

THIS WEEK

THROUGH APRIL 28

**Trenton Rescue Mission
Clothing Drive**
[See page 7 for details.](#)

WEDNESDAY, APRIL 26

**Nuclear Weapons: Sources of
Strength or Vulnerability**
4:15 p.m. ♦ MBG Auditorium
Aron Bernstein, MIT

THURSDAY, APRIL 27

**Take Our Daughters and Sons
to Work Day**
[See page 7 for details.](#)
Presentation
10 a.m.-12 p.m. ♦ MBG Auditorium

**Revealing War: A Conversation
About Art and Journalism in the
21st Century**
5 p.m. ♦ 101 McCormick Hall,
Princeton University

FRIDAY, APRIL 28

STOP class
9:30-11:30 a.m. ♦ Mod 6
conference room
Please contact Dorothy Strauss,
x3072, dstrauss@pppl.gov,
to enroll.

SATURDAY, APRIL 30

CommuniversiTY
Princeton University
[See page 9 for details.](#)

UPCOMING

TUESDAY, MAY 2

STOP class
1:30-3:30 p.m. ♦ Mod 6
conference room
Please contact Dorothy Strauss,
x3072, dstrauss@pppl.gov,
to enroll.

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ITER milestone: First transformer procured by PPPL is energized

By Jeanne Jackson DeVoe



The transformers at ITER. (Photo courtesy of Fusion 4 Energy)

ITER, the international fusion experiment in the south of France, reached a major milestone with the help of PPPL last month when it connected the ITER worksite to France's electrical grid.

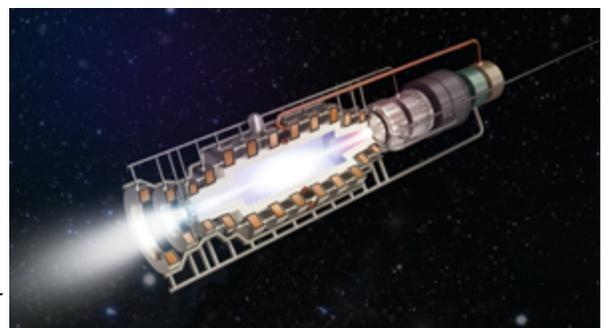
The connection of the transformer was a milestone for the ITER Council and the European Union. It connects the steady state electrical network (SSEN) at the ITER site to the French electrical system, the Réseau de transport d'électricité (RTE) through a massive, 87-ton, 400/22-kilovolt transformer – one of four procured by PPPL on behalf of US ITER. It was built in South Korea by Hyundai Heavy Industries, a branch of the company known for producing cars.

[continued on page 2](#)

NASA selects Princeton fusion-powered rocket study for Pluto mission evaluation

By John Greenwald

PPPL and Princeton Satellite Systems (PSS) have conceived a fusion-powered rocket system that has won a NASA grant to evaluate a mission to orbit Pluto. The proposed study, awarded a \$500,000 NASA Innovative Advanced Concepts (NIAC) Phase II grant, will assess a mission that could reach the space dwarf in less than four years, compared with the nine years that the recent New Horizons fly-by mission required.



Artist's rendering of direct fusion drive rocket. (Credit: S. Shalumov)

[continued on page 4](#)

ITER

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“It’s an exciting moment,” said Charles Neumeyer, who was then team leader until last fall when he became head of engineering for the NSTX-U Recovery Project. “The European team is responsible for installing the equipment. We deliver it, they plug it in.”

Completing last of SSEN procurements

PPPL is now completing the last of \$34 million in procurements on behalf of US ITER for ITER’s SSEN. The procurements began in 2013 under Neumeyer and are expected to be completed this summer under the direction of engineer John Dellas, who took over Neumeyer’s position as the US ITER SSEN WBS Team Leader. The system will provide 120 megawatts of AC power to the conventional loads of the 445-acre ITER site.

In addition to the SSEN electrical components, PPPL experts are providing diagnostics to measure the performance of ITER fusion reactions, and continues to provide research support over a broad range of topics.

Three remaining SSEN transformers will be connected to the 400-kilovolt grid by the end of the summer. However, it will be another eight or nine months before the ITER work-site and buildings can draw power from the grid, according to the ITER organization. The SSEN transformers reduce the voltage to 22 kilovolts for distribution to ITER’s plant systems across the site.

A separate electrical system for the Pulsed Power Electrical Network (PPEN), procured by China, will power the ITER tokamak and will go through the same connection process.

Since the transformers were the most complex items with the longest lead time, they were the first items in the SSEN that PPPL procured, at a total cost of \$6 million. The requests for proposal were sent out in December 2012 and the team chose Hyundai Heavy Industries based on a best-value procurement evaluation. Although all procurements were open to manufacturing sources worldwide, in most cases U.S. sources were not viable because the ITER equipment must be built to International Electrotechnical Commission (IEC) standards to operate at French standard voltage levels. Most U.S. sources target U.S. markets that pose a different set of requirements.



From left, Jeremy Sanna (ITER Organization), Cedric Gazza (ENGAGE), Gilles Consolo (ITER Organization operation manager for the 400kV switchyard) and Laureano Linan Delgado (FERROVIAL) verify the 400 kV circuit breaker before commissioning. (Photo Francesco Campostrini/ITER Newslines)



An overhead shot of the ITER switchyard. (Photo courtesy of ITER)



An aerial view of the ITER site taken in April. (Photo courtesy of ITER)



The first transporter being transported by barge from Marseille across the inland sea Etang de Berre. (From YouTube video “First exceptional load arrives to ITER,” courtesy of ITER)

Neumeyer traveled to Hyundai Heavy Industries, located in Ulsan, Korea, in 2013 for the design review before production began. “The scale of things they’re building there is very impressive,” he said. “Factories building electrical equipment, ships, cars, and other Hyundai products line the harbor and all of the big freighters come in and deliver things all over the world.”

Shipping from Korea to France

The transformers were shipped individually on huge freighters from the Hyundai plant in Ulsan, on the Sea of Japan. The first unit was shipped on Nov. 16, 2014, and made its way through the Indian Ocean and the Suez Canal to Marseille’s Fos-sur-Mer industrial harbor in southern France. As the first of 250 “highly exceptional loads,” the transformer had to travel a special route at night to ITER. The transformer and the ones that followed were transported by barge from Marseille through a narrow canal and finally by truck inland to the ITER site in Cadarache, France. The first transformer reached its destination by Jan. 14, 2015. A video of the transformer’s voyage can be seen on YouTube at <https://www.youtube.com/watch?v=B0tsDebPnzw>.

Neumeyer visited the ITER site several times after the transformers were delivered and during their installation. “Initially, there was a lot of uncertainty in the process. We were the first group in US ITER to exercise big procurements like this. We made the first deliveries of any plant components to the ITER site. We were breaking new ground. When we started there were limited procedures, and storage facilities at the ITER site



A PPPL-procured transformer on its way to installation at ITER. (Photo courtesy of ITER)



Charles Neumeyer, third from right, visited Hyundai Heavy Industries in Ulsan, South Korea, from Sept. 25 to 27 as part of the a manufacturing readiness review for ITER’s steady state electrical network. (Photo courtesy of Hyundai Heavy Industries).

were not ready. Temporary storage had to be set up near the parking lot of the ITER office. In many ways we pioneered the process of equipment delivery to the ITER site.”

Neumeyer made sure that PPPL and US ITER’s name is affixed to the transformers and other components. The permanent nameplates of all SSEN equipment provided by PPPL gives the customer name as, “PPPL, Princeton, NJ, US DA.” “I wanted to make sure that all of these components had something recognizing PPPL’s contribution,” Neumeyer said.

He added that the transformer’s connection to the grid is also a milestone for him and the PPPL SSEN team. “It’s very gratifying to see the project succeed,” Neumeyer said. 🙏

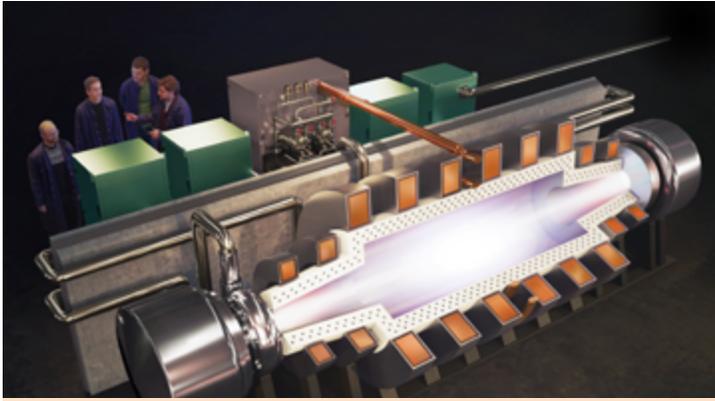
HYUNDAI		HEAVY INDUSTRIES CO. LTD.	
POWER TRANSFORMER			
			TL2500-A11
MANUFACTURER SERIAL NO	2015219210F001	STANDARD	IEC60076
NUMBER PHASE	3	RATED FREQUENCY	50 Hz
VECTOR GROUP	Ynynd	TEMP. RISE (OIL/WINDING)	60/65 °C
AMBIENT TEMPERATURE (MIN/MAX)	-20/40 °C	COOLING CLASS	ONAN/ONAF
WINDING RATED POWER	POS. VOLTAGE	RATED CURRENT	SE. (BL/LINE/NEU.) AC(LINE/NEU.)
HV 60/75 MVA	# 1 460 kV	75.3/94.1 A	1050 kV 1300/750 kV 325/325 kV
	# 21 450 kV	85.6/108.3 A	
LV 60/75 MVA	# 21 340 kV	101.9/127.4 A	
	23.1 kV	1500/1878 A	170/170 kV 70/70 kV
TAPPING RANGE :		400V ±10 x 1.5%	
HV-LV IMPEDANCE AT 75 °C AT 75MVA		APPROXIMATE WEIGHT (kg)	
POSITIVE SEQUENCE AT # 1 17.935 %		CORE & COIL ASSEMBLY 5995.3	
POSITIVE SEQUENCE AT #11 16.609 %		UNTANKING WITH COVER 70000	
POSITIVE SEQUENCE AT #21 17.406 %		TANK & FITTINGS 49887	
SOUND POWER LEVEL AT 75MVA 87 dB		INSULATION OIL (62400 l) 56160	
TYPE OF INSULATION OIL IEC60296		FULLY ASSEMBLED 166000	
		SHIPPING 87000	
TANK, CONVEYOR AND PIPING DESIGNED TO WITHSTAND FULL VACUUM AND 101kPa OF POSITIVE PRESSURE.			
READ INSTRUCTION BOOK BEFORE INSTALLING AND ENERGIZING TRANSFORMER.			
MANUFACTURER HIE, ULSAN, SOUTH KOREA		YEAR OF MANUFACTURE 2014.11	
CUSTOMER NAME PPPL, PRINCETON, NJ, USA			
IDENTIFICATION NUMBER		43AC00-15-1000	

A nameplate on the transformer shows PPPL as the “owner.” (Photo courtesy of Charles Neumeyer)

Fusion-powered rocket

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The nuclear fusion reactor technology, which PSS has licensed, was one of seven Phase II early stage technology proposals awarded NIAC funding. PSS and PPPL had previously won a Phase I award. Included in the two-year grant will be support for research on the fundamental physics of the fusion engine and the design of subsystems needed to make the reactor a reality. The early stage awards support proposals that “have the potential to transform future human and robotic exploration missions,” said NASA, “and could significantly improve current approaches to building and operating aerospace systems.”



Rendering of Princeton Field Reversed Configuration-based power reactor. Little shielding is needed. (Credit: S. Shalumov)



Princeton graduate student Peter Jandovitz and undergraduate Jacob Percy working on Princeton Field Reversed Configuration-2. (Photo by Elle Starkman)



Princeton graduate student Charles Swanson and undergraduate Emily Ho working on Princeton Field Reversed Configuration-2. (Photo by Elle Starkman)

The PSS-licensed reactor technology is based upon the Princeton Field Reversed Configuration fusion reactor invented by PPPL physicist Samuel Cohen. The linear, simply connected reactor system could dramatically reduce the cost and duration of human and robotic missions in space and permit new missions that had previously seemed impossible.

Once fully developed, the engine could facilitate space exploration and planetary defense. Among the applications:

- A mission to fly a telescope to 550 astronomical units, or 51 billion miles, from the sun to use the enormous mass of our star as a gravitational lens to view exoplanets in distant galaxies;
- A mission to propel humans to Mars in far less time than conventional technology would take;
- Reduction of transit time and increased capability and scientific return of any deep space mission;
- A rapid response to the potential impact of a large asteroid on the earth, enabling timely deflection of the asteroid.

The reactor could also be used for a wide variety of terrestrial applications, including relatively small and clean fusion power plants. Other uses could include propulsion systems for submarines and aircraft, and remote power for civilian and military operations. 



Neon Plasma in Princeton Field Reversed Configuration-2. (Photo by Elle Starkman)

PPPL goes green with numerous Earth Week events

PPPL celebrated Earth Week last week with numerous activities that included the annual site cleanup, a home electronics collection, a vendor fair, an Earth Day video and a colloquium speaker.

The week kicked off with PPPL's annual Earth Day cleanup on April 18 in which 25 people spent the morning picking up trash and recyclables from the PPPL campus and surrounding area. The volunteers then enjoyed lunch in the Mod 6 conference room.

"I would like to say thank you to everyone who participated," said Margaret Kevin-King, the buildings and grounds supervisor, who organized the event. "Tell your friends we feed you and tell them how much fun it is!"

The volunteers collected 395 pounds of debris, including 162 pounds of metal and wires, 58 pounds of wood, 23 pounds of tree ranches, 35 pounds of recycling, and 117 pounds of trash.

On Earth Day, April 19, PPPL held its annual home electronics collection. Kyron Jones collected 1,850 pounds of home electronics and delivered them to [Unicor](#) at Fort Dix to be recycled.

Later in the day, the Green Team held a vendor's fair in the LSB lobby featuring booths by PPPL vendors, as well as PPPL's Bike Challenge Team, Princeton University's Sustainability, Princeton Library, Sustainable Princeton, and several others. The fair also featured art work by children and family members of PPPLers celebrating Earth Day.

The Green Team celebrated PPPLers who reduce energy through carpooling or help PPPL recycle with the annual Green Machine Awards ([See page 6](#)).



Kristen Ferraro of IT at the electronics recycling center during Earth Week. (Photo by Elle Starkman)



A group of PPPLers got together before collecting almost 400 pounds of debris and recycling across the site. (Photo by Elle Starkman)



PPPLers enjoy Earth Week events in the LSB lobby last week. (Photo by Elle Starkman)



Kyron Jones oversees home electronics recycling during Earth Week. (Photo by Elle Starkman)

Audience members enjoyed a dirt pudding cup (chocolate pudding with Oreos and gummy worms) while watching the short video "Anthropocene." (Available at <http://top-documentaryfilms.com/anthropocene/>) The video explores whether the planet has entered another geological era in which humans are causing permanent damage to the Earth.

In the afternoon, Alan Robock, of the Department of Environmental Sciences at Rutgers University, discussed "The effects of nuclear war on climate and agriculture" in a special Earth Day colloquium.

Raffle prize winners from the Earth Day fair were:
Advanced Green Power Strip: Nicole Allen

The book "50 Hikes in NJ", bug spray & sunscreen:
Larry Bernard

Italian Herb Trio planter: Adolfo Amaya

Pack of 60w-equivalent LED bulbs: Loic Reymond

Terhune Orchards NJ Fresh Food Basket: Lena Scimeca

Bag of Green cleaning products: Tori Sikkema

Winners of the children's art contest were: Chloe Lamb, 5, daughter of Kevin; Julianne Strauss, 6, daughter of Dorothy; Catalina Serai Dorman, 9, daughter of Pam; Caitlin Jones, 8, daughter of Jennifer; and Grant Sikkema, 13, son of Tori. Winners received a \$20 gift voucher from the Plasma Hutch.

The events were organized by PPPL's Green Team: Margaret Kevin-King, Virginia Finley, Leanna Sullivan, Robert Sheneman, Kate Morrison, Ana Marie Datuin, Jeanne Jackson DeVoe, Mark Hughes, Ed Jenkins, Kyron Jones, and Dana Eckstein. 📷

PPPL's honored for carpooling and recycling

Several PPPL's were recognized for their efforts to reduce energy consumption through carpooling and to reduce the amount of waste sent to landfills through recycling.

"It's entirely in keeping with our mission and it's very important that we're taking these steps," said Michael Zarnstorff, deputy director for research, who handed out the awards. "We want to recognize what you've been doing."

In fiscal year 2016, PPPL's combined recycling rate for office waste and construction and demolition was 97 percent. PPPL received an EPEAT Purchaser Award for the third year in a row, as well as the U.S. Department of Energy's Gold Green Buy Award for its sustainable purchases and the U.S. Environmental Protection Agency Region 2 Food Recovery Challenge Award for the Laboratory's composting program (fiscal year 2015). 



Green Machine Award winners were honored last week.

Car Pooling

Several employees received Green Machine awards for saving energy (and money) by carpooling to work every day. The carpools not only reduce energy consumption, they also reduce air pollution and congestion on the roads. Plus, it saves money and reduces stress for the participants. Together, they saved 132,750 miles, or 5,624 gallons of gasoline.

ES&H Carpool

Rick Horner, Keith Rule, Neil Gerrish and Penny Horner

Richard Horner is the primary driver of a group that has car pooled for more than six years from Mount Holly and Bordentown, New Jersey. Horner drives 80 miles a day. The group saves 240 miles a day or about 54,000 miles and 2,288 gallons of gasoline a year.

Facility and Site Services

Tom Ward, Mike Barowsky, Tim Conwell, Mark Snyder, Jeff Bennett and Sean Rogers

Tom Ward, the primary driver, has been carpooling with a group of five other coworkers for more than six years from Levittown, Pennsylvania. The group drives about 50 miles a day round-trip from Pennsylvania, saving 250 miles a day and 56,250 miles and 2,383 gallons of gasoline per year.

Electrical Engineering Power Branch

Dick DeBonis and David Miller

DeBonis and Miller have been carpooling for the past 16 years from Easton, Pennsylvania, saving 100 miles a day, 22,500 miles and 953 gallons of gasoline per year for a grand total of 360,000 miles and some around 15,000 gallons of gasoline during that time.

Recycling

Many employees at PPPL were recognized for their efforts supporting PPPL's sustainability program through recycling.

Maintenance

Nelson Neal

Nelson Neal was recognized for the extra efforts he makes with recycling, cleaning and keeping PPPL safe. Neal can often be seen separating recycling and compostable items from the trash in the cafeteria.

IOI Project Group

Steve Langish, Les Hill, Kate Morrison, (PPPL), Frank Karam & Sam Rozycki (Princeton University)

This group achieved a high recycling rate by recycling most of the demolition and construction debris from the IOI project, reducing the amount of waste going to the landfill. Their total recycling rate for January alone, for example, was 94 percent.

Facilities

Steve Green, Calvin Armstrong, Nelson Neal, Debra Anderson, Stanley Reece, Margaret Boateng, Andrew DeCaro and Michael Consulmagno

This group plays a crucial role in Food Waste disposal and recycling lab-wide by diligently sorting through plastics and silverware from the food bins and mixed trash in the single stream. They contributed to PPPL being honored with a Food Recovery Challenge Award from the EPA and to PPPL's recycling rate of 68 percent in 2016.

Take Our Daughters and Sons to Work Day at PPPL April 27

April 27 is [Take Our Daughters and Sons to Work Day](#). This is a great opportunity to show your own child(ren) the significant role you play in satisfying the mission of the Princeton Plasma Physics Laboratory.

Special activities in the MBG Auditorium from 10 a.m. to noon

You and your children are invited to come to the auditorium for plasma, electricity & magnetism, and liquid nitrogen demos and activities (and a special surprise) on Thursday, April 27, from 10 a.m. to noon. The demos and explanations will be geared toward children in grades five to seven, but all ages/grades are welcome. The rest of the children's time at the Lab should be spent with their parent, learning the employee's unique role in the daily operation of the lab.

IMPORTANT: Parents must accompany their children at all times. Employees must complete a [site access notification form](#) for all children they are escorting and sign them in as visitors at the security booth. The times listed above are the only times in which there is any formal programming for the children. No child will be permitted to be anywhere on PPPL campus without their parent, and this includes the Science Education Lab.

[Please RSVP here](#) with the number and ages of your children if you would like to participate in this program.

—The PPPL Science Education and Outreach Team

Trenton Rescue Mission Clothing Drive

Through April 28

Drop off used or new donations at the Old Security Entrance.

If you have any questions, please contact:

Margaret King, mking@pppl.gov, ext. 3568,

or Dana Eckstein, deckstei@pppl.gov, ext. 2588.

Facts & Snacks!

A fun guide to PPPL Publications

May 9, 11:30 a.m.-12:30 p.m.

LSB, B318

Refreshments will be provided!

***Not on-site, but would like to attend remotely? Email Aileen Pritch at apritch@pppl.gov for more information.**

Safety Training Observation Program (STOP) class

Sessions will be held:

Fri., April 28 — 9:30-11:30 a.m., Mod 6 conference room

Tues., May 2 — 1:30-3:30 p.m., Mod 6 conference room

Please contact Dorothy Strauss, x3072, dstrauss@pppl.gov, to enroll.

Dress Up Your Plant!

PPPL's Green Team gave away 100 succulents last week in honor of Earth Day.

PPPLers can now show off their plants in the Green Team's photo contest. The contest will run from April 24 to May 5. PPPLers may submit one entry each. Five winners will be randomly selected. Please send your submissions to <https://goo.gl/forms/XLuVmSZIbIONPxWr1>.

—The Green Team

Volunteer for PPPL's Communiversality booth

Communiversality is a huge arts festival sponsored by Princeton University and the Arts Council of Princeton on Sunday, April 30, from 11:30 a.m. to 5:30 p.m. It's a great opportunity to tell the community what PPPL does. Please volunteer for a one- or two-hour shift at PPPL's booth on the Princeton University lawn from 11:30 a.m. to 1:30 p.m., 1:30 p.m. to 3:30 p.m., or 3:30 p.m. to 5:30 p.m.



Please sign up by [clicking here](#) or contact Deedee Ortiz, dortiz@pppl.gov, ext. 2785, for more information. Thank you!

New training module on reporting sexual misconduct

[A new training module](#) for PPPL employees on what to do if you experience or witness sexual misconduct or other illegal activity has been posted on PPPL's Human Resources website, hr.pppl.gov.

The module advises PPPL staff members of available resources at PPPL and Princeton University for anyone who is the victim of sexual misconduct or who witnesses or learns of such conduct or other illegal activities. The module was developed by Michael Gonzalez, of PPPL's HR Department.

The video reminds PPPL staff to call PPPL's Emergency Services Unit immediately at ext. 3333 from PPPL phones or 609-243-3333 from non-campus phones if they are the victim of or witness a crime or other emergency. Princeton University policy states that all staff members have an obligation to report sexual misconduct to the University's Human Resources Department.

The University also has a confidential hotline at 866-478-9804 as well as several other confidential resources. Additional information is available at <http://sexualmisconduct.princeton.edu>.

Spring 2017 Princeton Center for Theoretical Science Events

Details about the events and *required registration* can be found at http://pcts.princeton.edu/pcts/current_future_programs.html

EVENTS

PCTS Seventh Annual Lecturer (No registration is required.)
Charles Kane, University of Pennsylvania
May 1-5, 2017

[Details about seminars can be found here.](#)

Tuesday, May 2 — 2:30 p.m.: Seminar #1, PCTS, Room 407 Jadwin Hall,
“Symmetry Protected Topological Insulators and Semimetals”

Thursday, May 4 — 8:00 p.m.: Hamilton Lecture, Room A-02 McDonnell Hall:
“Topological Phases of Matter”

Friday, May 5 — 11:00 a.m.: Seminar #2, PCTS, Room 407 Jadwin Hall,
“Clustering in Luttinger liquids and the quantum Hall effect”

Registration is now open for:

“Bangs, Bounces, Black Holes, and Bubbles: Where General Relativity Meets Cosmology”
May 11-13, 2017

<http://www.phy.princeton.edu/pcts/BangsBounces2017/BangsBounces2017.html>

PCTS programs do not have a registration fee, unless otherwise noted, however, online registration for participation is required.

All events are held at PCTS, Room 407 Jadwin Hall, unless otherwise noted.

May is National Bike Month

Join PPPL’s Bike Month Challenge. Teams are forming now. Go to <https://goo.gl/WfyTcU> to register, or contact Robert Sheneman, x3392, rshenema@pppl.gov, for more information.

American Red Cross Blood Drive

Thursday, May 25
8 a.m.-1 p.m.

The blood mobile will be parked next to the warehouse near Mod 6 in the Lower Parking Lot. The check-in point will be the Mod 6 Conference Room.

Appointments are still available! Please call the OMO at ext. 3200 or go to redcrossblood.org and enter sponsor code PPPLPrinceton. You can make a difference! Your blood donation matters!

Thank you!

—American Red Cross, Occupational Medicine Office and Human Resources

BROCK

NICK PETTI
Chef Manager



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 April 24	Tuesday April 25	Wednesday April 26	Thursday April 27	Friday April 28
COMMAND PERFORMANCE Chef's Feature	"Meatless Monday" Garbanzo Loaf with Pasta Marinara	Chicken-Fried Steak with Mashed Potatoes and Fried Green Tomatoes	Pepper Steak with Rice	Open-Faced Turkey Sandwich with Mashed Potatoes and a Vegetable	Seafood Cioppino over Rice
Early Riser	Banana Walnut Pancakes	Steak, Egg & Cheese Quesadilla	Corned Beef Hash with 2 Eggs	French Toast sticks	2 Eggs, Choice of Breakfast Meat & Tater Tots
Country Kettle	Spring Vegetable	Turkey Noodle	Tuscan Bean	Split Pea	New England Clam Chowder
Deli Special	Fluffernutter Sandwich	Italian Chopped Antipasto Wrap	Shrimp Salad Wrap	Asparagus, Sundried Tomatoes, Roasted Peppers & Mozzarella Cheese Wrap	Chicken Parmesan Sub
Grill Special	Buffalo Black Bean Burger	Falafel Wrap	Cowboy Burger	BBQ Chicken Grilled Cheese	Crab, Asparagus & Roasted Pepper Quesadilla
Panini	3 Cheese Panini with Cheddar, Swiss, Blue Cheese & Tomato on Sourdough	Sausage Torpedo with Peppers & Onion	Teriyaki Chicken with Asian Slaw, & Swiss Cheese on a Kaiser Roll	Cuban Sandwich	Grilled Peanut Butter and Jelly

MENU SUBJECT TO CHANGE WITHOUT NOTICE

HEART HEALTHY

VEGETARIAN OPTION

WEEKLY

Editor: **Jeanne Jackson DeVoe** ♦ Layout and graphic design: **Kyle Palmer** ♦ Photography: **Elle Starkman** ♦ Science Editor:
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The PPPL WEEKLY is published by the [PPPL Office of Communications](http://pppl.gov/communications) on Mondays throughout most of the year and biweekly during the summer, except for holidays.

DEADLINE for calendar item submissions is noon on WEDNESDAY. Other stories should be submitted no later than noon on TUESDAY.

Comments: commteam@pppl.gov ♦ PPPL WEEKLY is archived on the web at: <http://w3.pppl.gov/communications/weekly/>.