

At PPPL  
**THIS WEEK**

**MONDAY, MARCH 4**

**PST Seminar**

1:30 p.m. ♦ T-169 Theory Conf. Rm.

Electromagnetic flow control and electromagnetic flow measurement in liquid metals

Andre Thess, Ilmenau University of Technology, Germany

**Andlinger Center Seminar**

4:30 p.m. ♦ Main Campus, Computer Science Auditorium 104

After Solyndra: Financing Obstacles to Clean Energy and Some Policy Recommendations

Richard Kauffman, Senior Advisor to the Secretary in the U.S. D.O.E.

**WEDNESDAY, MARCH 6**

**PPPL Colloquium**

4:15 p.m. ♦ MBG Auditorium

From Democratic Consensus to Cannibalistic Hordes: The Principles of Collective Behavior

Iain Couzin, Princeton University

Refreshments at 4 p.m. in the LSB Lobby

**SATURDAY, MARCH 9**

**Science on Saturday**

9:30 a.m. ♦ MBG Auditorium

A short history of length

Joel Langer, Case Western Reserve University

**Memorial Service for John Schmidt**

11 a.m. ♦ Nassau Presbyterian Church, 61 Nassau St., Princeton

**UPCOMING EVENTS...**

March 13

**Carebridge Seminar**

"Thinking Your Way to Healthy Eating"

11:30 a.m. ♦ H.R. Training Room

March 15

**Deadline for Green Machine Awards nominations**

March 22

**Young Women's Conference at Princeton University**

9 a.m. - 2 p.m.

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# A high-tech Science Bowl

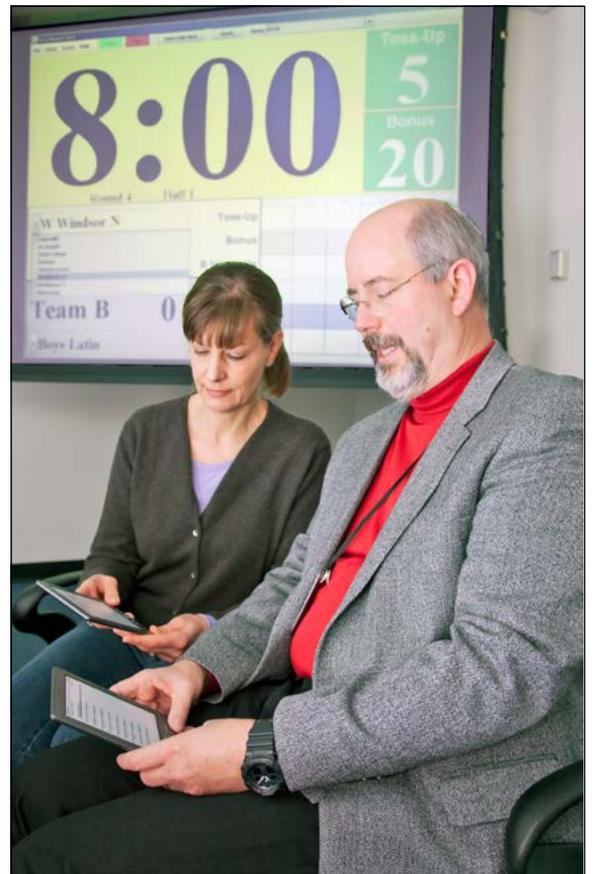
By Jeanne Jackson DeVoe

The Science Bowl at PPPL on Feb. 22 and 23 was a contest for the 21st century with judges and moderators using e-readers for the questions instead of paper and a new software program projecting the latest contests, room assignments and scores in the lobby and onto people's smart phones.

The new innovations made the U.S. Department of Energy's New Jersey Regional Middle School and High School Science Bowl run calmly and smoothly amid the excitement of the contests that ended in the High School Science Bowl with an up-to-the-finish line match and a last-minute comeback for the West Windsor-Plainsboro High School South.

Some 200 high school students on 32 teams from throughout New Jersey competed in the Science Bowl in which teams of four to five people answer science questions in rounds of 25 toss-up questions and 25 bonus questions in a double elimination format. More than 50 volunteers from PPPL worked on the event each day as moderators, judges, and timekeepers.

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Two volunteers, Kristin Baumgartner and Paul LaMarche, show off their Kindle e-readers at the High School Science Bowl. Baumgartner, Steve Baumgartner's wife, works in IT Communications for Bristol-Myers Squibb and LaMarche, a former PPPL'er and husband to Susan Murphy-LaMarche, is vice-provost for space programming and planning in Princeton University's Office of the Provost.

# 2,041 tons of metal equal top EPA award for PPPL

By Jeanne Jackson DeVoe

When PPPL sold the metal from old motor generators on the C site last year, the Laboratory recycled 2,041 tons of metal, generated a tidy \$1 million and ended up winning a prestigious award from the federal Environmental Protection Agency as the 2012 EPA WasteWise Program's Federal Partner of the Year. "Thanks to the efforts of our staff, PPPL continues to be a leader in waste reduction activities," said Michael Williams, Associate Laboratory Director for Engineering and Infrastructure. "Although it's good to be recognized by the EPA, it's even better knowing we are helping to protect our environment and reaping financial rewards at the same time."

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Rob Sheneman led Lab to WasteWise win.

## EPA Award

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The Laboratory also upgraded its composting program by having a contract with Brock & Co., the company that runs the cafeteria, requiring that almost everything be compostable or reusable – so that all plates, cups and containers can be composted and metal silverware can be reused.

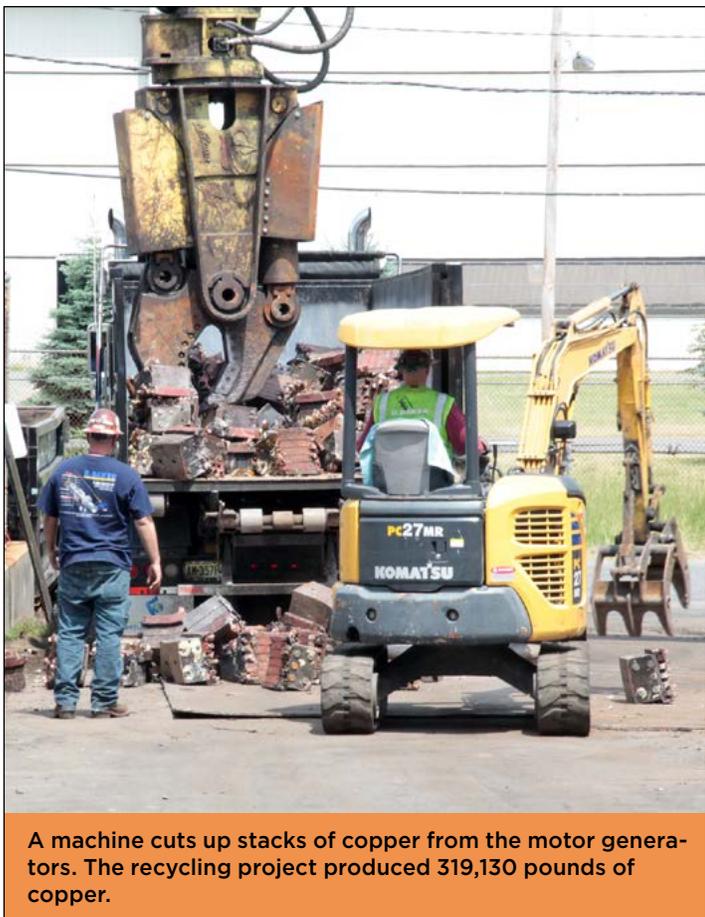
In 2011, PPPL reduced the total amount of solid waste it disposed by nearly 7 tons from about 147,000 tons to about 140,000 tons.

“I think it’s a significant recognition for the work that people do here every day,” said Robert Sheneman, head of the Environmental Services Division. “Certainly the programs that are championed by the Facilities Division and the Environmental Services Division are important but what really matters

is that people participate in those programs. They choose to recycle their paper versus throwing it away in the garbage. They choose to put their compostables in the green bin.”

WasteWise is a federal program aimed at tracking and reducing waste that has 1,700 members in 54 industry and government sectors. Members include the U.S. Postal Service, the City of Atlanta and PSE&G.

The three main sets and one small set of motor generators removed from PPPL’s C-Site in 2011 (Fiscal year 2012) once used to power PPPL’s early experiments resulted in 2,041 tons of metal being recycled. The total includes more than 3 million pounds of steel, nearly 52,000 pounds of aluminum, about 319,000 pounds of copper, about 267,000 pounds of copper and brass and about 2,000 pounds of stainless steel.



A machine cuts up stacks of copper from the motor generators. The recycling project produced 319,130 pounds of copper.



The demolition and sale of the C-Site motor generators yielded over 4 million pounds of metal and netted \$1 million for PPPL. The recycling of the metal was a big factor in PPPL winning the 2012 EPA WasteWise Program’s Federal Partner of the Year.

All those tons of metal meant that PPPL’s recycling rate by weight was 95.4 percent – an astounding 8 or 9 tons per person at PPPL, Sheneman said.

The Laboratory also significantly reduced the amount of greenhouse gases it produced by reducing the amount of waste going into landfills. In fiscal year 2011, PPPL reduced greenhouse gases by the equivalent of about 6,000 metric tons of CO<sub>2</sub>, compared to a reduction of about 1,200 the previous year. Those 6,000 tons included a 9.5 metric ton reduction due to composting and a 5,973-ton reduction due to recycling.

“Most staff knows what’s required to be done when they have a project and they make an effort,” said Building and Grounds supervisor Margaret King. “PPPL staff for the most part is incorporating recycling into projects thereby diverting trash out of the landfill to recycling, reuse and re-manufacturing. It is important, and a great honor that these efforts and practices are recognized, supported and encouraged.”

Sheneman noted that PPPL’s green purchasing program also reduces the amount of waste that ends up in landfills. PPPL won a GreenBuy award from the U.S. Department of Energy for its green purchasing program last year, as well as a federal Sustainability Award for reducing overall greenhouse gas emissions 48 percent since 2008 – far exceeding the U.S. government’s goal of a 28 percent reduction.

Other programs, such as PPPL’s electronic recycling program, also contribute to PPPL’s effort to reduce waste, Sheneman said. Last year, PPPL won the 2011 WasteWise Gold Achievement Award for the program, which recycled more than 12 tons of electronics in 2010 and 32 tons of outdated magnetic tapes and more than 45 tons of non-PCB capacitors – preventing more than 1,200 metric tons of carbon dioxide equivalent in 2010.

The WasteWise Program’s Federal Partner of the Year award recognizes that PPPL is approaching waste reduction in a broad variety of ways, Sheneman said. “As an institution, it’s a validation of the long-standing programs we have in place here,” he said. “Some people take it for granted but when you go outside the fence here you realize that a lot of organizations don’t have these kinds of practices. This is a validation that the work we’re doing is worth doing.”

# High-tech Science Bowl

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The software program by Eliot Feibush, a computational scientist at PPPL, and his team of high school interns, meant that 200 contestants no longer had to come down to the lobby to learn about their standings and to find out which of the nine rooms they were assigned. "We're very advanced in terms of all the programs for the Science Bowl," Feibush said proudly.

"I think the screen is very useful, you don't have to keep coming back here to get scores," said West Windsor Plainsboro-South Team Captain Alexander Clifton. Teammate Chitanya Asawa had the highest praise of all. "PPPL is always innovating," he said.

In previous years, Deedee Ortiz, the program's director, wrote the scores by hand on a huge poster in the lobby and a large crowd would congregate around the poster. "They would mob her," recalled Aliya Merali, who worked with Ortiz at both Science Bowls. "We had to put up red tape. It was madness."

The software isn't Feibush's first innovation. In 2009, he and his team came up with software that keeps track of scores in real time and computerizes the scores and timekeeping so that everything is done digitally. Players, scorekeepers and spectators have all benefited from the electronic display.

Another new technology this year was that volunteer judges and moderators at PPPL used Kindle tablets instead of paper for the contest – saving \$1,000 worth of paper.

The tight competition kept things lively in both the Middle School and High School Science Bowl. West Windsor-Plainsboro South went into the final round undefeated but at the beginning of the game Bergen County was



Moderator Andrew Zwicker reads questions from a Kindle e-reader and Carol Ann Austin keeps score during one of the final rounds of the Middle School Science Bowl, pitting the JDroid Science Club at left against the Thomas Grover Middle School. JDroid placed second place in the Science Bowl and Thomas Grover Middle School won third place.

ahead 64 to 4 and at half-time the score was 64 to 22, with Bergen County leading, before West Windsor-Plainsboro South regained the lead.

"It feels good," said team member Arnav Sood. "It was up to the last question. It was pretty intense."

Clifton, the West Windsor-Plainsboro High School South team captain and a senior, savored the victory. The team had come in second in the regional competition in 2012 and 2011 and had won the competition in 2010. "I worked really hard in 9th, 10th and 11th grade," he said. "Now I finally earned it."

West Windsor-Plainsboro-South will receive an all-expenses paid trip to the National 4-H Center in Maryland just outside of Washington D.C. for the national competition. The final rounds will be held at the National Monuments Building in Washington DC.

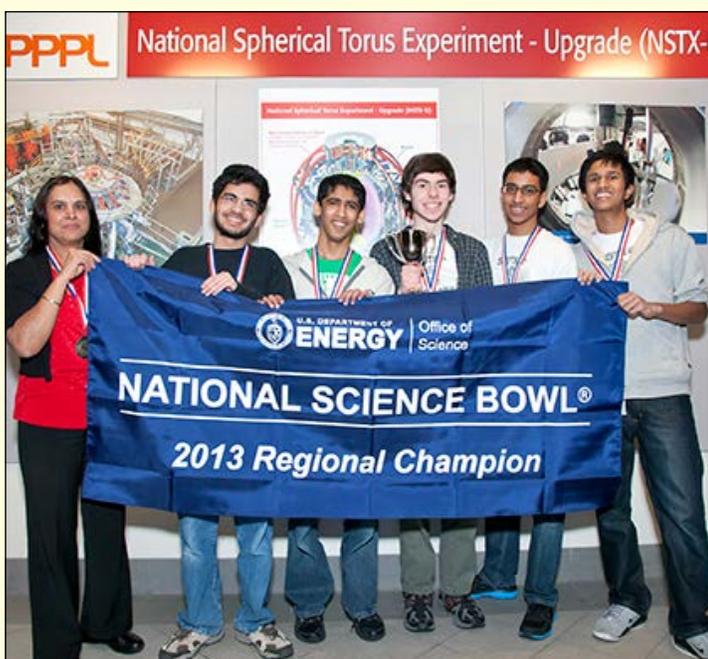
The Bergen County team, which is based in Hackensack, came in second in the competition and a team from State College, Pa., won third place.

In the DOE's Middle School Science Bowl on Feb. 22 in which about 100 students on about 16 teams competed, the Bridgewater-Raritan Middle School placed first in a final contest against JDroids Science Club based in Wayne with a score of 128 to 90. Thomas Grover Middle School, a middle school in the West Windsor-Plainsboro Regional School District, placed third. The School Spirit Award went to Pond Road Middle School in Robbinsville.

Rohan Jayanth, a member of the JDroids, said the tension before the crucial final competitions is difficult. "It's exciting and it's nerve-wracking at the same time," he said. "We don't get mad at each other, we just try to cover each other's weaknesses."

In the cafeteria, Courtney Washington a teacher from South Glenfield Middle School in Montclair, brought 3,000 straws and held her own contest in which students tried to build bridges with straws and masking tape that would hold the most weight. "They're a great group of kids," she said. "They study hard and they deserve it." ☐

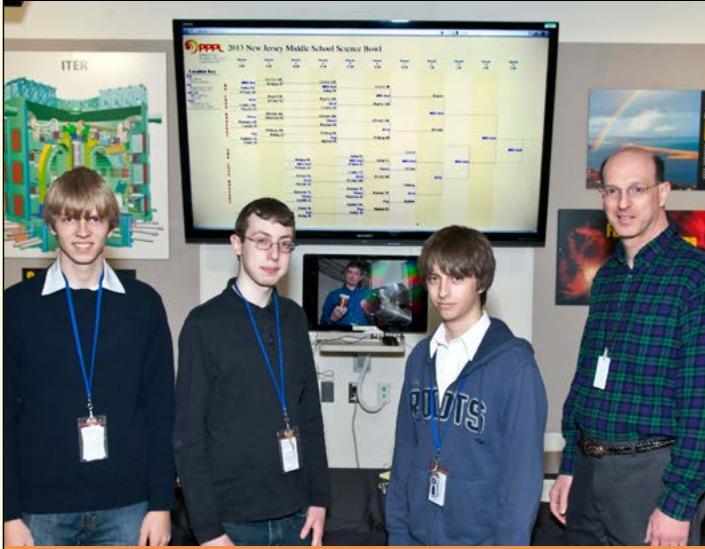
– more Science Bowl photos on page 4



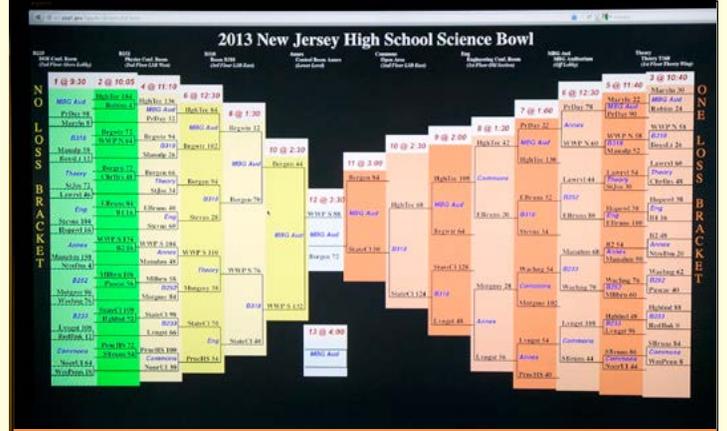
The winning High School Bowl team, West Windsor-Plainsboro High School South, shows off their championship banner.

# Scenes from a High-tech Science Bowl

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Eliot Feibush far right and interns from the Bergen County Academy in Hackensack, left to right: Matthew Lotocki, Jared Miller and Michael Knyszek.



The colorful score board designed by Feibush and his team of interns showed the latest scores, standings and room assignments.



The Bridgewater-Raritan team debates the answers during the final competition with the JDroids Science Club in Wayne.



The winning trophy and medals await the winners.



Bergen County, left, competes against the State College, Pa. team.



The West Windsor-Plainsboro High School South team in action.



The Bridgewater-Raritan team displays their banner after winning the Middle School Science Bowl



Steve DePasquale, a volunteer science judge, with students from the Maryland of the Oranges Academy during the Middle School Science Bowl.

## Memorial service and calling hours for JOHN SCHMIDT

A memorial service for John Schmidt, who died on Feb. 13, is scheduled for Saturday, March 9, at 11 a.m. in Nassau Presbyterian Church, 61 Nassau St., Princeton.



Calling hours will be Thursday, March 7, from 4 to 8 p.m. and Sunday, March 10, from 2 to 4 p.m. in the family home at 11 Catbriar Court, Belle Mead, N.J.

Memorial gifts may be made to the Cancer Institute of New Jersey Foundation, 120 Albany St., Tower 2, 2nd floor, New Brunswick, NJ 08901 or online, <http://www.cinj.org/giving/about-foundation>; or to the Fox Chase Cancer Foundation, attn.: Development Office, 333 Cottman Ave., Philadelphia, PA 19111, or online at <https://www.fccc.edu/helpingFoxChase/index.html>.

## 2013 Science on Saturday

Princeton University Plasma Physics Laboratory Lecture Series



A short history of length

JOEL LANGER

Case Western Reserve University

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

Princeton celebrates **Pi Day** on March 9, 10 and 14th (Einstein's birthday) with everything from a pie eating contest to tours of Einstein's neighborhood. On March 9 at 7:30 p.m., the Princeton Theatre Experiment and the Arts Council of Princeton will present an evening of comedy and musical compositions inspired by "concepts mathematical" in "An Evening of Physico-Mathematica-Logical Music and Comedy," at the Arts Council of Princeton. Tickets are \$5, \$3.14 for ACP members, students and seniors. More information is available at <http://www.pidayprinceton.com/2012-events>.



## COLLOQUIUM



From Democratic Consensus to Cannibalistic Hordes: The Principles of Collective Behavior

IAIN COUZIN

Princeton University

Wednesday, March 6

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

## Volunteers Needed for Young Women's Conference

PPPL's annual Young Women's Conference needs dozens of volunteers to help with exhibits, lead groups and help things move along smoothly. Both female and male volunteers are welcome.

Please contact Aliya Merali, [amerali@pppl.gov](mailto:amerali@pppl.gov), ext. 2208 for more information.

## 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

COMMAND PERFORMANCE  
CHEF'S FEATURE

MONDAY MARCH 4



SWEET & SOUR CHICKEN OVER RICE

Biscuit, Sausage, Egg & Cheese

TUESDAY MARCH 5



NACHOS GRANDE

Sausage, Bacon & Pepper Omelet

Vegetarian Black Bean ✓

Roast Beef & Cheddar on an Onion Roll

Smoked Turkey & Provolone Focaccia with Cranberry Mayo

Pulled Chipotle Chicken Wrap

WEDNESDAY MARCH 6



CARVED ROAST BEEF

Western Style Breakfast Pizza

Portobello Mushroom Barley ✓

Chipotle Grilled Chicken Sandwich

Bacon, Arugula & Tomato On Multigrain Bread

Broccoli & Ricotta Stromboli ✓

THURSDAY MARCH 7



STUFFED SHELLS WITH MEAT SAUCE

Raisin Walnut Pancakes ✓

Bean & Bacon

Maui Burger (Grilled Pineapple, Ham, Cheddar & Teriyaki)

Prosciutto & Provolone Torpedo

Rosemary Chicken with Fresh Mozzarella Ciabatta

FRIDAY MARCH 8



RAVIOLI ✓

Greek Omelet

Vegetarian Chili

Grilled Cheese & Tomato ✓

Tuna Salad & Cheddar Cheese on Multigrain Bread ✓

Fresh Mozzarella, Basil & Tomato Ciabatta ✓

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