

HOTLINE

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

PPPL — On Course with Top Crew

Director Goldston Delivers State-of-the-Lab Address



PPPL Director Rob Goldston (large photo) delivers the State-of-the-Lab talk. At top left are (from left), Steve Sabbagh, Adriana Popescu, and Charles Skinner in the Lobby; at top right (from left) are John Schmidt, Greg Schmidt, and Rich Hawryluk, and at bottom right is Alex Illic.

Dressed in a Hawaiian shirt and surrounded by staff and friends wearing leis, PPPL Director Rob Goldston delivered his annual State-of-the-Lab talk on November 24. His message to the overflow crowd in the MBG Auditorium: PPPL has a “top crew” and is “on course.”

“We have great people, an exciting program, and remarkable prospects,” said Goldston.

Under the “great people” category, the Director talked about the Lab’s “top crew,” safety on the job, and risk management. While giving details about the Lab’s “exciting program,” he discussed the National Spherical Torus Experiment, National Compact Stellarator Experiment,

Off-site Research, Plasma Science and Technology, and Theory. Under “remarkable prospects,” Goldston focused on the community fusion development path, as well as the support of Congress and the U.S. Administration for fusion. He also discussed the possibility of locating the U.S. ITER Project Office at PPPL and of building the West Wing addition to the Lyman Spitzer Building.

The talk is available on the web under the PPPL Employee site, Director’s Office, at <http://www-local/director/index.shtml>. The event had an island theme and concluded with the presentation of awards (see page 2) and a reception in the Lobby. ●

PPPL and University Honor Brooks, Ji, and Yamada

Following the State-of-the-Lab talk on November 24, PPPL and Princeton University officials presented the PPPL Distinguished Engineering Fellow Award to Arthur Brooks and the Kaul Prize for Excellence in Plasma Physics Research and Technology Development to Masaaki Yamada and Hantao Ji. The three recipients were honored during a ceremony and reception at the Laboratory.

PPPL Distinguished Engineering Fellow

The Lab recognized Brooks for “outstanding engineering accomplishments in the areas of electromagnetic, thermal-hydraulic, and structural analysis for numerous experimental devices and design studies, including the Tokamak Fusion Test Reactor (TFTR), the Tokamak Physics Experiment (TPX), and the National Spherical Torus Experiment (NSTX); and most recently, for pioneering the development of electromagnetic codes that were pivotal in the design of the National Compact Stellarator Experiment (NCSX).” TFTR operated at PPPL from 1982 to 1997; TPX was designed, but not built; NSTX, a national collaborative effort, is presently operating at PPPL; NCSX, also a national collaborative effort, is being designed and expected to begin operating at PPPL in 2007.

“Art’s list of contributions to the Laboratory’s projects includes all of our large-scale facilities. He has made critical, creative contributions to every one of them,” said PPPL Director Rob Goldston.

Brooks received a bachelor’s degree in mechanical engineering from The City College of New York in 1975, graduating magna cum laude. He received a master’s degree in mechanical engineering from Polytechnic Institute of New York in 1979. Brooks came to PPPL in 1976 as a subcon-

tractor to support the design of TFTR. In 1986, he joined PPPL’s Engineering Analysis Division. Brooks is a member of the American Society of Mechanical Engineers.

The Distinguished Research and Engineering Fellow Program, funded by the U.S. Department of Energy, was created to recognize members of the Laboratory’s research staff, as well as engineering and scientific staff, for their accomplishments. Fellows receive one-time gifts of \$5,000 and qualify for priority in regard to their research and engineering programs.



From left are Princeton University’s Will Happer with PPPL’s Masaaki Yamada, Hantao Ji, Art Brooks, and PPPL Director Rob Goldston. Yamada and Ji are recipients of the Kaul Foundation Prize for Excellence in Plasma Physics and Technology Development and Brooks is the recipient of the PPPL Distinguished Engineering Award.

Kaul Prize

PPPL physicists Masaaki Yamada and Hantao Ji received the Kaul Prize for Excellence in Plasma Physics Research and Technology Development. The award recognizes Yamada and Ji “for the experimental investigation of driven magnetic reconnection in a laboratory plasma.”

Magnetic reconnection is the breaking and topological rearrangement of magnetic field lines in a plasma — a hot,

Hotline

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ionized gas. It is one of the most fundamental processes of plasma physics and has important relevance to fusion research, as well as to the physics of the earth's magnetosphere and solar flares. Yamada and Ji conduct their research on the Magnetic Reconnection Experiment (MRX) at PPPL.

"Masaaki and Hantao, and their graduate students, have opened up a new era in laboratory astrophysics with the MRX experiment," said Director Goldston.

Last year, Yamada and Ji received the American Physical Society's 2002 Award for Excellence in Plasma Physics Research for their work in magnetic reconnection.

Yamada, a PPPL Distinguished Research Fellow and an American Physical Society Fellow, is the Head of the MRX research program. He received a bachelor's degree and a master's degree from the University of Tokyo and a Ph.D. in physics from the University of Illinois, joining PPPL in 1973 as a postdoctoral fellow. He carried out many basic plasma physics experiments, as well as fusion experiments, before pioneering MRX in the early 1990's to explore the fundamental physics of magnetic reconnection. Yamada has been the doctoral thesis advisor for a dozen graduate students of Princeton University, the University of Tokyo, and Purdue University and has held invited professor positions at Ecole Polytechnique Federale de Lausanne, Switzerland, as well as at Kyoto University and the University of Tokyo in Japan.

Ji, a Principal Research Physicist at PPPL, received a bachelor's degree in physics from Ehime University in Japan in 1985 and a doctor of science degree in physics from the University of Tokyo in 1990. He conducted plasma physics

research at the National Institution for Fusion Sciences in Japan and at the University of Wisconsin-Madison before coming to PPPL. Since 1995, he has been conducting research on the MRX. Ji has carried out many laboratory studies of basic physics phenomena observed in space, astrophysical, and fusion plasmas. In addition to MRX, currently he is responsible for two other experimental projects on related subjects at PPPL. He won a Kanbayashi International Fellowship (1985-1986), an Iwatani Memorial Fellowship (1986-1990), and a Department of Energy Outstanding Mentor Award in 2002. Ji is a member of the American Physical Society, the American Geophysical Union, the American Association for the Advancement of Science, and the Japan Society of Plasma Science and Nuclear Fusion Research.

Princeton University awards the Kaul Prize to recognize a recent outstanding technical achievement in plasma physics or technology development by a full-time, regular employee of PPPL. It includes a cash award of \$2,000 for each individual. Nominations for the award are submitted to the Prize Selection Committee, which includes the Princeton University Provost, the Chair of the Princeton University Research Board, the PPPL Director, PPPL Deputy Director, and PPPL Chief Scientist. This is the seventh time the prize has been given.

Former PPPL Director Ronald C. Davidson endowed the Kaul Prize by giving to Princeton University a portion of the gift he received as the 1993 recipient of the Award for Excellence in Science, Education, and Physics from the Kaul Foundation. ●



From the Princeton Plasma Physics Laboratory

PPPL Team Completes New Center Stack for NSTX



Above are team members who participated in the design, fabrication, and assembly of the new toroidal field inner bundle for NSTX. The bundle, also called a center stack, was installed in December. In front of the bundle (from left) are Bob Horner, H.M. Fan, Jack Mount, John Travowski, Bruce Paul, Joe Rushinski, Frank Jones, Charlie Neumeyer, Mike Messineo, George Steill, Tom Kozub, Art Brooks, Chang Jun, Phil Heitzenroeder, Jim Chrzanowski, and Masa Ono. Behind (from left) are John Edwards, Steve Jurczynski, Jack Hynes, Bob Marsala, Mike Kalish, Hans Schneider, John Desandro, Mike Hause, Buddy Kearns, Bob Herskowitz, Ed Bush, Joe Winston, John Boscoe, Mark Cropper, Ron Byer, Scott Gifford, Jim Benchoff, Mike Duco, Frank Terlitz, Kris Gilton, Marty Wisowaty, Mike Anderson, Mike Dimattia, Bob Tucker, Jr., Ed Gilsenan, Jim Kukon, Jim Lane, Bill Slavin, Sylvester "the eagle" Vinson, and Tom Meighan. Not pictured are Bob Delany, Tom Egebo, Steve Kemp, Fred Simmonds, Irv Zatz, and Bill Zimmer.



IT Works! New Security for Laptops and Dial-in Network Connections

In supporting on-site and off-site visitors, collaborators, traveling staff, and staff working from home, PPPL's Computer Division staff continue to see a number of laptops and dial-in systems attach to the Lab's network without the latest security patches. These systems are vulnerable and can pick up infections outside the Laboratory. When connected to PPPL's networks, they can spread infections inside PPPL.

To reduce the potential for internal infections and to identify and notify users of the vulnerability of their machines, a segregated network is being implemented for all dial-in and laptop systems. This network will be configured to prevent unpatched and infected systems from spreading

infections on the main PPPL network. It will also provide cyber security staff the ability to more easily identify and isolate problem systems. This network will allow all laptop and dial-in systems to access the internet (surf the web, check outside e-mail, etc.). Registered machines will also be able to access the PPPL networks. Unregistered machines and visitors will need to either register or authenticate at the PPPL firewall to access internal PPPL systems. Implementation will proceed with minimal disruption to users. Current systems will be "pre-registered" and these users should not have to take further action.

More information will be available as the network is implemented. ●

Plasma Hutch Opens

PPPL merchandise sold at a brisk pace during the December 1 Grand Opening of the new PPPL store, "The Plasma Hutch." Items offered at the hutch presently include T-shirts, golf shirts, clocks, pens, hats, mugs, and other "stuff." New merchandise will be added as the store becomes more established.

The Plasma Hutch will be open Fridays from 11 a.m. to 1 p.m., with a **special opening before the holidays on Monday, December 22 from 10 a.m. to noon.** It is on the first floor of the Lyman Spitzer Building around the corner from the history wall off the Lobby.

For now, the store is open for employees only, but long-range plans include making merchandise available to others. If you have a special group coming in, you may want to pre-purchase items for your visitors. Also, departments can purchase in bulk in anticipation of special guests. Check with Plasma Hutch staff for details during regular store hours.

So hurry down for your one-stop holiday shopping! ●



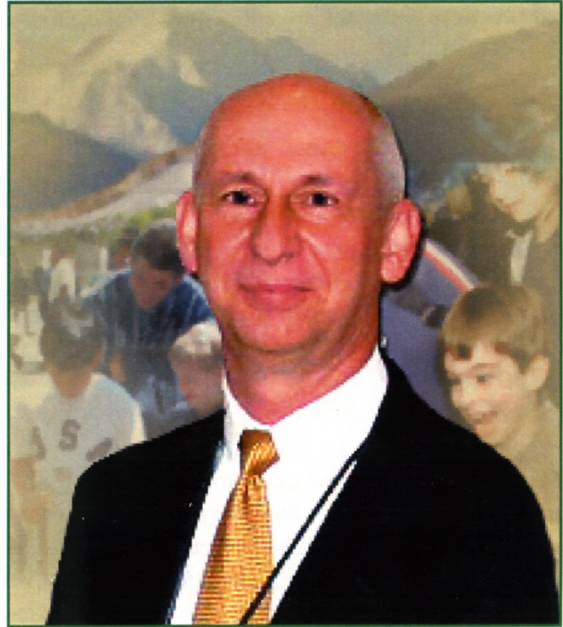
PPPL's Steve Iverson purchases a shirt from the store, which is being staffed by Lena Scimeca (left) and Sonja Patterson (middle). Iverson was instrumental in getting the store off the ground.

Plasma Hutch Hours
Fridays, 11 a.m. to 1 p.m.

Classified

FOR SALE: 1993 Saturn SL-1, 4-Door Sedan, 113K Miles, Auto Trans, AC, ABS, Traction Control, Auto Door Locks, AM/FM Stereo Radio, Cassette. Recently Passed NJ Inspection. \$850. Call Tony at 908-812-4282.

Fusion Power Associates Awards DeLooper



PPPPL External Affairs Head John DeLooper is this year's recipient of the Fusion Power Associates' (FPA) Special Award, which recognizes DeLooper's "many contributions in support of the fusion program, both locally and nationally." The FPA Board of Directors presented the award to DeLooper in Washington, D.C., in November. The Board especially noted DeLooper's educational outreach efforts and his logistical support for the fusion Snowmass meetings. Congratulations, John! ●

Thank You

The PPPL United Way Committee thanks the Wegmans store in West Windsor for the donation of 10 dozen decorated glazed donuts for the Laboratory's United Way campaign meeting. The event drew nearly 100 employees. A special thanks goes to Assistant Store Manager Frank DiFranco, who approved the donation. Thanks, Wegmans! ●



Murphy-LaMarche Named HR Director

Susan Murphy-LaMarche is the new Director of PPPL's Human Resources. She replaces Steve Iverson, who is retiring in January.

Murphy-LaMarche joined the Laboratory's staff in 1983, eventually becoming supervisor of the Computer Operations Center for the Laboratory's Tokamak Fusion Test Reactor experiment.

In 1991, she was named Manager of Training and Development, serving in that capacity for five years before becoming Deputy Director of Human Resources. She advises the Laboratory Director as a member of several key committees, including the PPPL Council, the Director's Advisory Committee for Women, and the Director's Minority Advisory Committee. In addition, she has been involved in several projects and served on committees that address improvement issues for both PPPL and the University.

Murphy-LaMarche, a former teacher, received a master's degree in education from Hofstra University on Long Island, New York, and a bachelor's degree in history from Marywood University in Scranton, Penn. She is a member of the Society for Human Resource Management and is nationally certified as a Professional in Human Resources.

Murphy-LaMarche received the Princeton University President's Standing Committee on the Status of Women Award in 1994 and 1998, and was named "Executive of the Year" in 1998 by the Mercer Chapter of Professional Secretaries International. ●



Susan Murphy-LaMarche

Sheneman Heads Materiel & Environmental Services

Rob Sheneman was named Head of PPPL's new Materiel and Environmental Services Division in October. He had been Acting Head of Environmental Restoration/Waste Management since the summer of 2002.

Sheneman came to PPPL in 1994 as the Environmental Restoration Manager, with responsibilities for the technical, regulatory, and administrative management of the Lab's site-wide environmental characterization and clean-up program.

In 1999, Sheneman received a Special Service Award from the DOE Chicago Operations Office in recognition of his efforts to accelerate environmental cleanup and reduce the overall cost at PPPL. He is a member of the Environmental Review Committee (ERC) and has served on several ad hoc committees addressing environmental issues at PPPL. Sheneman currently leads an ERC working group that is developing an Environmental Management System for PPPL.

Sheneman received a bachelor's degree in biology and geology from the University of Rochester, graduating with distinction. He is a licensed professional geologist in Pennsylvania and Delaware and has been certified as a professional geologist by the American Institute of Professional Geologists. He is a member of the Geological Society of America and the American Geophysical Union. For 10 years prior to joining PPPL, he worked for several consulting engineering companies, managing environmental investigation and cleanup projects throughout the U.S. for private clients and state and Federal agencies. ●



Rob Sheneman

Consulting Approval Request Forms Revised

The Laboratory's Ethics and Conflicts of Interest Committee recently revised the *Request for Approval of Consulting or Other Similar Business Activities Disclosure Form*. The new form can be obtained from Dolores Lawson in the Director's Office or on the web at <http://www-local.pppl.gov/director/index.shtml>.

This form requires additional information and analysis, principally in the following areas: more detailed description of the outside business activity proposed to be undertaken; assessment to determine if a potential conflict of interest exists, and the basis for that determination; disclosure of whether, and to what extent, Laboratory staff or equipment is being used in support of the outside business activity; extent and nature of financial interest in the outside business; assessment by the approving official as



to whether a conflict of interest or serious appearance of a conflict of interest is perceived to exist with respect to the outside business.

The new form is effective immediately. The Employment Section of the Laboratory's Personnel Practices Manual describes in more detail the procedure and conditions for obtaining approval to undertake outside consulting work or to pursue outside business activities.

The DOE, using money provided by the U.S. taxpayer, funds research activities at PPPL. "In recognition of this fact, the Laboratory is dedicated to the highest standards of integrity. The new disclosure form described above is being implemented in support of this objective," said Ed Winkler, Head of PPPL's Business Operations Department. ●

Science-on-Saturday Talks Begin in January

The 2004 Science-on-Saturday wintertime lecture series begins January 17 with “Some Reflections on Mirrors” by Drexel University Professor Ronald K. Perline. The series is free and open to the public. The lectures begin at 9:30 a.m. in the Lab’s MBG Auditorium. Below is the schedule for 2004.

|  | <div>  <h2>Science on Saturday</h2> <p>Princeton University Plasma Physics Laboratory Lecture Series</p> </div> |
|---|--|
| January 17 | <p>SOME REFLECTIONS ON MIRRORS by Prof. Ronald K. Perline, Department of Mathematics, Drexel University, Philadelphia, PA</p> |
| January 24 | <p>NO PROGRAM — SATs</p> |
| January 31 | <p>HYDROGEN & FUEL CELLS - WHAT'S NEW AND WHAT'S NOW by Ms. Kaye Kamp, Science Education Advisor, U.S. Department of Energy, Washington, DC</p> |
| February 7 | <p>THE WORLD OF STRUCTURAL BIOLOGY AND THE PROTEIN DATA BANK by Prof. Helen M. Berman, Board of Governors Professor of Chemistry and Chemical Biology, and Director, Protein Data Bank, Rutgers University, New Brunswick, NJ</p> |
| February 14 | <p>GRID COMPUTING by Prof. Manish Parashar, Dept. of Electrical & Computer Engineering, Rutgers University, New Brunswick, NJ</p> |
| February 21 | <p>GLASS, THE CANVAS FOR SCIENCE: FROM THE SCIENTIFIC GLASSBLOWER'S PERSPECTIVE by Mr. Michael Souza, Princeton University, Dept. of Chemistry, Princeton, NJ</p> |
| February 28 | <p>NO PROGRAM — NEW JERSEY REGIONAL SCIENCE BOWL®</p> |
| March 6 | <p>FUSION AT PPPL: SCIENTIFIC RESEARCH ON A NEW ENERGY SOURCE by Prof. Robert Goldston, Director, Princeton Plasma Physics Laboratory, Princeton, NJ</p> |
| March 13 | <p>THE DARK SIDE OF THE UNIVERSE by Prof. Neta Bahcal, Dept. of Astrophysical Science, and Director, Council on Science and Technology, Princeton University, Princeton, NJ</p> |
| March 20 | <p>NANOTECHNOLOGY: FACT & FICTION, FANTASY & REALITY by Dr. Paul E. Burrows, Laboratory Fellow, Pacific Northwest National Laboratory, Richland, WA</p> |



Princeton Plasma Physics Laboratory

HOLIDAY PARTY

TUESDAY, DECEMBER 23

12:00 NOON - LSB LOBBY AND CAFETERIA

Free Lunch

- CLAMS CASINO - SALAD BAR - FRIED CLAMS - FRIED SHRIMP -
- VEGETABLE LASAGNA - GRILLED SALMON - TOP ROUND BEEF -
- VEGETABLES - HOMEMADE DESSERTS -

OPEN TO EVERYONE AT THE LAB!



ENTERTAINMENT BY
UNITY COMMUNITY CENTER JAZZ ENSEMBLE

RAFFLE

