US DOE Princeton Plasma Physics Laboratory Vol. 31, No. 2 • November • 2009

HOTLINE

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

Physics Society Honors Maingi and Nazikian

In recognition of their work in fusion energy research and plasma physics, Rajesh Maingi and Raffi Nazikian have been named Fellows of the American Physical Society (APS).

Maingi, an Oak Ridge National Laboratory (ORNL) researcher on a long-term assignment at PPPL, was cited for physics research and demonstration of plasma density control in fusion devices, and for the discovery of a new class of instabilities in plasmas.

ORNL Director Thom Mason said, "Rajesh's originality in controlling and fueling fusion plasmas, as well as his discovery of new plasma regimes, lays the groundwork for greater understanding in fusion research."

Maingi received a Ph.D. in nuclear engineering from North Carolina State University in 1992, became an ORNL employee in 1997, and was assigned to PPPL in 1999.

Nazikian, a Principal Research Physicist at PPPL, was noted for his contributions in observing particular waves in fusion plasmas and for developing tools to understand instabilities in plasmas.

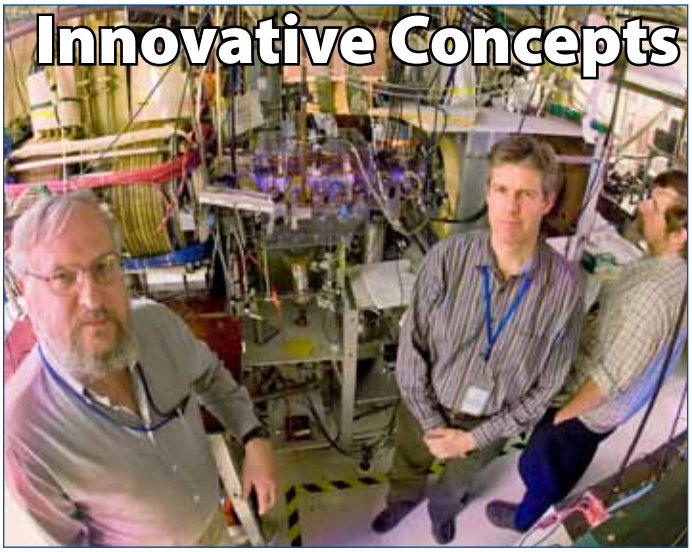
PPPL Director Stewart Prager said, "Raffi's key discovery 10 years ago of a plasma wave excited by fusion reaction products has opened up a field of research that will be a major focus of the international ITER experiment 15 years into the future. Raffi has since become an international leader in understanding instabilities in plasmas." Nazikian joined PPPL in 1989 after receiving a Ph.D. in plasma physics from the Australian National University in Canberra.

Rajesh Maingi

Raffi Nazikian

Maingi and Nazikian received the honors at the APS-Division of Plasma Physics meeting in Atlanta earlier this month. Fewer than one half of one percent of American Physical Society members are elected to become Fellows. ●

Innovative Concepts at PPPL Get ARRA Lift



At the PFRC experiment at PPPL are, from left, PFRC principal investigator Samuel Cohen, Dave Farley, and Bruce Berlinger.

An additional $1.8 million in funding from the American Recovery and Reinvestment Act will benefit three innovative fusion energy research projects at PPPL. This recently awarded amount is on top of the $13.8 million PPPL received in August as a result of the stimulus bill signed by President Obama earlier this year.

"We are delighted and grateful to receive these precious funds, which will greatly increase the progress of these highly innovative projects," said Princeton University Dean for Research A.J. Stewart Smith.

Of the $1.8 million, $320,000 will be used for infrastructure and upgrades to a fusion experiment called the Princeton Field-Reversed Configuration, an alternate concept for magnetically confining a plasma; $952,000 for upgrades

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Prager Testifies at House Science Committee Fusion Hearing

PPPL Director Stewart Prager (second from left) joined other fusion leaders who gave testimony during "The Next Generation of Fusion Energy Research" hearing October 29 in Washington, D.C. The U.S. House of Representatives Committee on Science and Technology, Subcommittee on Energy and Environment, held the hearing. From left are DOE Office of Fusion Energy Sciences Associate Director Ed Synakowski, Professor Prager, Oak Ridge National Laboratory Director Thom Mason, University of Rochester Professor Ricardo Betti, and University of Wisconsin Professor Ray Fonck. A Committee hearing on fusion has not been held since 1996. For more about the hearing, go to: http://science.house.gov/publications/hearings_markups_details.aspx?NewsID=2653.

HOTLINE

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The HOTLINE is issued by the US DOE Princeton Plasma Physics Laboratory, a research facility supported by the United States Department of Energy. It is primarily an internal publication. Correspondence and requests to reprint material should be directed to the Editor, PPPL HOTLINE, P.O. Box 451, Princeton, NJ 08543; Interoffice correspondence should be addressed to MS-38, LSB Bldg.; tel. 609-243-2757; fax 609-243-2751; e-mail pwieser@pppl.gov.

IT'S NOT TOO LATE!

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PPPL United Way Campaign

Please send your pledge card to
ROSEMARIE FUCHS-SMITH
B-362

United Way

ARRA

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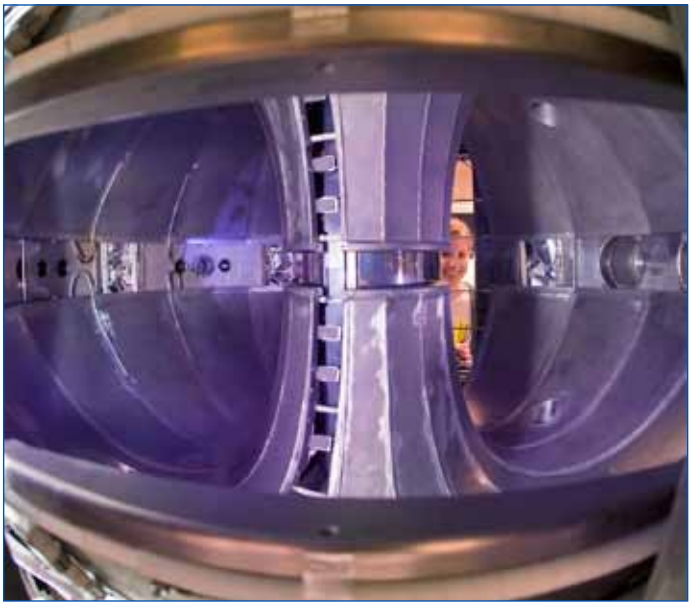
and modifications to the Lithium Tokamak Experiment, a fusion experiment to study the use of liquid (lithium) metal — instead of solid — walls inside of the vacuum chamber containing the hot plasma; and $576,000 to design, construct, and implement a special instrument called an X-ray imaging crystal spectrometer that measures intensities of soft X-rays emitted by a plasma and uses these intensities to determine plasma temperatures.

PPPL Director Stewart Prager said, "Two of these projects are distinguished from the pack in that they explore the physics of a key idea, not part of the mainline approach to fusion. If successful they could greatly alter the road to fusion. The third is vital to gaining highly precise measurements in fusion experiments." ●



An interior shot of the Lithium Tokamak Experiment with PPPL graduate student Laura Berzak peeking through an opening.

PPPL physicists Ken Hill (left) and Manfred Bitter with an X-ray imaging spectrometer similar to the one that will be designed and built with the additional ARRA funding.

Grisham Noted for 'Positive' Contribution to Japanese Experiment

Japanese officials recently cited PPPL scientist Larry Grisham for his contributions to the successful achievement of a half-megavolt negative-ion beam on JT60U, a Japanese fusion experiment. During a ceremony in Naka, Japan, representatives from the Japan Atomic Energy Agency presented Grisham with a ceremonial gift and certificates in Japanese and English.

Positive ions of hydrogen isotopes are commonly used to produce the neutral beams that are injected into plasma fuel to heat it to the temperatures required for the production of fusion energy. Future fusion devices such as ITER, the large international fusion experiment under construction in France, will require higher-velocity neutral beams to penetrate the core of their larger, denser plasmas.

The achievement of the stable operation of a half-megavolt negative ion beam validates the neutral-beam concept to be used for ITER. Each ITER beam will inject 16.5 megawatts of power, roughly what would be required from each beam in a fusion power plant. ●

— Anthony DeMeo

Larry Grisham

Pounding the Pavement for Good Causes

PPPL'ers Participate in Walks and Marathons to Support Autism Awareness and Cancer Research

Several PPPL'ers and grad students participated in the October 3 "Walk Now for Autism" at Long Branch to raise awareness about autism and funds for autism research. PPPL's Barbara Sarfaty, whose grandson, Colin, has autism, brought the PPPL'ers together to join the "Colin's Clan" team. More than 4,500 people came together for this year's shore walk and helped raise over $265,000. From left are: Barbara Sarfaty, Josh Kallman, Luc Peterson, Meghan Bellows, James Morgan, Jess Baumgaertel, Kelsey Tresemer, Lee Ellison, Eisung Yoon, Ceil O'Brien, and Charlie Kircher.

Some donned blue T-shirts in October to walk along the shore at Long Branch, another wore orange and ran in the New York City Marathon in November, and two will be wearing mouse ears for a January marathon. All are putting on sneakers to step up awareness and raise research funds for charitable causes.

Barbara Sarfaty and a group of PPPL graduate students and staff participated in the Autism Walk; Chris Minervini ran in the New York City Marathon as part of "Fred's Team" to raise funds for pediatric cancer research at Memorial Sloan-Kettering; and Jessica Baumgaertel and Luc Peterson are training to run in the Disney Marathon in January for the Rally Foundation, which supports research institutions for pediatric cancer.

Fourth-year graduate students Baumgaertel and Peterson are gearing up for the "happiest" run — the Walt Disney World Marathon scheduled for January 10.

"The 26.2-mile marathon is through all the four theme parks in Orlando, including through the castle," says Peterson. "It draws about 20,000 runners." Adds Baumgaertel, "The path starts and ends at Epcot, passing through the Magic Kingdom Park to Disney's Animal Kingdom Theme Park and Disney's Hollywood Studios along the way. People say it's the happiest marathon you'll ever run."

To prepare, the two have been running three to four mornings a week, from shorter 6-mile runs to up to 15 or more miles at a clip. Taking a break from computer simulation codes — Luc concentrates on turbulence in NSTX and Jess on turbulence in stellarators — they run all over Princeton and Plainsboro. They often run at least two hours.

"We enjoy running, but we look forward to our 'off' days," says Baumgaertel, who has been running close to two years. She says she went from "the couch" to running 5k and has worked her distance up. Peterson, an avid sportsman who plans on training for a triathlon, enjoys volleyball, softball (he's on the Tokabats softball team), and soccer.

The two will be running with Luc's fiancée, Meghan Bellows, and Princeton University's Audrey Sederberg. Baumgaertel and Peterson are running in honor of a 14-year-old youngster from Brooklyn whose cancer is in remission.

"I'm hooked on running," says Baumgaertel. ●

Luc Peterson and Jessica Baumgaertel train for the Disney Marathon.

PPPL's Chris Minervini ran in the New York City Marathon in November for "Fred's Team," a group of runners with the common goals of raising funds for critical cancer research and completing a marathon. Fred's Team, Memorial Sloan-Kettering's Marathon Program, supports the Aubrey Fund for Pediatric Cancer Research. Minervini ran the race officially in 4:48:30.

What's Happening @ PPPL?

Spooky World Series Bash

PPPL'ers enjoy popcorn, peanuts, pretzels, and Stewart's root beer at the Halloween-World Series party in the Lobby October 30. Boo! Go team!!

What's Happening @ PPPL?

The Materiel Services Group recently completed 16 consecutive years of work without a recordable injury. Congratulations to the Group for this outstanding accomplishment!

From left are (seated) Sara Flohr, Fran Cargill, and Christine Canal; (standing) Jerry Siminoff, Matt Lawson, Chris Stires, John Luckie, Spence Holcombe, and Rob Sheneman. Not in photo are Jim Conover, Kyron Jones, and Marisol Rivas.

science education news

The Science-on-Saturday lecture series will begin on January 9, 2010. Watch for the schedule, which will be posted before the holiday break.

PPPL to Host Two Science Bowls in 2010

Middle School Science Bowl — Friday, February 26, 2010

High School Science Bowl — Saturday, February 27, 2010

Volunteers are needed! If you are interested in serving as a time-score keeper, moderator, science judge, or overall helper at one or both of the Science Bowls, please contact James Morgan at jmorgan@pppl.gov.

Please Join Us to Celebrate
Raffi Nazikian and Rajesh Maingi
becoming 2009 APS-DPP Fellows and
Steven Sabbagh winning the
2009 IOP Nuclear Fusion Award.

Date: FRIDAY, DECEMBER 4
Time: 2:00 P.M.
Place: LSB LOBBY

Ice Cream Cake, Fruit and Beverages
Will Be Served