PPPL PRINCETON PLASMA PHYSICS LABORATORY
A Collaborative National Center for Fusion & Plasma Research
U.S. DEPARTMENT OF ENERGY
WEEKLY
OCTOBER 7, 2013

At PPPL THIS WEEK

WEDNESDAY, OCTOBER 9

PPPL Colloquium
3p.m. ◆ MBG Auditorium

Effects of a Rapidly Warming Arctic on Weather Patterns in Mid-Latitudes

Jennifer Francis, Rutgers University

GFDL Events and Seminars
2 p.m. ◆ Geophysical Fluid Dynamics Laboratory (GFDL)

Smagorinsky Seminar Room

Evaluation of the warm cloud micro-physical processes in global models using the CloudSat/A-Train multi-sensor satellite observations

Michael Herzog, Cambridge Univ., UK)
www.gfdl.noaa.gov/events
(Gov't, University or 2 forms of I.D. needed)

SATURDAY, OCTOBER 12

Princeton University Community & Staff Day
10 a.m. - Jadwin Gym, Stadium

Princeton University Freshman Parents Tour
2 p.m. and 3 p.m.

UPCOMING EVENTS

October 19–20
Lyman Spitzer Conference
Dept. of Astrophysical Sciences
Peyton Hall, Princeton University

October 21
Open Enrollment Begins

October 26
Boy Scout Merit Badge Fair

November 6
Health Fair at PPPL

November 11–15
55th Annual Meeting of the APS Division of Plasma Physics
Denver

INSIDE...

Director's Corner

A note to staff on the federal government shutdown

By **STEWART PRAGER** — Director, Princeton Plasma Physics Laboratory

Dear PPPL'ers:

We are now in the second week of the "government shutdown." The lapse in appropriations for government functions is extremely unfortunate, producing substantial harm to many sectors. No one knows the extent of the shutdown, although there is a general expectation, or hope, that it will not persist longer than several weeks. PPPL is open and, due to the nature of our funding, we can maintain our operations in the near future. However, the ultimate financial effect of the shutdown on the Lab remains unknown. As a result, we are now trimming back our expenditures – deferring travel, training, and conferences where possible and cutting back on new procurements. Should there be a prolonged lapse in appropriations, the Department of Energy informs us that it will be forced to take further action to shut down non-excepted operations, resulting in employee and contractor furloughs. I appreciate everyone's cooperation in this effort. Please feel free to contact me, or anyone else in Lab administration, if you have any questions. Let us hope that Congress passes an appropriation quickly.

Stew C. Prag

David Gates and Charles Skinner

PPPL physicists elected to receive prestigious honor

By Jeanne Jackson DeVoe

PPPL physicists David Gates and Charles Skinner have been named as American Physical Society fellows – a prestigious honor that is given to only one half of one percent of all APS members each year.

Gates, a principal research physicist and stellarator physics lead who has been at PPPL for 16 years, and Skinner, a principal research physicist at PPPL for 31 years whose work has focused on spectroscopy and plasma-wall interactions, will be honored at the APS Division of Plasma Physics meeting in Denver Nov. 11 to 15. The two bring the total number of APS fellows at PPPL to 51.

Gates said he was delighted at the recognition. "I think it's a great honor," he said. "It's really nice to be recognized by such a distinguished group of your peers."

Skinner was equally happy. "I'm thrilled, of course," he said. "It means your accomplishments are recognized by your peers and that's always very gratifying."

Gates' work on magnetic islands recognized

Gates was recognized primarily for his "innovation and leadership in the understanding and control" of magnetic islands, small bubble-like islands that appear in the hot charged gases or plasmas during magnetic fusion experiments that can cool the plasma and can cause a "density limit" that can prevent fusion reactors from producing as much power as possible.

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New ESU patch makes a statement
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APS Fellows

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His research into island physics and plasma control has applications in both tokamaks and stellarators, said Hutch Neilson, PPPL's Advanced Projects director. "This is a recognition of Dave's strong record of accomplishment as a physicist and the judgment of his peers of his impact on the field," he said.

Gates joined PPPL in 1997 when PPPL's National Spherical Torus (NSTX) experiment first began. He became involved in plasma control research and was quickly recognized as a leader in the field. His more recent work has focused on controlling and avoiding disruptive plasma instabilities.

David Gates, left, and Charles Skinner were elected as APS fellows for their pioneering work in plasma physics.

International collaborations

Since 2009, Gates has been PPPL's stellarator physics leader and has led the effort to build a new stellarator program through international collaborations. Despite differences in the challenges of controlling plasma in stellarators, Gates used his knowledge to collaborate with the Large Helical Device (LHD) project in Japan and Wendelstein 7-X project in Germany. He spent two summers doing research on LHD as a National Institute for Fusion Science visiting professor, where he supervised a team of early-career researchers.

"Dave's work in island physics and plasma control and tokamaks makes him the ideal person to build a scientific bridge between tokamaks and stellarators because of his strong grasp of the overlapping physics issues, where the two concepts meet," Neilson said.

Gates attended the University of Wisconsin-Madison as an undergraduate, and received his PhD from Columbia University in 1993. Before coming to PPPL, he was a research associate for the Culham Centre for Fusion Energy in the United Kingdom, working on the COMPASS-D and START experiments.

Gates said he enjoys coming to work each day at PPPL. "It's a great job. I love my job," he said. "There are very few jobs that allow you the intense freedom I get. I have ideas, I follow them through. Most of my days are different. I like to feel I've added to the field in a substantial way and that makes me feel useful."

Skinner recognized for multiple contributions

Skinner received the honor for contributions in multiple areas during his more than a three-decade career in which he had three patents with Szymon Suckewer, now the director of Princeton University's Plasma Science and Technology Program, and is first author of 21 invention disclosures for devices he has come up with related to plasma physics.

"That's the wonderful thing about Charles: He takes on an important topic and just does it," said Masa Ono, head of PPPL's NSTX Department. "That's one reason he hasn't been recognized previously because he wasn't just focused on one thing."

Skinner is a well-known expert on how the performance of plasmas used in magnetic fusion experiments is affected by the plasma's interaction with the wall of the tokamak, known as plasma-wall interactions, which could interfere with obtaining optimal performance from the plasma in experiments.

When he first arrived at PPPL in the 1980s, Skinner pioneered research into using plasma to create short X-ray lasers, a discovery that was announced at the APS Division of Plasma Physics meeting in 1984. X-ray lasers have found their way into many different fields.

In the 1990s, Skinner began work on spectroscopy with ground-breaking research along with Suckewer into how spectroscopy can be used to measure the temperature of the highly charged particles known as ions in magnetic fusion experiments. "He was a very early pioneer of tokamak high temperature spectroscopy," said Ono.

Skinner's work in spectroscopy led him into research on how to measure and control the use of tritium, the radioactive fuel that was then used in PPPL's Tokamak Fusion Test Reactor (TFTR). Skinner used spectroscopy to measure the amount of tritium that was being left behind on the walls of the reactor during the fusion experiments. His work on how tritium can be trapped in the graphite walls of a reactor led to the recognition that carbon could not be employed as the material used for the walls of the international ITER fusion experiment in Cadarache, France, and other reactors. He also developed the use of lasers to remove the tritium from the tokamak walls. His work was recognized when he was asked to take part in the ITER design review and to serve on two panels and a working group related to ITER's design.

An instrument used in NSTX and world-wide

He and other researchers also found that tritium could be trapped in dust particles produced by the plasmas. Skinner developed an ultra-sensitive instrument that detects dust that is used in NSTX and in the Tore Supra tokamak in France. More recently, he has been working with Bruce Koel, a professor of chemical and biological engineering at Princeton University who also maintains a laboratory at PPPL. Skinner is collaborating with Koel on efforts to understand how lithium can best be employed to form the walls of an experimental fusion device.

Skinner has also served as a mentor to numerous students at PPPL through the summer internship programs. More than 10 undergraduates worked with him on the dust detector, for example.

"I've had a diverse career in many different fields," Skinner said. "Because of this diversity I have been able to find synergies between different fields and apply them to addressing issues in a novel way."

New ESU patch makes a statement

By Jeanne Jackson DeVoe

The officers in PPPL's Emergency Services Unit are sporting a new look: a bold new arm patch in black and orange with a gray scroll underneath. The patch is part of an effort by the Site Protection Division to come up with its own logo that could be used not only on uniforms but also on its numerous vehicles.

Fran White, the head of Site Protection, said ESU's new logo reflects the Laboratory's new logo, which came out in 2012, and was designed with input from senior managers. "It not only highlights the new PPPL logo but also develops a fresh new look for our officers and their unique mission," he said.

The new patch debuts: A white ESU vehicle gets a new look.

"Having a patch on your shoulder is not only required by state law, there's also a sense of pride behind the patch you have on your shoulder," said Jamie Dunnigan, the emergency planning and training coordinator for Site Protection who led the effort.

The new look isn't just aesthetic – it's a way for other companies to identify PPPL's ESU when members respond to fires and other emergencies in the community.

"It was definitely important to stand out from the organizations around us," said White. "You have a shape indicative of police – an image of emergency services, and you have this scroll that's indicative of an academic environment, so there's a lot of imagery here that came together from different places."

The patch is being sewn onto several pieces of clothing each officer wears – including short-sleeved uniforms, long-sleeved uniforms, sweatshirts, a winter parka and fleece lining. It's also on the side of one of the Lab's white SUVs.

Officer Christine De Zuani says she likes the new patches. "They're bold," she said. "I like that they stand out. It truly says what we're all about. It's fresh."

Capt. Darren Thompson, Officer Christine De Zuani and Jamie Dunnigan, who spearheaded the design, sport the new patch on their uniforms.

Capt. Darren Thompson is also a fan. "It's definitely a new identity and it helps us to rebrand the division," he said.

PPPL's ESU has received high marks in Department of Energy evaluations – especially for having officers who serve in multiple roles as police, fire and emergency service officers, which the DOE cited as a best practice. But the DOE did suggest that ESU improve its branding with an emblem or image unique to PPPL.

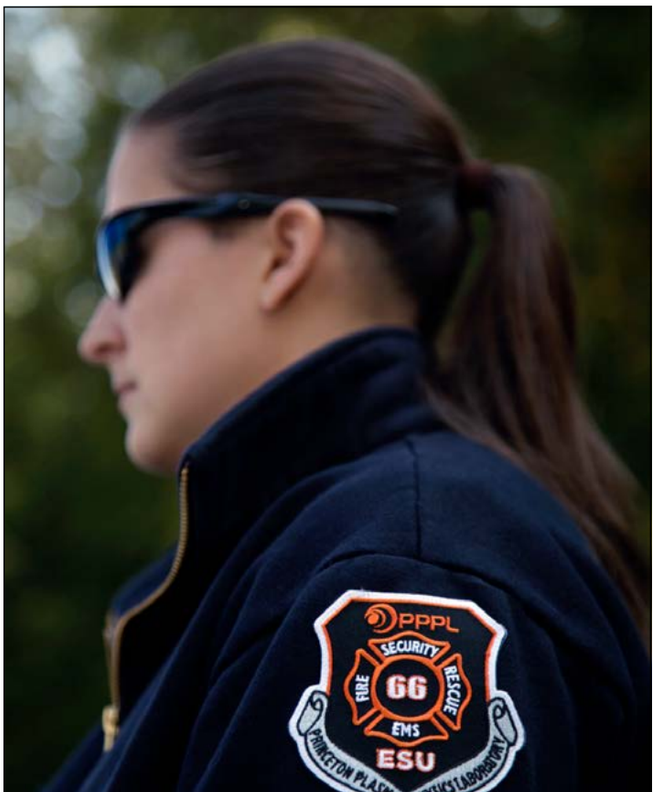
Dunnigan had already started working on a new design for the patch and the design evolved over 18 months. Graphic designer Greg Czechowicz in the Office of Communications helped out with a final draft of the design. The department also got input from top managers and most importantly from the officers themselves who wanted something that showed the uniqueness of the Emergency Services Unit. "We all coalesced around this design in the end," said Dunnigan.

Result of collaboration

White said the collaboration was crucial. "There was a recognition that this was an opportunity for improving our image and we had a whole bunch of people, including officers, managers, and communications, who all bonded together very enthusiastically and worked hard to come up with an image," White said, "so this is really the result of collaboration, inspiration and work of people throughout PPPL."

Dunnigan said the new patches will probably be on all PPPL uniforms by mid-winter and will gradually be applied to all new vehicles as well. "It was a long time coming and now the transition from one design to the new one will take some time," said Dunnigan.

Having PPPL recognized when officers appear at a fire or other emergency will be worth the effort, White said. "This really was a project that we took very seriously," White said. "We want to ensure that people say, 'Wow, that's PPPL!".



Officer Christine De Zuani wearing the new ESU patch.

Retirements at PPPL

PPPL bids a fond farewell to the following employee who retired on October 1:

Lynne Yager
QA Technical Specialist,
PPPL Best Practices & Outreach,
37 years

The Site Protection Division reminds everyone that **FIRE PREVENTION WEEK** is October 6-12, 2013.
"PREVENT KITCHEN FIRES" — is the message of this year's Fire Prevention Week.

Please join us on Friday, Oct. 11 from 11 a.m. to 2 p.m. in the LSB loop to learn about fire safety. There will be a fire hose demonstration with a hose house, the PPPL Fire Engine 66, and a fire extinguisher demonstration.

We hope to see you there on Friday!

For additional information on this year's theme, go to FPW.ORG

Welcome PPPL New Hires

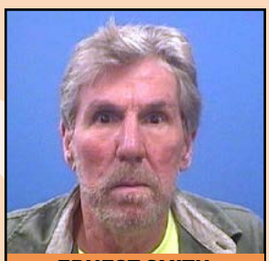
PPPL welcomes the employees pictured below who have recently joined our staff.

WILLIAM R. FOX
Staff Research Physicist
Plasma Science & Techology

BRETT HUDNETT
Heavy Equipment Operator
Engineering & Infrastructure

JESSE ILNICKI
HVAC Technician
Engineering & Infrastructure

KEVIN LAMB
Electronics Technician
Engineering & Infrastructure

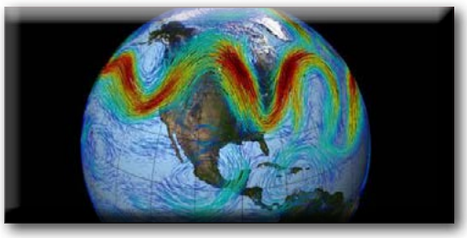


ERNEST SMITH
General Maintenance Technician
Engineering & Infrastructure

PPPL hosted two stellarator researchers on Thursday, Oct. 3. Dr. Arnold Lumsdaine of ORNL (left in picture), is the U.S. engineering lead for the design of a high heat-flux in-vessel component, the "scraper element," as part of the U.S. collaboration with Germany's Wendelstein 7-X stellarator program. Vicente Queral Mas of Spain (right), has developed novel cost-saving manufacturing techniques for stellarators. Both visitors presented seminars, toured the NSTX-U center stack manufacturing area, and inspected components for the QUASAR (formerly NCSX) stellarator. They are shown with Hutch Neilson (center). Not pictured: Harry Mynick, Queral's host.

Photo by Ron Strykowsky

COLLOQUIUM



Effects of a Rapidly Warming Arctic on Weather Patterns in Mid-Latitudes

JENNIFER FRANCIS
Rutgers University

Wednesday, Oct. 9

3:00 p.m. (Coffee/Tea at 2:45 p.m.) • MBG Auditorium

Two new health programs for benefits eligible staff

Two new health programs will be available free for benefits eligible staff starting Sept. 30.

MY HEALTH COACH provides you and your eligible dependents with free confidential assistance to achieve your health goals.

MY MEDICAL EXPERT identifies expert physicians to bring best practice medicine to you, is confidential, offered at no cost to you, and designed to help you make medical decisions with greater confidence.

Also, **PPPL'S HEALTH FAIR** on Nov. 6 at 11 a.m. in the MBG Auditorium will include a presentation on these two new programs. Representatives from My Health Coach and My Medical Expert will also be available from 10 a.m. to 2 p.m in the lobby to answer your questions.

Princeton University Community & Staff Day

All Princeton University faculty, staff and their families are invited to attend Community and Staff Day 2013 on Saturday, Oct. 12, when they can attend the Princeton Vs. Lafayette Football game at no cost (tickets must be picked up the week before), take part in a Family Fun-Fest and a Trash Artstravaganza Contest or bring young sports enthusiasts to a free Youth Sports Clinic.

Schedule of events:

Princeton vs. Lafayette Football Game.
Princeton Stadium, Kickoff at 1 p.m.

Family Fun-Fest activities, games, and food.
Jadwin Gymnasium 10 a.m. to 1 p.m.

Trash Artstravaganza Contest.
Jadwin Gymasium, 10 a.m. to noon.

Youth Sports Clinic.
Free for youngsters ages 5 to 13,
11 a.m. to 12:30 p.m., Jadwin Gymnasium.

PPPL staff can pick up tickets from Sonja Patterson, B173, or at Princeton University's Athletic Ticket Office in Jadwin Gym from 9 a.m. to 4 p.m. Monday through Thursday or 9 a.m. to noon Friday or at the Princeton University Office of Community and Regional Affairs, 22 Chambers St., Suite 101, Monday to Friday 9 a.m. to 4 p.m.

Brock 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

	MON. 7 OCT.	TUE. 8 OCT.	WED. 9 OCT.	THU. 10 OCT. NAT'L ANGELFOOD CAKE DAY	FRI. 11 OCT.
COMMAND PERFORMANCE CHEF'S FEATURE	 ZESTY ORANGE CHICKEN OVER RICE	 PASTA BOLOGNESE	 CHICHEN FRANCAISE	 GLAZED ROSEMARY CHICKEN	 STUFFED TILAPIA
EARLY RISER	California Eggs Benedict with Avocado, Ham & Hollandaise	Blueberry French Toast	Eggs, Sausage, Mushroom, Peppers, Cheese Quesadilla	Turkey Omelet	Bacon, Egg & Cheese Croissant
COUNTRY KETTLE	Cream of Potato	Black Bean Cilantro	Cream of Turkey	Vegetable Vegetarian	Spinach & Sausage Soup
GRILLE SPECIAL	Buffalo Chicken Wrap	Cajun Marinated Chicken Breast with Peppers and Onions	Popcorn Shrimp Po' Boy	Mushroom Swiss Cheesesteak	Shredded Pork & Coleslaw on a Kaiser Roll
DELI SPECIAL	Tuna Salad and Hard Boiled Egg Wrap	New Orleans Style Muffaletta	Liverwurst & Onion on Rye	Turkey, Roasted Eggplant, Provolone & Spicy Mayo	Turkey, Bruschetta & Cream Cheese Wrap
PANINI	Pizza Bagels	Chicken Parmesan Sandwich	Bacon, American Cheese & Tomato Ciabatta	Corned Beef Reuben	Franks & Beans
BROCK VALUE MEAL ★$6.25	½ Sandwich, Small Soup or Salad, Chips, 12 oz. Soda	2 Slices Pizza, Bag of Chips, 12 oz. Soda	Cheeseburger, French Fries, 12 oz. Soda	2 Hot Dogs, French Fries, 12 oz. Soda	Meatball Sandwich, Potato Chips, 12 oz. Soda

MENU SUBJECT TO CHANGE WITHOUT NOTICE

VEGETARIAN OPTION

CLICK HERE FOR A PRINTABLE WEEKLY MENU

WEEKLY

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