

At PPPL  
**THIS WEEK**

**MONDAY, MARCH 5**

**Andlinger Center Seminar**

Noon - 1 p.m. ♦ Main Campus,  
Wallace Hall - Room 300

How Quantum Mechanics Can Help  
Solve the World's Energy Problems

Emily Carter (ACEE Director)

**TUESDAY, MARCH 6**

**PPPL Theory Seminar**

9:30 a.m. ♦ T-169

Slava Lukin

**WEDNESDAY, MARCH 7**

**PS&T Seminar**

9:30 a.m. ♦ B-318

Magnetic Reconnection and High-Beta  
Plasma Confinement Experiments at  
the University of Tokyo

Michiaki Inomoto, Yasushi Ono, and the  
TS group (University of Tokyo)

**PPPL Colloquium**

4:15 p.m. ♦ M.B. Gottlieb Auditorium

What the Sun Has Taught Us About  
Basic Properties of Matter

Sarbani Basu (Yale University)

[CLICK HERE FOR ABSTRACT](#)

**THURSDAY, MARCH 8**

**State of the Laboratory Address**

2 p.m. ♦ M.B. Gottlieb Auditorium

Stewart Prager (PPPL)

**FRIDAY, MARCH 9**

**DIII-D Science Meeting**

1 p.m. ♦ B-233

**SATURDAY, MARCH 10**

**Science on Saturday**

9:30 a.m. ♦ M.B. Gottlieb Auditorium

100 Years of Superconductivity

Michael Norman (Argonne National  
Laboratory)

*Guest Corner*

**Jumpstarting STOP at PPPL**

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



A few years ago, managers using the Safety Training Observation Program (STOP) observed technicians working without hard hats in the NSTX test cell. When the managers asked why, they found out that the bulky headwear prevented the workers from getting close enough to their tasks in crowded spaces. The solution? The workers would wear "bump caps" that provide adequate head protection and access to their work.

Through STOP — a program we adopted in 2008 to improve safety and reduce accidents at the Laboratory — the managers collaborated with the NSTX workers and ES&H staff to develop the solution.

Since PPPL implemented the program, more than 1,800 STOP reports have been submitted, prompting numerous changes to improve safety in the workplace.

We've noticed, however, a recent drop in the use of STOP, despite its success in providing valuable data on safe and unsafe behaviors by people working at PPPL. Supervisor participation, as measured by the number of reports submitted and the number of supervisors submitting each month, has declined from 75 percent of full participation initially to only about 30 percent recently.

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**The Greening of the Fleet**

*PPPL's Officers Meet the Ecological Challenge While Keeping the Site Secure*

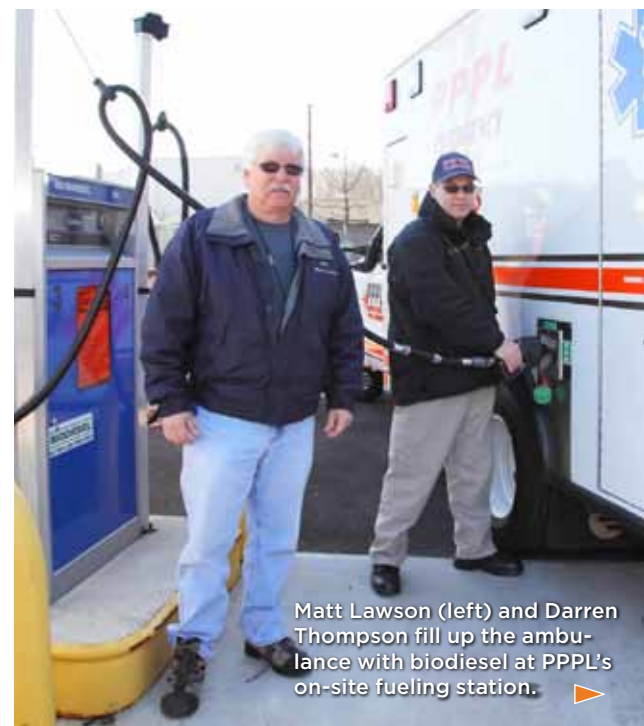
By Patti Wieser

Every time Captain Darren Thompson steps on the pedal of a white pick-up truck to patrol the site, he shrinks PPPL's carbon footprint.

Thompson and the rest of the Lab's Site Protection Division use a fleet that is 90 percent "green." By the end of the year, the division will operate with an all-green fleet — vehicles that run on alternative fuels or are hybrid.

"We are at the forefront of the 'eco' movement in emergency services," said Fran White, head of the division. Driven by a U.S. Department of Energy and PPPL shared strategic directive to use alterna-

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Matt Lawson (left) and Darren Thompson fill up the ambulance with biodiesel at PPPL's on-site fueling station.

# Fleet Greening

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tive fuels and reduce consumption of fuel, the division found a way to protect the site and respond to emergencies in an environmentally friendlier way.

## Going the extra mile

This proactive step goes above and beyond federal orders. “Emergency vehicles such as fire engines and ambulances are exempt from the federal mandate for government fleets to use alternative fuel,” said PPPL environmental engineer Keith Rule. “Even though these vehicles are exempt, PPPL has moved forward to make its emergency vehicles green.”

Rule, White, and Matt Lawson, excess property and transportation manager at PPPL, joined an effort led by Thompson to transform Site Protection’s vehicles. “Darren Thompson, the fleet manager for Site Protection, championed using alternative fuels for the division’s vehicles, which include a fire engine, an ambulance, and four trucks,” White said.

The green conversion was multi-layered since the planners had to take into account the primary roles for the division. “Our plan for converting to green vehicles must support our mission of protecting the site and responding to emergencies,” White said. “The team looked at identifying vehicles that met this mission, and still reduced our fuel consumption.”

The fleet’s six vehicles have been replaced or modified to be more environmentally friendly during a three-year transition that concludes this year. A new ambulance and a fire engine with a rebuilt fuel tank run on biodiesel fuel called B20. A pick-up truck and an SUV are powered by an ethanol blend alternative fuel called E85. A new Ford Escape hybrid is fueled by gasoline and an electric battery. A sixth will be replaced later this year with a flexible-fuel vehicle that uses either regular gas or E85.

“I know about the Lab’s initiative to go green and it felt like the right thing to do — to show a commitment to the Lab’s direction,” said Thompson.

Biodiesel is an alternative fuel made from animal fat or vegetable oil; B20 is a blend of biodiesel with conventional petroleum-based biodiesel. E85 is a blend of ethanol and regular gasoline; ethanol is fermented from corn, grains, or agricultural waste. Gasoline-powered vehicles produce harmful emissions that are damaging to the environment. In general, vehicles powered by alternative fuels such as B20, E85, or electric batteries produce lower emissions, making them “greener.”

At the wheel of Engine 66, the Lab’s yellow fire engine, Thompson said, “There is no difference whatsoever in the operation or feel of this vehicle — which runs on biodiesel — from fire engines that run on regular fuel. It operates the same as any other fire engine. It accelerates the same. It performs the same,” he said. Engine 66, also set up as an emergency vehicle, is used by the Lab’s firefighters to respond to fires and emergencies at PPPL and surrounding areas.


Site Protection used 5,214 gallons of fuel in fiscal year 2011, according to Lawson. “The Taylor Oil Company in Somerville, N.J., supplies us with B20 and E85,” he said, noting that the Lab has used biodiesel for five years. Lawson oversees the on-site fueling station at PPPL, which has regular diesel, E85, biodiesel, and unleaded gasoline. Rule said Site Protection officers initially were concerned about the reliability of greener vehicles, particularly about whether the fuel would be effective in vehicles used for emergency response. Now the staff is wholly supportive. “The movement toward greener vehicles caused a shift in the culture here,” said Rule, who was instrumental in educating the officers about the green fleet. “As a result of going green, Site Protection officers have shown a heightened awareness about the reliability of the new fuel-efficient, clean vehicles.”

Site Protection officer Sean Galie quickly became an advocate for green emergency vehicles, and would like a flex-fuel car at home as well. “There have been zero issues. If you didn’t tell anyone he or she would never know that our vehicles are powered with alternative fuels,” Galie said.

In addition to the vehicles using green fuel, the Site Protection staff has fully deployed a bicycle patrol fleet. The bike fleet encourages a fitter crew and saves fuel, leading to a further reduction in greenhouse gas emissions.

“Bikes and hybrids save fuel,” said Rule, noting that overall, since 2008, the Laboratory has reduced its greenhouse gas emissions due to fleet vehicle emissions by 23 percent. Added Jamie Alkhateeb, “Less fuel means less fuel usage, so we are decreasing our carbon footprint.”

Alkhateeb, the emergency preparedness and training coordinator for Site Protection, said that as a DOE national lab, PPPL should be leading and serving as a role model, not just for others in the federal complex, but for everyone.

PPPL’s goal to decrease petroleum consumption and increase alternative fuel use echoes the DOE’s call for using alternative fuels and reducing the consumption of fuel. And Site Protection leads the charge — preserving the environment while protecting the site, saving trees when saving lives, and reducing greenhouse gas emissions when fighting fires. “Part of the reason for doing fusion research is to reduce greenhouse gas emissions when generating electricity, but we need to do all the right things along the way and our Site Protection vehicles are included as part of that plan,” White said. 



PPPL officer Chris Pietsch patrols the site on a bicycle.

# Jumpstarting STOP

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An analysis of the program shows that STOP helps to keep safety in the day-to-day conversation at PPPL, promoting safety awareness, and driving improvement actions. By these measures, the program is succeeding, even without a provable cause-and-effect benefit to the accident rate. However, the steady decline in participation by those responsible for the program's implementation means that STOP is on a course toward extinction at PPPL unless there are changes.

Jerry Levine, Bill Slavin, Dorothy Strauss, and I formed a committee to investigate the causes of declining participation and to recommend changes. We interviewed about a dozen supervisors at various levels and found that their reporting expectations did not correspond to the different levels of hazard in the work supervised — essentially they perceived they were being measured against a “one-size-fits-all” standard. Most tellingly, there was no accountability, although there is a strong commitment to safety. We concluded that the program must be refreshed if we want to sustain it. Based on our committee's findings and recommendations, the Laboratory is making the following changes in our implementation of STOP:

1. Each department has developed its own STOP participation plans, based on its needs, subject to the approval of the appropriate deputy director, and department heads will be held accountable for participation.
2. The ES&H organization will provide training as needed.
3. The streamlined training program will provide all the essential information in a single one-hour session.
4. The management is communicating these changes to staff, as well as the Laboratory's renewed commitment to the STOP program (a fuller version of this article will be published in the March issue of the ES&H Bulletin).

These changes are the right steps to take, but the future success of the STOP program at PPPL depends on our renewed commitment to the program, especially on the part of those, like myself, who are in management positions. We look forward to recommitting ourselves to this important program in 2012. ☐

*The full article on STOP by Hutch Neilson will be published in the ESH&S Bulletin in March.*

## STOP Reporting is Easy

STOP checklist cards are available throughout the Lab and a completed card can be turned in by dropping it off at any mail pickup location — no envelope or address required. An equivalent, online reporting form is available at

<http://www-local.pppl.gov/esh/STOPcheck.html>.

## Three Essentials of STOP

STOP has three essential elements: observation, conversation, and reporting. Observation means studying individuals at work to look for safe and unsafe behaviors. A STOP checklist reminds the observer — typically a manager or supervisor — of what to look for. Observation is coupled with conversation. The observer asks the worker about the observed behavior to better understand the reasons behind it, and provides feedback to reinforce safe behavior and modify unsafe behavior. Reporting the observations and conversations to ES&H for analysis results in a better understanding of the underlying causes of accidents, and helps us monitor trends and implement measures, such as procedures, training, or equipment, to improve performance. STOP reports describe only the behaviors observed and the substance of the ensuing conversations. Information not relevant to the aims of STOP, such as the names of observed individuals, is never reported.

In summary, STOP aims to promote safe behavior through one-on-one interactions, and to gather information that can be used to make institutional changes to help us all work more safely. The program focuses on behaviors and behavior modification, whereas our traditional safety walkthroughs and spot-checks focused more on physical workplace conditions.



PPPL hosted about 200 area high school and middle school students during the regional Science Bowls® — the first for middle and the second for high school — on February 24 and 25. Competing teams were quizzed on biology, chemistry, physics, astronomy, earth science, general science, and mathematics during the Jeopardy!-like tournaments in which all the categories were disciplines of science. Each team was made up of four students, a student alternate, and a teacher who served as an advisor and coach. Several dozen PPPL staff and friends volunteered to make the two bowls a success. PPPL physicist Daren Stotler (right) volunteered as a moderator. Thomas Grover Middle School in West Windsor, N.J., and Princeton High School in Princeton, N.J., took home the first-place prizes at the competitions. [www.pppl.gov/polPressReleases.cfm?doc\\_id=1139](http://www.pppl.gov/polPressReleases.cfm?doc_id=1139)

# STATE OF THE LABORATORY ADDRESS

NEW DATE

**Thursday, March 8, 2012 — 2 p.m.**

M.B. Gottlieb Auditorium, Lyman Spitzer Building

*After Dr. Prager's presentation, the Kaul Awards and the Distinguished Engineering Fellow Award will be presented. Refreshments to follow. All staff are invited to attend.*

# 2012 Science on Saturday

Princeton University Plasma Physics Laboratory Lecture Series

## One Hundred Years of Superconductivity

**MICHAEL NORMAN**  
Argonne National Laboratory

**Saturday, March 10, 2012**

9:30 a.m.

M.B. Gottlieb Auditorium, Lyman Spitzer Building

# COLLOQUIUM

## What the Sun Has Taught Us About Basic Properties of Matter

**SARBANI BASU**  
Yale University

**Wednesday, March 7**

4:15 p.m. (Coffee/Tea at 4 p.m.)

M.B. Gottlieb Auditorium, Lyman Spitzer Building

### Volunteers Needed

### Young Women's Conference in Science, Mathematics, Technology and Engineering

hosted by PPPL on the MAIN CAMPUS of Princeton University  
Friday, March 23  
9 a.m. to 2 p.m.

Contact Stephanie Wissel at [swissel@pppl.gov](mailto:swissel@pppl.gov)



YOUNG WOMEN'S CONFERENCE IN SCIENCE, MATHEMATICS, TECHNOLOGY AND ENGINEERING

March 23, 2012  
Princeton University

# PPPL Café Menu

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

**MONDAY, MAR. 5**

**TUESDAY, MAR. 6**

**WEDNESDAY, MAR. 7**

**THURSDAY, MAR. 8**

**FRIDAY, MAR. 9**

COMMAND PERFORMANCE  
CHEF'S FEATURE



**Chicken Marsala over Pasta**



**Roasted Turkey w/ Roasted Potatoes**



**Create Your Own... Beef Tacos**



**Chicken & Smoked Sausage Gumbo**



**Greek Gyros with French Fries**

EARLY RISER

Hash Browns, Egg and Cheese on English Muffin

The Oversized Breakfast Burrito

Steak, Egg and Cheese Quesadilla

Blueberry Pancakes w/ Bacon

Sausage, Egg and Cheese on a Croissant

COUNTRY KETTLE

Chicken with Brown Rice

Vegetable Lentil

Turkey Chili

Cream of Squash

Tomato Florentine

GRILLE SPECIAL

Grilled Ham & Cheese with Bacon and Tomato w/ Fries

Crispy Buffalo Chicken Quesadilla w/ Blue Cheese

Pizza Steak Sandwich on Garlic Toast w/ Fries

The BBQ Bacon Turkey Burger w/ Spiral Fries

Sausage, Pepper and Onion Sandwich with Fries

DELI SPECIAL

Classic Tuna Hoagie

Roast Beef BLT Wrap

Grilled Southern Reuben

Honey Ham and Swiss

Pesto Chicken Salad Sandwich

PANINI

Salami, Pepperoni and Provolone

The Gobbler — Turkey, Bacon and Provolone

Grilled Chicken, Bacon, Cheddar, and Chipotle

Eggplant Parmesan

The Monte Cristo Panini

MENU SUBJECT TO CHANGE WITHOUT NOTICE

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

# WEEKLY

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

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.

Send to: [pwieser@pppl.gov](mailto:pwieser@pppl.gov) ♦ Comments: [commteam@pppl.gov](mailto:commteam@pppl.gov) ♦ PPPL WEEKLY is archived on the web at: <http://www.pppl.gov/ppplweekly.cfm>