

Hotline

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

Negotiations Begin on New Contract

By Anthony DeMeo

On May 2, Secretary of Energy Hazel O'Leary agreed to enter into negotiations to extend Princeton University's contract with the U.S. Department of Energy (DOE) for the operation of PPPL through September 30, 2001. "Secretary O'Leary's decision is very good news for PPPL. It is the result of the Laboratory's excellent programmatic accomplishments and effectiveness in management," noted PPPL Director Ronald C. Davidson. The University's current five-year contract to operate PPPL expires on September 30, 1996.

New Contract

During the second week of May, the DOE gave the University a model contract for the extension. This draft incorporates fundamental changes in compliance with DOE's contract reform initiative. According to Jerry Faul, Acting Manager of the DOE



The negotiating team, from left, are (seated) Ed Winkler, Steve Iverson, Dale Meade, Howard Ende, June Wiinikka, and Marlene Martinez; and (standing) Joan Shands, Jeff Hoy, Jerry Faul, and Al Sinisgalli. Not pictured is Christopher McCrudden.

Princeton Group, who is leading the DOE negotiating team, "The model reflects the Department of Energy's current views on contract reform, as

well as other regulatory changes, and is being used as the basis for negotiations with the University. One of the

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1996 PPPL Distinguished Fellows Honored

By Patti Wieser

Recognizing their excellence in research and in engineering, the Laboratory recently named two physicists and two engineers as the PPPL Distinguished Fellows for 1996. The Distinguished Research Fellows are Chio Z. "Frank" Cheng and Stewart Zweben and the Distinguished Engineering Fellows are Philip Heitzen-

roeder and Robert Woolley. The recipients were honored during a formal ceremony on June 7 at PPPL.

Said PPPL Director Ronald C. Davidson, "I wish our new Research Fellows and Engineering Fellows continued success in their very important work. Through their extraordinary accomplishments, the recipi-

ents bring great distinction to the Laboratory and Princeton University."

The Distinguished Research Fellow Program, which is funded by the U.S. Department of Energy (DOE), was created in 1993 to recognize

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Fellows

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members of the Laboratory's Research Staff. Fellowships are awarded to those who have achieved extraordinary records of creativity and accomplishments in research over an extended period of time. The Distinguished Engineering Fellow Program was created in 1995 to honor members of the engineering and scientific staff who have achieved outstanding records of innovation and accomplishment in engineering over an extended period of time. This year's Engineering Fellows are the first to be awarded through the program. Fellows receive one-time gifts of \$5,000 and qualify for priority in regard to their research and engineering programs.

The Distinguished Research Fellows, Cheng and Zweben, were cited for their "excellence in theoretical and experimental plasma physics research at PPPL."

Cheng, a Principal Research Physicist and Head of PPPL's Space Plasma Physics, was honored "for outstanding contributions to the theory of the interaction of high energy particles and magnetohydrodynamic modes, such as the Fishbone and the Toroidal Alfvén Eigenmode, and for important contributions to magnetospheric physics."

Cheng received a bachelor's degree in physics from the National Cheng-Kung University in Taiwan



The PPPL Distinguished Fellows for 1996 are, from left, Chio "Frank" Cheng, Stewart Zweben, Philip Heitzenroeder, and Robert Woolley.

in 1969 and a Ph.D. in physics from the University of Iowa in 1975 before coming to PPPL. He has been a member of the Laboratory's research staff since 1975.

During the presentation ceremony, Davidson said, "Frank is one of the world's leading theoretical experts on energetic particle effects and MHD (magnetohydrodynamic) modes, with applications to laboratory and space plasmas."

The citation for Zweben, a Principal Research Physicist, recognized him "for pioneering investigations of the physics of alpha particle effects on fusion plasmas including direct measurements of escaping charged fusion products leading to identification of several loss mechanisms including first orbit loss, stochastic to-

roidal field ripple loss, and MHD induced loss."

Zweben, who received a bachelor's degree in physics from the State University of New York at Stony Brook in 1972 and a Ph.D. in physics from Cornell University in 1977, came to PPPL in 1984.

Davidson said, "Stewart is one of the world's leading experimental plasma physicists, with extensive experience in fluctuation measurements and analysis, and in nuclear particle measurements and analysis."

The two Distinguished Engineering Fellows, Heitzenroeder and Woolley, were recognized for their excellence in engineering at PPPL. Deputy Director Dale Meade, who

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presented the Engineering Fellowship plaques, said, "The recent accomplishments on the Tokamak Fusion Test Reactor are a tribute to the engineering efforts at PPPL. Without our engineering capabilities, we would not be able to reach our goals."

Heitzenroeder, a Principal Engineer and Head of the Design and Analysis Division, was cited "for many contributions to the development of fusion technology and advanced tokamak design. Mr. Heitzenroeder's technical leadership of design and fabrication efforts for magnets, vacuum chambers, plasma-facing components and remote handling equipment has contributed to advancing the state-of-the-art of these critical fusion technologies."

Heitzenroeder, a member of the engineering and scientific staff at PPPL since 1972, received a bachelor's degree in mechanical engineering from the New Jersey Institute of

Technology in 1969. While presenting the citation, Meade said, "Phil has been a major contributor to the Laboratory's engineering activities since 1972, and his outstanding technical capabilities and creativity span the full range from design, to research and development, to fabrication."

Woolley, a Principal Engineer and Head of TFTR Systems Engineering, Tokamak Operations, was honored "for contribution to the startup testing and extended operation of the Tokamak Fusion Test Reactor. Mr. Woolley's broad knowledge of power supplies and protection circuitry as well as technical leadership of upgrade activities have enabled the magnets to operate at or beyond the original engineering design specifications."

Woolley, who came to PPPL in 1976, received a bachelor's degree in electrical engineering from Lehigh University in 1969 and a master's in electrical engineering from George Washington University in 1973.

Said Meade of Woolley, "Bob has demonstrated outstanding creativity in diverse areas ranging from integrated systems testing, to optimized control systems, to advanced tokamak design."

Fellows Form Councils

Approximately ten PPPL Distinguished Research Fellows and five Engineering Fellows are expected to be appointed by the end of the decade. Five Research Fellows have been named at the Laboratory since the program was established in 1994. They are Russell Hulse, Masayuki Ono, James Strachan, Roscoe White, and Michael Zarnstorff. Fellows are expected to devote most of their time to active research and engineering activities. The Research and Engineering Fellows form the Distinguished Research Fellow Council and the Distinguished Engineering Fellow Council, respectively, which advise the Director on the scientific and engineering direction of the Laboratory. ●

Contract

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primary goals of contract reform is to improve efficiency and thereby reduce costs, both for the Laboratory and the DOE."

Negotiations Now Underway

In addition to Faul, the DOE negotiating team includes June Wiinikka, Contract Specialist; Joan M. Shands, DOE Counsel; Marlene Martinez, DOE Chicago Office; and Jeff Hoy, DOE Germantown Office. Princeton University's team is led by Al Sinisgalli, Director of the Office of Research and Projects Administration, and includes Howard S. Ende, General Counsel; Christopher McCrudden, Associate Treasurer and Director of Finance; Dale Meade,

PPPL Deputy Director; Ed Winkler, Head of the PPPL Office of Resource Management; and Steve Iverson, Head of PPPL Human Resources and Administration.

The negotiations will involve a significant number of revised contract language issues pertaining to the use of performance measures, financial incentives, and liability issues. To prepare for the sessions, which began on May 16, the Princeton team has been reviewing the contract to gain an understanding of the changes and their potential impact on the Lab. "Princeton is not the first DOE contractor to negotiate a new contract since the reform measures were instituted. Over the past few years, we have kept ourselves informed of the progress made in the successful development of DOE con-

tracts with places such as Argonne and Brookhaven National Laboratories and the Continuous Electron Beam Accelerator Facility," said Steve Iverson. "Nevertheless, the University and DOE teams will face more than a few challenges in ironing out the new contract terms."

Opportunities for PPPL

Davidson said, "Aspects of the DOE contract reform initiative now being incorporated in the new contract would provide PPPL with unique opportunities for improved efficiency and greater self-determination, with less direct DOE oversight. But much work needs to be done between now and September to complete negotiations and arrive at a new contract agreeable to both parties. This is a formidable challenge." ●

Annual Patent Dinner Recognizes PPPL Inventors

By Patti Wieser

When it comes to ingenuity, there's no time like the present.

"Now is the time for inventions," said PPPL Deputy Director Dale Meade, who urged inventors at the Patent Awareness Dinner to continue their creativity in both fusion and non-fusion areas.

The Laboratory honored twenty-nine PPPL inventors for Fiscal Year 1995 during the dinner held in May at Princeton University's Prospect House.

Meade, who delivered remarks along with PPPL Committee on Inventions member Ken Young, extended congratulations to the honorees from PPPL Director Ronald C. Davidson.

In a congratulatory message, Davidson said, "The innovative concepts embodied in your inventions and patents are at the very intellectual heart of the Laboratory's core competencies in plasma science and technology."

Meade, noting that the Laboratory supports inventions in both fusion and non-fusion areas, said those related to fusion reflect PPPL's progress in its mission. "In some of these cases, the inventions were a necessity for moving forward and establishing our goal to provide a new energy source for the 21st century," said the Deputy Director.

Meade closed by challenging inventors and non-inventors alike to take in the spirit of creativity. "I want to remind everyone that now is the time."

The Patent Committee on Inventions for 1995 included Peter Bonanos, Marilyn Hondorp, Steve Jardin, John Johnson, Dale Meade, Lewis Meixler, Schweick von Goeler, and Ken Young. ●



From left are Annie, Ana, and Ned Sauthoff, Anne Young, and PPPL Deputy Director Dale Meade.



PPPL Technology Transfer Head Lewis Meixler (right) converses with Princeton University's Jean Mahoney.



Nathaniel Fisch (middle) chats with Mark and Kim Herrmann (backs to camera).



PPPL's Stephen Paul poses with family members. From left are Paul's father-in-law, Martin Gen; his mother, Bernice Paul; his wife, Gilda Paul; Paul; his father, Sy Paul; and his mother-in-law, Sara Gen.



From left are Jan Wioncek and Mary and John Desandro.



Mr. and Mrs. Edward Nartowitz.



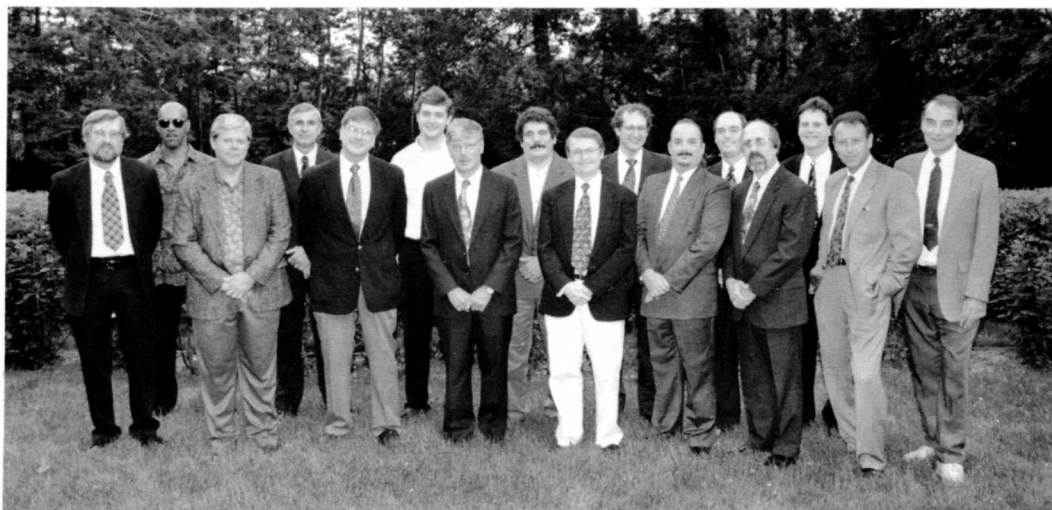
Clockwise from left are Enoch Durbin, Szymon and Ada Suckewer, Mrs. Durbin, and Sharon and Henry Kugel.



Enjoying the dinner are, clockwise from left, Dianne and Tom Walters, Kathryn and Robert Woolley, and Tom Kozub and Evelyn Agosto.

Photos by Dietmar Krause

Inventors from Fiscal Year 1995



The inventors honored at the Patent Recognition Dinner are, from left, Tom Kozub, Sylvester Vinson, Tom Walters, Henry Kugel, Robert Woolley, Mark Herrmann, Forrest Jobs, John Desandro, Edward Nartowitz, Nathaniel Fisch, Leonard Kralik, Gary Gibilisco, Jan Wioncek, Stephen Paul, Szymon Suckewer, and Enoch Durbin. Not pictured are Lloyd Ciebiera, Victor Garzotto, Thadius Golian, Fred Levinton, Dennis Manos, Jack Mervine, David Moore, Holt Murray, Jean Rax, Richard Rossmassler, John Timberlake, Frank Tulipano, and Shoichi Yoshikawa.

Patents Issued in Fiscal Year 1995

Method of High Level Radioactive Waste Management

Holt Murray

Lower Hybrid Current Drive in Tokamak Reactors Using Alpha Particles

Nathaniel Fisch and Jean Rax

Direct Current Sputtering of Boron from Boron/Carbon Mixtures

Dennis Manos, Edward Nartowitz, and John Timberlake

Patents Applied for in Fiscal Year 1995

PPPL Tritium Waste Package

Lloyd Ciebiera, Richard Rossmassler, Frank Tulipano, and Sylvester Vinson

Inventions Disclosed in Fiscal Year 1995

Mathematical Maze

Shoichi Yoshikawa

A Process to Eliminate Oxides of Nitrogen Emitted from an Internal Combustion Engine by Replacing the Intake of Air with Pure Oxygen

Stephen Paul

UHV Pressure Gauge using a Pure Electron Plasma with Enhanced Range

David Moore

Drawer-mounted Keyboard Platform

Jack Mervine

Traveling Spark Ignition (TSI) System

Enoch Durbin and Szymon Suckewer

SF₆/T₂ Detector

John Desandro and Victor Garzotto

Method and Apparatus for Steady-State Magnetic Measurement of Poloidal Magnetic Field Near a Tokamak Plasma Using Only Fixed Air-Core Electrical Coils and a Mechanical Strain Gauge

Robert Woolley

Rational Interferometer

Forrest Jobs

A Method of Obtaining an Estimate of Total Tritium on a Molecular Sieve Waste Container

R. Tom Walters

Pressure Profile via Motional Stark Effect

Fred Levinton

Channeling α -Particle Power with Two Waves

Nathaniel Fisch and Mark Herrmann

Cable Armor Removal Tool

Gary Gibilisco, Leonard Kralik, and Jan Wioncek

Oil Change Device for Equipment Used with Tritium

Lloyd Ciebiera, Thadius Golian, and Tom Kozub

Gated Boron Deposition Using Z-Pinch Ablation

Henry Kugel and John Timberlake

Lithium Carbide/Graphite Composite for Evaporation of Lithium

Henry Kugel and John Timberlake

Women's Review Highlights Improvements

By P.A. Moore*

The Fifth Department of Energy (DOE) Review of Laboratory Programs for Women recently held at Brookhaven National Laboratory (BNL) demonstrated that efforts put into quality of work at various sites have been rewarded, although almost all participants agreed that there was still much to be done to achieve equity. More than 100 participants from twenty DOE facilities recently met at Brookhaven to share successes over recent years in promoting women in science.

Successful Programs

The Review consisted of oral presentations and poster displays from DOE facilities and contractors on successful programs, followed by focus groups to make recommendations on implementing similar programs at other sites. Some successful programs include Women in Science and Technology (WIST) at Argonne, in which women scientists meet regularly to

discuss issues of importance to the lab, along with the Lab Women's Coordinator, Ruth Reck. Other labs reported implementing mentoring programs for junior staff, establishing day care centers on site, and a mother-daughter science club. These programs and others were presented during talks, poster sessions, and breakout groups.

Martha Krebs, Director of Energy Research (ER), gave the keynote address and emphasized the role of DOE in continuing to build on the basic science of the nation, and the need to have an informed public. Antoinette Joseph, also from ER, spoke to participants about the need to stay focused on goals. She complimented Victoria McLane, of BNL, and Abbie Layne, of the Morgantown Energy Technology Center, for their work in compiling the comparative report which measures women's programs at the various facilities. "Such a report provides

an important baseline to benchmark future progress," said Joseph, "and gives labs clear direction as to areas of improvement."

Scientific Solipsism

Invited speaker Sheila Tobias, author of "Overcoming Math Anxiety," spoke about scientific solipsism, in which we assume that science is only for people who are the same as us. In her recent book, and her talk of the same title, "Rethinking Science as a Career," Tobias indicated that while we cannot all be bench scientists, there is an important role to play in policy, legal affairs, and the media by science-trained people. "These types of careers are just as important to the nation as those who practice their science in the lab," said Tobias.

Participants from the conference, and points of contact for the labs, will return to their respective sites with new ideas for helping women in science. Linda Hansen, a computer sci-

entist from Argonne West, was delighted with the Review. "Seeing so many other accomplished and talented women is a real pleasure. Having this network is important to encourage other women that we can make that happen," she said. ●

**P.A. Moore is the Assistant to the Director at the Stanford Linear Accelerator Center in California.*



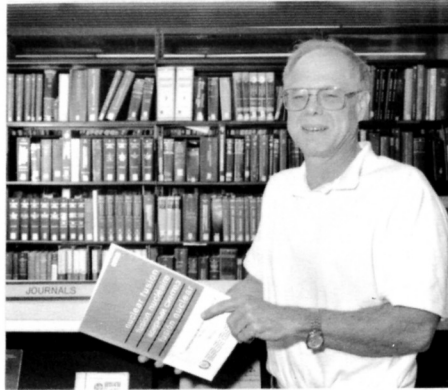
PPPL participants in the Fifth DOE Review of Laboratory Programs for Women are, from left, Carol Phillips, Chris Ritter, Sharon Warkala, Phyllis Schwarz, Steve Iverson, and Dori Barnes. Not pictured is Virginia Finley.

Ignat Takes Over as Editor of Nuclear Fusion

By Patti Wieser

PPPPL's David Ignat is the newly named Editor of *Nuclear Fusion*, a monthly journal of the International Atomic Energy Agency (IAEA). He replaces Cornelis Bobeldijk, who is retiring from the editorship after 11 years.

Ignat, who left PPPL in May, will begin his assignment at the periodical's headquarters in Vienna on July 1. His responsibilities include selecting referees, arbitrating between authors and referees, soliciting review articles, managing the budget, and proofreading. Ignat will primarily focus on coordinating manuscript changes with authors and referees, the latter of which are scientific judges who review manuscripts for science and clarity in the fields of their expertise.



David Ignat

"That will be the most delicate part of my job, perhaps the most demanding," commented the newly named editor of ironing out any differences in opinion.

Ignat has been both a contributing author and referee for *Nuclear*

Fusion, which was founded in 1960. The periodical presently has 375 paid subscribers, most of which are research libraries such as the one at PPPL. During the past two years, PPPL contributed 37 articles to the journal.

Ignat, who received a Ph.D. in plasma physics from Yale University in 1968, came to PPPL in 1977 as an administrator in the Experimental Division, eventually joining the engineering and scientific staff. He has been involved in the PLT, PBX-M, and TFTR projects.

Summing up his goals as editor of *Nuclear Fusion*, Ignat said, "I hope to be able to see the number of submitted articles rise slightly — even if the fusion budget does not ... and to keep it [the journal] readable." ●

Nuclear Fusion was founded as a multi-lingual journal in 1960 upon the advice of the Scientific Advisory Committee to the IAEA. The journal was then mainly concerned with basic plasma physics. After the third IAEA Conference on Plasma Physics and Controlled Nuclear Fusion Research held in Novosibirsk in 1968, when world research concentrated more and more on tokamak physics, the journal's focus shifted slowly to fusion-oriented research. As of 1967, it has been published in English only. The first 10 volumes had quarterly issues, the next 7 were bi-monthly, and since 1968, the journal has been published monthly.

—Information supplied by Cornelis Bobeldijk

Upcoming PPPL Recreational Events

- **August** (day to be decided) **Free Lunch for all employees**
- **Saturday, September 7** **Bus Trip to Atlantic City**
- **Saturday, December 7** **Holiday Dinner Dance**

Mark Your Calendars! Watch for details in upcoming issues of HOTLINE and the News Alert.