

PRE-FRESHMAN ENRICHMENT PROGRAM

FINAL REPORT

for Period June 15, 1993 - June 30, 1994

Conducted by

Murray State College

Prepared and Submitted by

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October, 1995

Prepared for

The U. S. Department of Energy  
AWARD NO. DE-FG02-93ER79186

**MASTER**

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## A B S T R A C T

Murray State College's PREP project completed both funded years including two four week summer sessions and two winter components each year. A total of 48 students were selected to participate in the project (24 each year). A total of 47 students completed the project for the two-year funding period (24 students the first year and 23 the second). One hundred percent (100%) of the first year's student group represented underrepresented populations in science based careers, and 95.8% of the second year's group met the underrepresented criteria. A follow-up study conducted during the months of April and May, 1995, revealed that 46 of the 47 students were enrolled in both a math and science course in the fall 1994/spring 1995 school year. One student was not contacted due to a change in address. The student was under the supervision of foster parents through the Bureau of Indian Affairs. Attempts to locate the student were unsuccessful. In the opinion of the writer, all PREP project objectives were achieved with the exception of the first goal: To motivate project participants to pursue courses in high school leading to careers in mathematics, science and engineering. The objective must be evaluated over the seven year period addressed in the proposal.

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Murray State College initiated their Pre-Freshman Enrichment Program on May 18, 1993. Curriculum development began on that date with the active participation of the two instructors and the project director. All planning activities centered around the following project objectives:

1. To motivate project participants to pursue courses in high school leading to careers in mathematics, science and engineering.
2. To expose project participants to many different mathematics, science and engineering fields.
3. To provide project participants direct exposure to, and an opportunity to interact with, real scientists and engineers who work in their geographic location.
4. To provide project participants with fundamental computer operation skills and concepts.
5. To expose project participants to the accomplishments of leading mathematicians, scientists and engineers through field trips to science and engineering museums in Oklahoma City and the Dallas/Ft.Worth area.
6. To provide project participants with an introduction to the scientific method of inquiry.

The first group of students began their PREP experience on May 25, 1993, and concluded their summer component on June 25, 1993. Two activities were held during the following academic year. The first activity was held on Saturday,

December 4, 1993, and a demonstration was presented on flexible manufacturing systems. The presented on Metallurgical Engineering activities. A follow-up of second activity was held on April 30, 1994, and a demonstration was the PREP students' current enrollment in their home schools was conducted during both meetings. All PREP students were enrolled in both a Math and Science course for both semesters.

The second year's group of students began their summer PREP component on May 30, 1994, and concluded their summer component on June 24, 1994. The first winter activity was held on Saturday, December 14, 1994. A flexible manufacturing system demonstration was conducted. Students initiated the production run and each student left the meeting with a sample "product". The second activity was conducted on Metallurgical Engineering with plenty of hands-on activities. The event was held on Saturday, April 1, 1995.

PREP instructors and the project director began their planning activities for the second summer session on May 23, 1994. The activities began with a review of the previous year's daily questionnaires for suggestions together with the project evaluation forms completed at the end of the summer component. Not only were several planned activities altered on the basis of the information contained on the questionnaire and evaluations, but also one major schedule change was made for the summer component. The all-day-field trips were moved to Thursdays to provide more time. The switch allowed students to spend more time on field trips and still depart for home for the weekend at 5:00 on Fridays. All field trips involved three to four

hours travel time.

For the first year of MSC's PREP Project, twenty-four (24) students were initially selected from approximately 40 applicants by a screening committee. Selection priority was given to those students representing minorities and women between grades six and nine. Three alternates were selected in the event an applicant decided to withdraw their application. One student did, and an alternate was substituted for that position. All 24 students completed the project, although one student was ill one week. All twenty-four students met the minority student objective. The number, grade level, gender, and ethnic breakdown of project participants was:

**PROJECT PARTICIPANTS FOR 1993**

	5th		6th		7th		8th		Total	
	M	F	M	F	M	F	M	F	M	F
Black			1						1	
Indian	3			3	4			2	7	5
Hispanic							1		1	
White		2		5		1		2		10
Totals	3	2	1	8	4	1	1	4	9	15

For the second year of MSC's PREP Project twenty-four (24) students were selected from over 70 applicants. Selection priority by the screening committee was given to those students representing minorities and women between grades six and nine. Six alternates were selected in the event an applicant decided to withdraw their

application. Two students decided to withdraw by the end of the second and third days. Ultimately, all six alternates were contacted for the two positions. Unfortunately, five of the students had made other plans during the time frame between their initial application and the project. Successive applicants were then contacted in the order they were initially ranked. The remaining position was filled with one applicant not meeting the minority objective. On the eighth day of the summer component, one additional student withdrew due to "homesickness." After careful deliberation, the project director elected not to attempt to replace the student. A total of 23 students completed the summer component. The number, grade level, gender, and ethnic breakdown of project participants was:

**PROJECT PARTICIPANTS FOR 1994**

	5th		6th		7th		8th		Total	
	M	F	M	F	M	F	M	F	M	F
Black										
Indian		3	3		2	2			5	5
Hispanic						1				1
White		2		2	1	5		3	1	12
Totals		5	3	2	3	8		3	6	18

Both summer components of MSC's PREP project followed the curriculum outlined in the original proposal. In addition, students were asked to write a brief paper on the science, math, or engineering field of their choice for a career. Many of

the students had some basic keyboarding skills prior to participating in the project, and therefore prepared their papers using WordPerfect software available on computers in the science lab.

Guest speakers for the summer components included an architectural engineer, mechanical engineer, petroleum engineer, environmental chemist, agricultural engineer, botanist, electrical engineer, chemist, and agronomist. Discussions varied from water quality, the manufacturing of gasoline and tires, to oil well cement setting times and the DNA structure and gene splicing of tomatoes. PREP students thoroughly enjoyed all of the different presentations.

All day field trips in the summer components included the Omniplex Science Museum, the General Motors Assembly plant, the Federal Aviation Agency, the Oklahoma City Zoo, Halliburton Services, and a natural gas-fired electricity generating plant. Field trips were the highlight of the week. Many of the students had never been to Oklahoma City before, or traveled very far from their homes.

At the end of both summer components, students were provided a list of math and CAD software available in the public domain for the cost of postage and diskettes. PREP students were not provided this software as stated in the original proposal due to a cutback of available funds from DOE.

The project director devoted five weeks of his time (at salary) to the PREP project each summer of the grant award period. Additionally, an extra week each summer was expended for preparation prior to the time that the instructors reported for work, and following each summer component, a week was expended in concluding

all PREP business and administrative tasks associated with the project. Both additional weeks each summer were without salary. PREP activities following each summer component required two days in the fall and two days in the spring working on the winter/spring components. Five additional days were involved at the beginning of the project in interviewing prospective teachers, undergraduate counselors, and principals from participating PREP students home schools, both years of the program. The project director followed-up on undergraduate counselors throughout both summer projects and provided assistance in leading evening recreational activities on many occasions.

Both of MSC's PREP projects were in full compliance with all award requirements.

In the opinion of the writer, all PREP project objectives were achieved with the exception of the first goal: To motivate project participants to pursue courses in high school leading to careers in mathematics, science and engineering. Only time will tell if the project was successful in achieving it.

**APPENDIX A**  
**1993 Participants**

1993 PREP CAMP PARTICIPANTS:

Tomi-Lynn Arnold 405-836-7985	Route 1, Box 31, Milburn, OK 73450
Andrew Bartee 405-795-7430	Route 2, Box 442A, Madill, OK 73446
Shannon Caldwell 405-443-5715	P.O. Box 412, Milburn, OK 73450
Kendle Curry 405-443-5677	Route 1, Milburn, OK 73450
Melissa Elkins 405-443-5589	Box 432, Milburn, OK 73450
Autumn Ferris 405-836-7777	Route 1, Box 39, Milburn, OK 73450
Sonya Frank 405-795-5106	Route 2, Box 444, Madill, OK 73446
Jennifer Griffith 405-537-2501	HC 64, Box 2350, Loco, OK 73442
Kathy Harkins 405-795-5639	Route 3, Box 410, Madill, OK 73446
Margaret Harkins 405-795-5639	Route 3, Box 410, Madill, OK 73446
Eric Johnson 405-369-2342	Route 1, Box 160D, Davis, OK 73030
Dusty Kemp 405-371-3678	P.O. Box 331, Tishomingo, OK 73460
Nick LaNoy 405-369-5160	113 W. Hazelwood, Davis, OK 73030
Kevin Nelson no phone	108 North Rennie, Tishomingo, OK 73460
Shandi Purifoy 405-443-3514	P.O. Box 283, Milburn, OK 73450

1993 PREP CAMP PARTICIPANTS CONT'D:

Cody Russell  
405-443-5203

Route 1, Box 60, Wapanucka, OK 73461

Tina Russell  
405-443-5526

Route 1, Box 20, Milburn, OK 73450

Lacie Smith  
405-443-5374

P.O. Box 411, Milburn, OK 73450

Suzy Taylor  
405-443-5502

150-B Villas Court, West Columbia, SC 29170

Jason Weaver  
405-537-2314

HC 64, Box 2100, Healdton, OK 73438

LeAna Wetekam  
405-443-5502

Route 1, Box 201, Milburn, OK 73450

Eric White  
405-622-5153

Route 1, Box 243, Sulphur, OK 73086

Joshua Williams  
405-444-3538

P.O. Box 742, Velma, OK 73091

Diana Wolfe  
405-564-4913

210 West Tishomingo, Madill, OK 73446

Nikki Rowland  
(no phone)

P.O. Box 164, Milburn, OK 73450

**APPENDIX B**  
**1994 Participants**

1994 PREP CAMP PARTICIPANTS:

Nesa Adams 405-759-2279	Rt. 2, Box 105-1A, Stratford, Ok, 74872
Stella Amos 405-759-2967	P.O. Box 13, Stratford, OK, 74872
Jennifer Alexander 405-937-4256 (Dad) 405-223-5400x2E (Mom)	Rt. 1, Box 237, Milburn, OK, 73450
Joe Eatherly 405-759-3372	Rt. 2, Box 109A, Stratford OK 74872
Sommer Hail 405-443-5297	P.O. Box 416, Milburn, OK, 73450
Justin Hatfield 405-443-5448	P.O Box 187, Milburn, OK, 73450
Asa Highsmith 405-371-2121	606 N. Kemp, Tishomingo, OK, 73460
Lindsay LaFevers 405-371-3215	Rt. 2, Box 582A, Tishomingo, OK, 73460
Pamela Loyd 405-759-2130	Rt. 2, Box 102W, Stratford, OK, 74872
Tony Lowe 405-920-0008 (withdrew)	1512 Olive, Durant, OK, 74701
Shawnita McDonald 405-759-2415	Rt. 1, Box 220-A, Stratford, OK, 74872
Angelia Martinez 405-443-5707	P.O. Box 323, Milburn, OK, 73450
Tika Prewett 405-371-9823	P.O. Box 482, Tishomingo, OK, 73460
Anne Raper 405-371-2161	609 South N, Tishomingo, OK, 73460
Misty Robinson 405-622-3976	601 W. 13th, Sulphur, OK, 73086



**APPENDIX C**  
Follow-up Form

Murray State College  
and  
U.S. Department of Energy  
**June 1995 - PREP Survey**

Name: \_\_\_\_\_

Address: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_

Zip: \_\_\_\_\_ Telephone: \_\_\_\_\_

Parent's Name: \_\_\_\_\_

Home School: \_\_\_\_\_

Please list any math courses  
you have taken or are enrolled  
in this year:

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Please list any science courses  
you have taken or are enrolled  
in this year:

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How did your PREP experiences  
help you in school?

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What are the activities or  
things you most enjoyed  
during your PREP experience  
at MSC?

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Do you plan to go to college  
after high school graduation?

Yes \_\_\_\_\_ No \_\_\_\_\_

If so, what would you like to major in?

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If the address at the top of the page is not right, please fill in the right one.

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