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HOTLINE

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

Goldston Delivers State of the Lab; Honors Scientists for Research

PPPL Director Rob Goldston offered the following analogical summary of PPPL's year to staff, "We are really on this boat sailing together. We have picked up speed by everyone pulling together." Goldston delivered this message during his "State of the Lab" talk in the MBG Auditorium on November 20. The Director reviewed the Lab's achievements and discussed the future, dividing his talk into three categories: program, operations, and external relations. He concluded by thanking staff members for their hard work and special efforts "to sail the boat together." (Videos of the talk are available for loan from Sonja Patterson in Human Resources and from Dolores Lawson in the Director's Office.) Princeton University President Shirley Tilghman and DOE Princeton Area Office Manager Jerry Faul also attended the talk.

Princeton University President Shirley Tilghman visited PPPL on November 20 for PPPL Director Rob Goldston's "State of the Lab" talk. Following the talk, Tilghman and Goldston presented the PPPL Distinguished Research and Engineering Fellow Awards and the Kaul Foundation Prize for Excellence in Plasma Physics and Technology Development. From left are Tilghman, Engineering Fellow recipient Douglas McCune, Kaul Prize recipient Larry Grisham, Research Fellow recipient Allan Reiman, and Goldston.

Said Tilghman, "I'm here today to convey to you the enormous pride we at the University have for your work at the Plasma Physics Lab. ...You are indeed an integral part of the University. You bring great distinction to the University by the work you do." Tilghman lauded Goldston for his leadership of the Lab, and noted that PPPL does fundamental research that will benefit all of the world.

At the conclusion, the Kaul Foundation Prize for Excellence in Plasma Physics and Technology and the PPPL Distinguished Research and Engineering Fellows citations were given. In addition, Faul presented a DOE Distinguished Associate Award to Jack Anderson for his "significant contributions to the DOE's Safeguards and Security Directives Implementation Review Conference (see story on page 5). The awards were followed by a pie a la mode party in the Lobby.

Kaul Prize

PPPL physicist Larry Grisham was awarded the Kaul Foundation Prize for Excellence in Plasma Physics and Technology Development in recognition of his research contributions re-

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Goldston

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garding the use of neutral beams for fusion applications. The award honors Grisham "for his distinguished contributions to the understanding and improvement of the first generation of high-power negative-ion-based neutral beams for fusion applications." In experimental fusion devices, a beam of neutral atoms is fired into plasma to increase the temperature for the production of fusion power.

Goldston said, "Larry is a world leader in the development of high-power atomic beams based on the production of the unusual negatively charged hydrogen ion. This is a critical technology for future fusion power plants. While the major technology development efforts in this area are based abroad, Larry has nonetheless earned international recognition for his leadership in this area, resulting — for example — in his being asked to summarize the world program in negative-ion neutral beams at the last international conference on fusion energy. His work was essential for the success of the recent demonstration of efficient negative-ion neutral-beam current drive on the JT-60U tokamak in Japan."

Grisham, a physicist at PPPL since 1974, received a bachelor's degree in physics from the University of Texas in 1971 and a Ph.D. in nuclear physics from Oxford University in England in 1974. He has been involved in numerous scientific collaborations in the U.S. and abroad; during the past 15 years he has traveled to Japan 36 times to participate in neutral-beam collaborations. Grisham is a 1971 Rhodes Scholar and Woodrow Wilson Fellow, and is the author or coauthor of about 190 papers.

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. 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 fifth time the prize has been given.

PPPL Director Rob Goldston delivers his State of the Lab address.

PPPL Distinguished Fellows

PPPL researchers Allan Reiman and Douglas McCune are this year's PPPL Distinguished Research and Engineering Fellows, respectively.

Reiman, a physicist, was cited for his numerous contributions in diverse topics in plasma physics, including the theory of three-dimensional plasmas found in fusion devices called stellarators, and for his leadership in developing innovative approaches to the stabilization of plasmas in the design of the National Compact Stellarator Experiment (NCSX).

McCune, Co-head of the Laboratory's Computational Plasma Physics Group, was honored for seminal contributions to computational plasma physics, particularly in the area of high-level data analysis in fusion experiments, and for his more recent work in establishing and leading the PPPL Computational Plasma Physics Group, which has been vital to the development of modern computational physics and collaborative data analysis capability for both PPPL and the Fusion Energy Science Community.

Reiman received a bachelor's degree in physics from Harvard University in 1971, graduating summa cum laude. At Harvard, his academic honors included the Whittaker Prize, Detur Prize, and Knox Fellowship, and he was one of twelve in his class of 1,200 elected to Phi Beta Kappa in the junior year. A National Science Foun-

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dation Graduate Fellow in Princeton University's Physics Department from 1971 to 1973, Reiman received his Ph.D. from that Department in 1977. He worked at the Massachusetts Institute of Technology, Cornell University, and the University of Maryland before joining PPPL's Theory Department in 1981. He was named a Fellow of the American Physical Society in 1993. Since 1994, he has been a Lecturer with the rank of Professor in Princeton's Astrophysical Sciences Department. From 1997 to 2000, he was Head of the Plasma Configuration Design Group for NCSX.

"Allan is the Laboratory's leader in the theory of three-dimensional plasmas, such as in stellarators, which vary in cross section around the torus. He has been one of the leaders of the effort to design the National Compact Stellarator Experiment, which recently had a very successful Physics Validation Review, followed by strong approval from the Fusion Energy Sciences Advisory Committee. Allan did a fantastic job pulling this effort together at its inception, and has provided many of the critical analyses which have helped it succeed through many reviews," said Goldston.

McCune graduated magna cum laude with a bachelor's degree in mathematics from Yale University in 1978, the same year he began working at PPPL as a computational scientist. He received a master's in computer science from Drexel University in 1995. McCune, a software engineer and applied mathematician by training, has 23 years of experience in computational plasma physics. He is the main author and creator of TRANSP, an integrated software package for tokamak fusion plasma simulations, which has been used to analyze and validate the results on tokamak experiments around the world. He is coauthor of dozens of conference papers and journal articles, primarily in the field of experimental plasma physics and controlled fusion.

Goldston said, "Doug combines great skill in software engineering with a deep understanding of plasma physics, and the process of experimental research in our field. His data interpretation code, TRANSP, has become the standard for making sense of high-level data from fusion experiments around the world. He has done an outstanding job of maintaining a major code system on multiple platforms, and of providing an avenue for a wide range of U.S. and international collaborators to make additions and improvements."

The Distinguished Research and Engineering Fellow Program, funded by the DOE, was created to recognize members of the Laboratory's research, and 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. ●

Staff enjoyed the pie a la mode party in the Lobby following the State of the Lab talk by PPPL Director Rob Goldston and the presentation of awards. At top left are, from left, Dolores Bergmann, Steve Iverson, and Joanne Bianco. At left are a group engaged in lively conversation at the party. Above, Dolores Lawson (right) delivers a scoopful to Frank Cheng. To her right is Barbara Sarfaty.

American Physical Society Honors Two PPPL Scientists

PPPL physicists Edmund Synakowski and Randy Wilson recently received honors from the American Physical Society (APS). The APS gave Synakowski the 2001 Award for Excellence in Plasma Physics Research and named Wilson a Fellow during the Division of Plasma Physics meeting this fall in Long Beach, California.

Synakowski

Ed Synakowski

Synakowski was cited for his contributions to experiments that demonstrated a novel means of suppressing turbulence and the loss of heat from plasmas. He led research on this subject at PPPL on the Tokamak Fusion Test Reactor (TFTR). These efforts led to joint research on this topic with physicists at General Atomics in San Diego, California. He is one of four to receive the national award; the other three recipients are researchers in California. The award was established to recognize a particular recent outstanding achievement in plasma physics research and consists of $5000, which will be divided among the honorees.

PPPL Deputy Director Rich Hawryluk said of Synakowski, "Ed is well deserving of this award. He led the team effort in conducting an elegant series of experiments on TFTR. These experiments, together with measurements and theory developed at PPPL, were critical to our understanding of how to suppress turbulence and the loss of heat in fusion plasmas. His subsequent collaborative research on the fusion experiment at General Atomics helped confirm the universal nature of these physics principles."

Synakowski is presently Deputy Program Director of the National Spherical Torus Experiment (NSTX). He received a bachelor's degree in physics from the Johns Hopkins University in 1982, graduating with Departmental Honors and receiving the Donald Kerr Memorial Medal for excellence in physics. Synakowski received a Ph.D. in physics from the University of Texas at Austin in 1988, the same year he joined the research staff at PPPL. In 2000, he was named an APS Fellow and also shared the Kaul Foundation Prize for Excellence in Plasma Physics and Technology Development, an award given by Princeton University to a PPPL employee.

Wilson

Wilson was named an APS Fellow in recognition of his major pioneering contributions to understanding the use of radio-frequency waves to heat and drive an electric current in fusion plasmas. The honor is a lifetime appointment. The APS rules limit the maximum number of Fellows selected each year to be no more than half of one percent of the Division membership.

Wilson, who heads the Radio Frequency Technology Development group at PPPL, received a bachelor's degree in physics from the University of Michigan in 1974 and a master's and Ph.D. in Astrophysical Sciences from Princeton University in 1977 and 1980, respectively. Upon receiving his Ph.D., he joined the Laboratory's staff.

PPPL Experiment Department Head Joel Hosea said, "Randy Wilson has made outstanding contributions to the physics and technology of radio-frequency (rf) heating and current drive in fusion-oriented plasmas. His important advances in the field include pioneering ion cyclotron heating studies on PLT [Princeton Large Torus], leading the first ion-cyclotron heating and mode-conversion heating and current-drive physics explorations in deuterium-tritium (D-T) plasmas on TFTR, and most recently, extending rf heating studies to the high ion harmonic fast wave heating regime on NSTX. He is recognized worldwide in the plasma physics community as a leader of rf research and richly deserves his selection to be a Fellow of the American Physical Society."

Congratulations, Ed and Randy! ●

Randy Wilson

Department of Energy Recognizes PPPL's Anderson

Jack Anderson, Head of PPPL's Environment, Safety & Health and Infrastructure Support Department, recently received the DOE Distinguished Associate Award. He was recognized for his "significant contributions to the DOE's Safeguards and Security Directives Implementation Review Conference." Jerry Faul, Manager of the DOE's Princeton Area Office, presented the award to Anderson during the "State of the Lab" and awards ceremony at PPPL on November 20.

Jerry Faul (left), Manager of the DOE Princeton Area Office, presents PPPL's Jack Anderson with the DOE Distinguished Associate Award.

Faul said of Anderson, "Jack has provided a great service to the Department. He provided very valuable insight, advice, and practical suggestions to the working group on methods to maintain and improve security at a DOE laboratory."

Anderson was part of a six-member team that organized an assessment of the impacts of existing security and counterintelligence orders on the scientific and security environment at all of the DOE's facilities. The team concentrated on how to balance the need for new security and counterintelligence requirements with scientific freedom and progress. As part of the team, Anderson was involved in organizing the effort which resulted in recommendations for improved integration of new security policies with science objectives. Anderson represented the DOE "National Laboratory Improvement Council", and teamed with members from the DOE's Office of Science, Office of Counterintelligence, Environmental Management, Security and Emergency Operations, and the National Nuclear Security Administration. The team was aided in its efforts by 15 working groups comprised of DOE federal employees and contractor representatives from all of the DOE national laboratories.

Anderson has over 20 years of experience in plant management, plant operations, and construction functions. Half of this experience has been in the DOE environment and the other half in the civilian nuclear power industry and nuclear powered submarine construction. He came to PPPL in 1990 to head the Laboratory's Security and Emergency Preparedness group, and has been in his present position since 1997. Anderson received a bachelor's degree in Industrial Engineering along with a bachelor's in Business Administration in 1980 both from Rutgers University. In 1997, he received a Master's in Business Administration from Rider University.

"I was grateful to Rob Goldston for letting me devote a large portion of my time to the review team and its task. It illustrates Rob's desire to help out the entire DOE Laboratory community," said Anderson.●

The Laboratory will be closed Monday, December 24, 2001 through Tuesday, January 1, 2002 in observance of the Christmas and New Year's holidays. The lab will reopen on Wednesday, January 2, 2002. The dates of the Laboratory holiday schedule are as follows:

Monday	**December 24**	University Holiday
Tuesday	**December 25**	University Holiday
Wednesday through Friday	**December 26-28**	Laboratory Closed
Monday	**December 31**	University Holiday
Tuesday	**January 1**	University Holiday

Note: the staff has two (2) optional holidays available this year which may be used in conjunction with one (1) vacation day for the week PPPL is closed.

PPPL Speakers Go on the Road to Explain Our Science

The PPPL Scientific Speakers' Program kicked off in 2001. During this first year, researchers from the Lab delivered scientific talks at 11 sites, including colleges, universities, and research institutions. Those who participated in the program this year are (from left) Raffi Nazikian, Janardhan Manickam, Ed Synakowski, Cynthia Phillips, John Schmidt, and Daren Stotler. Not pictured is Ned Sauthoff. The talks were given at Clarkson University in New York; the Eastern Regional Research Center of the Department of Agriculture in Pennsylvania; Florida Atlantic; Florida Tech; Moravian College in Pennsylvania; North Dakota State University; Southern University in Louisiana; SUNY-Albany; the University of Louisiana, Lafayette; The University of Massachusetts, Amherst; the University of New Hampshire; the University of Southern California, and Youngstown State University in Ohio. As PPPL Director Rob Goldston noted during his State of the Lab talk, "This is an important component of outreach to the broader scientific community." ●

This Year's Spot Awards Went To ...

Joe Byczkowski
Rosemarie Fuchs-Smith
Jim Graham
Terry Greenberg
Marilyn Hondorp
Dolores Lawson
Bob Marsala
Don McBride
Penny Neuman
Lisa Owen

The Spot Award Program was initiated in 2000 to recognize and reward those individual staff members who have made short-term extraordinary contributions or accomplishments. These contributions typically occur over the course of several weeks or months. It honors those who have excelled in resolving complex problems leading to improvement or innovations resulting in cost savings, increased productivity, efficiency of operations, higher morale, and safety. Each honoree receives a certificate and a $100 net award. Nominations are prepared by the proposed recipients' immediate supervisors. For more information, contact HR at ext. 2220. ●

Chamber Awards PPPL

On behalf of the Laboratory, PPPL's Chris Ritter (left) and John DeLooper recently accepted the "Outstanding Contribution to the Advancement of a Business Education Partnership" award from the Princeton Area Chamber of Commerce. Congratulations!

P•P•P•L

Holiday Party

Friday, December 21

Noon – LSB Lobby and Cafeteria

FREE LUNCH

Carving Station • Seafood • Pasta • Salad Bar • Homemade Desserts

LIVE BAND – RAFFLE – SKIT

Open to Everyone at the Lab!

PARTY SCHEDULE OF EVENTS

Noon to 12:45 p.m. – The Rhythm Kings,
featuring PPPL's own Ed Synakowski – Lobby

12:45 p.m. – Skit by Anonymous,
starring the PPPL Players – Auditorium

1 p.m. – Raffle – Auditorium

1:15 p.m. to 2 p.m. – The Rhythm Kings – Lobby

Season's Greetings

from the

Princeton Plasma Physics Laboratory