

## At PPPL THIS WEEK

WEDNESDAY, SEPTEMBER 28

### PPPL Colloquium

4:15 p.m. ♦ MBG Auditorium

Natural Disaster Aftermaths

Dr. Marc Goldsmith

(Goldsmith & Associates, LLC)

THURSDAY, SEPTEMBER 29

### PPPL Theory Seminar

10:45 a.m. - 12:00 p.m. ♦ T-169

Dr. Christopher C. Chaston

(UC Berkeley)

### GFDL Events and Seminars

2:00 p.m. ♦ GFDL

Smagorinsky Seminar Room

The Role of the Winds in Past Climate Change and CO<sub>2</sub>

Bob Anderson (Columbia - LDEO)

[www.gfdl.noaa.gov/events](http://www.gfdl.noaa.gov/events)

(Gov't, Univ. or 2 other forms of I.D. needed)

### PPPL Colloquium

4:15 p.m. ♦ MBG Auditorium

Flow Shear and Tearing in Auroral Plasmas

Dr. Chris. C. Chaston, ( UC Berkeley)

FRIDAY, SEPTEMBER 30

### Blood Drive

8:00 a.m. - 2:00 p.m. ♦ Lower Parking

### DIII-D Science Meeting

1:00 p.m. - 2:30 p.m. ♦ B-233



What's Happening on the  
Princeton University Campus?

[CLICK HERE](http://www.princeton.edu/main/news/events/)  
[www.princeton.edu/main/news/events/](http://www.princeton.edu/main/news/events/)

## Guest Corner

# Charting the Roadmap to Magnetic Fusion Energy

By **Hutch Neilson** - Head, PPPL Advanced Projects



Sixty-five fusion researchers from 10 countries came together on September 7-10 at Princeton University's McDonnell Hall to discuss the major steps on the roadmap to commercial fusion energy. The workshop, hosted by PPPL and organized by an international committee of fusion leaders, occurred at a pivotal moment in the history of magnetic fusion development. With the ITER project now launched on its mission to answer outstanding questions regarding the control of a burning plasma, the countries engaged in fusion research are planning, with renewed intensity, the research and major facilities needed to develop the fusion nuclear science and technology for harnessing fusion energy. The International Workshop, "MFE [Magnetic Fusion Energy] Roadmapping in the ITER Era," filled a need that had been going unmet — a forum for an international exchange of technical information and strategic perspectives on how best to tackle the remaining challenges leading to a magnetic fusion Demo and commercialization. The participation of so many of the world's leading fusion sci-

*continued on page 2*

## GOOGLE APPS: Comments from Happy Users



**Adam Cohen, Deputy Director for Operations (and a participant in the Google Pilot):**

"There are so many reasons to like Google Apps. It's giving us lots of options, options that, as a Lab, we've never had before. For example, we will be able to share calendars and set up meetings more easily. We will be able to share and edit documents more easily. Best of all, it's cutting edge. Government agencies are all moving into the cloud, and we are early movers helping to set the path for other National Labs."

Some comments from other "early adopters" of PPPL Google mail:

"Mail search is better with more options and faster."

"Very easy to use. I like the customizable start page and email interface. The search features are very useful."

"Ability to upload and download documents with Google Docs."

"GOOGLE ROCKS!!!"

**(Google is coming, October 31)**

# MFE Roadmap

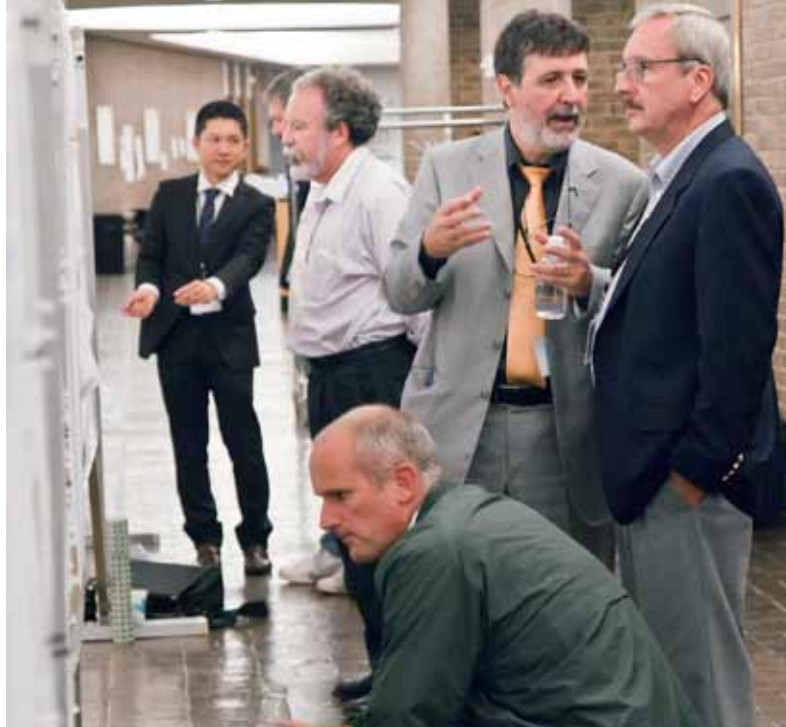
continued from page 1

ence and engineering researchers reflects a widely-felt sense of urgency in the need to collaborate more closely in meeting these challenges.

The workshop was organized around four topics: Fusion Technology, Physics-Technology Integration and Optimization, Major Facilities, and Perspectives on Demo and the Roadmap to Demo. There were 28 oral and nine poster presentations addressing these topics, with plenty of time dedicated to discussion. The workshop closed with summary presentations on each topic. Participants from all of the ITER parties — Europe, Japan, China, Russia, India, South Korea, and the United States — presented their current thinking on the timescale for next-step nuclear facilities. Though there is a spread in the scale and scope of the facilities being considered, the schedules advocated are remarkably consistent. All said, serious planning should begin now, leading to construction in the 2020s and operation in the late 2020s to mid-2030s. Missions considered for the next step include materials R&D, component testing, reliability and availability growth, and electricity generation, all of which must be accomplished for a fusion Demo. Options presented at the workshop range from Fusion Nuclear Science Facilities focused on materials research and component development, to Pilot Plants or Demos designed to integrate the science and technology of a fusion system and demonstrate readiness for commercialization. At the same time, it was recognized that there is much to be done in smaller, more focused programs, utilizing computation and simulated environments to expedite progress, in order to develop the fusion nuclear science and technologies for integration and testing in large nuclear facilities.



PPPL scientist Leonid Zhakarov (left) talks to Niek Lopes Cardozo, a professor at Eindhoven University of Technology in the Netherlands, during the MFE Roadmapping poster session.



Conference attendees converse at the poster session. PPPL senior scientist Rob Goldston is third from left in a light-colored shirt.

## What Next?

The scale and complexity of the outstanding challenges in fusion development, highlighted at the workshop, underscore the necessity of working together internationally to resolve them. A continued international commitment to the success of ITER was seen as critical both to technical progress and to the credibility of the field. At the same, new mechanisms are needed for experts to collaborate in reaching a better technical understanding of the major development issues and the options for resolving them. Suggested follow-up activities included the formation of international working groups to address key technical issues where currently there are divergent understandings, for example: the physics and technology assumptions and models used in fusion system codes; the strategy for fusion materials development; and the requirements and state of readiness for the various next-step fusion nuclear facility options. The political and financial challenges for fusion are well recognized, but this workshop focused on the science and technology issues and steps the community could take to resolve them.

A summary of the workshop is being prepared for publication, and a list of participants and all of the presentation material are available at <http://advprojects.pppl.gov/Roadmapping>. For further information, contact Hutch Neilson ([hneilson@pppl.gov](mailto:hneilson@pppl.gov), 609-243-2726). ■

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# Fusion Leaders Flock to Princeton for Roadmapping Conference



PPPL's Hutch Neilson, MFE Roadmapping Conference Chair, addresses conference attendees at Princeton University's McDonnell Hall on September 9.

## Welcome! PPPL New Hires



**John C. Schmitt**  
Assoc. Research Physicist  
Plasma Science and  
Technology



**Seung Hoe Ku**  
Staff Research Physicist  
Theory



**Peter Porazik**  
Associate Research  
Physicist  
Theory



**Teodora Z. Todorova**  
Janitor  
Engineering and  
Infrastructure



**Myrna "Deedee" Ortiz**  
Staff Assistant  
Science Education



**Aliya Merali**  
Research Scientist  
Science Education



**Akeem G. Robinson**  
Machine Technician  
Engineering and  
Infrastructure



**Devon Battaglia**  
Associate Research  
Assistant  
Plasma Science and  
Technology



**Yuhu Zhai**  
Mechanical Engineer  
Engineering and  
Infrastructure

# COLLOQUIUM

NATURAL DISASTER AFTERMATHS

**DR. MARC GOLDSMITH**

Marc Goldsmith & Associates LLC

**Wednesday, September 28**

**4:15 p.m.**

**(Coffee/Tea at 4:00 p.m.)**

**M.B. Gottlieb Auditorium  
Lyman Spitzer Building**

# BLOOD DRIVE

SEPTEMBER 30, 2011

8:00AM - 2:00 PM

The Mobile Van will be located in the Lower End Parking Lot on Friday, September 30 8:00 am to 2:00 pm

If you are willing and able to donate, please schedule an appointment by calling OMO at extension 3200



# COLLOQUIUM

FLOW SHEAR AND TEARING IN AURORAL PLASMAS

**DR. CHRISTOPHER C. CHASTON**

UC Berkeley

**Thursday, September 29**

**4:15 p.m.**

**(Coffee/Tea at 4:00 p.m.)**

**M.B. Gottlieb Auditorium  
Lyman Spitzer Building**

It's **ALL ON SALE** at the Plasma Hutch!

**Come to Human Resources (B173) before they're all gone!**

**T-Shirts - \$5**

*(S, 2X, 3X only)*

**Collared Shirts - \$10**

*(Small only)*

**Holiday Ornaments - \$1**



TUESDAY, SEPTEMBER 27

**Chicken Cacciatore**



THURSDAY, SEPTEMBER 29

**Chicken Caesar Salad**



MONDAY, SEPTEMBER 26

**Chicken Francaise**



WEDNESDAY, SEPTEMBER 28

**Fajitas! Fajitas!**



FRIDAY, SEPTEMBER 30

**Cornucopia - Assorted Eats**



MENU SUBJECT TO CHANGE WITHOUT NOTICE

# WEEKLY

Editor: **Patti Wieser** ♦ Copy Editor /Graphic Design: **Gregory Czechowicz**  
Photography: **Elle Starkman** ♦ Web: **Chris Cane**

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