

**Informal Science Educators Network Project  
Association of Science-Technology Centers Incorporated**

Final Report to  
U.S. Department of Energy  
DE-FG02-95TE000084

DOE/TE/00084-71

May 9, 1997

**EXECUTIVE SUMMARY**

Funding from the Department of Energy and the Annenberg/CPB Math and Science Project have helped the Association of Science-technology Centers Incorporated (ASTC) to establish and sustain an on-line community of informal science educators nationwide. The Project, called the Informal Science Educators Network Project (ISEN), is composed primarily of informal science educators and exhibit developers from science centers, museums, zoos, aquariums, botanical gardens, parks, and nature centers. Although museum-based professionals represent the majority of subscribers to ISEN, also involved are some classroom teachers and teacher educators from colleges and universities. Common to all ISEN participants is a commitment to school and science education reform. Specifically, funding from the Department of Energy helped to bootstrap the effort, providing Barrier Reduction Vouchers to 123 educators that enabled them participate in ISEN.

Among the major accomplishments of the Project are these: 1) assistance to 123 informal science educators to attend Internet training sessions held in connection with the Project and/or purchase hardware and software that linked them to the Internet; 2) Internet training for 153 informal science educators; 3) development of a listserv which currently has over 180 subscribers--an all-time high; 4) opportunity to participate in four web chats involving informal science educators with noted researchers; 5) development of two sites on the World Wide Web linking informal science educators to Internet resources; 6) creation of an on-line collection of over 40 articles related to inquiry-based teaching and science education reform.

In order to continue the momentum of the Project, ASTC has requested from the Annenberg/CPB Math and Science project a no/cost extension through December 1997. The extension will allow unspent funds to be applied toward continuing the popular listserv and incorporating the World Wide Web site developed for the Project by the Exploratorium into ASTC's home page on the Internet.

**MASTER**

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**Informal Science Educators Network Project  
Association of Science-Technology Centers Incorporated**

**Final Report to  
U.S. Department of Energy  
DE-FG02-95TE00084S**

### **PROJECT SUMMARY**

During the funding period, the Association of Science-Technology Centers Incorporated (ASTC) worked with its Project partners, WestEd Labs and the Exploratorium, to develop on-line resources and an electronic network to link educators at informal science education institutions across the country and others working in school classrooms, colleges, and universities. Essential to the success of the Informal Science Educators Network Project (ISEN) has been access for informal science educators to Internet training and to the hardware and software they needed to telecommunicate and connect to the Internet. Mini-grants from the Department of Energy have helped to make that possible for 123 from 81 different institutions, including science centers, museums of natural history, botanical gardens, zoos, aquariums, observatories, and children's museums (see Attachment A, names and locations of those who received Barrier Reduction Vouchers and how they were used).

The Project's major activities include:

- Barrier Reduction Vouchers that enabled 123 educators to obtain equipment, connections, and Internet training
- Training for 153 informal science educators in 11 workshops held nationwide
- Approximately 180 subscribers to the listserv (now called ISEN-ASTC-L)
- Development of two sites on the World Wide Web
- Four web chats, each focusing on topics relevant to science education reform
- Sessions at the 1995 and 1996 ASTC annual conferences to promote use of the ISEN resources

### **PROJECT ACTIVITIES**

In this section, we describe the application process for receiving Barrier Reduction Vouchers, looking first at recruitment, then at eligibility.

**Recruitment.** To cast as wide a net as possible, more than 500 names were collected as potential members of the new electronic network. Over the first year, two pamphlets were

distributed (see Attachments B & C); additionally, information about the Project was developed for the ASTC newsletter, a bi-monthly publication received by ASTC's 500 member institutions.

**Eligibility.** Encouraged to apply for Barrier Reduction Vouchers were those whose work focused on school and science education reform. In addition, those selected were to represent the wide geographical distribution of ASTC member institutions. Individual need was another consideration.

To be eligible, institutions were required to match the amount of the Voucher (\$300). Museum Directors, CEOs, and Presidents responded with enthusiasm. The following quotations from letters are typical; some speak to the need; others to the outcomes expected; all endorse the program:

The Museum's match is guaranteed in the staff time required for training, in the dedication of hardware, software, and telephone access. (New Mexico)

ISEN will help us further our commitment to working with educators at the local, state, and national level. (Texas)

Training will be a great asset to supporting our new institute for teachers. (Florida)

We can stay abreast of the current developments in the field of museum education. (Tennessee)

As said earlier, 123 persons/institutions received Vouchers. (See Attachment A for list of recipients, their institutions, and how the Vouchers were spent.)

## OUTCOMES

Barrier Reduction Vouchers helped to boot strap the informal science community onto the electronic highway. Vouchers were used in a variety of ways depending on the needs of the institution. For example, a Voucher enabled a museum educator to travel to one of the 11 training sessions offered by WestEd Labs, to purchase needed equipment to gain access the Internet, to buy an on-line telecommunications service, or to install a direct line that made connection to the Internet possible. With matches from their institutions meeting, and, more often, exceeding the Voucher amount, a number of educators were able not only to attend training sessions to learn how to navigate the Internet and to telecommunicate, but also to purchased hardware and equipment needed to make access to the Internet a reality.

**Training.** Barrier Reduction Vouchers helped science educators travel to one of the 11 training sessions offered by WestEd Labs. In their March 1996 Report, Rockman et al, evaluators for the Project, noted that participants in the training provided by WestEd reported increased skill in telecommunications technology as a direct result of the training. New skills reported by trainees included downloading and forwarding mail and navigating the World Wide Web. Typical, is this quotation from one of the trainees:

I use the Internet to look for educational information both for my projects and for local teachers since many teachers in my area are not Internet or Web capable. I keep in contact with peers from outside agencies. (1996, pp. 7-8).

We can assume that many trainees returned to their institutions excited about the Internet as a resource for their work and telecommunications as a tool for connecting with colleagues. And we can assume them willing to share their new expertise with other staff. This quotation comes from a letter to ASTC:

Your efforts have produced a rippling effect . . . I participated in the training session following the ASTC Conference; since then, I have delivered that training to numerous members of my immediate museum community as well as at a national conference.

**Equipment.** An equal number of voucher requests were for the upgrading or purchase of computer equipment, connection to a dedicated phone line, or fees to a telecommunications service.

In the Rockman et al report cited earlier, the Project evaluators call attention to access as a defining problem for museum educators and they illustrate its variations, as follows. They note, for example, the lack of hardware and software; they also point out what they refer to as the "psychological barriers" that many new users face. Rockman et al define these obstacles as having to overcome the "discomfort" associated with using a new technology that demands new skills (1996, p. 3).

In a later report, Rockman et al (August 1996) state that subscription to the ISEN-TEN listserv continued to grow although, they add, "It remains unclear whether the movers and shakers of the science reform arena are currently engaged by ISEN" (p. 27). They then offer this summary:

Building this community and, moreover, using technology as a tool to do so, is a process that will take time. Overall, the information contained in this report shows that, in a relatively short time, a good start has been made by many in the informal science education community toward making changes to effect science reform. (p. 28)

## **FUTURE**

ASTC is requesting from Annenberg/CPB Math and Science Project a no/cost extension of the Project through December 1997, to allow unspent funds to be applied to continuing Project activities. Plans for 1997 focus on three objectives; the first two relate to the new ISEN-ASTC listserv; the third objective relates to ASTC's home page on the World Wide Web. The objectives are to (1) increase the number of subscribers to the listserv from 150 to 250; (2) increase on-line activity; (3) incorporate the Web sites developed by the Exploratorium and WestEd Labs into ASTC's home page on the World Wide Web.

## References

Rockman et al (March 1996). *Informal science Educator's Network: Interim Report*. San Francisco: Rockman et al.

Rockman et al (August 1996). *Informal science Educator's Network: Interim Report* San Francisco: Rockman et al.

Attachments

Attachment A: Recipients of Barrier Reduction Vouchers

Attachment B: ISEN Pamphlet

Attachment: ISEN Pamphlet

FIRSTNAME	LASTNAME	INSTITUTION	BRV/PURPOSE	CODE
BETH	CAMERON	ALABAMA SCIENCE CENTER		SCI
WENDY	MCALLISTER	ALASKA SCIENCE CENTER	MODEM	SCI
AUDREY	WILLIAMS	AMERICAN MUSEUM OF SCIENCE AND		SCI
FRANCINE	HUTCHINSON	ANNISTON MUSEUM OF NATURAL	TRAVEL/PHONE LINE	SCI
JESSICA	RICHTER	ASTRONOMICAL SOCIETY OF THE	UPGRADE COMPUTER/PHONE LINE	OB
VICKI	DAVISON	ATLANTA/FULTON COUNTY ZOO, INC	PHONE LINE	ZO
CHRISTOPHER L.	NEWOLD	BADLANDS NATIONAL PARK	TRAVEL/TRAINING	NH
WINIFRED	MENDENHALL	BREVARD MUSEUM OF HISTORY &	COMPUTER/MODEM/PHONE LINE	
LAURAINNE	MERLINI	NATURAL SCIENCE	ON-LINE SERVICE/TRAVEL	ZO
JENNIFER	HELFMAN	BURNET ZOO	ON-LINE SERVICE	ZO
JANET	LOPEZ	CALIFORNIA ACADEMY OF SCIENCES		SCI
LUANN	CRAIGHTON	CALLAWAY GARDENS		BG
JULIE A.	VIDOTTO	CALLAWAY GARDENS	TRAVEL/TRAINING	BG
DENNIS	BATEMAN	CARNEGIE SCIENCE CENTER	TRAVEL/TRAINING	SCI
PAUL	KRAPFEL	CARTER HOUSE NATURAL SCIENCE	TRAVEL/TRAINING	SCI
CARLOS	YRURETAGOYENA	CENTRO REGIONAL DE ESTUDIOS	TRAINING/TRAVEL	NH
ETTA	HEBER	CHABOT OBSERVATORY & SCIENCE		OB
PHIL	PARFITT	CENTER		SCI
MARILYN C.	SOLVAY	CHICAGO ACADEMY OF SCIENCES		BY
BETTY	QUIGLEY	CHICAGO LINCOLN PARK ZOO		INSTITUTION
IAULONO	MEYER	CHILDREN'S MUSEUM OF MAINE	MODEM/SOFTWARE	CM
JANET M.	JOHNSON	CHILDREN'S MUSEUM/CTR FOR CULT ARTS		CM
JANE	KEEGAN	CINCINNATI MUSEUM OF NATURAL	MODEM	SCI
JENNIFER	WARFIELD	CRAVENBROOK INSTITUTE OF SCIENCE	ON-LINE SERVICE	SCI
KARIN	HOSTETTER	CREATIVE DISCOVERY MUSEUM		
KIM	SNEDEN	DENVER BOTANIC GARDENS		BG
JENNIFER	WEAVER	DENVER ZOOLOGICAL GARDENS		ZO
JILL	FOSTER	DETROIT ZOOLOGICAL INSTITUTE	TRAINING	ZO
DONNA	BREARLEY	DISCOVERY PLACE, INC	PHONE LINE/TRAINING	SCI
JANET	YAMAGUCHI	DISCOVERY SCIENCE CENTER	TRAVEL/TRAINING	SCI
ROBERT	CASABA	DISCOVERY SCIENCE CENTER/LAUNCH	TRAVEL/TRAINING	SCI
LANCE	TAWOA	ECONOMIC DEVELOPMENT PLANNING	COMPUTER UPGRADE	SCI
				SCI

JOANNE M.	SAVICKY	EDGERTON EDUCATIONAL CENTER	MODEM	SCI
VIRGINIA	OTT	EXPLOREUM MUSEUM OF DISCOVERY	TRAVEL/TRAINING	SCI
EVELYN	BUDDENHAGEN	EXPLORIT SCIENCE CENTER	PHONE LINE	SCI
JODY	SPIRY	FOLSOM CHILDREN'S ZOO & BOTANICAL GARDEN		BG
COLLEEN	BLAIR	FT. WORTH MUSEUM OF SCIENCE &	TRAINING/TRAVEL	SCI
BOBBY	WELCH	GADSDEN CULTURAL ARTS FDTN.		CM
TOM	WICHTER	GEORGIA WILDLIFE FEDERATION	MODEM/PHONE LINE	NC
ELVA	FARRELL	GULF COAST WORLD OF SCIENCE, INC		SCI
NJIT	COORAY	HAROLD LYON ARBORETUM		BG
JAN	MCWILLIAMS	HIGH DESERT MUSEUM	PHONE LINE/TRAVEL	SCI
BARRY A.	VAN DEMAN	INTERNATIONAL MUSEUM OF SURGICAL SCI		SCI
JUDY L.	WNIKLER	INVENTION FACTORY SCIENCE CENTER	MODEM/PHONE LINE	SCI
JOANN	USLICK	INVENTURE PLACE	ON-LINE SERVICE	SCI
ROSE L.	HEINTZ	INVENTURE PLACE, NATL INVENTORS HOF	MODEM/TRAINING	SCI
CRISTINA A.	TROWBRIDGE	LAS CRUCES MUSEUM OF NATURAL HISTORY	PHONE LINE	SCI
KATHY	SEXSON	LEE RICHARDSON ZOO	TRAVEL/TRAINING	ZO
TERESA R.	NORFORD	LEWIS GINTER BOTANICAL GARDEN	PHONE LINE	BG
UNDY J.	BULL	LINCOLN CHILDREN'S MUSEUM	MODEM/PHONE LINE	CM
LINDA	RHINE	LOS ANGELES ZOO		ZO
SCOTT	ALVERY	LOUISVILLE SCIENCE CENTER		SCI
AMY S.	LOWEN	LOUISVILLE SCIENCE CENTER		SCI
MELISSA S.	SPALDING	LOUISVILLE SCIENCE CENTER	MODEMS/SOFTWARE/PHONE LINES	SCI
KATHERINE	FRENCH	MATTHAEI BOTANICAL GARDENS	TRAINING/TRAVEL	BG
MARY C.	CLOUD	MCALLEN INTERNATIONAL MUSEUM	TRAVEL/ON-LINE SERVICE	SCI
ROSEMARY	ANDERSON	MCKINLEY MUSEUM		MS
ELSA	BAILEY	MIAMI MUSEUM OF SCIENCE	TRAVEL/TRAINING	SCI
NORBERT	LARSEN	MOANALUA GARDENS FOUNDATION	TRAINING	BG
KATIE	MUIR	MONTEREY BAY AQUARIUM	TRAVEL/TRAINING	AQ
LENEETTE	FREEMAN	MUNCIE CHILDREN'S MUSEUM	UPGRADE SYSTEM	CM
EMILY V.	WADE	MUSEUM INSTITUTE FOR TEACHING SCIENCE	PHONE LINE	SCI

MARY ANN	ELLIS	MUSEUM OF ARTS AND SCIENCES	TRAVEL/TRAINING	SCI
SHEREE P.	ADAMS	MUSEUM OF SCIENCE & HISTORY	TRAVEL	SCI
CLIVE	ANDRIESSE	MUSEUM OF SCIENCE & HISTORY		SCI
ROBERT	KRAMPF	MUSEUM OF SCIENCE & HISTORY	TRAVEL/TRAINING	SCI
JANICE B	LUTH	MUSEUM OF SCIENCE AND INDUSTRY	MODEM/PHONE LINE/TRAVEL	SCI
SHARRON	HORRIGAN	MUSEUM OF THE ROCKIES	MODEM/COMPUTER	SCI
BONNIE	SACHATELLO	MUSEUM OF THE ROCKIES		SCI
CAROLYN	BALCH	NATIONAL AIR & SPACE MUSEUM	TRAINING	SCI
MAUREEN	KERR	NATIONAL AIR & SPACE MUSEUM		SCI
ERIN	KEATING	NC MUSEUM OF LIFE & SCIENCE		SCI
ERIN	DAWSON	NEW ENGLAND SCIENCE CENTER	TRAVEL/TRAINING	SCI
ERIN	INTRESS	NEW MEXICO MUSEUM OF NATURAL HIST	TRAINING	SCI
MARY ELLEN	MUNLEY	NEW YORK STATE MUSEUM		SCI
SYBIL K.	KANE	NORFOLK BOTANICAL GARDEN	MODEM/TRAVEL	BG
SANDRA H.	GRAHAM	NORTH CAROLINA MUSEUM OF LIFE & SCIENCE		SCI
ELIZABETH D.	BAIRD	NORTH CAROLINA MUSEUM OF NATURAL SCIENCES	14.4 MODEM/PHONE LINE	SCI
LAURA	WYATT	NORTHERN ILLINOIS BOTANICAL SOCIETY, INC	PHONE LINE/TRAINING	BG
BETTIE E.	BEDELL	OAK RIDGE NAT'L LAB.	TRAVEL/TRAINING	
MARCELLA	CRANFORD	OAK RIDGE NAT'L LAB.	TRAVEL/TRAINING	
PEGGY	KING	OAK RIDGE NAT'L LAB.	TRAVEL/TRAINING	SCI
KRIS	LIGHT	OAK RIDGE NAT'L LAB.	TRAVEL/TRAINING	SCI
KATHY	LYON	OAK RIDGE NAT'L LAB.	TRAVEL/TRAINING	SCI
	BILLSTROM	OAKLAND MUSEUM OF CALIFORNIA	MODEM/PHONE LINE	MS
ARLYN	CHRISTOPHERSON	OAKLAND ZOO	MODEM	ZO
KEVIN J.	NIEMI	OLBRICH BOTANICAL GARDENS	MODEM/PHONE LINE	BG
VIRGINIA	BESLER	OMNIPLEX SCIENCE MUSEUM	PHONE LINE	SCI
JAMES	PARKER	OREGON REGIONAL PRIMATE RESEARCH	TRAINING/TRAVEL	SCI
CHRISTINE	FLANAGAN	ORLAND E. WHITE ARBORETUM	MODEM	
JUANITA	HERNANDEZ-BLACK	ORLANDO SCIENCE CENTER	MODEM/PHONE LINE/TRAVEL	SCI

CHERYL	LYDON	PACIFIC SCIENCE CENTER		SCI
JEFF	VAN WEST	PACIFIC SCIENCE CENTER		SCI
JAMES M.	BRYANT	PEMBER MUSEUM OF NATURAL HISTORY	UPGRADE COMP. SYSTEM	SCI
ROBERT	ALEXANDER	PHIPPS CONSERVATORY		BG
LOIS M.	WINSLOW	PITTSBURGH CHILDREN'S MUSEUM	TRAVEL/TRAINING	CM
SUSAN	PARKER	PITTSBURGH CIVIC GARDEN CENTER	MODEM/SOFTWARE/PHONE LINE/ON-	BG
KAREN	HARRINGTON	POTAWATOMI ZOO	TRAINING	ZO
GREGORY C.	CORNWALL	ROPER MOUNTAIN SCIENCE CENTER	TRAVEL/MODEM	SCI
DIANE	KISICH	SAN FRANCISCO ZOOLOGICAL SOCIETY	SOFTWARE	ZO
RYC.	CARROLL	SANTA BARBARA BOTANIC GARDEN	TRAINING/TRAVEL	BG
CHRIS	GERTSCHEN	SAWTOOTH SCIENCE INSTITUTE	EQUIPMENT	SCI
MARGARET	CONOVER	SCIENCE MUSEUM	-	SC
LINDA	ROWAN VAN LUIK	SCIENCE MUSEUM OF WESTERN VIRGINIA	PHONE LINE/MODEM	SCI
TERRY	LEWIS	SD DISCOVERY CENTER & AQUARIUM	PHONE LINE/MODEM	AQ
JOHN SCOTT	FOSTER	SENECA ZOO SOCIETY		ZO
WINNIE	FATTON	SOUTH BRANCH WATERSHED ASSOCIATION, INC		NC
CARMIE	HAGERTY	SOUTH FLORIDA SCIENCE MUSEUM	TRAVEL/MODEM	SCI
KENN	HITCHCOCK	SPACE CENTER	ON-LINE SERVICE	SCI
<sup>SS</sup> NANCY	McGUIRE	SUNRISE MUSEUM	TRAINING	SCI
JAMAC.	SHEA	TETON SCIENCE SCHOOL	ON-LINE SERVICE	SCI
STUART	GABBERT	UNIVERSITY OF KANSAS NATURAL HISTORY	COMPUTER/TRAVEL	SCI
GILLIAN	FLEMING	UNIVERSITY OF PENNSYLVANIA MUSEUM OF ANTHROPOLOGY & ARCHAEOLOGY		SCI
CAROL	WAKELY	UNIVERSITY OF PENNSYLVANIA MUSEUM OF ARCHAEOLOGY AND		SCI
SONYA	ELY	VIRGINIA DISCOVERY MUSEUM	TRAVEL/PHONE LINE	SCI
MARK	WOLEN	VIRGINIA MUSEUM OF NATURAL HISTORY	PHONE LINE/MODEM	SCI
MIKE	BASNAGE	WAGNER FREE INSTITUTE OF SCIENCE	TRAVEL/TRAINING	SCI
	KASPAR	WILD BASIN PRESERVE		

		WILLAMETTE SCIENCE & TECHNOLOGY	TRAVEL/TRAINING	SCI
GIL	ANSPACHER	CENTER	MODEM	SCI
LEROY	LEE	WISCONSIN ACADEMY OF SCIENCES,		
LINDA	SCHMDT			

FIRST NAME	LAST NAME	INSTITUTION	BRV PURPOSE	CODE
SHEREE P.	ADAMS	MUSEUM OF SCIENCE & HISTORY	TRAVEL	SCI
ROBERT	ALEXANDER	PHIPPS CONSERVATORY	BG	SCI
C. SCOTT	ALVERY	LOUISVILLE SCIENCE CENTER	-	SCI
ROSEMARY	ANDERSON	MCKINLEY MUSEUM	-	MS
CLIVE	ANDRIESE	MUSEUM OF SCIENCE & HISTORY	-	SCI
GIL	ANSPACHER	WILLAMETTE SCIENCE & TECHNOLOGY CENTER	TRAVEL/TRAINING	SCI
ELSA	BAILEY	MIAMI MUSEUM OF SCIENCE	TRAVEL/TRAINING	SCI
ELIZABETH D.	BAIRD	NORTH CAROLINA MUSEUM OF NATURAL SCIENCES	14.4 MODEM/PHONE LINE	SCI
CAROLYN	BALCH	NATIONAL AIR & SPACE MUSEUM	TRAINING	SCI
MARK	BASNAGE	WAGNER FREE INSTITUTE OF SCIENCE	TRAVEL/TRAINING	SCI
DENNIS	BATEMAN	CARNEGIE SCIENCE CENTER	TRAVEL/TRAINING	SCI
BETTIE E.	BEDELL	OAK RIDGE NAT'L LAB.	TRAVEL/TRAINING	SCI
VIRGINIA	BEISLER	OMNIPLEX SCIENCE MUSEUM	PHONE LINE	SCI
AMY	BILLSTROM	OAKLAND MUSEUM OF CALIFORNIA	MODEM/PHONE LINE	MS
COLLEEN	BLAIR	FT. WORTH MUSEUM OF SCIENCE & HISTORY	TRAINING/TRAVEL	SCI
DONNA	BREARLEY	DISCOVERY PLACE, INC	TRAVEL/TRAINING	SCI
JAMES M.	BRYANT	PEMBER MUSEUM OF NATURAL HISTORY	UPGRADE COMP. SYSTEM	SCI
EVELYN	BUDDENHAGEN	EXPLORIT SCIENCE CENTER	PHONE LINE	SCI
LINDY J.	BULL	LINCOLN CHILDREN'S MUSEUM	MODEM/PHONE LINE	CM
BETH	CAMERON	ALABAMA SCIENCE CENTER	-	SCI
MARY C.	CARROLL	SANTA BARBARA BOTANIC GARDEN	TRAINING/TRAVEL	BG
ROBERT	CASABA	DISCOVERY SCIENCE CENTER/LAUNCH PAD	ON-LINE SERVICE	SCI
ARLYN	CHRISTOPHERSON	OAKLAND ZOO	MODEM	ZO
MARY C.	CLOUD	MCALLEN INTERNATIONAL MUSEUM	TRAVEL/ON-LINE SERVICE	SCI
MARGARET	CONOVER	SCIENCE MUSEUM	-	SC
RANJIT	COORAY	HAROLD LYON ARBORETUM	-	BG
GREGORY C.	CORNWALL	ROPER MOUNTAIN SCIENCE CENTER	TRAVEL/MODEM	SCI
LUANN	CRAIGTON	CALLAWAY GARDENS	-	BG
MARCELLA	CRAINFORD	OAK RIDGE NAT'L LAB.	TRAVEL/TRAINING	SCI
VICKI	DAVISON	ATLANTA/FULTON COUNTY ZOO, INC	PHONE LINE	ZO
DUKE	DAWSON	NEW ENGLAND SCIENCE CENTER	TRAVEL/TRAINING	SCI
MARY ANN	ELLIS	MUSEUM OF ARTS AND SCIENCES	TRAVEL/TRAINING	SCI
CAROL	ELY	VIRGINIA DISCOVERY MUSEUM	TRAVEL/PHONE LINE	SCI

BY NAME  
REDUCTION  
RECIPIENTS

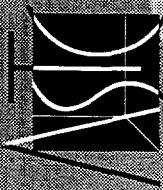
ELVA	FARRELL	GULF COAST WORLD OF SCIENCE, INC	SCI
WINNIE	FATTON	SOUTH BRANCH WATERSHED ASSOCIATION, INC	NC
CHRISTINE	FLANAGAN	ORLAND E. WHITE ARBORETUM	MODEM
STUART	FLEMING	UNIVERSITY OF PENNSYLVANIA MUSEUM OF ANTHROPOLOGY & ARCHAEOLOGY	SCI
JILL	FOSTER	DISCOVERY MUSEUM	TRAVEL/TRAINING
JOHN SCOTT	FOSTER	SENECA ZOO SOCIETY	ZO
LENETTE	FREEMAN	MUNCIE CHILDREN'S MUSEUM	UPGRADE SYSTEM
KATHERINE	FRENCH	MATTHAEI BOTANICAL GARDENS	TRAINING/TRAVEL
JAMA C.	GABBERT	UNIVERSITY OF KANSAS NATURAL HISTORY MUS	COMPUTER/TRAVEL
CHRIS	GERTSCHEIN	SAWTOOTH SCIENCE INSTITUTE	EQUIPMENT
SANDRA H.	GRAHAM	NORTH CAROLINA MUSEUM OF LIFE & SCIENCE	SCI
CARMIE	HAGERTY	SOUTH FLORIDA SCIENCE MUSEUM	TRAVEL/MODEM
KAREN	HARRINGTON	POTAWATOMI ZOO	TRAINING
ETTA	HEBER	CHABOT OBSERVATORY & SCIENCE CENTER	ZO
ROSE L.	HEINTZ	INVENTURE PLACE, NATL INVENTORS HOF	OB
JENNIFER	HELFMAN	BURNETZOO	ON-LINE SERVICE
JUANITA	HERNANDEZ-BLACK	ORLANDO SCIENCE CENTER	SCI
KENN	HITCHCOCK	SPACE CENTER	ON-LINE SERVICE
SHARON	HORRIGAN	MUSEUM OF THE ROCKIES	SCI
KARRIN	HOSTETTER	DENVER ZOOLOGICAL GARDENS	MODEM/COMPUTER
FRANCINE	HUTCHINSON	ANNISTON MUSEUM OF NATURAL HISTORY	ZO
CLARE	INTRESS	NEW MEXICO MUSEUM OF NATURAL HIST & SCI	SCI
JANET M.	JOHNSON	CRANBROOK INSTITUTE OF SCIENCE	ON-LINE SERVICE
SYBIL K.	KANE	NORFOLK BOTANICAL GARDEN	MODEM/TRAVEL
MIKE	KASPAR	WILD BASIN PRESERVE	BG
ERIN	KEATING	NC MUSEUM OF LIFE & SCIENCE	SCI
JANE	KEEGAN	CREATIVE DISCOVERY MUSEUM	SCI
MAUREEN	KERR	NATIONAL AIR & SPACE MUSEUM	SCI
PEGGY	KING	OAK RIDGE NAT'L LAB.	TRAVEL/TRAINING
DIANE	KISICH	SAN FRANCISCO ZOOLOGICAL SOCIETY	ZO

ROBERT	KRAMPF	MUSEUM OF SCIENCE & HISTORY	TRAVEL/TRAINING	SCI
PAUL	KRAPFEL	CARTER HOUSE NATURAL SCIENCE MUSEUM	TRAVEL/TRAINING	SCI
NORBERT	LARSEN	MOANALUA GARDENS FOUNDATION	TRAINING	BG
LEROY	LEE	WISCONSIN ACADEMY OF SCIENCES, ARTS & LT	MODEM	SCI
TERRY	LEWIS	SD DISCOVERY CENTER & AQUARIUM	PHONE LINE/MODEM	AQ
KRIS	LIGHT	OAK RIDGE NAT'L LAB.	TRAVEL/TRAINING	SCI
JANET	LOPEZ	CALIFORNIA ACADEMY OF SCIENCES		SCI
AMY S.	LOWEN	LOUISVILLE SCIENCE CENTER		SCI
JANICE B	LUTH	MUSEUM OF SCIENCE AND INDUSTRY	MODEM/PHONE LINE/TRAVEL	SCI
CHERYL	LYDON	PACIFIC SCIENCE CENTER		SCI
KATHY	LYON	OAK RIDGE NAT'L LAB.	TRAVEL/TRAINING	SCI
WENDY	MCALLISTER	ALASKA SCIENCE CENTER	MODEM	SCI
ROSS	MCGUIGRE	SUNRISE MUSEUM	TRAINING	SCI
SUSAN	MCWILLIAMS	HIGH DESERT MUSEUM	PHONE LINE/TRAVEL	SCI
WINIFRED	MENDENHALL	BREVARD MUSEUM OF HISTORY & NATURAL SCIENCE	COMPUTER/MODEM/PHONE LINE	
LAURAINNE	MERLINI	BRONX ZOO/WILDLIFE CONSERVATION PARK	ON-LINE SERVICE/TRAVEL	ZO
KARLAULONO	MEYER	CINCINNATI MUSEUM OF NATURAL HISTORY	MODEM	SCI
KATIE	MUJIR	MONTEREY BAY AQUARIUM	TRAVEL/TRAINING	AQ
MARY ELLEN	MUNLEY	NEW YORK STATE MUSEUM		SCI
KEVIN J.	NIEMI	OLBRICH BOTANICAL GARDENS	MODEM/PHONE LINE	BG
CHRISTOPHER L.	NIEWOLD	BADLANDS NATIONAL PARK	TRAVEL/TRAINING	NH
TERESA R.	NORFORD	LEWIS GINTER BOTANICAL GARDEN	PHONE LINE	BG
VIRGINIA	OTTS	EXPLOREUM MUSEUM OF DISCOVERY	TRAVEL/TRAINING	SCI
PHIL	PARFITT	CHICAGO ACADEMY OF SCIENCES		SCI
JAMES	PARKER	OREGON REGIONAL PRIMATE RESEARCH CENTER	TRAINING/TRAVEL	SCI
SUSAN	PARKER	PITTSBURGH CIVIC GARDEN CENTER	MODEM/SOFTWARE/PHONE LINE/ON-LINE SERVICE	BG
BETTY	QUIGLEY	CHILDREN'S MUSEUM/CTR FOR CULT ARTS		CM
LINDA	RHINE	LOS ANGELES ZOO		ZO
JESSICA	RICHTER	ASTRONOMICAL SOCIETY OF THE PACIFIC	UPGRADE COMPUTER/PHONE LINE	OB
LINDA	ROWAN VAN LUIK	SCIENCE MUSEUM OF WESTERN VIRGINIA	PHONE LINE/MODEM	SCI

BONNIE	SACHATELLO-	MUSEUM OF THE ROCKIES		SCI
JOANNE M.	SAWYER	EDGERTON EDUCATIONAL CENTER	MODEM	SCI
LINDA	SAVICKY			
KATHY	SCHMIDT	LEE RICHARDSON ZOO	TRAVEL/TRAINING	ZO
NANCY	SEXSON	TETON SCIENCE SCHOOL	ON-LINE SERVICE	SCI
KIM	SHEA			
MARILYN C.	SNEDEN	DETROIT ZOOLOGICAL INSTITUTE	TRAINING	ZO
MELISSA S.	SOLVAY	CHILDREN'S MUSEUM OF MAINE	MODEM/SOFTWARE	CM
JODY	SPALDING	LOUISVILLE SCIENCE CENTER	MODEMS/SOFTWARE/PHONE LINES	SCI
LANCE	SPIRY	FOLSOM CHILDREN'S ZOO & BOTANICAL GARDEN		BG
CRISTINA A.	TAWOA	ECONOMIC DEVELOPMENT PLANNING OFFICE, AMERICAN SOMOA COASTAL MANAGEMENT PROGRAM		SCI
JOANN	TROWBRIDGE	LAS CRUCES MUSEUM OF NATURAL HISTORY	PHONE LINE	SCI
BARRY A.	USLICK	INVENTURE PLACE	ON-LINE SERVICE	SCI
JEFF	VAN DEMAN	INTERNATIONAL MUSEUM OF SURGICAL SCI	MODEM/TRAVEL	SCI
JULIE A.	VAN WEST	PACIFIC SCIENCE CENTER	TRAVEL/TRAINING	BG
EMILY V.	VIDOTTO	CALLAWAY GARDENS		
GILLIAN	WADE	MUSEUM INSTITUTE FOR TEACHING SCIENCE	PHONE LINE	SCI
JENNIFER	WAKELY	UNIVERSITY OF PENNSYLVANIA MUSEUM OF ARCHAEOLOGY AND ANTHROPOLOGY		SCI
JENNIFER	WARFIELD	DENVER BOTANIC GARDENS		BG
JENNIFER	WEAVER	DISCOVERY CENTER MUSEUM OF ROCKFORD, INC	PHONE LINE/TRAINING	SCI
BOBBY	WELCH	GADSSEN CULTURAL ARTS FDTN.	CM	
TOM	WICHTER	GEORGIA WILDLIFE FEDERATION	MODEM/PHONE LINE	NC
AUDREY	WILLIAMS	AMERICAN MUSEUM OF SCIENCE AND ENERGY		SCI
JUDY L.	WINKLER	INVENTION FACTORY SCIENCE CENTER	MODEM/PHONE LINE	SCI
LOIS M.	WINSLOW	TRCDC	TRAVEL/TRAINING	CM
SONYA	WOLEN	PITTSBURGH CHILDREN'S MUSEUM	PHONE LINE/MODEM	SCI
LAURA	WYATT	VIRGINIA MUSEUM OF NATURAL HISTORY	PHONE LINE/TRAINING	BG
JANET	YAMAGUCHI	NORTHERN ILLINOIS BOTANICAL SOCIETY, INC	COMPUTER UPGRADE	SCI

CARLOS	YRURETAGOYENA UGALDO	CENTRO REGIONAL DE ESTUDIOS AMBIENTALES	TRAINING/TRAVEL	NH
		OAK RIDGE NATL LAB. CHICAGO LINCOLN PARK ZOO		

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ASSOCIATION OF  
SCIENCE-TECHNOLOGY  
CENTERS

1025 Vermont Ave., NW Suite 500  
Washington, DC 20005-2516

<input type="checkbox"/> <b>WORKSHOP G</b>	Greensboro, NC	March 8
<input type="checkbox"/> <b>WORKSHOP H</b>	St. Louis, MO	March 27
<input type="checkbox"/> <b>WORKSHOP I</b>	Livermore, CA	week of March 18
<input type="checkbox"/> <b>WORKSHOP J</b>	Seattle, WA	February 14
<input type="checkbox"/> <b>WORKSHOP K</b>	Boston, MA	April 18/19

To apply for a \$210 Barrier Reduction Voucher to help you get online, purchase equipment or receive technical assistance, complete the questions below.

1. What is the nature of your current work with schools and teachers?  
*Describe in particular how are involved in educational reform efforts.*

**PLEASE TURN OVER**

**ISEN** is the **Informal Science Educators' Network** and its goal is to use **online communication** to establish a "community of practitioners" among educators from:

- ◆ science centers or museums
- ◆ zoos
- ◆ aquariums
- ◆ parks
- ◆ botanical gardens
- ◆ nature centers
- ◆ planetariums

Members of **ISEN** will:

- ◆ **collaborate** with educators in schools and other informal science institutions to **create and share resources**
- ◆ participate in professional development activities to **support and develop projects**
- ◆ learn to use the burgeoning resources available through **electronic communication** to further science education reform

To join **ISEN**, fill out and return this form to **ASTC**, 1025 Vermont Ave., NW, Suite 500, Washington, D.C. 20005-3516, Attn: **ISEN**.

YOUR NAME: .....

INSTITUTION NAME: .....

ADDRESS: .....

CITY: .....

STATE: .....

ZIP: .....

PHONE: .....

FAX: .....

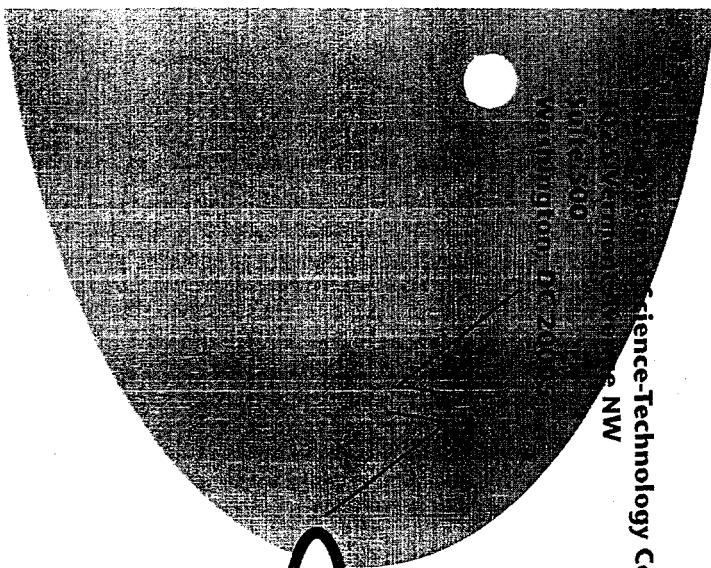
We will conduct eight regional training workshops across the country, as well as one national training workshop during the NSTA conference in March. Please indicate which workshop you would like to attend:

**2. Describe how you will use your Barrier Reduction Voucher and how your organization will match funds**

Along with this form, please attach a letter written on institutional letterhead from your institution's director indicating the level of institutional support for participation and the financial match from your institution.

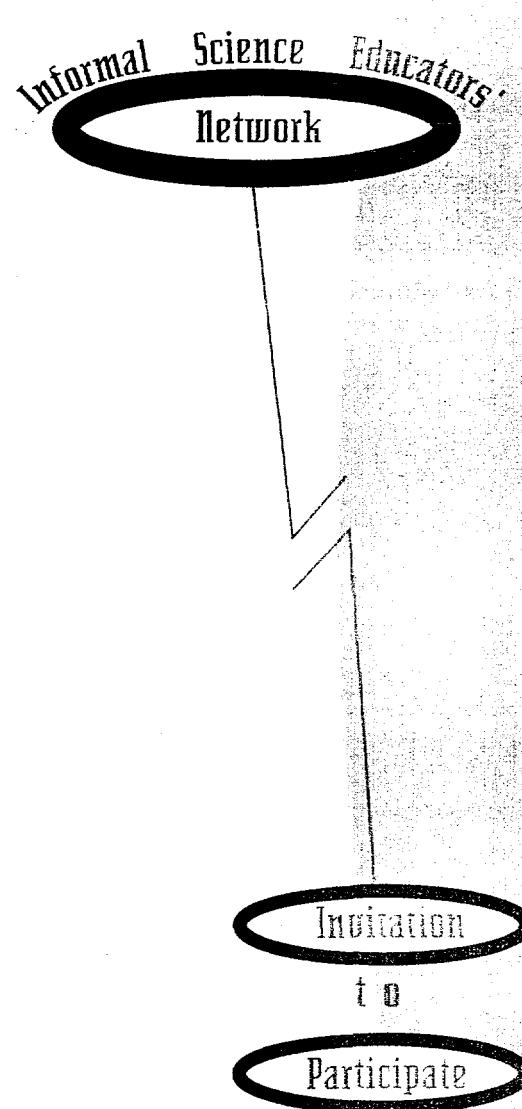
Annenberg/CPB  
Math and Science Project





ISEI

Science-Technology Centers  
NW



APPLICATION ENCLOSED

DEADLINE EXTENDED  
TO AUGUST 31, 1995

## What Do I Need?

We always suggest that you have the most **robust** computer system possible. There is a minimum equipment and hardware "floor" to participate fully in ISEN:

- Macintosh (System 7 or above) or PC-compatible (486 running Windows),
- at least a 14.4 baud modem and a dedicated telephone line, or
- a direct connection to Internet

It is possible to participate with the following equipment, but your level of activity will be restricted:

- Macintosh (System 6) or PC-compatible (DOS), and
- a 2400 baud modem

If you have some, but not all, of the minimum hardware, or have some other barrier to connectivity to the Internet, you may apply for the barrier reduction voucher to bring you to the **threshold for participation**

Even though getting connected to the Internet is one of the fastest growing activities in the U.S., many educators face simple barriers to getting connected. In informal science institutions, just as in schools, access to dedicated telephone lines, modems, or a service provider is quite limited. The barrier reduction vouchers permit the individual to identify which specific issue prevents him or her from becoming a part of the online community.

## Applying

Individuals may apply for up to \$300, which must be matched dollar for dollar by the institution. Specific application instructions are listed on the **detachable application form** to the right.

Complete the detachable form located on the last panel of this application and answer the questions on separate paper. Applications are due at ASTC by **July 8, 1995**.

## Selection Criteria

First and foremost, ISEN is for informal science educators who work in institutions such as science centers, museums, zoos, aquariums, botanical gardens, parks and nature centers. Applicants must demonstrate work focusing on school and science **education reform**. In addition, selection will address geographical distribution, institutional variety, size of organization, and individual need. Fifty participants from each of the 10 geographic areas defined by the regional educational laboratories will be selected, to total 500 participants.

## Notification

You will be notified by August 1, 1995, and asked to respond to a survey requesting specific information about your current hardware status, the barriers to connectivity, and your preferred training dates.

## Training

We will conduct eight regional training workshops **across the country**, as well as two national training workshops—during the ASTC Conference in October 1995, and during the NSTA Conference in March 1996. If selected, you will receive a list of specific dates and times for workshops and be asked to indicate your first three choices of dates. We will confirm your training date by September 1995.

**Please fill out, detach, and return this form to ASTC, 1025 Vermont Ave. NW, Suite 500, Washington, D.C. 20005 Attn: ISEN, along with a separate sheet with answers to the questions listed below**

Name .....

Institution Name (full, official name) .....

Institution Address (street, city, state, zip) .....

Applicant's Telephone Number (area code, number, extension if applicable) .....

Institution Fax Number (area code, number) .....

Home Address (street, city, state, zip) .....

Home Telephone Number (optional) .....

Home Fax Number (optional) .....

Applicant's E-mail Address (if applicable) .....  This e-mail address is for my home computer.

**Level of participation:**

I want to participate in ISEN and I...

- need training in using telecommunications tools and resources
- need travel money to attend the training
- need technical assistance to get set up and make sure things work right
- need a 14.4 modem
- need a dedicated telephone line
- don't need any of the above support, but I want to be included in the online activities

**I plan to attend:**

- 1995 ASTC Annual Conference
- 1996 NSTA Annual Conference

**On separate paper, respond to the following questions:**

1. What is the nature of your current work with schools and teachers? Describe how you are involved in educational reform efforts.
2. How familiar are you with telecommunications? What is your experience with e-mail, World Wide Web, and commercial services (e.g., America Online or CompuServe)?
3. Who in your organization is the best person to answer technical questions (about telephone/computer/connectivity issues)? Please list their phone number and e-mail address.
4. If you are requesting a barrier reduction voucher, please describe what you will use it for and how your institution will match it.
5. Attach a letter from your director on institutional stationery, indicating level of institutional support for participation and financial match. If you are requesting a barrier reduction voucher, you must demonstrate a direct dollar-for-dollar financial match.



Major funding for this project is provided by  
The Annenberg CPB  
Math and Science Project

**Questions?**  
Call Andrea Anderson,  
202/783-7200

with additional support from the  
U.S. Department of Energy



ASSOCIATION OF  
SCIENCE-TECHNOLOGY  
CENTERS

## What is ISEN?

The Association of Science-Technology Centers (ASTC) announces the Informal Science Educator's Network (ISEN): a **network of educators** from institutions such as science centers, museums, zoos, aquariums, parks, and botanical gardens who work with teachers and school systems and who are committed to science education reform. Our intent is to establish a **"community of practitioners"** among informal science educators, through face-to-face meetings and online communication, resulting in our personal, professional development and the growth of our institutions' capacity to serve education reform.

At most informal science education institutions, there are individuals whose work focuses on teacher education: They conduct professional development workshops for teachers, they develop or coordinate development of science curriculum for schools, or they work with schools or school systems to change science teaching and learning. This is the targeted community—educators who are working outside of the schools, who are committed to improving science teaching and **learning**, and who seek **connections** with like-minded peers.

With funding from the Annenberg/CPB Math and Science Project and the U. S. Department of Energy, ASTC and its partners—the Exploratorium and Far West Laboratory for Educational Research and Development—will train up to 500 participants to access and use the Internet, and provide connection assistance, "barrier reduction vouchers" for equipment, and technical advice for novices.

Collaboratively, the Informal Science Educators' Network will **create and share resources**, hold online conferences, and learn to use the rich resources available on the World Wide Web for the

purpose of science education reform. We envision the content of the electronic network will include a directory of electronic resources at informal science institutions; a library of documents specific to the interests of informal science educators; pointers to relevant online resources, such as the Eisenhower National Clearinghouse; and pointers to other resources such as the Federal Register or STIS. Development and support of the content will be an ongoing, continuous activity, in which both the Exploratorium and the Far West Lab will assume the initial responsibility. Ultimately, we expect members will **make their own contributions** to ISEN resources as they become more familiar with the Internet.

## Who Can Participate?

While ISEN itself is open to any interested educator, this application process will secure training, technical assistance, and vouchers for equipment such as modems, telephone lines, or other expenses for selected participants.

Anyone interested in informal science education can ultimately reach the Informal Science Educators' Network Home Pages and participate in online activities. This application is required for participants who request training, technical assistance, and barrier reduction vouchers.

Support for participation will be provided to 500 educators from 250 informal science institutions. Supported participants will:

- attend a one-day training workshop;
- participate in online activities designed specifically for them;
- receive technical assistance to identify low-cost local telecommunication service provider; and
- be eligible for barrier reduction vouchers for modems, telephone lines, or travel for training (the value of the voucher must be matched by your institution)