

SAVE THE DATE: Safety All-Hands Meeting Oct. 23 from 9 a.m. to 11 a.m.
Melvin B. Gottlieb Auditorium

At PPPL THIS WEEK

OPEN ENROLLMENT BEGINS

October 15 – 18

IAEA Demo Programme Workshop
University of California at Los Angeles

October 17

4:15 p.m. ♦ MBG Auditorium

Colloquium

Dr. Alan C. Cummings
California Institute of Technology
Voyager's Interstellar Mission
Refreshments at 4 p.m.
Here is the [link to the colloquium flyer](#)

October 17

8:30 a.m. to 2:30 p.m. ♦ MBG Auditorium

Electric Utilization Training

Call Sue Hill, shill@pppl.gov to register

Oct. 19 ♦ 8:30 a.m.

Laboratory Management Review Meeting

Room B-318

UPCOMING EVENTS

October 23 ♦ 9 to 11 a.m.

Safety All-Hands Meeting
MBG Auditorium

October 24 ♦ 10 a.m. to 2 p.m.

PPPL Health Fair ♦ LSB Lobby

Informational Meetings
11:30 a.m. & 1:30 p.m. ♦ MBG Auditorium

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Have Two Ways Out** [page 2](#)

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Scientists meet to chart roadmap to fusion

By John Greenwald

The crucial next steps on the roadmap to developing fusion energy will be the focus of more than 70 top fusion scientists and engineers from around the world who will gather at the University of California at Los Angeles (UCLA) this week. The Oct. 15 to 18 session will kick off a series of annual workshops under the auspices of the International Atomic Energy Agency (IAEA) that will address key scientific and technological challenges facing countries developing fusion as a source of clean and abundant energy for producing electricity.

“There’s nothing like face-to-face talk and presentations to help people resolve common challenges,” said Hutch Neilson, who directs advanced projects at the PPPL and will chair the workshop at UCLA.

PPPL hosted a worldwide gathering of fusion scientists at Princeton University last year that led to planning for the workshops. “We felt there was a compelling need for international discussions to look at a wide range of options in an unbiased way,” said Stewart Prager, director of PPPL. “There’s proven to be a lot of interest in the international community.”

Pathways to demonstration fusion power plants

The workshops aim to help participants chart pathways to the demonstration fusion power plants that the major world programs currently envision. Such “DEMO” plants would mark the final step before the construction of commercial fusion power stations that could operate by mid-century.

Fusion powers the sun and stars. The process takes place when the atomic nuclei—or ions—in electrically charged gas called plasma fuse under extreme heat and pressure and release a burst of energy. Fusion programs seek to recreate this process on Earth under laboratory conditions.

The IAEA gathering comes against the backdrop of the construction of ITER, a huge experimental facility that the European Union, the **United States** and five other countries are building in the south of France to showcase fusion as a practical source of energy. Plans call for ITER to produce 500 million watts of fusion power for up to 500 seconds by the late 2020s.

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Hutch Neilson



Rob Sheneman, the deputy head of PPPL's Environment, Safety, Health and Security Department, accepted a silver award in the EPA's Federal Electronics Challenge 2012 in Washington DC on Sept. 26. The PPPL won the award for purchasing, managing and disposing of energy efficient electronics equipment. PPPL won a bronze award last year.

From left to right: Jim Jones, EPA acting assistant administrator for the Office of Chemical Safety and Pollution Prevention; Rob Sheneman, Jennifer McDonald, director of the Department of Energy's Sustainability Performance Office.

Home fire safety hints from the Site Protection Division

Fire escape plans: Have two ways out



Galie helps Cassandra Pugh try out the firefighter's equipment.



PPPL Firefighter Sean Galie shows off his fire equipment.



Guy Grow uses a fire extinguisher to put out a fire.

Every second counts when there is a fire in your home, so it's vital that you and your family be prepared by coming up with an escape plan to get out of your home quickly. Remember that it takes less than 60 seconds for a small flame to turn into a major fire and a home can fill with black smoke and become engulfed in flames within minutes.

You can prepare for such an emergency by preparing and practicing your fire escape plan twice a year with everyone in your household, including children and people with disabilities. It's also a good idea to practice your plan with overnight guests. Some tips to consider when preparing your escape plan include:

- Draw a map of each level of your home and show all doors and windows. Find two ways to get out of each room. Make sure all doors and windows that lead outside open easily.
- Only purchase collapsible escape ladders evaluated by a recognized testing laboratory. Use the ladder only in a real emergency.
- Teach children how to escape on their own in case you cannot help them.
- Have a plan for everyone in your home who has a disability.
- Practice your fire escape plan at night and during the daytime.

Security Bars Require Special Precautions

Security bars may help to keep your family safe from intruders but they can also trap you inside in the event of a deadly fire! Windows and doors with security bars must have quick release devices to allow them to be opened immediately in an emergency. Make sure everyone in the family understands and practices how to properly operate and open locked or barred doors and windows.

Immediately Leave the Home

When a fire occurs, get out fast! You may only have seconds to escape safely. Take the safest exit route, but if you must escape through smoke, remember to crawl low under the smoke and keep

your mouth covered. The smoke contains toxic gases that can disorient you or, at worst, overcome you.

Never Open Doors that are Hot to the Touch

When you come to a closed door, feel the doorknob and door to make sure that fire is not on the other side. If either is hot, leave the door closed and use your secondary escape route. If the door feels cool, open it slowly. Be ready to shut it quickly if heavy smoke or fire is present.

If you can't get out, close the door and cover vents and cracks around doors to keep the smoke out. Call 9-1-1 or your local emergency number. Say where you are and signal for help at the window with a light-colored cloth or a flashlight.

Designate a Meeting Place Outside and Take Attendance

Designate a meeting location a safe distance in front of your home. For example, meet under a specific tree or at the end of the driveway or front sidewalk to make sure everyone has gotten out safely and no one will be hurt looking for someone who is already safe. Make sure everyone in your home knows how to call 9-1-1 or your local emergency number and that your house number can be seen day or night from the street.

Once Out, Stay Out

Remember to escape first and then notify the fire department using the 9-1-1 system or proper local emergency number in your area. Never go back into a burning building for any reason. Teach children not to hide from firefighters. If someone is missing, or pets are trapped inside your home, tell the firefighters right away. They are equipped to perform rescues safely.

Remember to test your smoke detectors monthly, and change the batteries twice a year. 📞

Scientists meet to chart roadmap to fusion

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Individual countries explore their own next steps

Individual countries are exploring their own next steps toward fusion with different degrees of urgency, based on their perceived need for such energy. The steps themselves remain tentative and subject to government confirmation. “What’s needed at present is for the planners to come together and discuss their different roadmaps,” said nuclear engineering professor Mohamed Abdou, who will host the workshop as director of the Fusion Science and Technology Center at UCLA. “This will help us understand the goals and assumptions behind the plans of the major fusion programs.”

The chief candidate for development as a fusion power plant is the tokamak, the most widely used experimental fusion device today. Tokamaks heat plasma to tens of millions of degrees Celsius and confine it inside a magnetic field that is shaped like a donut or a cored apple, depending on the machine. ITER will be the largest and most powerful tokamak to date. An alternate candidate for a DEMO is the stellarator, a potentially promising but currently less-studied device. Stellarators heat and confine plasma inside a magnetic field that is shaped like a cruller—a spiral wrapped around a circle.

A look at the possible roadmaps that countries are considering:

China The world’s most populous nation seeks to reduce its dependence on coal, which produces 70 percent of its electric power. **China** is currently pushing ahead with plans for a device called **China’s** Fusion Engineering Test Reactor (CFETR) that would develop the technology for a demonstration fusion power plant. Construction of the CFETR could start around 2020 and be followed by operation of a DEMO in the 2030s.

Europe and Japan These programs are jointly building a powerful tokamak called JT-60SA in Naka, **Japan**, as a complement to ITER.


Plans call for construction to be completed in 2019. The Japanese and Europeans will then pursue similar but independent timelines. Both programs contemplate starting engineering design work on a DEMO around 2030, following the achievement of ITER milestones, and placing the DEMO in operation in the 2030s.

India The country could begin building a device called SST-2 to develop components for a DEMO around 2027. **India** could then start construction of a DEMO in 2037.

Korea The program plans to build a machine that it calls K-DEMO—a tokamak that would develop components in its first phase, called K-DEMO-1, and then utilize the components in the second phase, or K-DEMO-2. Construction could commence in the mid-to-late 2020s, with operations starting in the mid 2030s.

Russia Plans call for the development of a fusion neutron source (FNS), a next-step facility that would produce neutrons, the chief form of energy created by fusion reactions, in preparation for a DEMO. The FNS project is part of a Russian commercial development strategy that runs to 2050.

United States A next-step Fusion Nuclear Science Facility (FNSF) is under consideration. It would be used to investigate materials properties under fusion conditions, and develop components for a DEMO. Construction of the device could start in the 2020s.

Heading the agenda for the first IAEA workshop will be issues ranging from options for materials for fusion facilities to the mission for next-step machines. “These workshops will help us understand the risks of different paths and the costs and benefits,” said Prager. “And that really is important for determining the best roadmap.” 

American Red Cross Blood Drive

It was a great day for plasma but not the kind of plasma used in fusion when 25 PPPL employees donated blood during the American Red Cross Blood Drive on Friday, Oct. 5.



Paul Sichta enters the bloodmobile.



Cassandra Pugh leaves the bloodmobile after giving blood.



The American Red Cross bloodmobile in the PPPL parking lot.

OPEN ENROLLMENT IS STARTING



Open enrollment starts today and employees will have until Nov. 16 to decide on a new healthcare plan, enroll in a Health Benefit Expense Account, and opt for other benefits such as life insurance and retirement accounts.

Most PPPL employees should have received packets in the mail explaining their benefits and more information is available at Princeton.edu/hr/oe.

The main change in benefits is that Princeton University has streamlined the number of available plans, so that everyone who previously had a Preferred Provider Organization plan (PPO) or Point of Service plan (POS) will now be part of the Princeton Health Plan, which will still offer Aetna and UnitedHealthcare as network choices.

“People shouldn’t be concerned about it but it’s changed,” said Kim Mastromarino, the Human Resources Generalist in charge of PPPL’s open enrollment. “Now they’ve combined them so that there is no difference.”

People who previously had a PPO plan can expect to pay less under the new plan because they were paying extra to go out of network, while people who had a POS plan will pay 6 percent more.

With the Princeton Health Plan (PHP), employees can still see their current doctor and will not need a referral to visit their specialist. Preventive care services such as annual exams, colonoscopies and mammograms and labs and x-ray services are all covered 100 percent in-network. Copayments will be \$20 for primary care physicians and

\$30 for specialists. Everyone will receive new medical ID cards.

There will also be rate increases for the MetLife basic and high option PPO dental plans and for supplemental and spousal life insurance.

Contributions to the Health Benefits Expense Accounts will be limited to \$2,500 this year as required by the Patient Protection and Affordable Care Act.

The prescription plan will not be changed but the company previously called Express Scripts is now called Express Scripts, rather than Medco, due to a name change.

Employees should make sure that they have a password so that they can log on to the Princeton Human Resources site to see information about changes in benefits and enroll in a new plan. If you do not have a password or have forgotten your password, you should call the OIT help desk at Princeton, 258-HELP to have your password reset.

Employees with questions regarding their benefits can contact Kim Mastromarino, kmastrom@pppl.gov, extension 2101.

REGISTER NOW FOR ELECTRIC UTILIZATION TRAINING

Electric Utilization Training is being offered on Oct. 17 from 8:30 a.m. to 2:30 p.m. in the MBG Auditorium. To register, please email Sue Hill, shill@pppl.gov or call 2227.



PPPL Café 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.

MONDAY - OCT. 15

TUESDAY - OCT. 16

WEDNESDAY - OCT. 17

THURSDAY - OCT. 18

FRIDAY - OCT. 19

COMMAND PERFORMANCE
 CHEF'S FEATURE



Vodka Penne w/ Ham & Peas served w/ Garlic Bread



Jamaican Jerk Chicken over Rice & Beans



Baked Tilapia Florentine w/a Cold Italian Pasta Salad



Chicken Cutlet over Spicy Mac & Cheese w/ a Vegetable



Cajun-Style Pork Loin w/Home Fries & Vegetable

Early Riser	Blueberry Pancakes with Turkey Sausage	The XL Mexican Omelet w/ Home Fries	Bacon, Egg & Cheese on a Fresh-Baked Croissant	Steak, Egg, Cheese, Onions, Peppers & Potato Burrito	Potato & Vegetable Frittata
Country Kettle	Hearty Chicken Noodle 🍅	Bavarian Barley Soup 🍅	Hearty Beef Chili 🍅	Chipotle Sweet Potato 🍅	Apple Fennel Soup 🍅
Grille Special	French Dip Hoagie Au Jus & French Fries	Grilled Cheese w/ Bacon & Tomato on Rye w/ Fries	Caribbean Grilled Chicken Sandwich w/ Pineapple, Ham & Fries	Steak, Pepper Jack, Peppers & Tomato Wrap w/ Onion Rings	Chicken Quesadilla w/ Salsa & Sour Cream
Deli Special	Chicken Caesar Wrap	Open-Faced Corned Beef Reuben	Curry Chicken Salad on a Multigrain Roll	Louisiana Crab Salad w/ Lettuce & Tomato on a Wrap	Grilled Chicken, Roasted Eggplant, Peppers w/ Balsamic Vinaigrette
Panini	Turkey, Bacon, Cheddar, Tomato & Ranch Dressing	Steak, Onions, Peppers, Tomato & Pepper Jack	Ham & Three Cheeses w/ Tomatoes, Onions & Chipotle Griller	Italian Sausage, Onion, Peppers & Provolone	Monte Cristo

MENU SUBJECT TO CHANGE WITHOUT NOTICE

WEEKLY

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Comments: commteam@pppl.gov ♦ PPPL WEEKLY is archived on the web at: <http://www.pppl.gov/ppplweekly.cfm>