

## At PPPL THIS WEEK

**TUESDAY, FEB. 5**

**Theory Seminar**  
10:45 a.m. ♦ T-169

Introduction to XGC

S. Ku

**WEDNESDAY, FEB. 6**

**GFDL Events and Seminars**

12 p.m. ♦ Geophysical Fluid  
Dynamics Laboratory (GFDL)

Smagorinsky Seminar Room

Labor capacity reduction from heat  
stress under climate warming

John Dunne (GFDL)

[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

Seismic Imaging and Inversion  
Based on Spectral-Element and  
Adjoint Methods

Jeroen Tromp, Princeton University

Refreshments at 4 p.m. in the LSB Lobby

[Click here for link](#)

**THURSDAY, FEB. 7**

**Theory Seminar**

11 a.m. ♦ Theory Conf. Room

Ed Thomas, Auburn University

**SATURDAY, FEB. 9**

**Science on Saturday**

9:30 a.m. ♦ MBG Auditorium

Finding a needle in a (genomic)  
haystack or how can computers  
help cure cancer

Olga G. Troyanskaya, Princeton Univ.

### UPCOMING EVENTS...

Feb. 15

**Young Women's Conference  
Application Deadline**

<http://science-education.pppl.gov/YWC>

Feb. 22 - 23

**DOE's NJ High School  
Science Bowl®**

Contact Deedee Ortiz, x2785 or  
email [dortiz@pppl.gov](mailto:dortiz@pppl.gov)

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### Director's Corner

## Stewart Prager discusses possible impact of federal budget on PPPL



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

Dear PPPL'ers,

Recently, many at the lab have asked me about the near-term budget and staff plans for PPPL. The answer is simple: we do not yet know the PPPL budget for 2013, but our plan for now is to continue with our current staffing level. It is remarkable that Congress has not yet passed a budget for this fiscal year, which began Oct. 1, 2012. There are several milestones to pass, as we all know from reading the newspaper - the postponed fiscal cliff (which if not resolved could reduce services broadly in the U.S.), the debt ceiling limit, and the passing of a budget. The uncertainty and gridlock in the federal budgeting process this year seem to be larger than at any time during the past several years.

The possible outcomes for PPPL in the near-term range from maintaining our current staff level to some amount of staff reduction (in the longer term, we continue to pursue options where we might be adding staff). We have some optimism, considering the various forces at work in Congress and DOE, that we will not have to reduce staff, but any staff reduction would begin with a voluntary retirement program. We are very fortunate that DOE is strongly committed to the NSTX-Upgrade project, yet the uncertainties are large, and no one knows what the final budget will be. We are watching the situation week-by-week and will respond to any new information as it becomes available. You can be sure that PPPL management, Princeton University management, and the fusion community at large are doing everything possible to maintain a strong fusion program and budget in these difficult legislative times. I will inform you of any new information as soon as it develops.

*Stewart C. Prager*

## Energy Chickens game makes saving energy fun



By Jeanne Jackson DeVoe

**T**hey're cute, they're silly and they're fun but now the energy chickens at PPPL have flown the coop after helping more than 40 employees cut energy costs by about 21 percent.

Researchers at Pennsylvania State University developed the game through the U.S. Department of Energy's Energy-Efficient Buildings Hub. The idea was to encourage employees to turn off their electronic devices. While the game has ended, the project will conclude at the end of March.

The preliminary results show PPPL participants reduced energy by 34 percent on week-ends and by 15 percent on work days - meeting their pledge of reducing energy by at least that much. The pledge, which was signed by all participants, stated, "I pledge to keep my chickens healthy. I pledge to reduce my energy consumption. I will turn it off!"



Dena Lang, a research associate at Penn State, shows the energy chickens game to Jim Graham.

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# Help is a *click* away with work orders

By **MIKE VIOLA** — Head, PPPL Facilities and Site Services Division

If you see a light is out in a hallway or you need something as simple as hanging a picture up in your office, it's easy to get help from the Facilities Department by filling out a work order request using the steps below.

We respond to everything from water leaks to missing tiles. We get at least 400 requests a month, so it's important that you fill out the work order so we can keep track of your request.

## How the work order works

Here's how the work order works: You start on the [PPPL Employee Information Services](#) page under the "Information and Services by Function" table and click on the second item in the second column "[Work Order Requests and Work Order Status.](#)" This brings up a New Work Request form where your name, email and phone number are automatically filled in. Provide your location by pulling down the name of the building where you work under Property, find your room number under Asset and then give your location.

You can choose what type of work you need on the pull down menu under Service: such as general mechanics, HVAC, an electrician or janitor or a huge list of other choices. If you don't see what you need because all you want to do is to hang a picture or you just don't know – choose "other." Then write a brief description of what you need: "I want to hang a picture," and give your location again in the description. When you're finished, click on "Create Request." You should get an email within a few minutes confirming that you've sent your request.

Linda Harmon, Facilities' data assistant coordinator, checks the work orders several times a day, prints them out and then hands off the requests to the appropriate technician. The technicians also must fill out a job hazards analysis for every work request on the back of the work order request form.

After the technician or staff member finishes a job, the Facilities Department technician will return the work order form with details on whether the job was completed, how much time it took, the materials he or she used, etc.

If you have a last-minute request, a question regarding the work orders, or an emergency, please email Linda at [lharmon@pppl.gov](mailto:lharmon@pppl.gov) or call her on extension 2588. Please do not use a work order for general information! We will try to accommodate all requests, however PPPL staff should provide sufficient notice to allow time for a reasonable response e.g. send work orders to set up for special events two weeks prior to the event, if possible.

Please be patient after you've put in your work order. We will get to it as soon as we can. Keep in mind that requests involving safety issues get first priority. We're also always working on routine preventive maintenance to keep everything – including our heating and cooling systems – running smoothly. We have more than 25 technicians and other staff working hard to keep our buildings going, including electrical technicians, general mechanics, HVAC, janitorial staff and operations.

Facilities needs all the information on the work orders for even simple tasks because we have to submit all this information to the Department of Energy at the end of the fiscal year. The work order system, which is called Micro Main, provides a report that tells us how many hours or man days were spent working in each of PPPL's approximately 35 buildings. The DOE uses that information to determine how much it costs to maintain our buildings.

The Facilities Department truly relies on PPPL staff members to be our eyes and ears in PPPL's buildings because we can't be everywhere at once. We welcome work orders for anything that needs to be repaired so we can respond properly. ☺

## Boy Scouts visit PPPL



John DeLooper, (right), head of Best Practices and Outreach, speaks to members of Boy Scout Troop 46 from Belle Mead, and their parents in the NSTX Control Room during an evening tour on Jan. 28. The Scouts take the tour as part of their earning a nuclear science badge (inset).

# Energy chickens

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The project began in September when plug load monitors were installed to record the energy use of 61 participants' devices. Those participants took brief surveys twice a day on their well-being and other issues on special cell phones provided to them. The project also began using plug load monitors to record the energy use of participants' devices. In the second phase, which started in mid-October, the energy chickens game started up and ran through Jan. 31, with time added to make up for interruptions caused by Hurricane Sandy. The game used the baseline results from the beginning of the project and compared them with the daily energy use of participants who signed up for the game. Participants received energy chicken stickers reminding them to "Turn it off!"

Researchers also placed posters around the Laboratory to raise awareness of how much energy appliances use. Many appliances, like computer loudspeakers and printers, continue using power even when they're not being used, and the posters said that in general 40 percent of office energy use is from these devices, called plug loads.

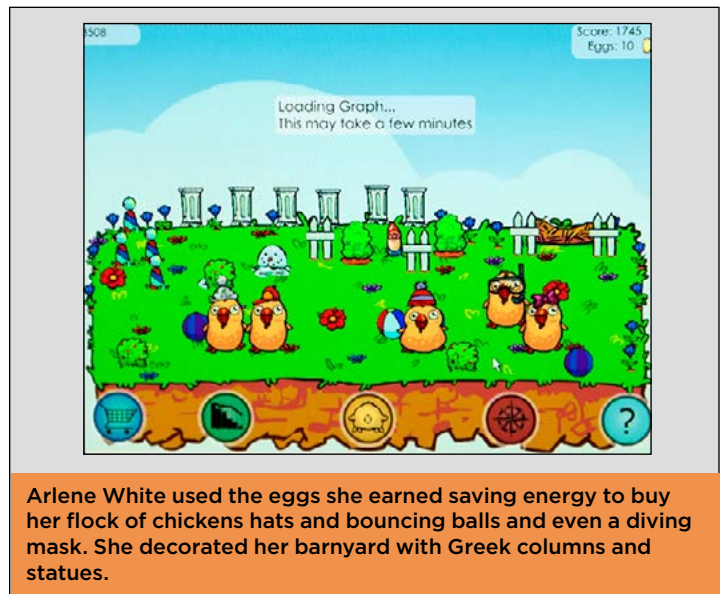
Dena Lang, a research associate at Penn State who is in charge of the project, said she is pleased with the outcome so far. "I'm very happy with the initial results as they have exceeded our expectations based on findings reported in the literature from similar studies," she said. She noted that the project is unique in using a video game to induce people to reduce energy. While funding for the project has ended, Lang said that her team is looking at ways to promote adoption of such games on a larger scale.

The game connects each person's electric devices to one energy chicken so a player with four devices would have four chickens. Arlene White, the principal buyer/small business liaison at PPPL, has grown very attached to her flock of chickens. "This is my family and there's one girl and four boys," she said proudly when showing them off. "I gave the girl a bow."

White's five chickens were connected to her devices – her two computer monitors, her PC, her printer and the task lights above her desk. They act as both the carrot and the stick for conserving energy. The stick is that players like White wind up with a sick chicken if they don't turn off their devices. The chickens shrink and turn green and eventually keel over and won't lay eggs until they revive. White found that out the hard way one day when she forgot to turn off her devices while she was at an all-day meeting and found a flock of ailing chickens the next day. It prompted her to take action. "I was upset. I shut everything off. I can't have these chickens dying," she said.



White shows off her "family" of chickens: four boys and a girl with a bow.



Arlene White used the eggs she earned saving energy to buy her flock of chickens hats and bouncing balls and even a diving mask. She decorated her barnyard with Greek columns and statues.

The game's carrot is the eggs the healthy chickens lay when they reduce energy, which get harder and harder to earn as the game goes on. (They also received \$75 cash at the end of the study). White managed to earn 1,745 eggs and she "spent" the eggs lavishly at the game's "store." She decked out her chickens with funny hats and a diving mask and bought them bouncing balls to play with. Then she went to work decorating their little yard. The décor includes a fence and flowers, statues and even Greek columns. And what yard would be complete without a snowman and a garden gnome? "You have to have a gnome," she said.

And the energy chickens have had their intended effect. "It really has made me more aware," said White. "Even when I run to the copy machine, I turn my monitors off."

The idea for "Energy Chickens" came from "serious games" — video games designed for business purposes, such as training employees. It's also based on other virtual pet games that have been popular with kids for years and are being adapted to encourage people to change their behavior. There is a virtual pet designed to encourage diabetic children to take their medicine, for example, and another designed to provide company to older people in nursing homes. Virtual pets work by encouraging players to form a bond with their "pets" that can prompt them to change their behavior.

Leanna Meyer, an environmental engineering associate who worked on the project at PPPL, said some people were more attached to the energy chickens than others. "Some people were more in tune with it," she said. "I think it was really popular with the ladies. It was a competition and they were doing it in their group."

The 42 people who participated in the game were all in the Lyman Spitzer Building and Mod 6, Meyer said. They were divided into seven areas and the game allowed players to see how chickens were doing in their group and how they were doing in other groups, which were all given colors.

Jim Graham, manager of Best Practices, was not as enamored of his chickens as White but he managed to keep three chickens connected to his computer, his fan and his telephone pretty healthy. He bought them hats, and put up a picket fence piece by piece around the property.

Graham said he sometimes grumbled when the special cell phone would buzz him to ask him whether he had logged on to the game. "The positive thing that came out of it is I started paying attention to turning things off – even at home, especially at home," he said. "When I leave one room and go to another I turn things off."

He has even gotten his wife to conserve energy. "I said, 'Turn off the kitchen lights, we're not using them anymore,'" he recalled. "And she called me a pain in the neck. But the next time she turned off the lights!" 🐔

# Welcome PPPL New Hires

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



**ANGELA CAPECE**  
*Associate Research Physicist*  
Plasma Science and Technology



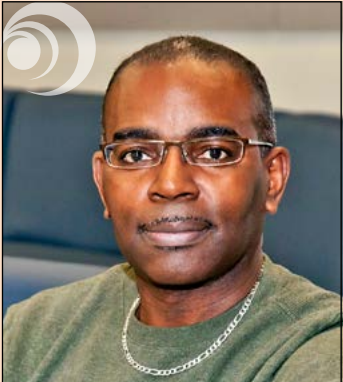
**JOHN DELLAS**  
*Electrical Engineer*  
Engineering & Infrastructure



**ARTURO DOMINGUEZ**  
*Postdoctoral Fellow*  
Science Education



**JANE FENG**  
*Accounts Payable*  
Business Operations



**LA MONT FOREMAN SR.**  
*Accounts Payable*  
Business Operations



**ROB HAGER**  
*Associate Research Physicist*  
Theory



**RAJESH MAINGI**  
*Department Head*  
Edge Physics & PFC Research



**ENRIQUE MERINO**  
*Technical Associate*  
LTX



**MORGAN STYER**  
*Welding Engineer*  
Engineering & Infrastructure



**ZHIRUI WANG**  
*Associate Research Physicist*  
NSTX



**HELEN WOJTENKO**  
*Staff Accountant*  
Business Operations



**JINXING ZHENG**  
*Visiting Physicist*  
Theory



## Facemask Testing

Industrial Hygienist Samantha Burrows tests the self-contained breathing apparatus respirator of Emergency Services Officer Paul Sobke. All of the officers have their respirators tested each year to make sure the seal works properly and does not allow airborne toxins or other chemicals to enter the respirator.

Photo by Sandy Shaw/ Site Protection Division

# 2013 Science on Saturday

Princeton University Plasma Physics Laboratory Lecture Series

<b>FEB. 9</b>	<b>FINDING A NEEDLE IN A (GENOMIC) HAYSTACK OR HOW CAN COMPUTERS HELP CURE CANCER</b> by Prof. Olga G. Troyanskaya, Lewis-Sigler Institute for Integrative Genomics and Department of Computer Science, Princeton University
<b>FEB. 16</b>	<b>FROM ROBOT SOCCER TO AUTOMOTIVE SAFETY: AN OPTICAL TOUR</b> by Prof. R. Andrew Hicks, Department of Mathematics, Drexel University
<b>FEB. 23</b>	<b>NO LECTURE — DOE'S NJ HIGH SCHOOL SCIENCE BOWL®</b>
<b>MAR. 2</b>	<b>LIGHT AND NANOTECHNOLOGY — ENGINEERING AND SO MUCH MORE</b> by Prof. Claire Gmachl, Department of Electrical Engineering, Princeton University
<b>MAR. 9</b>	<b>A SHORT HISTORY OF LENGTH</b> by Prof. Joel Langer, Department of Mathematics, Case Western Reserve University
<b>MAR. 16</b>	<b>A ROBOT'S VIEW OF OUR OCEAN PLANET</b> by Josh Kohut, Assistant Professor of Oceanography, Center for Coastal Physical Oceanography, Rutgers University


**Thank you for your donations to United Way!**

PPPL employees contributed a total of **\$31,914** to the PPPL and Princeton University United Way campaign.  
Thank you to all who donated!



# 2013 Science on Saturday

Princeton University Plasma Physics Laboratory Lecture Series




**Finding A Needle In a (Genomic) Haystack or How Can Computers Help Cure Cancer**

**OLGA G. TROYANSKAYA**  
Princeton University

**Saturday, Feb. 9 • 9:30 a.m. • M.B.G. Auditorium**

# COLLOQUIUM



**Seismic Imaging and Inversion Based on Spectral-Element and Adjoint Methods**

**JEROEN TROMP**  
Princeton University

**Wednesday, February 6**

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

## Volunteers Needed

PPPL will host 48 teams of middle and high school students (about 250 students total) on Friday & Saturday, Feb. 22-23 at the New Jersey Regional Middle and High School Science Bowls.



**WE NEED YOUR HELP!**





We are hoping to find: moderators, science/rules judges, time/score keepers, lunch attendants, etc.  
Won't you please consider volunteering your time?  
Lunch provided for competition day volunteers. Contact Deedee Ortiz @ 2785 or [dortiz@pppl.gov](mailto:dortiz@pppl.gov), to sign up or for more information.



# 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.

— Mark Gazo, Chef Manager

	<b>MONDAY FEB. 4</b>	<b>TUESDAY FEB. 5</b>	<b>WEDNESDAY FEB. 6</b>	<b>THURSDAY FEB. 7</b>	<b>FRIDAY FEB. 8</b>
<b>COMMAND PERFORMANCE CHEF'S FEATURE</b>	 <b>POTATO &amp; CHEESE PIEROGIES</b>	 <b>EGGPLANT PARMESAN LASAGNA</b>	 <b>BAKED MACARONI &amp; CHEESE</b>	 <b>BBQ CHICKEN WITH CORN ON THE COB</b>	 <b>BAKED TILAPIA</b>
<b>EARLY RISER</b>	Greek Omelet with Spinach, Tomato & Feta Cheese	Cranberry Pancakes	Steak, Egg & Cheese Quesadilla	Ham, Egg & Cheese Bagel	Sausage, Egg & Cheese Croissant
<b>COUNTRY KETTLE</b>	Italian Wedding Soup	Beef Barley	Turkey Chili with Beans	Pasta e Fagioli	New England Clam Chowder
<b>GRILLE SPECIAL</b>	Chicken Tenders & Fries with Honey Mustard	Hot Pastrami & Cheddar on Rye served with Cole Slaw	Chicken Cutlet, Ham, Swiss & Dijonnaise Baguette with Fries	Italian Hot Dog served with Onion Rings	Falafal served with Tzaziki Sauce and Chick Pea Salad
<b>DELI SPECIAL</b>	Peppered Ham & Muenster Cheese on a Kaiser Roll	Chicken Salad & Bacon Wrap	Six Foot Hoagie	Ham Salad Croissant	Roasted Vegetables & Feta Cheese Torpedo
<b>PANINI</b>	3 Cheese & Ham Griller on Ciabatta Bread	Turkey, Bacon, Tomato, Pesto Mayonnaise Baguette	Crispy BBQ Chicken Sandwich	Meatloaf, Cheddar Cheese Torpedo	Alfredo Florentine Chicken Panini

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**

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