

Hotline

The Princeton University Plasma Physics Laboratory is a United States Department of Energy Facility

Sci Ed Programs Help Teachers

Area teachers are getting an extra boost — from exploring connections between energy and the environment to using the Internet on the computer — thanks to new Science Education programs.

Through two National Science Foundation grants, the Science Education Program is organizing Teacher Leadership Workshops, as well as a series of Networking Infrastructure for Education (NIE) Workshops. Through the Teacher Leadership Workshops, PPPL will conduct a three-year math and science teacher enhancement and leadership program in global energy and environmental solutions for 30 middle school teachers. The NIE Workshop will train middle school teachers from around the state how to integrate telecommunications and computers with education.

"We want teachers to understand how scientists do science so they can use that same framework in how they teach students," said Science Education Head Diane Carroll of the Teacher Leadership Workshops.

Good Opportunity

Added Sharon Sherman, Science Education Senior Program Leader, "This is a good opportunity to bring the competencies of PPPL to teachers."

The grants, which were received through partnerships with other institutions, increase funding for science education and promote new programs and the improvement of existing pro-



As part of the Teacher Leadership program, Science Education employees and area teachers traveled to Ohio State University to attend a Teacher Enhancement Program. From left (in back row) are East Windsor teachers Linda Zalewitz and Joan Tomlin, Trenton teacher Joan Migdalof, and Science Education Senior Program Leader Sharon Sherman; (front row) PPPL's Ravitte Gall and Chris Ritter, and Gail Hoskins, a research associate at Ohio State University.

grams. The Lab's portion of each grant is about \$100,000.

The Teacher Leadership program, which will include workshops over the next three summers, will kick off this summer with the theme, "Global Energy and Environmental Solutions." Hands-on activities, lectures, and discussions will give participants a thorough understanding of global energy and environmental solutions, allowing them to reform their math and science instruction.

Explained Carroll, "A major factor of this program is introducing middle school teachers to scientific research. Through a series of 'immersion experiences' teachers will have an opportunity to actually do

science. For many this will be a first-time experience."

"We want teachers to understand how scientists do science so they can use that same framework in how they teach students."

—Diane Carroll

This summer's workshop will introduce the middle school teachers to basic concepts of ecology. The participants will assess the causes of

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environmental problems, make models of the factors they believe have an impact on the environment, and determine interrelationships among those factors.

To get in touch with nature, the teachers will learn about ecosystems. They will do experiments that include such things as placing a stalk of celery in a glass of colored water and later analyzing the celery, and exposing crickets to different temperatures to see if there is a relationship between the number of chirps a cricket makes and the temperature. "The teachers will look at both the science and the mathematics involved in these processes," noted Sherman.

During the school year, they will continue to learn about the basics of ecology, population dynamics, and both renewable and nonrenewable resources while working with Lab staff through PPPL's Science Education Program.

"Another important aspect of the program is the integration of library skills into the curriculum. Teachers will learn about periodical indexes, electronic bibliographic and citation

searching, current contents, quick and easy access to the library catalogs of the world, the On-line Computer Library Center (OCLC), and the Internet," Sherman said. "Once provided with the tools necessary to do research, teachers will team up with PPPL scientists and design their own experiments. They will bring the knowledge of process and content back to their students." She added, "By the end of the third year, teachers will have a good understanding of global energy needs, including the importance of developing safe, alternative sources of energy. The outcomes of this experiential learning approach include better understanding of the organizing concepts of science, greater teacher sci-



From left are Science Education staffers Megan O'Connor and Pamela Lucas. Lucas is a program administrator and O'Connor is involved in report writing and administration.

ence content knowledge, better attitudes toward science and science teaching, greater knowledge of instructional strategies, and development of thinking skills necessary for scientific research."

The NIE program, a collaboration by the Science Education Program and the Lab's Computer Systems Division, will develop effective uses of telecommunications resources in education for kindergarten through twelfth grades.

"Educational technology is a major area where we can make a contribution. PPPL can facilitate the integration of computers and telecommunications with education," said Carroll.

Restructuring Courses

Carroll explained that the National Science Foundation, through Statewide Systemic Initiative grants, supports restructuring how science and mathematics are taught in the school districts. Carroll said a central component of restructuring these courses involves integrating technology with teaching.

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Ravitte Gall, making a presentation at a Parent Workshop, is working with Sharon Sherman on the development of the Global Energy and Environmental Solutions material for the Teacher Leadership Workshops. Gall, who has previously worked in the Science Education Program for three summers, recently graduated from Princeton University, where she studied ecology and evolutionary biology.

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"The National Science Foundation came up with this project — the NIE Workshop—to fit hand-in-hand with the Systemic Initiative. New Jersey was one of the states that received funding to explore innovative ways of using technology in the classroom and to analyze the telecommunications facilities available throughout the state," said Carroll.

She continued, "The Science Education Program is involved in developing a more active community of teachers who routinely use the Internet on the computer. By providing initial access and training, many teachers will develop uses and interactions among themselves that will benefit students. We're providing the initial gateway training."

In addition to giving wider access to teachers who are traditionally isolated in classrooms, the Internet

encourages students to interact and collaborate with others, said Carroll. She added that it also exposes the students to troves of information available through the computer.

The teacher development efforts of the Teacher Leadership and NIE workshops reflect and complement the objectives of the Science Education Program, which include systemic reform of math and science teaching, curriculum development, and teacher enhancement. ●

PPPL Hosts Regional Science Bowl

Lab Volunteers Make the Day a Success

When PPPL hosted the New Jersey Regional Competition of the National Science Bowl® in February, others besides the participating students were swept up in the excitement. Also captivated by the competition were more than 30 PPPL staffers who had volunteered their time to serve as scientific judges, moderators, timekeepers, score keepers, and rule's judges.

"Some of them who were supposed to only help in the morning got so caught up in the excitement that they stayed the whole day," said PPPL co-organizer Bill Davis.

Variety of Duties

Staff volunteers took on a variety of duties, also helping with behind-the-scenes activities such as refreshments, prize selection, equipment set up, and solicitation of corporate contributions. And their participation, agreed the organizers, lent to the day's success.

PPPL co-organizer Pamela Lucas said, "The day would not have been such a success without the help of PPPL staff members. They were very supportive and went above and beyond the call of duty."

Added Davis, "The day went really well. The volunteers were great.

Not only did they handle the technical aspects smoothly, but they showed that scientists can be personable, supportive, and fun as well." [See accompanying list of PPPL Science Bowl volunteers.]

The day-long competition drew 16 teams from New Jersey and Pennsylvania high schools. During the competition, students answered multiple choice or short answer questions in biology, chemistry, physics, astronomy, mathematics, and earth and computer sciences. The questions were made up by scientists from U.S. Department of Energy (DOE) National Laboratories. Each team included four students, a student alternate, and a teacher who served as an advisor and coach.

Said Lucas, "The Science Bowl gives students who excel in science and math an opportunity to demonstrate their skills and academic achievements."

Top Prize

The East Brunswick High School team took home the top prize — an all-expense paid trip to Washington, D.C., to participate in the Fourth Annual National Science Bowl®, scheduled to begin on April 28. Lucas will accompany the team to Washington, D.C.

Two first-time Science Bowl teams — William Tennent High School and Christian Brothers Acad-

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Science Bowl Volunteers

Norton Bretz	Athene Kan
Diane Carroll	Jill Kwiatkowski
Mary Corneliussen	Paul LaMarche
Bill Davis	Pam Lucas
James Davis	Jack Mervine
Bruce Draine	Sue Murphy
Tom Gibney	Megan O'Connor
Steve Gordon	Jim Rogers
P.J. Harris	Sandy Schmidt
Sean Harris	Lee Schroeder
Keith Harvest	Joe Smith
Bob Heeter	Darren Stotler
Clint Hepner	Marilee Thompson
Rush Holt	Keith Voss
Rebecca Kamara	Tony Wesson
	Damen Young

Science Bowl

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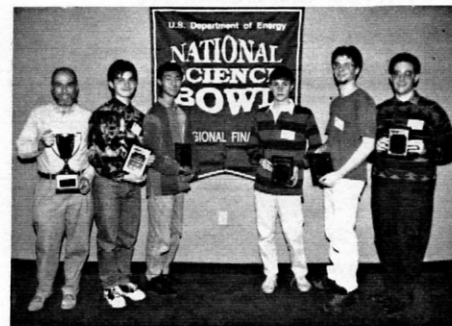
emy — garnered second and third place, respectively. All the participating teams in the day-long competition received certificates, while the top three received trophies and plaques.

High school teams competing this year were Carteret High School, Carteret, New Jersey; Christian Brothers Academy, Lincroft, New Jersey; East Brunswick High School, East Brunswick, New Jersey; Ewing Township High School, Ewing, New

Jersey; Hamilton East-Steinert High School, Hamilton, New Jersey; High Technology High School, Middletown Township, New Jersey; Hightstown High School, Hightstown, New Jersey; Montgomery High School, Montgomery, New Jersey; Neshaminy High School, Langhorne, Pennsylvania; North Brunswick High School, North Brunswick, New Jersey; South Brunswick High School, South Brunswick, New Jersey; Trenton Central High School, Trenton, New Jersey; Union High School, Union, New Jersey; Watchung Hills

Regional High School, Warren, New Jersey; West Windsor-Plainsboro High School, West Windsor, New Jersey; and William Tennent High School, Warminster, Pennsylvania.

The regional competition



The East Brunswick High School team, which won the New Jersey Regional Competition of the National Science Bowl®, are, from left, Dr. Paul Kimmel (coach), Eugene Schlossberg, Joung-Mo Kang, Jonathan Agnew, Gregory Corrado, and Daniel Horowitz.



At the table, in front of the spectators, are PPPL Assistant Director Rush Holt and PPPL employee Jack Mervine, who served as a science judge and a moderator, respectively, during the Science Bowl. Keeping score is volunteer Keith Harvest.

is sponsored by the Department of Energy and hosted by PPPL. The National Science Bowl® is sponsored by the Department of Energy and the Cray Research Foundation. Winners and finalists of the National Science Bowl® receive national recognition and are awarded prizes such as science trips at home and abroad, school link-ups to the National High School Supercomputer at the Lawrence Livermore National Laboratory in Livermore, California, computer hardware and software, and teacher scholarships. ●

1995-1996 Holiday Schedule

For Administrative and Support Staffs, Professional Library, Research and Technical Staff members:

Independence Day	July 3	Monday
	July 4	Tuesday
Labor Day	September 4	Monday
Thanksgiving	November 23	Thursday
	November 24	Friday
Christmas	December 25	Monday
	December 26	Tuesday
New Year's	January 1	Monday
Memorial Day	May 27	Monday
Optional Holidays		Two additional

Optional holidays may be used at the staff member's discretion and with the approval of the supervisor for religious holidays and any other personal reason.

Alternate holiday arrangements may be made by departments and offices such as the Library and Dining Services where work schedules or union contracts dictate other holiday schedules.

PPPL Co-Hosts Second Procurement Breakfast

PPPPL co-hosted its second "procurement breakfast" for small disadvantaged and women-owned businesses on Thursday, March 2. About thirty-five representatives from small disadvantaged and women-owned businesses attended the breakfast, which included presentations, networking meetings, and Laboratory tours. The event was jointly hosted by PPPL and the International Minority Business Corporation (IMBC).

"This, too, is fusion, but of a different sort — the fusion of a dynamic scientific enterprise with an enthusiastic, entrepreneurial business sector."
—Ronald Davidson



IMBC Executive Vice President Gregory Trent (left) talks with Jerry Faul, Deputy Manager of the Department of Energy's Princeton Area Office, during the breakfast for minority and women-owned businesses.

Laboratory Director Ronald C. Davidson, who welcomed the group, discussed PPPL's long-term objective for advancing the understanding and control of the fusion process for energy applications, as well as its immediate goal for increasing the involvement of minority and women-owned businesses in the Laboratory's work.

"This, too, is fusion, but of a different sort — the fusion of a dynamic scientific enterprise with an enthusiastic, entrepreneurial business sector," said the Director of the Lab's

more immediate goal. "The product of this fusion reaction is also energy — the energy needed to nurture your businesses and to power this Laboratory onward in its important scientific quest. This breakfast is an opportunity for this second kind of fusion to take place."

The four-hour meeting gave small disadvan-

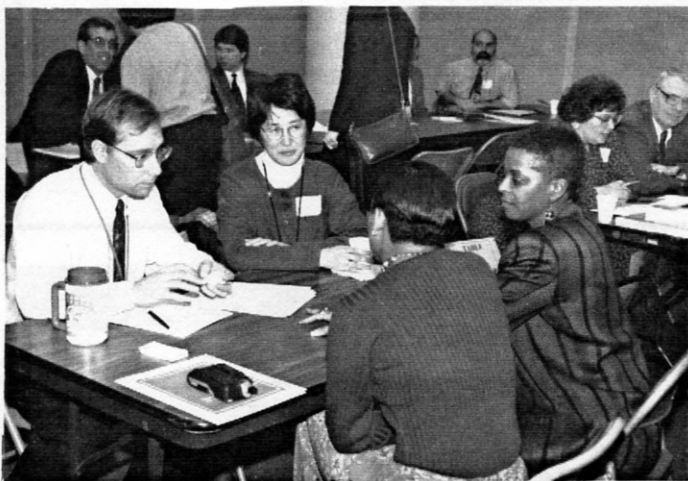
taged and women-owned businesses an introduction to PPPL and also provided Laboratory staff the opportunity to meet representatives of qualified businesses. Following presentations, which featured remarks by Davidson, PPPL Deputy Director Dale Meade, Department of Energy Princeton Area Office Deputy Manager Jerry Faul, and Rodney Templon, Head of PPPL's Procurement Division, business representatives met individually with Laboratory staff to discuss methods and opportunities for contracting work with PPPL.

Said Templon, "We look forward to increasing the Lab's opportunities for doing business with small disadvantaged and women-owned businesses and are hopeful this breakfast meeting will lead to such an increase."



Henry Carnevale, of PPPL, leads a tour group through the Princeton Beta Experiment-Modification (PBX-M) at the breakfast.

Added IMBC Executive Vice President Gregory Trent, "One of the reasons we decided to have a second breakfast at PPPL is that we're continually making contact with new minority and women vendors and these new contacts represent new opportunities for PPPL to purchase from these businesses." ●



Participating in the "Procurement Breakfast" held at the Laboratory in early March are (clockwise from left at table in foreground) PPPL employees Chris Veith and Virginia Finley with business representatives Winonah Brooks and her daughter, Daniela Cotton (back to camera).

Lab Garner's United Way Silver Award



From left are United Way Chairperson John Bavlish, Co-Chairperson Mary Ann Brown, and PPPL Director Ronald C. Davidson. Brown is holding the Silver Award.

Once again, PPPL was among the "top performing organizations" involved in the United Way Drive. The Lab took home the Silver Award for its contributions to the Greater Mercer United Way 1994/1995 Campaign.

"We really appreciate the great job you did. It was an enormous success," said PPPL Director Ronald Davidson while congratulating PPPL United Way Campaign Chairperson John Bavlish and Co-Chairperson Mary Ann Brown.

United Way gives the Silver Awards to salute organizations whose total corporate and employee support exceeds \$50,000 or whose employee (contribution) per capita is more than \$30. Approximately 400 PPPL employees contributed to the 1994/1995 campaign, raising a total of \$26,700. The amount surpassed the Lab's goal of \$25,000. Bavlish received the award for the Laboratory during a recent United Way Reception at Bristol-Myers Squibb.

PPPL's success was mirrored by that of the Greater Mercer United Way Campaign, which exceeded its goal of \$6 million.

Said Bavlish, "It was a banner year for both the PPPL and the Greater Mercer United Way campaigns. Thanks go to the United Way Campaign Committee members and to all the employees who contributed so generously, making the campaign such a success."

Support United Way!

HOTLINE

Editor: Carol Phillips
Writer: Patti Wieser
Layout: Patti Wieser

Photography: Dietmar Krause
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