

At PPPL THIS WEEK

WEDNESDAY, MARCH 13

PPPL Colloquium

4:15 p.m. ♦ MBG Auditorium

Modern Visualization Successes and Challenges

Christopher Johnson, University of Utah

Refreshments at 4 p.m. in the LSB Lobby

Carebridge Seminar

11:30 a.m. ♦ H.R. Training Room

Thinking Your Way to Healthy Eating

THURSDAY, MARCH 14

Theory Seminar

10:30 a.m. ♦ T-169

Nonlocal models of non-diffusive transport

Diego del Castillo Negrete

Hamilton Colloquium Series

4:30 p.m., Princeton University

Jadwin Hall, A10

Two Dimensional Turbulence

William Young, Scripps Institution of Oceanography, UC, San Diego

FRIDAY, MARCH 15

Deadline for Green Machine Awards nominations

SATURDAY, MARCH 16

Science on Saturday

9:30 a.m. ♦ MBG Auditorium

A robot's view of our ocean planet

Josh Kohut, Rutgers University

THIS IS THE LAST IN THE SERIES

UPCOMING EVENTS...

March 20

American Red Cross Blood Drive

8 a.m. - 1 p.m.

Lower end parking lot

March 22

Young Women's Conference at Princeton University

9 a.m. - 2 p.m.

Inside...



Happenings at PPPL ...

page 3



Café at PPPL Menu

page 4

Maingi adds a new strategic dimension to fusion and plasma physics research

By John Greenwald

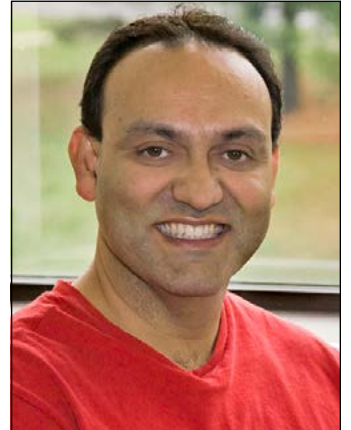
Physicist Rajesh Maingi remembers nearly everything. Results of experiments he did 20 years ago play back instantly in his mind, as do his credit card and bank account numbers.

His knack for recalling research results comes in particularly handy. "Knowing results from five-to-20 years ago makes it easier to ask the right questions for contemporary scientific programs," Maingi said. Such findings have made him a leading expert on key aspects of the physics of plasma, the superhot, charged gas that fuels fusion reactions in donut-shaped magnetic facilities called tokamaks.

Maingi brings his expertise to the new position of manager of edge physics and plasma-facing components at PPPL. The recently created post calls for coordinating all Laboratory research on the volatile edge of the plasma, which must be carefully controlled for fusion to take place, and on the crucial boundary between the plasma and the interior surfaces of a tokamak.

The strategic position adds a new dimension to research at PPPL. "We've decided to pull all our activities in this area together and plan how to use them to make an impact in the fusion community and the world," said Michael Zarnstorff, deputy director for research at the Laboratory. "Rajesh is well-known around the world, particularly in tokamak physics. He has experience and perspective and strategic vision, and we see him as a great opportunity for the Lab."

continued on page 2



Rajesh Maingi is the manager of edge physics and plasma facing components.



Safety Champions want to hear from you



The Safety Champions Committee is off to a good start and would like to let PPPL staff know that the members are available to pass along employee safety ideas and concerns in a quasi-anonymous manner, if desired. This is not meant to bypass the preferred supervisory chain-of-command, the Safety Office or other methods of communicating your concerns.

Members of the Safety Champions Committee from left to right in back: Saj Gilani, Erik Gilson, Mike Williams, (the Safety Champion), Tim Conwell, Steve Raftopoulos; left to right in front: Deedee Ortiz, Sue Hill, Barry Jedic and Kris Gilton.

Photo composite by Elle Starkman

Maingi

continued from page 1

Maingi is no stranger to PPPL. From 1999 to 2012 he was on long-term assignment from Oak Ridge National Laboratory to the National Spherical Torus Experiment (NSTX), the major fusion facility at PPPL. Now, as a newly hired PPPL staffer, he is on a two-year assignment to the DIII-D fusion facility at General Atomics in San Diego while the NSTX is being upgraded, and remains deeply involved in long-term planning for NSTX experiments.

Maingi fell in love with fusion during a 12th grade physics class in Raleigh, N.C. His family had moved there from India when he was 5. While writing his senior-class paper on fusion, he decided to make it his career. "Most people aren't that fortunate," he says. "They have to flounder around a little longer."

What particularly fascinates Maingi is the transition the plasma makes from its blistering core—"the hottest thing in the universe," he says—to its far cooler outer regions that lie just a few meters away in tokamaks. The challenge is to manage this transition so that the core remains hot enough to maintain fusion reactions without allowing the outer layers to damage components of the tokamak that face the plasma. Maingi has pursued this challenge since earning his doctorate from North Carolina State University and joining Oak Ridge in 1992.

Maingi calls the edge of the plasma—the one-to-two centimeter section of gas found just inside the boundary layer—"the tail that wags the dog." Controlling this edge is vital to preventing the sudden eruptions of heat called

"edge localized modes" that can destroy the divertor plates that vent exhaust from fusion reactions. Researchers have achieved a measure of such control on the NSTX, "and that by itself is very exciting," Maingi said.

Maingi shares his enthusiasm with budding scientists, mentoring student projects at the Laboratory from the high school to the post-graduate levels. Such projects have both short- and long-term benefits, he says. On the one hand, the student work can augment his own research. On the other hand, "There's a lot of satisfaction in seeing one or more of your students progress into scientists, particularly if they stay in the field," Maingi said.

Scientific curiosity runs in the Maingi family. Among the students that Maingi has mentored is his younger son, Raman, who coauthored two journal-published papers as a high school summer intern at PPPL in 2010 and 2011. Raman now studies political science as a sophomore at Rutgers University. His older brother, Logan, is a graduate student in theoretical particle physics at Johns Hopkins University. Maingi and his wife, Nola, have a third child, Jillian, who is in kindergarten.

Maingi likes to relax by playing touch football, with quarterback his favorite position. While living in Plainsboro, he organized weekly games in the summer at an open field near his home. "Kids of all ages and a handful of dads and I would go out there," he said. "It was wonderful and a great way to stay in shape. You watched all the kids grow up and it gave them a great pastime." 📷

Rep. Rush Holt at Science on Saturday



Congressman Rush Holt paid a surprise visit to PPPL during the Science on Saturday lecture on March 2 and praised the Laboratory's Science Education programs. A former assistant director of PPPL, Holt began the science education program in the early 1990s.

(Photo by John DeLooper)



A NEW PPPL VIDEO IN THE WORKS

Videographer Kevin Coughlin, left, is filming a new informational video about PPPL that will be shown to visitors and the general public. Here, he prepares to interview Hutch Neilson, head of advanced projects.



TAIWANESE REPORTER VISITS PPPL

Chaoying (Alex) Lai, a reporter from United Daily News, a Taiwanese news service, who is based in Washington D.C., visited PPPL on Feb. 28. Masa Ono, the NSTX project director, gave Lai a tour of the NSTX site and Lai talked extensively with physicists W. W. Lee and Hong Qin. Lai is writing an article about the difference between fusion and fission and the need for fusion in Taiwan. From left to right: Lai, Qin and Lee in Lee's office.



PRINCETON ART STUDENTS TOUR PPPL

Al Von Halle gives a tour to a group of Princeton University art students who will be spending a few weeks painting various sites at PPPL. Their professor, Josephine Halvorson, is to the right of Von Halle.

WILD TURKEYS INVADE PPPL

Wild turkeys made a surprise appearance in the courtyard outside the cafeteria last week. They have mostly been seen in the lower parking lot. This is mating season for wild turkeys and the Site Protection Division warns that they could be aggressive and you should not approach them or feed them.





**Princeton Plasma Physics Laboratory
American Red Cross Blood Drive**
Wednesday, March 20
8 a.m. - 1 p.m.
Lower End Parking Lot

Call Tricia Brennan x3200 for an appointment or sign up online at www.redcross.org
Enter sponsor code: 022762



COLLOQUIUM



**Modern Visualization
Successes and
Challenges**
CHRISTOPHER JOHNSON
University of Utah

Wednesday, March 13

4:15 p.m. (Coffee/Tea at 4 p.m.)
M.B.G Auditorium, Lyman Spitzer Building

2013 Science on Saturday

Princeton University Plasma Physics Laboratory Lecture Series



**A robot's view of our
ocean planet**

JOSH KOHUT

Rutgers University

Saturday, March 16 • 9:30 a.m. • M.B.G. Auditorium

Planning an event at PPPL? Make it a GREEN event!

If you're planning an event or meeting at PPPL, please consider using biodegradable, compostable, and recyclable items, similar to those used in the cafeteria and make your event a green event! Try to avoid Styro-foam products and non-compostable plastic cups and plates and help PPPL reduce the amount of trash we send to the landfill.

Volunteers Needed for Young Women's Conference

PPPL's annual Young Women's Conference on March 22 needs dozens of volunteers to help with exhibits, lead groups and help things move along smoothly. Both female and male volunteers are welcome.






Please contact Aliya Merali, amerali@pppl.gov, ext. 2208 for more information.

Café at PPPL Menu

BREAKFAST 7 a.m. • 10 a.m.
CONTINENTAL BREAKFAST 10 a.m. • 11:30 a.m.
LUNCH 11:30 a.m. • 1:30 p.m.
SNACK SERVICE until 2:30 p.m.

Mark Gazo, Chef Manager

COMMAND PERFORMANCE
CHEF'S FEATURE

	MONDAY MARCH 11	TUESDAY MARCH 12	WEDNESDAY MARCH 13	THURSDAY MARCH 14	FRIDAY MARCH 15
	 BAKED BREADED PORK CHOPS	 2 HOT DOGS SERVED WITH BAKED BEANS	 SALISBURY STEAK W/ MASHED POTATOES	 CORNE BEEF AND CABBAGE	 POTATO & CHEESE PIEROGIES (V)
EARLY RISER	Vegetable & Bean Breakfast Burrito (V)	Ham & Egg Panini Wrap	Chicken Tenders with Eggs	Philly Steak, Egg and Cheese Wrap	Blueberry Pancakes with Sausage
COUNTRY KETTLE	Vegetable Beef	Cream of Tomato Bisque (V)	French Onion Soup	Irish Stew	Manhattan Clam Chowder
GRILLE SPECIAL	Buffalo Popcorn Chicken Wrap	Grilled Chicken With Roasted Onions & Peppers on a Roll	Turkey Burger with Turkey Bacon and Smoky BBQ Sauce	Chicken, Roasted Pepper & Provolone on a Kaiser Roll	English Style Fish and Chips
DELI SPECIAL	Egg Salad & Bacon Wrap	Liverwurst & Onion on Rye	American Hoagie	Roast Beef and Cheese Hoagie Wrap	Hummus Veggie Wrap (V)
PANINI	Blue Cheese Steak Panini with Peppers & Onions	Blackened Chicken with Pepper Jack Cheese and Peppers	Sausage, Pepper and Mozzarella Stromboli	Pastrami and Cheddar Panini	Grilled Portobello, Spinach and Feta on Flat Bread (V) 🍎

MENU SUBJECT TO CHANGE WITHOUT NOTICE

[CLICK HERE FOR A PRINTABLE WEEKLY MENU](#)

WEEKLY

Editor: **Jeanne Jackson DeVoe** ♦ Layout and graphic design: **Gregory J. Czechowicz**
Photography: **Elle Starkman** ♦ Web: **Chris Cane** ♦ Admin. support: **Pamela Hampton**

The **PPPL WEEKLY** is published by the **PPPL Office of Communications** on Mondays throughout the year except for holidays. Deadline for calendar item submissions is noon on Thursday. Other stories should be submitted no later than noon on Wednesday. Comments: commteam@pppl.gov ♦ **PPPL WEEKLY** is archived on the web at: <http://www.pppl.gov/ppplweekly.cfm>