Act of 1974 (Pub. L. 93-275), Section 401 of the Energy Reorganization Act of 1974 (Pub. L. 93-438), Title IX of the Education Amendments of 1972, as amended (Pub. L. 92-318, Pub. L. 93-568, and Pub. L. 94-482), Section 504 of the Rehabilitation Act of 1973 (Pub. L. 93-112), the Age Discrimination Act of 1975 (Pub. L. 94-135), Title VIII of the Civil Rights Act of 1968 (Pub. L. 90-284), the Department of Energy Organization Act of 1977 (Pub. L. 95-91), and the Energy Conservation and Production Act of 1976, as amended (Pub. L. 94-385). In accordance with the above laws and regulations issued pursuant thereto, the Applicant agrees to assure that no person in the United States shall, on the ground of race, color, national origin, sex, age, or handicap, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity in which the Applicant receives Federal assistance from the Department of Energy.

Applicability and Period of Obligation

In the case of any service, financial aid, covered employment, equipment, property, or structure provided, leased, or improved with Federal assistance extended to the Applicant by the Department of Energy, this assurance obligates the Applicant for the period during which Federal assistance is extended. In the case of any transfer of such service, financial aid, equipment, property, or structure, this assurance obligates the transferee for the period during which Federal assistance is extended. If any personal property is so provided, this assurance obligates the Applicant for the period during which it retains ownership or possession of the property. In all other cases, this assurance obligates the Applicant for the period during which the Federal assistance is extended to the Applicant by the Department of Energy.

Employment Practices

Where a primary objective of the Federal assistance is to provide employment or where the Applicant's employment practices affect the delivery of services in programs or activities resulting from Federal assistance extended by the Department, the Applicant agrees not to discriminate on the ground of race, color, national origin, sex, age, or handicap, in its employment practices. Such employment practices may include, but are not limited to, recruitment, recruitment advertising, hiring, layoff or termination, promotion, demotion, transfer, rates of pay, training and participation in upward mobility programs; or other forms of compensation and use of facilities.

Subrecipient Assurance

The Applicant shall require any individual, organization, or other entity with whom it subcontracts, subgrants, or subleases for the purpose of providing any service, financial aid, equipment, property, or structure to comply with laws cited above. To this end, the subrecipient shall be required to sign a written assurance form, however, the obligation or both recipient and subrecipient to ensure compliance is not relieved by the collection or submission of written assurance forms.

Data Collection and Access to Records

The Applicant agrees to compile and maintain information pertaining to programs or activities developed as a result of the Applicant's receipt of Federal assistance from the Department of Energy. Such information shall include, but is not limited to, the following: (1) the manner in which services are or will be provided and related data necessary for determining whether any persons are or will be denied such services on the basis of prohibited discrimination; (2) the population eligible to be served by race, color, national origin, sex, age, and handicap; (3) data regarding covered employment including use or planned use of bilingual public contact employees serving beneficiaries of the program where necessary to permit effective participation by beneficiaries unable to speak or understand English; (4) the location of existing or proposed facilities connected with the program and related information adequate for determining whether the location has or will have the effect of unnecessarily denying access to any person on the basis of prohibited discrimination; (5) the present or proposed membership by race, color,

national origin, sex, age, and handicap, in any planning or advisory body which is an integral part of the program; and (6) any additional written data determined by the Department of Energy to be relevant to its obligation to assure compliance by recipients with laws cited in the first paragraph of this assurance.

The Applicant agrees to submit requested data to the Department of Energy regarding programs and activities developed by the Applicant from the use of Federal assistance funds extended by the Department of Energy. Facilities of the Applicant (including the physical plants, buildings, or other structures) and all records, books, accounts, and other sources of information pertinent to the Applicant's compliance with the civil rights laws shall be made available for inspection during normal business hours on request of an officer or employee of the Department of Energy specifically authorized to make such inspections. Instructions in this regard will be provided by the Director, Office of Equal Opportunity, U.S. Department of Energy.

This assurance is given in consideration of and of the purpose of obtaining any and all Federal grants, loans, contracts (excluding procurement contracts), property, discounts, or other Federal assistance extended after the date hereto, to the Applicants by the Department of Energy, including installment payments on account after such data of application for Federal assistance which are approved before such date. The Applicant recognizes and agrees that such Federal assistance will be extended in reliance upon the representations and agreements made in this assurance and the United States shall have the right to seek judicial enforcement of this assurance. This assurance in binding on the Applicant, its successors, transferees, and assignees, as well as the person whose signature appears below and who is authorized to sign this assurance on behalf of the Applicant.

28 June 1993
(Date)

Inner-City Consortium, Inc.
(Name of Applicant)

3624 Market Street-1st Floor East

Philadelphia, PA 19104-2614
(Address)

William S. Gaither
(Authorized Official)

( ) (215) 386-4500
(Applicant's Telephone Number)

CERTIFICATIONS REGARDING LOBBYING; DEBARMENT, SUSPENSION AND OTHER RESPONSIBILITY MATTERS; AND DRUG-FREE WORKPLACE REQUIREMENTS

Applicants should refer to the regulations cited below to determine the certification to which they are required to attest. Applicants should also review the instructions for certification included in the regulations before completing this form. Signature of this form provides for compliance with certification requirements under 34 CFR Part 82, "New Restrictions on Lobbying," and 34 CFR Part 85, "Government-wide Debarment and Suspension (Nonprocurement) and Government-wide Requirements for Drug-Free Workplace (Grants)." The certifications shall be treated as a material representation of fact upon which reliance will be placed when the Department of Energy determines to award the covered transaction, grant, or cooperative agreement.

1. LOBBYING

The undersigned certifies, to the best of his or her knowledge and belief, that:

(1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

(3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

2. DEBARMENT, SUSPENSION, AND OTHER RESPONSIBILITY MATTERS

(1) The prospective primary participant certifies to the best of its knowledge and belief, that it and its principals:

(a) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;

(b) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

(c) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (1)(b) of this certification; and

(d) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

(2) Where the prospective primary participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

3. DRUG-FREE WORKPLACE

This certification is required by the Drug-Free Workplace Act of 1988 (Pub. L. 100-690, Title V, Subtitle D) and is implemented through additions to the Debarment and Suspension regulations, published in the Federal Register on January 31, 1989, and May 25, 1990.

ALTERNATE I
(GRANTEES OTHER THAN INDIVIDUALS)

(1) The grantee certifies that it will or will continue to provide a drug-free workplace by:

(a) Publishing a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the grantee's workplace and specifying the actions that will be taken against employees for violation of such prohibition;

(b) Establishing an ongoing drug-free awareness program to inform employees about:

(1) The dangers of drug abuse in the workplace;

(2) The grantee's policy of maintaining a drug-free workplace;

(3) Any available drug counseling, rehabilitation, and employee assistance programs; and

(4) The penalties that may be imposed upon employees for drug abuse violations occurring in the workplace;

(c) Making it a requirement that each employee to be engaged in the performance of the grant be given a copy of the statement required by paragraph (a);

(d) Notifying the employee in the statement required by paragraph (a) that, as a condition of employment under the grant, the employee will:

(1) Abide by the terms of the statement; and

(2) Notify the employer in writing of his or her conviction for a violation of a criminal drug statute occurring in the workplace not later than five calendar days after such conviction;

(e) Notifying the agency, in writing, within ten calendar days after receiving notice under subparagraph (d)(2) from an employee or otherwise receiving actual notice of such conviction. Employers of convicted employees must provide notice, including position title, to every grant officer or other designee on whose grant activity the convicted employee was working, unless the Federal agency has designated a central point for the receipt of such notices. Notice shall include the identification number(s) of each affected grant;

(f) Taking one of the following actions, within 30 calendar days of receiving notice under subparagraph (d)(2), with respect to any employee who is so convicted:

(1) Taking appropriate personnel action against such an employee, up to and including termination, consistent with the requirements of the Rehabilitation Act of 1973, as amended; or

(2) Requiring such employee to participate satisfactorily in a drug abuse assistance or rehabilitation program approved for such purposes by a Federal, State, or local health, law enforcement, or other appropriate agency;

(g) Making a good faith effort to continue to maintain a drug-free workplace through implementation of paragraphs (a), (b), (c), (d), (e), and (f).

(2) The grantee may insert in the space provided below the site(s) for the performance of work done in connection with the specific grant:

Place of Performance:
(Street address, city, county, state, zip code)

3624 Market Street-1st Floor East

Philadelphia, PA 19104-2614

☐ Check if there are workplaces on file that are not identified here.

ALTERNATE II (GRANTEES WHO ARE INDIVIDUALS)

(1) The grantee certifies that, as a condition of the grant, he or she will not engage in the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance in conducting any activity with the grant.

(2) If convicted of a criminal drug offense resulting from a violation occurring during the conduct of any grant activity, he or she will report the conviction, in writing, within 10 calendar days of the conviction, to every grant officer or other designee, unless the Federal agency designates a central point for the receipt of such notices. When notice is made to such a central point, it shall include the identification number(s) of each affected grant.

As the duly authorized representative of the applicant, I hereby certify that the applicant will comply with the above certifications.

NAME OF APPLICANT	PR/AWARD NUMBER AND/OR PROJECT NAME
Inner-City Consortium, Inc.	Inner-City Energy & Environmental Consortium
PRINTED NAME AND TITLE OF AUTHORIZED REPRESENTATIVE	
William S. Gaither, President	
SIGNATURE	DATE
W. S. Gaither	26 June 1993

12. REFERENCES

The reader will find lists of references with most of the projects contained in this Program Plan. Listed below are additional references relevant to this Plan.

Annual Report 1990/1991, The HBCU/MI Consortium, The Historically Black Colleges and Universities/Minority Institutions Environmental Technology and Waste Management Consortium, Clark Atlanta University, Atlanta, Georgia, 125p.

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13. APPENDICES

NOTES:

APPENDICES 13.1 through 13.4 are included in this bound Program Plan

APPENDICES 13.5 through 13.13 are separate bound volumes.

13.1 CONSORTIUM BYLAWS

BYLAWS

Inner-City Energy and Environmental Education Consortium

Adopted 5 June 1992

ARTICLE I

Mission and Philosophy

The mission of the Inner-City Energy and Environmental Education Consortium is to recruit and retain inner-city youth to pursue careers in energy-related scientific and technical areas and in environmental restoration and waste management. To fulfill this mission the Consortium will involve school districts, community colleges, colleges and universities in the cities of Washington, D.C., Baltimore, and Philadelphia. The Consortium will focus its energies on pre-kindergarten through undergraduate levels in these cities giving particular attention to mathematics and science competencies.

The Consortium will be particularly mindful of the National Education Goals established by the President and the Governors in September 1989. Also, the Consortium will incorporate, to the greatest extent practical, the strategic objectives and implementation priorities defined in the February 1991 Report of the FCCSET (Federal Coordinating Council for Science, Engineering, and Technology) Committee on Education and Human Resources.

ARTICLE II

Name, Corporate Status, Office, Fiscal Year, & Definitions

Section 1. Name The name shall be Inner-city Energy and Environmental Education Consortium (hereinafter referred to as the Consortium).

Section 2. Corporate Status The Consortium shall not be incorportated in any state or the District of Columbia.

Section 3. Fiscal Year The fiscal year shall begin on 1 October and end on 30 September each year.

Section 4. Institute "Institute" as used in this document shall refer to the Weston Institute, or its successor organization.

Section 5. Members "Members" as used in this document shall refer to the organizations of various classes comprising the Consortium.

Section 6. Office The principal office of the Consortium shall be the Weston Institute, One Weston Way, West Chester, PA 19380.

Section 7. Definitions

7.1 "He" as used in this document is defned as he/she, whichever is appropriate.

ARTICLE III

Membership

The Consortium shall consist of three classes of members.

Section 1. Members Members shall consist of degree-granting institutions, school districts, and the Institute. Members shall be elected by the Council of Chief Executives.

Section 2. Associate Members Associate Members shall be non-degree granting organizations, including government agencies, which support the mission and philosophy of the Consortium. Associate Members shall be elected by the Council of Chief Executives.

Section 3. Affiliate Members Affiliate Members shall consist of suburban degree-granting educational institutions which support the mission and philosophy of the Consortium. Affiliate Members shall be elected by the Council of Chief Executives.

Section 4. Dues Dues for various classes of membership may be established by the Council of Chief Executives.

Section 5. Voting Rights

5.1 Council of Chief Executives. The Chief Executive Officer of each member organization shall be entitled to one vote on all matters coming before the Council. Chief Executive Officers may designate in writing, in advance of a meeting, a proxy who is entitled to vote at that meeting.

5.2 Steering Committee. Each Steering Committee member shall be entitled to one vote on all matters coming before the Steering Committee.

5.3 Standing Committees. Each Standing Committee member shall be entitled to one vote on all matters coming before the Standing Committee.

Section 6 Annual Renewal of Membership Annual renewal of membership shall be required in writing from the Chief Executive Officer to the Chair of the Council of Chief Executives at least thirty (30) days prior to the annual meeting.

Section 7 Termination of Membership Termination of membership of any Member, Associate Member, or Affiliate Member shall be by two-thirds vote of the Council of Chief Executives after holding an appropriate hearing.

Section 8 Resignation Resignation of any member of any class of may be submitted in writing to the Council of Chief Executives at any time, however such resignation shall not relieve the member of any unfilled obligation unless so agreed by the Council.

Section 9 Reinstatement Reinstatement of any former member of the Consortium may be requested by writing to the Chair of the Council of Chief Executives.

Section 10 Transfer or Assignment of Membership Transfer of membership is not permitted.

ARTICLE IV

Organization

Section 1 Council of Chief Executives The Council of Chief Executives shall hereinafter be known as the Council.

1.1 Membership The Council shall comprise the chief executive officer of each Member of the Consortium.

1.2 Responsibilities and Authorities The following responsibilities and authorities shall be vested in the Council:

1.2.1 Provide programmatic and fiscal direction for the Consortium consistent with its mission.

1.2.2 Evaluate the effectiveness of Consortium programs.

1.2.3 Foster cooperation and collaboration among Consortium members.

1.2.4 Periodically evaluate the performance of the Consortium Director and the Weston Institute as program manager.

1.3 Quorum A simple majority of Council members shall comprise a quorum for the conduct of business.

1.4 Officers

1.4.1 A Chair and a Vice-Chair shall be elected annually by the members of the Council.

1.4.2 The Chair shall preside at meetings of the Council, shall oversee the Consortium Director's preparation of the agenda for meetings of the Council, notice of meetings, and the preparation of minutes, and appropriate reports. In the absence of the Chair, the Vice-Chair shall preside.

1.4.3 Neither the Chair nor the Vice-Chair shall serve

more than three successive years in a specific office.

Section 2 Steering Committee

2.1 Membership The Consortium Steering Committee, hereinafter known as the "Steering Committee" shall comprise one voting member from each Member institution appointed by the chief executive officer of each Member institution.

2.2 Committee Responsibilities and Authorities

2.2.1 Implements, through the Consortium Director, the general policies adopted by the Council.

2.2.2 Carries out assignments and functions designated by the Consortium Director.

2.3 Individual Member Responsibilities and Authorities

2.3.1 Ensures coordination of Consortium activities within his institution and that obligations taken on by his parent institution are being fulfilled on time and within budget.

2.3.2 Serves as the point of contact for coordination of Consortium activities with other member institutions.

2.3.3 Serves on standing committees as required.

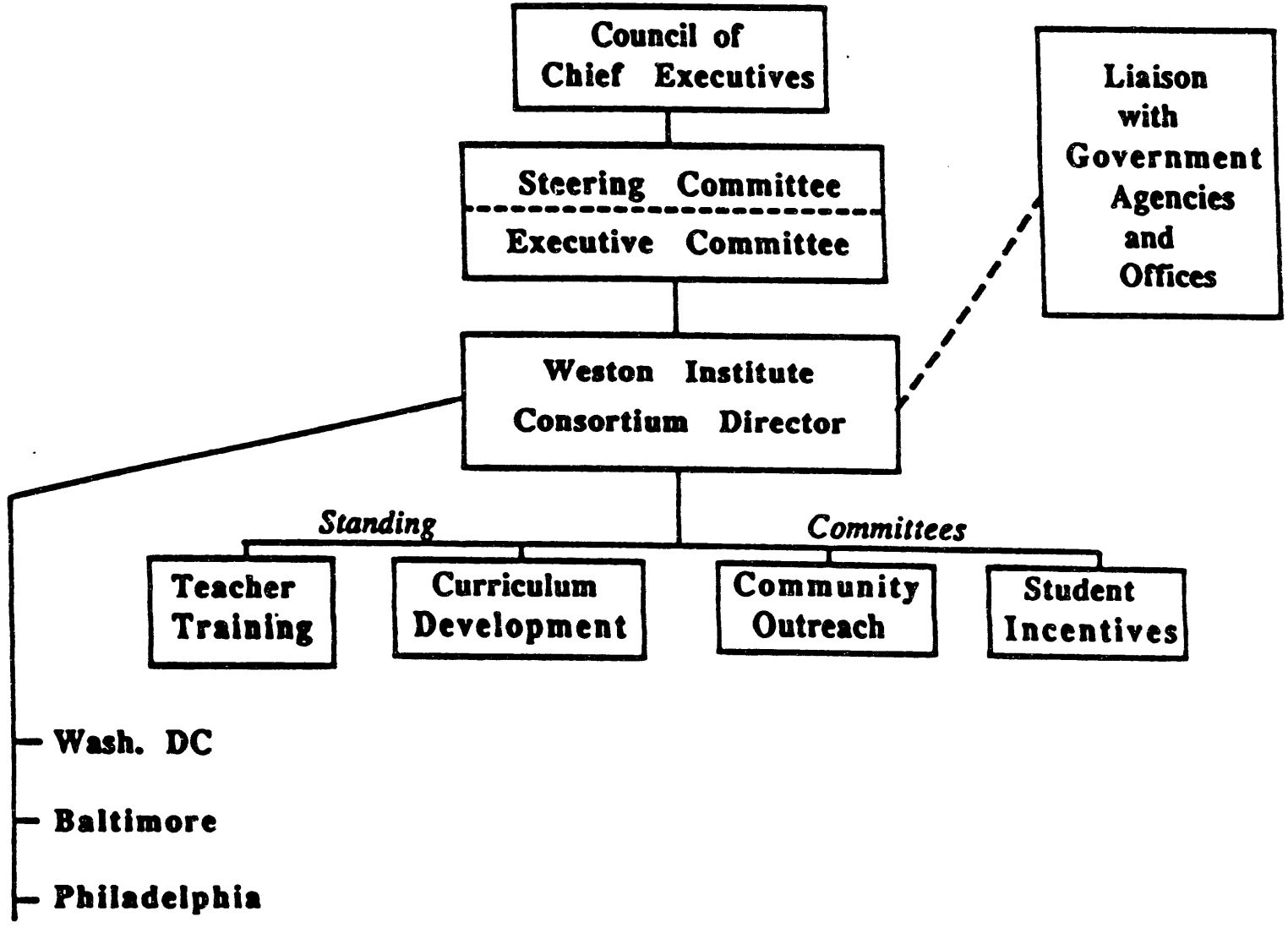
2.3.4 Attends if required, without vote, in the stead of the chief executive of his parent institution at meetings of the Council.

2.4 Chair The Consortium Director shall serve as chair of the Steering Committee. In his absence the Vice Chair of the Steering Committee shall serve as chair.

2.5 Vice Chair A Vice Chair shall be elected annually by the Steering Committee.

ORGANIZATION

Inner-City Energy and Environmental Education Consortium



2.6 Quorum A simple majority of Steering Committee members shall comprise a quorum for the conduct of business.

Section 3 Executive Committee An Executive Committee of the Steering Committee shall hereinafter be known as the Executive Committee and shall be appointed to act for the Steering Committee between regularly scheduled meetings of the Steering Committee.

3.1 Membership Membership on the Executive Committee shall comprise twelve members of the Steering Committee, four each from Baltimore, Philadelphia, and Washington, D.C., including six representatives of the six school districts in each city, ex officio, and six representatives from institutions of higher education, two from each city, to be elected annually by the Steering Committee.

3.2 Responsibilities and Authorities The Executive Committe is empowered to act for the Steering Committee between meetings of the Steering Committee.

3.3 Quorum A simple majority of Executive Committee members shall comprise a quorum for the conduct of business.

3.4 Chair The Consortium Director shall serve, without vote, except to break a tie, as chair of the Executive Committee. In his absence the President of the Institute shall serve as chair. In the absence of both, the Vice Chair of the Steering Committee shall preside.

Section 4 Consortium Director and Support Staff The Consortium Director hereinafter known as the "Director" and support staff shall be employees of the Institute.

4.1 Director The Director shall have the authority and responsibility for all aspects of Consortium operation.

4.2 Staff Staff shall be responsible to the Director and be employed as necessary to support the Director in effectively operating and managing the Consortium.

Section 5 Standing Committees Standing Committees exist to assist the Steering Committee and the Director in achieving the goals of the Consortium, defining strategies to achieve the goals, and developing implementation plans for each strategy. It is expected that the purview of the standing committees will extend from pre-kindergarten through undergraduate programs.

5.1 Committee on Administrative Support and Recruitment of Teachers This committee will be responsible for defining, implementing, and evaluating all aspects of providing necessary administrative support and developing teacher incentives to participate in Consortium programs.

5.2 Committee on Academic and Career & Technology Curricula This committee will be responsible for the identification and implementation of highly successful curricula where such can be found to exist, and for stimulating the development of new curricula where needed.

5.3 Committee to Involve Parents, Mentors and Community Organizations This committee will develop and implement strategies necessary to develop strong parental and other means of support for students.

5.4 Committee to Attract Students This committee will have the responsibility to initiate programs to interest students in the curricula and programs of the Consortium.

5.5 Membership Each Consortium member may appoint one voting representative to each Standing Committee.

5.6 Term of Membership The term of membership on standing committees shall be for one year and shall be renewed in writing by the member institution.

5.7 Quorum A simple majority of committee members shall comprise a quorum for the conduct of business.

5.8 Officers The Director, on advice of the Steering Committee, shall appoint a chair and vice-chair of each Standing Committee. Secretarial support for each Standing Committee shall be provided by the Director.

ARTICLE V

Meetings

Section 1. Annual Meeting of Council of Chief Executives An annual meeting of the chief executives of member organizations of the Consortium shall be held in Washington, D.C. to review the status of programs, to receive a report on the fiscal status and prospects, to admit new members, to revise policies or initiate new policies, approve the program plan for the coming year, evaluate progress, and other such business as may come before the Council.

Section 2. Quarterly Meetings of the Steering Committee The Steering Committee shall meet quarterly to receive a report of the Consortium Director, to receive a financial report, to receive reports of the standing committee chairs, to review applications for membership, and to conduct such business as may come before the Steering Committee. Meetings shall be held at member institutions on a rotating basis, distributed equitably among participating cities.

Section 3. Monthly Executive Committee Meetings The Executive Committee shall meet monthly to conduct the business of the Consortium. Meetings shall be held at member institutions on a rotating basis, distributed equitably among participating cities.

Section 4. Standing Committee Meetings Standing committees shall meet as required to fulfill their obligations but in no case fewer than two times each year.

Section 5. Meetings not to Duplicate Meetings of the Council of Chief Executives, Steering Committee, and Executive Committee shall not overlap or be duplicative. Accordingly, the Steering Committee shall meet separately four times each year. Its members shall be invited to attend, as observers, the annual meeting of the Council of Chief Executives. Also, the Executive Committee shall meet in those months when the Council of Chief Executives and/or the Steering Committee do not meet.

Section 6. Special Meetings Special meetings of the Council of Chief Executives, the Steering Committee, and the Executive Committee may be held at the call of the chair or by petition to the chair of three members.

Section 7. Notice of Meetings A schedule of meeting times and places shall be distributed by the Consortium Director before the start of each fiscal

year for the Council of Chief Executives, the Steering Committee, the Executive Committee, and the Standing Committees. Notice shall be given at least seven calendar days prior to the meeting dates.

Section 8. Rules Robert's Rules of Order, most recently revised, shall govern the conduct of meetings.

ARTICLE VI

Adoption and Amendment

Section 1. Adoption These bylaws may be adopted by a two-thirds vote of the chief executive officers attending the organization meeting of the Consortium.

Section 2. Amendment These bylaws may be amended by a two-thirds vote of the Council of Chief Executives.

ARTICLE VII

Dissolution

Section 1. Dissolution The Consortium may be dissolved by a two-thirds vote of the Council of Chief Executives.

13.2 REQUEST FOR PRELIMINARY PROJECT PROPOSALS

D R A F T

REQUEST FOR PROPOSALS

Inner-City Energy and Environmental Education Consortium
Sponsored by the U.S. Department of Energy
7 January 1992

Purpose of Request

This notice solicits proposals for educational projects which may be included in a program plan which will be submitted to the Department of Energy as a product of grant number DE-FG02-92ER75778 for possible funding in federal fiscal year 1994 which begins on 1 October 1993.

Background

The Consortium was organized on 5 June 1992. It is focused on K-16 education in the inner-cities of Baltimore, Philadelphia, and Washington, DC corridor where most students are historically under-represented minorities and a majority live below the poverty line. The U.S. Department of Energy seeks to reach these youth to increase the human resource pool of individuals capable of assisting the DOE in carrying out its extensive energy, environmental restoration, and waste management programs. Since the Consortium was organized it has completed (1) an inventory of existing programs, (2) a measures of effectiveness workshop, (3) a Teacher's Standing Committee workshop, and (4) a Student's Standing Committee workshop. The Consortium member institutions continue to work together through a series of meetings and workshops to identify methods to fulfill the Consortium's mission and to achieve its goals. A 1992-93 Calendar of Consortium Meetings specifies dates on which certain activities occur and culminates in the submission of a proposed program plan in June 1993 to the DOE to carry out specific projects in 1993-94.

Consortium Mission and Goals

The mission of the Consortium is *to recruit and retain inner-city youth to pursue careers in energy-related scientific and technical areas and in environmental restoration and waste management.*

Consortium goals include:

- Organize administrative support and recruit teachers to participate.
- Develop academic and vocational curriculum materials and programs.
- Increase involvement of parents, mentors, and community organizations.
- Excite and empower students to enter and to succeed in energy and environmental careers.

Consortium Membership

The Consortium comprises 32 academic institutions in Philadelphia, Baltimore, and Washington, DC. The institutions include The School District of Philadelphia, the School System of the Archdiocese of Philadelphia, The Community College of Philadelphia, Drexel University, Cheyney University, Delaware State College, Lincoln University, LaSalle University, the Philadelphia College of Pharmacy and Science, Temple University, The University of Pennsylvania, and Widener University.

In Baltimore the participating institutions include the Baltimore School District, the School System of the Archdiocese of Baltimore, Baltimore City Community College,

Coppin State College, Dundalk Community College, The Johns Hopkins University, Morgan State University, Towson State University, the University of Maryland-Baltimore County, Sojourner-Douglass College, and the University of Baltimore.

In Washington, DC the participants include the Washington DC Public Schools, the School System of the Archdiocese of Washington, DC, American University, Catholic University of America, Gallaudet University, George Washington University, Howard University, Montgomery Community College-Takoma Park Campus, and The University of the District of Columbia.

Target Student Population

The Consortium is targeting inner-city students from kindergarten through undergraduate (K-16) levels. In the three cities the K-12 student population is over 466,000, approximately 75% of whom are minorities. The combined undergraduate and graduate student population of the major inner-city colleges and universities an additional 214,000, a much smaller percentage of whom are minorities.

Consortium Organization

The Consortium is an unincorporated organization governed by bylaws adopted by the members on 5 June 1992. Policy direction of the Consortium is provided by a Council of Chief Executives which meets annually. The Council is chaired by Dr. Constance Clayton, Superintendent of the School District of Philadelphia. Dr. William Delauder, President of Delaware State College is Vice Chair of the Council.

Operational direction of the Consortium is provided by a Steering Committee which meets quarterly and an Executive Committee of the Steering Committee which meets monthly. Dr. William Gaither, President of Weston Institute chairs both of these operational committees. Weston Institute, a not-for-profit, tax-exempt Pennsylvania corporation, also provides administrative support and serves as the fiscal agent for the Consortium.

Measures of Effectiveness of Consortium Projects

The Consortium expects to measure the effectiveness of individual educational projects and its overall program plan in two ways. The first way will be through increased job readiness as students prepare to pursue careers in energy-related scientific and technical areas and environmental restoration and waste management. The second measure will be the increased numbers of students enrolled in math and science programs. The most fundamental and overarching measure will be to ensure student success in their careers

Criteria for Selection of Consortium Projects

The foremost criteria for project selection will be to fulfill the mission of the Consortium, stated earlier in this document. In addition to fulfilling the mission, and being sensitive to the measures of effectiveness describe above, projects will be selected on the basis of the following criteria:

(1) Replicability, Transferability, and Adaptability Projects should provide models which, if successful, can be reproduced in some other inner-city setting.

(2) Involvement of Educators, Community, Business, and Government Stakeholders should be identified and should make a tangible commitment to support the project.

(3) Innovative Methods to Address Inner-City Issues Projects must demonstrate an awareness of the tensions and challenges of inner-city life and propose innovative strategies to deal with these issues.

(4) Economic Benefit to Region or Community in Which the Project is Located Project should

show clearly that the community and the stakeholders will realize economic benefit as a result of this project.

(5) Project Management and Leadership Quality The track record of the proposed project leader will be important in the assessment of its fundability as will the description of the processes which will be used to plan, direct, support, document, and communicate the results of the project.

(6) Quantifiable Results The results of the project should be measurable. Measures of Effectiveness should be described and justified.

(7) Demonstrated Financial and Programmatic Support Evidence of financial commitment to the project through auditable non-federal matching funds will be expected. This should be manifest as a clear institutional commitment to the success of the project.

(8) Commitment to Multi-Cultural Workforce and Educational Philosophy Inner-city students need to see themselves, their cultures and their career potential reflected in the project's faculty, staff, and program design.

(9) Development of Problem Solving Skills Student learning through "hands on" experiences and shared inquiry with peers, teachers, and mentors needs to develop student flexibility in response to decision making.

(10) Linkages to other Consortium Projects Though not mandatory, effective working relations with other consortium members within and between cities is encouraged.

Funding

The Consortium funding level for 1993-94 program year will depend on the quality of the projects included in the program plan, the results of peer review, and will be subject to the availability of funds. The program plan will present projects in several priority tiers so that various levels of funding can be accommodated. Typical projects are expected to be in the $25,000 to $250,000 range, however, larger or smaller amounts may be requested. Budgets will be required for each year of each proposed project, up to a maximum of three years.

Preliminary Proposals

Preliminary project proposals should be brief and to the point. Sections which should be included are (1) Summary, (2) Background, (3) Description of Project, (4) Importance, (5) Approach, (6) Collaborating Organizations, (7) Expected Outcomes, (8) Measurement of Results, (9) References, (10) Leadership and Management, and (11) Three Year Budget. The total length of preliminary proposals (excluding budgets) should not exceed 4 double-spaced pages using Times 12 point type. Budget estimates, including auditable matching funds, must be identified. Preliminary proposals will be due in the office of Weston Institute no later than 5:00 p.m. on Monday 8 February 1993.

Matching Requirements

Projects proposals must show evidence of 25% matching to be provided from non-federal sources. Acceptable sources of matching funds include salaries, fringe benefits, institutional overhead, equipment, supplies, in-kind matching by business and/or industry, private and foundation grants, and other auditable contributions to the actual project.

Preliminary Project Proposal Evaluation

Preliminary project proposals will be evaluated by the Steering Committee and other reviewers to be selected. Evaluation will be based on (1) the degree to which the project meets project criteria specified above, (2) the effectiveness of the project in fulfilling the mission of the Consortium, and (3) the overall quality of the concept proposed.

Organizations Eligible to Submit Preliminary Project Proposals

Organizations eligible to submit preliminary project proposals include Consortium Members and Affiliate Members listed above. Other organizations which can demonstrably support the mission of the Consortium may be included as subcontractors by consortium member institutions. Neither individuals, for-profit organizations, nor government agencies are eligible to submit preliminary project proposals.

Preliminary Proposal Deadline

Forty copies of the preliminary proposals will be due in the office of Weston Institute, 1 Weston Way, West Chester, Pennsylvania 19380, Attention William Gaither, no later than 5:00 p.m. Monday 8 February 1993. Phone (215) 430-3100. FAX copies will not be accepted. For hand-delivery instructions, please call the Institute.

Grant Period and Fiscal Year

Preliminary proposals should provide a budget summary, for up to three years maximum depending on project duration, using DOE form ER F 4620.1A (7-85) and a more detailed budget for each project year on DOE form ER F 4620.1 (11-90). Copies of these forms are attached. The Consortium budget year shall begin on 1 September and end on 31 August.

Final Proposals

Following evaluation of the preliminary proposals by the Executive Committee of the Steering Committee on 19 February 1993, organizations invited to submit full proposals will be notified on Monday 22 February 1993. Forty copies of complete final proposals will be due in the office of Weston Institute at 5:00 p.m. on Thursday 1 April 1993.

Reference Documents

The following reference documents have been prepared by Consortium participants, invited persons, and the Weston Institute to share programmatic ideas, to develop a sense of priorities, and to other wise assist with the preparation of their proposal. Copies may be requested from Weston Institute.

- *Essential Participant Information (34 p. plus appendices)*
- *Inventory of Existing Programs (103 p.) superseded by second edition listed below)*
- *Measures of Effectiveness Workshop Report (80 p.)*
- *Teacher's Standing Committee Workshop (69 p.)*
- - *Student's Standing Committee Workshop (95 p.)*
- *Measures of Effectiveness Workshop Involving Prospective Employers (71 p.)*
- *Project Selection Criteria (85 p.)*
- *Inventory of Existing Programs - Second Edition (133 p.)*

yet to be published

- *Parent's Standing Committee Workshop* (Available 12 Jan. 93)
- *Curriculum Standing Committee Workshop* (Tentative - Available 2 Feb. 93)

Questions

Call William S. Gaither, President, Weston Institute, at (215) 430-3100 or FAX (215 524-4652.

13.3 REQUEST FOR FINAL PROPOSALS

REQUEST FOR PROPOSALS

Inner-City Energy and Environmental Education Consortium
Sponsored by the U.S. Department of Energy
Revised 22 February 1993

Purpose of Request

This notice solicits proposals for educational projects which may be included in a program plan which will be submitted to the Department of Energy as a product of grant number DE-FG02-92ER75778 for possible funding in federal fiscal year 1994 which begins on 1 October 1993.

Background

The Consortium was organized on 5 June 1992. It is focused on K-16 education in the inner-cities of Baltimore, Philadelphia, and Washington, DC corridor where most students are historically under-represented minorities without access to many professional career paths and a majority live below the poverty line. The U.S. Department of Energy seeks to reach these youth to increase the human resource pool of individuals capable of assisting the DOE in carrying out its extensive energy, environmental restoration, and waste management programs. Since the Consortium was organized it has completed (1) an Inventory of Existing Programs, (2) a Measures of Effectiveness workshop, (3) a Teacher's Standing Committee workshop, (4) a Student's Standing Committee workshop, (5) a Project Selection Criteria workshop, (6) a Parents/Community Standing Committee workshop, and (7) a Curricula Standing Committee workshop. The Consortium member institutions continue to work together through a series of meetings and workshops to identify methods to fulfill the Consortium's mission and to achieve its goals. A 1992-93 Calendar of Consortium Meetings specifies dates on which certain activities occur and culminates in the submission of a proposed program plan in June 1993 to the DOE to carry out specific projects in 1993-94.

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The mission of the Consortium is to *recruit and retain inner-city youth to pursue careers in energy-related scientific and technical areas and in environmental restoration and waste management.*

Consortium goals include:
- Organize administrative support and recruit teachers to participate.
- Develop academic and vocational curriculum materials and programs.
- Increase involvement of parents, mentors, and community organizations.
- Excite and empower students to enter and to succeed in energy and environmental careers.

Consortium Membership

The Consortium comprises 32 academic institutions in Philadelphia, Baltimore, and Washington, DC. The Philadelphia institutions include The School District of Philadelphia, the School System of the Archdiocese of Philadelphia, the Community College of Philadelphia, Drexel University, Cheyney University, Delaware State College, Lincoln University, LaSalle University, the Philadelphia College of Pharmacy and Science, Temple University, the University of Pennsylvania, and Widener University.

In Baltimore the participating institutions include the Baltimore School District, the School System of the Archdiocese of Baltimore, Baltimore City Community College, Coppin State College, Dundalk Community

University, Towson State University, the University of Maryland-Baltimore County, Sojourner-Douglass College, and the University of Baltimore.

In Washington, DC the participants include the Washington DC public Schools, the School System of the Archdiocese of Washington, DC, American University, Catholic University of America, Gallaudet University, George Washington University, Howard University, Montgomery Community College-Takoma Park Campus, and the University of the District of Columbia.

Target Student Population

The Consortium is targeting inner-city students from kindergarten through undergraduate (K-16) levels. In the three cities the K-12 student population is over 466,000 approximately 75% of whom are minorities. The combined undergraduate and graduate student population of the major inner-city colleges and universities an additional 214,000, a much smaller percentage of whom are minorities.

Consortium Organization

The Consortium is an unincorporated organization governed by bylaws adopted by the members on 5 June 1992. Policy direction of the Consortium is provided by a Council of Chief Executives which meets annually. The Council is chaired by Dr. Constance Clayton, Superintendent of the School District of Philadelphia. Dr. William Delauder, President of Delaware State College is vice-chair of the Council.

Operational direction of the Consortium is provided by a Steering Committee which meets quarterly and an Executive Committee of the Steering Committee which meets monthly. Dr. William Gaither, President of Weston Institute chairs both of these operational committees. Dr. Ronald Machen of Delaware State College is vice-chair. Weston Institute, a not-for-profit, tax-exempt Pennsylvania corporation, also provides administrative support and serves as the fiscal agent for the Consortium.

Measures of Effectiveness of Consortium Projects

The Consortium expects to measure the effectiveness of individual educational projects and its overall program plan in two ways. The first way will be through increased job readiness as students prepare to pursue careers in energy-related scientific and technical areas and environmental restoration and waste management. The second measure will be the increased numbers of students enrolled in math and science programs. The most fundamental and overarching measure will be to ensure student success in their careers.

Criteria for Selection of Consortium Projects

The foremost criteria for project selection will be to fulfill the mission of the Consortium, stated earlier in this document. In addition to fulfilling the mission, and being sensitive to the measures of effectiveness describe above, projects will be evaluated on the basis of the following criteria: (See Project Selection Criteria Workshop Report for more detail.)

(1) Replicability, Transferability, and Adaptability Projects should provide models which, if successful, can be reproduced in some other inner-city setting.

(2) Involvement of Educators, Community, Business, and Government Stakeholders should be identified and should make a tangible commitment to support the project.

(3) Innovative Methods to Address Inner-City Issues Projects must demonstrate an awareness of the tensions and challenges of inner-city life and propose innovative strategies to deal with these issues.

(4) Economic Benefit to Region or Community in which the Project is Located Project should show clearly that the community and the stakeholders will realize economic benefit as a result of this project.

(5) Project Management and Leadership Quality The track record of the proposed project leader will be important in the assessment of its fundability as will the description of the

processes which will be used to plan, direct, support, document, and communicate the results of the project.

(6) Quantifiable Results The results of the project should be measurable. Measures of Effectiveness should be described and justified.

(7) Demonstrated Financial and Programmatic Support Evidence of financial commitment to the project through auditable non-federal matching funds will be expected. This should be manifest as a clear institutional commitment to the success of the project.

(8) Commitment to Multi-Cultural Workforce and Educational Philosophy Inner-city students need to see themselves, their cultures and their career potential reflected in the project's faculty, staff, and program design.

(9) Development of Problem Solving Skills Student learning through "hands-on" experiences and shared inquiry with peers, teachers, and mentors needs to develop student flexibility in response to decision making.

(10) Linkages to other Consortium Projects Though not mandatory, effective working relations with other consortium members within and between cities is encouraged.

Funding

The Consortium funding level for 1993-94 program year will depend on the quality of the projects included in the program plan, the results of peer review, and will be subject to the availability of funds. Typical projects are expected to be in the $25,000 to $250,000/yr. range, however, larger or smaller amounts may be requested. Detailed budgets will be required for each year of each proposed project, up to a maximum of three years.

Matching Requirements

Projects proposals must show evidence of 25% matching to be provided from non-federal sources. Acceptable sources of matching funds include salaries, fringe benefits, institutional overhead, equipment, supplies, in-kind matching by business and/or industry, private and foundation grants, and other auditable contributions to the actual project.

Project Proposal Evaluation

Project proposals will be evaluated by the Steering Committee and other reviewers to be selected. Evaluation will be based on (1) the extent to which the proposal focuses on energy-related scientific and technical areas and environmental restoration and waste management, (2) the degree to which the project reaches inner-city youth, (3) the quality of scientific and technical material included in the project and the soundness of the work plan, and (4) the extent to which projects satisfy evaluation criteria listed above.

Organizations Eligible to Submit Project Proposals

Organizations eligible to submit project proposals include Consortium Members and Affiliate Members listed above. Other organizations which can demonstrably support the mission of the Consortium may submit proposals, provided that they can furnish written endorsement of the project by one or more consortium member institutions. Neither individuals, for-profit organizations, nor government agencies are eligible to submit project proposals.

Grant Period and Fiscal Year

Proposals should provide a budget summary, for up to three years maximum, depending on project duration, using DOE form ERF 4620.1A (7-85) and a more detailed budget for each project year on DOE form ERF 4620.1 (11-90). Copies of these forms are attached. The Consortium budget year shall begin on 1 September and end on 31 August.

Project Proposals

Project proposals should be direct and to the point. Sections (main headings) which should be included are (1) Summary, (2) Background & Importance, (3) Work Plan, (4) Demographic composition of students/teachers to be affected, (5) Expected Outcomes, (6) Measurement of Results, (7) References, (8) Leadership and Management, and (9) Budget. Appendices shall include: (A) Budget Detail

Sheets for each project year and Budget Summary on DOE forms specified above (4 pages), (B) Biographies of Project Leadership (2 pages max.), and (C) Letters of Commitment from supporting Consortium members, and/or documentation of matching. The total length of proposals (excluding budget pages and appendices) should not exceed 8 single-spaced pages using Times 12 point type. Pagination should be in the bottom center of each page with a 0.500 inch margin below the page number.

An example of the format required for final proposals is attached, indicating major and minor headings.

Three copies of final project proposals will be due in the office of Weston Institute, 1 Weston Way, West Chester, Pennsylvania 19380, Attention: William Gaither, no later than 5:00 p.m. Wednesday 1 April 1993. Phone (215) 430-3100. FAX copies will not be accepted. For hand-delivery instructions, please call the Institute.

Reference Documents

The following reference documents have been prepared by Consortium participants, invited persons, and the Weston Institute to share programmatic ideas, to develop a sense of priorities, and to otherwise assist with the preparation of proposals. Copies may be requested from Weston Institute.

- *Essential Participant Information (34 p. plus appendices)*
- *Inventory of Existing Programs (103 p. superseded by second edition listed below)*
- *Measures of Effectiveness Workshop (80 p.)*
- *Teacher's Standing Committee Workshop (69 p.)*
- *Student's Standing Committee Workshop (95 p.)*
- *Measures of Effectiveness Workshop Involving Prospective Employers (71 p.)*
- *Project Selection Criteria Workshop (85 p.)*
- *Inventory of Existing Programs - Second Edition (133 p.)*
- *Parent's Standing Committee Workshop (83 p.)*
- *Curriculum Standing Committee Workshop (85 p.)*

Other documents of potential use in the preparation of proposals included:

- *By The Year 2000: First in the World, Report of the FCCSET Committee on Education and Human Resources, U.S. Department of Energy, 1992: (321 p.)*
- *The HBCU/MI Consortium, Annual Report 1990/1991, Clark Atlanta University, James P. Brawley Drive at Fair Street, SW, Atlanta, Georgia 30314, (125 p.)*

Questions

Call William S. Gaither, President, Weston Institute, at (215) 430-3100 or FAX (215) 524-4652.

13.4 CERTIFICATE OF INCORPORATION-INNER-CITY CONSORTIUM, INC.

UNANIMOUS CONSENT OF DIRECTORS

STATE OF DELAWARE
SECRETARY OF STATE
DIVISION OF CORPORATIONS
FILED 09:00 AM 05/20/1993
693140014 - 2337077

CERTIFICATE OF INCORPORATION

OF

INNER-CITY CONSORTIUM, INC.

FIRST. The name of this corporation shall be:

INNER-CITY CONSORTIUM, INC.

SECOND. Its Registered Office in the State of Delaware is to be located at 1013 Centre Road, in the City of Wilmington, County of New Castle, and its registered agent is CORPORATE AGENTS, INC. at such address.

THIRD. The nature of the business and the objects and purposes to be transacted, promoted and carried on, are to do any or all the things herein mentioned, as fully and to the same extent as natural persons might or could do, and in any part of the world, viz:

To promote inner city energy and environmental education and also: to engage in any lawful act or activity for which corporations may be organized under the Delaware General Corporation Law.

FOURTH. This corporation is not organized for a profit and is not to have authority to issue capital stock. The conditions of membership shall be as stated in the by-laws.

No part of the net earnings of the corporation shall inure to the benefit of or be distributable to its members, trustees, officers, or other private persons, except that the corporation shall be authorized and empowered to pay reasonable compensation for services rendered and to make payments and distributions in furtherance of the purposes set forth in Article THIRD of the certificate of incorporation. No substantial part of the activities of the corporation shall be the carrying on of propaganda, or otherwise attempting, to influence legislation and the corporation shall not participate in, or intervene in (including the publishing or distribution of statements) any political campaign on behalf of any candidate for public office. Notwithstanding any other provision of this certificate, the corporation shall not carry on any other activities not permitted to be carried on (a) by a corporation exempt from Federal income tax under Section 501 (c) (3) of the Internal Revenue Code of 1986, as amended (or the corresponding provision of any future United States Internal Revenue Law) or (b) by a corporation, contributions to which are deductible under Section 170 (c) (2) of the Internal Revenue Code of 1986, as amended, (or the corresponding provision of any future United States Internal Law).

No part of the income of this corporation shall inure to the benefit of any individual and in the event of dissolution all assets, real and personal, shall be distributed exclusively for the purposes of the corporation in such manner, or to such organization or organizations organized exclusively for charitable, educational, scientific or other exempt purposes as at the time qualify as an exempt organization or organizations under Section 501 (c) (3) of the Internal Revenue Code of 1986.

FIFTH. The name and mailing address of the incorporator is as follows:

NAME	MAILING ADDRESS
Lamont W. Jones	Corporate Agents, Inc. 1013 Centre Road Wilmington, DE 19805

SIXTH. The activities and affairs of the corporation shall be managed by a Board of Directors. The number of directors which shall constitute the whole board shall be such as from time to time shall be fixed by, or in the manner provided in, the by-laws, but in no case shall the number be less than one. The directors need not be members of the corporation unless so required by the by-laws. The board of directors shall be elected by the members at the annual meeting of the corporation to be held on such date as the by-laws may provide, and shall hold office until their successors are respectively elected and qualified. The by-laws shall specify the number of directors necessary to constitute a quorum. The board of directors may, by resolution or resolutions, passed by a majority of the whole board, designate one or more committees, which to the extent provided in said resolution or resolutions or in the by-laws of the corporation shall have and may exercise all the powers of the board of directors in the management of the activities and affairs of the corporation and may have power to authorize the seal of the corporation tobe affixed to all papers which may require it; and such committee or committees shall have such name or names as may be stated in the by-laws of the corporation or as may be determined from time to time by resolution adopted by the board of directors. The directors of the corporation may, if the by-laws so provide, be classified as to term of office. The corporation may elect such officers as the by-laws may specify, who shall, subject to the provision of the Statute, have such titles and exercise such duties as the by-laws may provide. The board of directors is expressly authorized to make, alter or repeal the by-laws of this corporation.

The corporation may in its by-laws, confer powers upon its board of directors in addition to the foregoing, and in addition to the powers and authorities expressly conferred upon them by the Statuto, provided that the board of directors shall not exercise any power of authority conferred herein or by Statute upon the members.

SEVENTH. Meetings of members may be held outside the State of Delaware, if the by-laws so provide. The books of the corporation may be kept (subject to any provision contained in the Statutes) outside of the State of Delaware at such place or places as may be from time to time designated by the board of directors.

EIGHTH. The corporation reserves the right to amend, alter, change or repeal any provision contained in this Certificate of Incorporation, in the manner now or hereafter prescribed by the Statute, and all rights conferred upon members herein are granted subject to this reservation.

I, THE UNDERSIGNED, being the sole incorporator, for the purpose of forming a corporation,, in pursuance of an Act of the Legislature of the State of Delaware entitled "An Act Providing a General Corporation Law" (approved March 10, 1899) and the acts amendatory thereof and supplemental thereto, do make and file this certificate of incorporation, hereby declaring and certifying that the facts herein stated are true, and accordingly hereunto have set my hand and seal this twentieth day of May, 1993.

Lamont W. Jones
Incorporator

UNANIMOUS CONSENT OF DIRECTORS

THE UNDERSIGNED, being all of the Directors of Inner-City Consortium, Inc. a non-profit corporation organized under the laws of the State of Delaware, hereby adopt the following resolutions:

RESOLVED, That William S. Gaither is hereby elected Chairman of the Board of Directors and President and Chief Executive Officer of the Corporation.

RESOLVED, That Natalie S. Allen is elected Secretary/Treasurer of the Corporation.

RESOLVED, That the Company shall submit a proposal to the U.S. Department of Energy to manage an Inner-City Energy and Environmental Education Consortium comprising of academic organizations in Philadelphia, Baltimore, Washington, and in the State of Delaware.

Natalie S. Allen

William B. DeLauder

A. Frederick Thompson

William S. Gaither

This Unanimous Consent of Directors has been signed in counterparts and kept on file at Inner-City Consortium, Inc.

DATE: Wednesday, June 16, 1993

END

DATE FILMED

11/19/93