

HOTLINE

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

PPPL Garner Technology Transfer Award



PPPL Director Rob Goldston (left) and PPPL Technology Transfer Head Lewis Meixler hold the Regional Laboratory Award that PPPL received from the Federal Laboratory Consortium for Technology Transfer.

PPPL recently received a Regional Laboratory Award from the Federal Laboratory Consortium for Technology Transfer (FLC). The award from the FLC Northeast Region recognizes PPPL's "extraordinary efforts" to further national and regional technology transfer activities during 1999.

PPPL Technology Transfer Head Lewis Meixler accepted a plaque on behalf of the Laboratory during an FLC Northeast Regional meeting at the consortium's national gathering in Charleston, South Carolina, in May. The award honors PPPL for promoting technology transfer through collaborations with small businesses on the development of scientific instrumentation, work with other agencies to support the development and transfer of technology, and Science-on-Saturday lecture series.

PPPL Director Rob Goldston said, "We are very pleased to be recognized for our efforts in technology transfer. It is an important part of our program as a DOE Laboratory to assure that the technologies we develop have a positive impact on the nation."

The FLC, organized in 1974 to promote and facilitate the rapid movement of federal laboratory research results and technologies into the mainstream U.S. economy, includes more than 700 major federal labs and centers and their parent departments and agencies as members. ●

Lucas Named Head of Science Education Program

Pamela Lucas is the newly named Head of PPPL's Science Education Program. Lucas, who joined the Laboratory's Science Education staff six years ago, has been Acting Head for the past eight months. She replaces Diane Carroll, who is Executive Director of the Invention Factory Science Center in Trenton.

As Head, Lucas is responsible for overseeing educational programs for students and teachers from all levels, as well as for implementing new educational and outreach initiatives at the Laboratory. Present programs range from the National Undergraduate Fellowship Research



Program and the Energy Research Undergraduate Laboratory Fellowships, to the New Jersey regional competition of the National Science Bowl® and the Science-on-Saturday lecture series. They also include several educational partnerships with local communities, such as the Trenton Part-

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Is There a Doctor in the House?

Former Physicist Glenn Greene Heads Occupational Medical Office

From tokamaks and plasmas to EKGs and lung tests, Glenn Greene has made his rounds at PPPL. Dr. Greene, a former PPPL physicist turned physician, is the new medical director of the Lab's Occupational Medicine Office (OMO) within the Site Protection Division.

He is responsible for the core functions of the OMO, which include diagnosis and treatment of occupational injuries and illness, as well as providing medical certifications. In addition, he is implementing new programs and services, such as wellness programs and treatment of acute nonoccupational illness.

"We now offer the opportunity for employees to come here for personal medical reasons," said Dr. Greene. The physician emphasized that all personal medical evaluations are confidential, and only occupational health issues that occur in connection with Laboratory business require reporting.

Dr. Greene and Karen Brooks, R.N., an experienced occupational health nurse, are here through a subcontract with the Clinical Center of the Environmental and Occupational Health Sciences Institute (EOHSI), which is affiliated with the Robert Wood Johnson Medical School, University of Medicine and Dentistry of New Jersey (UMDNJ). [See sidebar on page 5.]

"When I found out there would be an opening at PPPL's medical office, I thought it would fit in well with my background. I was a physicist at PPPL from 1984 to 1992 and am familiar with the occupational hazards involved with working at the Lab," said Dr. Greene, who collaborated with other members of the Occupational Health Division at EOHSI to develop a proposal for PPPL. "Returning to PPPL to head the medical office seemed like an appealing opportunity."

Since Dr. Greene and Mrs. Brooks came on board in April, the Lab's medical office has been teeming with business. In July alone, there were more than 120 employee visits — a three-fold increase over the prior year's average monthly figure. Dr. Greene said he plans to install a second examination room at the OMO to accommodate



Dr. Glenn Greene and Karen Brooks, R.N.

the increased traffic. Present clinical facilities include a single exam room and a diagnostic room used to test hearing, vision, and lung function.

Dr. Greene's varied duties range from treating injury and illness, to examining staff who are returning to work, to insuring that employees are medically qualified to work under special circumstances. For instance, staff members on medical leave for personal health reasons

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Post-Zwicker Named Lead Scientist, Sci Ed Programs

Andrew Post-Zwicker has been appointed Lead Scientist, Science Education Programs, at PPPL.

Post-Zwicker will be responsible for creating and implementing the initiatives that result in the Science Education Program becoming a local and national leader in science education reform. Since joining PPPL's Science Education Program staff as a Senior Program Leader in 1997, he has expanded the Internet Plasma Physics Educational eXperience (IPPEX) and created the Plasma Camp program. IPPEX is an interactive educational experience that teaches users about plasma physics and fusion energy at a precollege level; Plasma Camp is an intensive two-week summer program of lectures, lab work, and curriculum design for high school physics teachers who are selected nationwide. In his new role, Post-Zwicker plans to create new programs for local high school students and community college professors nationwide, design and teach an undergraduate-level plasma sciences course, and create new internet education sites. He said his first goal is to establish a Plasma Science Education Center at PPPL. "I hope to use this center as a focal point for introducing a new generation of students and teachers to the beauty, complexity, and utility of plasmas — from computer chip manufacturing and lighting today to fusion energy tomorrow," Post-Zwicker said.

After receiving a bachelor's degree in physics from Bard College in Annandale-on-Hudson, New York, in 1986, Post-Zwicker went on to receive a master's and a Ph.D. in physics from Johns Hopkins University in 1988 and 1992, respectively. He conducted post-doctoral research for Oak Ridge National Laboratory at PPPL and at a fusion science laboratory in Jülich, Germany. Post-Zwicker always thought he would have the "standard research career," but during his first year as a post-doc researcher, he began working with an urban high school student and found the experience enriching. "Helping a

student learn is one of the most rewarding things you could ever do with your scientific training," said Post-Zwicker, who hails from a family of teachers. That first student he mentored, by the way, is now in medical school.

He is a member of the American Physical Society's Executive Committee for the Forum on Education and the Committee on Science Education for the Division of Plasma Physics, and is an author on more than 30 articles in a variety of journals. ●



Andrew Post-Zwicker

Lucas

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nership, which focuses on family outreach, teacher professional development, school support, and increased opportunities for students from the Trenton School District.

"My goal is to maintain and build on our existing programs, as well as to develop new programs for reaching out to students, educators, and the community. I also want to make sure the systems and structures are in place to support positive experiences for students and teach-

ers," said Lucas, who looks forward to her continuing work with students. "What I find exciting about the field of science education is having a role in inspiring and training the next generation of scientists — from children in elementary schools to graduate students."

Lucas has bachelor's degrees in biology and in natural science and mathematics from Rutgers University and from Thomas Edison State College, respectively. She worked in private industry before coming to PPPL. At the Lab, she has been a Science Education administrator and program leader, and has been Diversity Officer since 1994, a post she will continue to hold. ●

Atomization Research Collaboration Recognized



In July, PPPL physicist Hideo Okuda and Arnold Kelly of Charged Injection Corporation received a Certificate of Appreciation from the Federal Laboratory Consortium for Technology Transfer (FLC) for advancing electrostatic spray technology.

Okuda and Kelly collaboratively developed a computer simulation code to model the behavior of electrostatically charged particles. Charged Injection Corporation, a small business in Monmouth Junction, New Jersey, is using the code to design better electrostatic spray nozzles for use in non-ozone depleting fire fighting systems, agricultural sprays, diesel engine fuel injectors, and the production of nanofibers. The relationship between PPPL and Charged Injection Corporation spans several years and is made possible through a Cooperative Research and Development Agreement.

At left are Okuda (left) and Kelly at Charged Injection Corporation. ●

Colloquium Committee



The new PPPL Colloquium Committee for 2000/2001 includes, from left, Taik Soo Hahm, Ray Camp, and John Schmidt. Please contact one of them if you have any suggestions for interesting and informative speakers for the upcoming Colloquium series. Camp can be reached at ext. 3161 or via e-mail at rcamp@pppl.gov; Hahm is at ext. 2611 or thahm@pppl.gov; and Schmidt is at ext. 2538 or jschmidt@pppl.gov. Good luck to the new committee and a special thanks to last year's committee members Phil Heitzenroeder, Dennis Mueller, and Janardhan Manickam for a job well done. ●

Herrmann Awarded for Doctoral Dissertation

Former PPPL graduate student Mark Herrmann has been chosen as the winner of the 2000 Award for Outstanding Doctoral Dissertation in Plasma Physics. The award, sponsored by General Atomics, was established to recognize exceptional young scientists who have performed original doctoral thesis work of outstanding scientific quality and achievement in the area of plasma physics.



Herrmann's citation states, "With elegant use of analytical theory and computation, and insightful comparisons to experiment, this thesis lays the foundation for how radio frequency waves might cool fusion byproducts in a tokamak." The award will be presented at the upcoming American Physical Society's Division of Plasma Physics meeting in Quebec. Herrmann, who is now at the Lawrence Livermore National Laboratory, received a Ph.D. from Princeton University in Astrophysical Sciences, Program of Plasma Physics, in 1998. His advisor at PPPL was Professor Nathaniel Fisch. ●

Greene

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must be examined by their personal doctors, as well as by Dr. Greene, who will insure that they can perform their specific job functions at PPPL or require particular work restrictions. “We need to make sure they are fit for duty,” said the OMO Head.

In addition, Dr. Greene evaluates individuals who must work under special conditions, such as in a bubble suit, to make sure they are physically able to withstand the conditions. He noted there are detailed physical standards for various job classifications at PPPL. The OMO doctor and nurse also work closely with the Lab’s industrial hygienists, particularly in testing individuals for exposures to various hazards. They also visit Lab areas to observe working practices in the hope of identifying potential hazards to prevent injuries or illness. “PPPL is a very interesting place to practice occupational medicine,” observed Dr. Greene.

Series of Prevention Screenings

He and Mrs. Brooks are also planning a series of prevention screenings for staff, lunchtime discussions about medical topics, and a wellness program that will kick off with a smoking cessation course of eight sessions led by EOHSI’s Mary Lou Mills, R.N. “We do a broad spectrum of things,” Dr. Greene said.

The doctor said he enjoys seeing his former colleagues and the new direction of the Laboratory. As a PPPL physicist, he worked on the Princeton Large Torus, Current Drive Experiment, Princeton Beta Experiment, and Tokamak Fusion Test Reactor. “I started in the radio-frequency heating group and moved to diagnostics on TFTR,” he recalled. “But I’ve always been interested in medicine. When I was in graduate school at Caltech, I had a collapsed lung and spent two weeks in the hospital. That experience left me with a real interest in the medical field, but the promise of fusion was enticing.” He received a Ph.D. in Applied Physics with a minor in biology from the California Institute of Technology, and came to PPPL to do research.

“As I got older, I realized that if I didn’t make a change soon and try the medical field, I never would. So in 1990, I went back to school, part-time, and took courses in molecular biology and medical physics at the University of Pennsylvania.”

He continued to mull over his future, taking a year to make his decision while continuing his work as a physicist. In 1992, he entered the University of Pennsylvania School of Medicine and received an M.D. four years later. He completed an internship at the Albert Einstein Medi-

cal Center and a residency in Occupational and Environmental Medicine at UMDNJ. He also recently received a Master of Public Health degree. He is an Assistant Professor at the Robert Wood Johnson Medical School, where he divides his time between clinical practice and research.

“It has been a lengthy, circuitous route that led me back here,” said Dr. Greene. Welcome back! ●

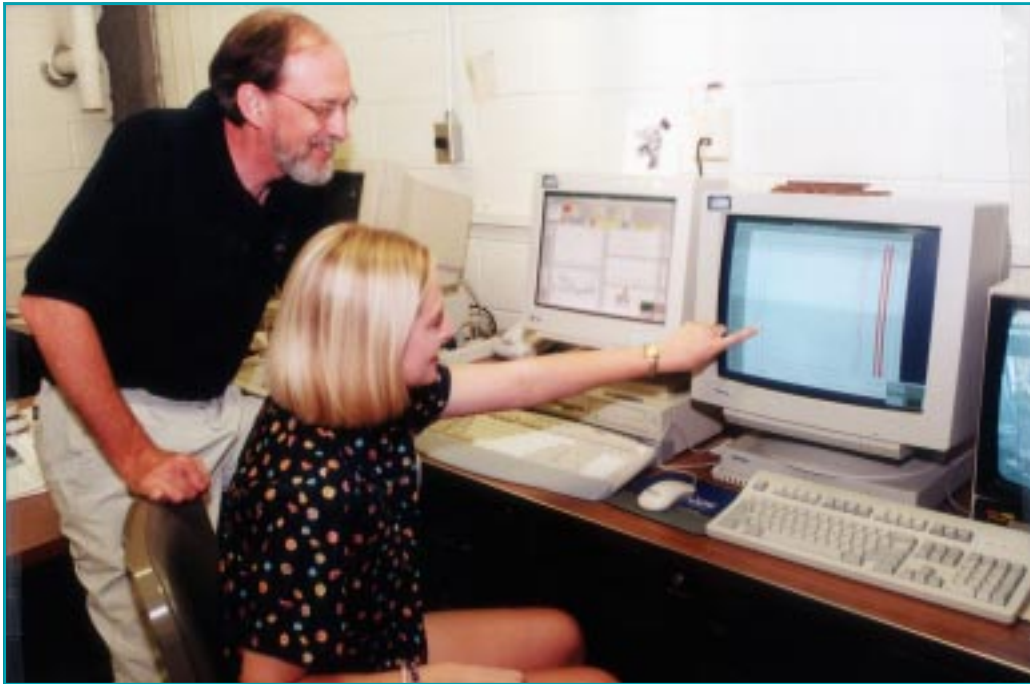
The Occupational Medicine Office is on the first-floor of the ESU Building. General clinic hours are 8:30 A.M. to 2:30 P.M. daily. Dr. Greene is at the clinic on Monday, Wednesday, and Thursday mornings. Return-to-work exams can be scheduled in advance, starting at 8 A.M. Please call ext. 3200 to schedule appointments.

EOHSI Clinical Center

Dr. Glenn Greene and Karen Brooks, R.N., are members of the Clinical Center of EOHSI, a specialized center for occupational medicine founded in 1984 and located within the 75,000-square-foot EOHSI building on the Busch Campus shared by UMDNJ and Rutgers University in Piscataway. The Center, led by Dr. Howard Kipen, includes a professional staff of five physicians, four nurses, a clinical psychologist, and a clinical social worker. It is the largest group specializing in Occupational and Environmental Medicine in New Jersey. The Center provides clinical and consultative services for a number of local industries in the pharmaceutical, chemical manufacturing, and hazardous waste sectors. It also manages and operates the Employee Health Service of the Robert Wood Johnson Medical School. A specialized Referral Clinic is held weekly at EOHSI, in which the staff evaluate, diagnose, and jointly review unusual or complex Occupational Medicine cases that are referred from other physicians, health agencies, companies, and legal groups throughout New Jersey and nearby states.

EOHSI, a joint institute of UMDNJ and Rutgers University, includes a staff of several hundred scientists, physicians, educators, and policy researchers. It is organized into six interdisciplinary divisions, including Occupational Health, Toxicology, Exposure Measurement and Assessment, Environmental Health, Environmental Policy, and Public Education and Risk Communication. EOHSI is recognized as one of a select number of national Centers of Excellence by agencies that include the National Institute of Occupational Safety and Health, the National Institute of Environmental Health Sciences, the U.S. Environmental Protection Agency, and the State of New Jersey. ●

Summer Sizzles with Teacher Workshops and Plasma Camp



At left, teachers Steve Brehmer and Stephanie Connors, Plasma Camp participants back for a second time, prepare the Current Drive Experiment-Upgrade for a plasma experiment. Below, Trenton and Burlington teachers make parachutes during a physical science workshop at PPPL. First they constructed the parachutes from instructions and then designed their own and developed experiments. These exercises were to show the differences between “cookbook” science and inquiry-based science. From left around the table are Trenton teacher Denise Mylowe, Burlington teacher Ed Alfaro, and Trenton teacher Brenda Koonce. On page 7 are teachers collecting aquatic insects during a life sciences exercise at the Stony Brook-Millstone Watershed.

The lure of aquatic insects, fusion reactions, electric circuits, and parachutes drew both local and distant teachers to summer science workshops organized, in part, by PPPL’s Science Education Program staff. From July 24 through August 4, forty-five elementary and middle school teachers from Trenton, Burlington City, and Florence, New Jersey, participated in one-week “Sizzling Summer Science” sessions either at PPPL or at the Samuel Smith Elementary School in Burlington. In addition, a two-week “plasma camp” for high school science teachers was held at the Lab in July.

During the Sizzling Summer Science workshops led by experts from the Liberty Science Center, Compaq Computers, PPPL, and Georgian Court College, teachers conducted experiments and developed inquiry-based teaching skills. Burlington and Florence teachers were at the Smith Elementary School and Trenton teachers were at PPPL. On two days, each respective group took a field trip to the Stony Brook-Millstone Watershed in Pennington to study aquatic insects.

Plasma Camp, officially called the Plasma Science and Fusion Energy Institute, was an intensive two-week summer program of lectures, lab work, and curriculum design for high school physics teachers who were selected nationwide. Thirteen teachers participated in this year’s institute, which was hosted by PPPL for the third summer. The goal was to help teachers develop curricular materials for physics classes, making the subject of

plasma and fusion accessible to high school pupils. As part of the workshop, teachers actually conducted experiments in the Current Drive Experiment-Upgrade to study plasma behavior. Three of the thirteen teachers had been involved in last year’s plasma camp and returned this year to assist with the program.

Andrew Post-Zwicker, Lead Scientist for PPPL’s Science Education Program, who designed and led the institute, said, “Plasma Camp is a unique opportunity for teachers from all over the country to engage in cutting-

Photo by Chris Ritter





Photo by Chris Ritter



Photo by Chris Ritter

edge research and bring the excitement and beauty of plasmas to their students.” Nick Guilbert, Head of the Science Department at the Peddie School in Hightstown, co-led the institute.

Plasma Camp was funded by the DOE’s Office of Fusion Energy Sciences. Sizzling Summer Science was a program of Teaching Science Matters, funded by an Eisenhower Professional Development grant from the New Jersey Department of Education. The workshops were provided through a collaboration among Princeton University, PPPL, and the Invention Factory Science Center in Trenton. ●

The following people were involved in leading the Sizzling Summer Science workshops:

Erin Peacock, Chris Manno, and Russ Walsh
— Montgomery Township Schools

Betty Faber — Liberty Science Center

Dave Cochran — Georgian Court College

Richard Catena — Compaq Computer Corp.

Andrew Post-Zwicker — PPPL

Jeff Hoagland — Stony Brook-Millstone Watershed

Anthony Fredericks, consultant

It's Picnic Time!

Don't forget! All staff were invited to one of four picnics at the home of Rob and Ruth Goldston. There are two picnics left — September 12 and September 19, from 4-7 P.M. If you are scheduled for one of the September barbeques and have not sent an R.S.V.P. yet, please send an e-mail to “humanres@pppl.gov” as soon as possible. You may also send an e-mail to HR if you were invited to one of the earlier picnics, could not attend, and would like to come September 12 or 19. The picnics are intended for PPPL staff, Department of Energy-Princeton Group staff, and long-term visitors. Unfortunately, family members cannot be accommodated at this time. ●



Zimmer Creates Park for People's Best Friends

Come January, PPPL consultant Gretchen Zimmer hopes to realize a dream that will make tails wag.

Zimmer, a computer software engineer working on NSTX, is opening "Rocky Top," a members-only park for dogs and their owners. It will join the ranks of more than 400 other such parks across the nation, including Wiggly Field in Chicago and Field of Dogs in California, many of which are public.

The South Brunswick Township Planning Board recently approved the park and Zimmer anticipates opening the 6-acre haven for hounds in January, 2001.

So what exactly is a dog park? According to the Rocky Top website, it is "a completely fenced-in recreational area where people can walk with their dogs off-leash safely and legally. It has footpaths, benches, a water source, shade trees, and other landscaping. Pets and owners can play Frisbee and fetch, run or jog, and play with other dogs without the worry of traffic or unfriendly pets in the area."

Rocky Top's proprietor will actually meet all prospective canine members to make sure they are used to being around other dogs. In addition, all members' dogs must be up-to-date with their vaccinations. The park will be operated as a club in that it will have a set of regulations to abide by, and dues will be collected on a monthly basis. Members will use an electronic card entry system to gain access.

Zimmer said she came late to the dog scene. Always a cat lover, she gained a greater appreciation of dogs when she met her husband, who is fond of dogs. The couple now has two dogs, Cooper, a Brittany, and Camas, a Labrador Retriever (in photo with Zimmer).

A few years back, the dog park idea came to Zimmer. "Three years ago, I took the Voluntary Reduction-in-

Force from PPPL, and began fostering homeless dogs and placing them with families. I thought about opening a dog daycare center, but then decided on the park," she said. The park idea gelled when she had unleashed her two dogs to run in a school stadium while the school was out-of-session, and was told by school officials that it was an "inappropriate use" of the grounds.

She looked around for property for a dog park and settled on six acres with woods and lots of boulders —

hence the name "Rocky Top" — in the Little Rocky Hill area of South Brunswick. Slowly, she has been clearing parts of the acreage. "I've taken 160 tires from the property to a recycling center," she said, adding that an old house on the site also was leveled.



Swimming Pond

The dog park, which is in a rural area of a residential zone, will include a 1.6-acre main portion, separate fenced areas for small dogs and for puppies, and a 3-foot-deep swimming pond.

Lit at night, it will be enclosed by 7-foot secure fencing with double-gated entries to prevent escapes. There will be a limit of 25 dogs at any one time in the main portion of the park, and a limit of 12 in the small dog park and 10 in the puppy park. Zimmer estimates the average stay will be 30 minutes.

Already her phone is ringing with people anxious to sign up their hounds. "If I build it, they will come," said Zimmer of the four-legged customers soon to be tromping the trails and wagging their tails at her South Brunswick park. ●

For more information about rates, hours of operation, and membership, check out the website: <http://www.rockytopdogpark.com>.

Happy Labor Day!