

THIS WEEK

JUNE 26-30

**European Physical Society 44th
Conference on Plasma Physics**
Belfast

MONDAY, JUNE 26

**Information Session on
Performance Management System**
1-2 p.m. ♦ MBG Auditorium

WEDNESDAY, JUNE 28

Colloquium
4:15 p.m. ♦ MBG Auditorium
"O.J.: Made in America" —
An Archival Case Study
Nina Krstic, Producer

THURSDAY, JUNE 29

**Information Session on
Performance Management System**
11 a.m.-12 p.m. ♦ MBG Auditorium

UPCOMING

FRIDAY, JULY 7

Public Tour
10 a.m.
Email tours@pppl.gov

INSIDE

C.S. Chang Wins Award **2**

PPPL Run Club **2**

Blood Pressure Screening **2**

Ice Cream Social **3**

All-Hands Meeting **4**

Parking Passes **5**

Performance Management **5**

Colloquium **7**

Menu **7**

Acting under secretary for DOE's Office of Science and Energy visits PPPL

By Jeanne Jackson DeVoe

Patricia Hoffman, acting under secretary for the U.S. Department of Energy's (DOE) Office of Science and Energy, visited PPPL on Tuesday, June 20, where she toured the facilities and met with PPPL leaders.

Hoffman visited the National Spherical Torus Experiment-Upgrade (NSTX-U) Control Room and the NSTX-U test cell on a tour led by Michael Zarnstorff, deputy director for research; Jonathan Menard, head of NSTX-U research; and Stefan Gerhardt, deputy director for engineering for the NSTX-U Recovery Project.



Patricia Hoffman, acting under secretary for the DOE's Office of Science, front row, second from right, with front row from left: Valeria Riccardo, head of Engineering; Terry Brog, interim PPPL director; and David McComas, Princeton University vice president for PPPL; second row from left: Michael Zarnstorff, deputy director for research; Rich Hawryluk, head of the NSTX-U Recovery Project; Jon Menard, head of NSTX-U Research; Pete Johnson, the DOE's Princeton Site Office manager; and Sandy Rogan, the deputy site office manager. (Photo by Elle Starkman)

[continued on page 5](#)

Former NASA operations manager takes on a new position as Princeton University Assistant Vice President for Operations for PPPL

By Jeanne Jackson DeVoe

Chelle (SHELL-ee) Reno is an operations manager who gets a thrill from organizing complex projects like NASA spacecraft operations into achievable components. Now she is bringing those skills to a new position as Princeton University assistant vice president for operations for PPPL, and returning to her New Jersey roots.

"I love puzzles and when there's a system full of complex interactions and other sorts of moving parts, lots of people would look at that and get overwhelmed," Reno said. "But when I can take that overwhelming structure and tame it, that makes me feel great."

Reno will support David McComas, Princeton University vice president for PPPL, with whom she has worked on several NASA projects, in overseeing operations at PPPL. Her job includes working with the Lab, the U.S. Department of Energy (DOE) and Princeton University leadership on all of PPPL's operational aspects.

[continued on page 6](#)

PPPL-led team wins major award of time on DOE supercomputers for fusion studies in 2017

By John Greenwald

A nationwide team of researchers led by PPPL physicist C.S. Chang has won the use of 269.9 million supercomputer hours to complete an extreme-scale study of the complex edge region of fusion plasmas. The award was made by the U.S. Department of Energy's [ASCR Leadership Computing Challenge \(ALCC\)](#) program for 2017, supported by the DOE's Office of Science.


The investigation, to be performed with the XGC code developed by PPPL and nationwide partners, will perform double-duty. It will model the width of the plasma flux that strikes and could damage the heat-exhausting divertors in donut-shaped magnetic fusion facilities called tokamaks, and will also simulate the crucial transport barrier — or “pedestal” — that stands between the hot core of the plasma and the cooler edge.

The study will bear directly on ITER, the international experiment under construction in France, to demonstrate the feasibility of fusion as an energy source. “ITER must be able to reliably withstand the steady exhaust heat that will be deposited in an extremely narrow strip on the divertor target plates,” Chang said in the investigation proposal. The study will provide insight into control of this heat-deposition strip, he said, and will also “shed light on the structure of the ITER pedestal, which is another critical issue.”

The year-long award will be performed in three phases. The team will run 100 million hours on Titan, the most powerful U.S. supercomputer, housed at the Oak Ridge Leadership

Computing Facility; 89.9 million hours on Cori at the National Energy Research Scientific Computing Center (NERSC) at the Lawrence Berkeley National Laboratory; and 80 million hours on Theta at the Argonne Leadership Computing Facility.

Supercomputers have hundreds of thousands of processor cores that operate in a massively parallel manner, enabling them to calculate in one hour what a desktop computer would need decades to complete. The allotment of 269.9 million hours of computing time would mean about 30,000 years of computing on a single-processor core desktop computer.

Working with Chang on the project will be PPPL physicists Seung-Hoe Ku, Robert Hager, Stephane Ethier, Daren Stotler, Michael Churchill, and other members of the team. Collaborating with them will be researchers from Oak Ridge National Laboratory, Lawrence Berkeley National Laboratory, the University of Colorado Denver, Rensselaer Polytechnic Institute, NERSC, and the firm PHWorley Consulting. 



C.S. Chang

Run for your health! PPPL Run Club

Daily meets at 12:15 p.m.
in the LSB Lobby
starting Monday, June 26




See Angela Powell (x3347) or Laurie Bagley (x2425) for details.

The OMO will be
conducting
Blood Pressure
Screening

Tuesday, June 27
11 a.m.–1 p.m.
LSB Lobby
Take this opportunity to
know your numbers!

PPPL'ers celebrate summer solstice with an ice cream social

Lab leaders served ice cream to dozens of enthusiastic PPPL'ers as the staff took a break from the workweek to socialize and enjoy some ice cream during a summer solstice celebration on Wednesday, June 21. The celebration was hosted by David McComas, Princeton University vice president for PPPL. 



Servers David Carle, head of Facilities, left, and Jerry Levine, head of Environment, Safety and Health. (Photo by Elle Starkman)



PPPL'ers line up as David McComas, Princeton University vice president for PPPL, and Kristen Fischer, head of Business Operations, serve ice cream. (Photo by Elle Starkman)



PPPL'ers chat and enjoy ice cream in the LSB lobby. (Photo by Elle Starkman)



Tim McLaughlin, left, with Julia Toth, and Ani Malool. (Photo by Elle Starkman)



Enjoying the event are, from left: Bob Kaita, Arturo Dominguez, Deedee Ortiz, Alana Coleman, Angela Powell, Tori Sikkema, and Stanley Reece. (Photo by Elle Starkman)



Carol Ann Austin, left, with ice cream servers Angela Powell; Marc Cohen, acting head of IT; Stacia Zelick, acting deputy director for operations; David McComas, Princeton University vice president for PPPL; Kristen Fischer, head of Business Operations; and Phil Efthimion, head of Plasma Science and Technology. (Photo by Elle Starkman)



Rich Hawryluk, head of the NSTX-U Recovery Project, serves Li Liu, left, and Yulei Wang. (Photo by Elle Starkman)

PPPL leaders note significant improvements in recent months

By Jeanne Jackson DeVoe

The Laboratory has made “significant improvements” in several areas over the past six months, Interim Director Terry Brog told staff at an all-hands meeting last week.

The Laboratory has worked hard to meet two requirements or “notables” set by the U.S. Department of Energy (DOE) in its last annual evaluation, Brog said. Following a coil failure that forced the National Spherical Torus Experiment-Upgrade to shut down last summer, the newly-formed NSTX-U Recovery Team held 12 design verification and validation reviews (DVVRs) and two extent of condition reviews by outside experts. An extent of cause review examining underlying causes of the coil failure is also underway.

“We now have a very good understanding of the things we have to fix in relatively short order and the best thing is they’re all fixable,” Brog said.

Leaders updated staff on several issues affecting the Laboratory, such as the NSTX-U Recovery Project and the federal budget process at the June 22 meeting.

Numerous improvements

Brog said the Laboratory has made numerous improvements since the last all-hands meeting in December of 2016. These include:

- Leadership and organization changes, including the hiring of two new managers: Valeria Riccardo, head of Engineering, and David Carle, head of Facilities and Site Services.
- Performance management changes requiring job descriptions and goals for each employee. One big change is that a percentage of staff and management salary merit increases will be tied to the Laboratory’s PEMP scores in the DOE’s annual report card on PPPL. DOE officials have been enthusiastic about this change since it shows that “if the Laboratory is going to be successful, we’re going to be successful as a team,” Brog said.
- Housekeeping: The Laboratory has made “tremendous improvements” to fulfill another DOE requirement to improve housekeeping, including cleaning out and removing half the storage trailers on campus, Brog said. Patricia Hoffman, the acting under secretary of the DOE’s Office of Science and Energy, was very impressed with the campus and the staff when she visited on June 20, he said. (See story page 1)

- Reductions in indirect costs.
- Progress in the Infrastructure Operational Improvement (IOI) project, including the approval last week of the next stage of the project.
- Collaborations with Princeton University in several areas, such as high-performance computing. The University is also working closely with PPPL on a new training and learning management system, Brog said.

Progress in NSTX-U Recovery

Rich Hawryluk, the head of the NSTX-U Recovery Project, told staff the team has made significant progress in identifying any potential issues that could affect the device. The team is currently evaluating costs and timelines to remedy the most crucial issues, Hawryluk said. He estimated the project could take about two years but the team will know more once it puts together a specific timeline. A conceptual design review for the project is scheduled for August.

Hawryluk noted that 47 outside experts from around the world were involved in the DVVRs and the two extent of condition reviews. They identified several challenges centered in the areas dubbed “polar regions” at the top and bottom of the NSTX-U. These include the PF1A coil and its twin, along with two sets of similar magnets, the PF1Bs and PF1Cs, all of which will be replaced. The recovery team must also address issues that interfered with heating the tiles in the polar region during vacuum vessel bakeout to remove any impurities. Tiles in those regions may also be replaced. Among several other issues were the necessity of modifying a high-pressure water system and providing more shielding to improve radiation protection for future operations, Hawryluk said.

Brog also gave an overview of the federal budget process. He noted that the president’s budget, which was released in February, is just the first step in a process that continues through October. The House and Senate must adopt their own budgets and reconcile their budgets to produce one budget, which the president must sign by Oct. 1 in order for it to become law.

If Congress fails to adopt a budget, as it has in the last several years, it must adopt a continuing resolution to provide funding for federal agencies, Brog said.

[continued on page 6](#)



Terry Brog, PPPL’s interim director, speaks to a packed crowd in the auditorium, at the June 22 all-hands meeting. (Photo by Elle Starkman)

Patricia Hoffman visit

continued from page 1

“To me, it’s a great learning experience to understand the potential of what fusion offers,” Hoffman said after the tour.

Accompanying her were Terry Brog, interim director of PPPL; Stacia Zelick, interim deputy director for operations; Rich Hawryluk, head of the NSTX-U Recovery Project; Scott Weidner, Princeton University assistant vice president for engineering; Valeria Riccardo, head of engineering; Pete Johnson, Princeton Site Office manager; and Sandy Rogan, deputy site office manager.

Hoffman also had a series of meetings with Johnson, Rogan and other members of the Princeton Site Office; Hawryluk and other members of the NSTX-U Recovery Project; David McComas, Princeton University vice president for PPPL; and Brog.

Hoffman is also assistant secretary of the DOE’s Office of Electricity (OE) Delivery and Energy Reliability, a position she has held since 2010. A material science engineer by training, she is a national leader on electrical grid



Stefan Gerhardt, left, deputy director for engineering for the NSTX-U Research Project, and Jon Menard, head of NSTX-U Research, give Hoffman a tour of the NSTX-U test cell. (Photo by Elle Starkman)

modernization. She was previously principal deputy assistant secretary for the OE from 2007 to 2010. She has bachelor’s and master’s degrees in ceramic science and engineering from Pennsylvania State University. [D](#)

Reminder: Central campus parking option available for PPPL staff

Do you have business or meetings on Princeton University’s central campus? PPPL staff now have use of a limited number of “Official Business Cards” (OBC) that allow two-hour parking in many campus locations. The locations are:

- Numbered Lots (except restricted lots 8, 9, & 18)
- Front of Dillon Gym
- Brown Hall OBC spaces
- Rear of Edwards Hall
- Visitor spaces behind Baker Rink, Lot 12 (close to MacMillan)

The parking cards can be checked out from Carol Ann Austin in the Director’s Office. So don’t leave for campus without it!

Performance Management Information Sessions

**Monday, June 26
at 1 p.m.**

**Thursday, June 29
at 11 a.m.**

MBG Auditorium

Chelle Reno

continued from page 1

Reno began June 19 and will provide the operations counterpart to Scott Weidner, who became the first Princeton University assistant vice president for engineering in August. While Weidner divides his time between PPPL and continuing some work on NASA missions, Reno will be full-time at PPPL.

“I am delighted that Chelle has taken on this important role,” McComas said. “I am really impressed by her numerous operations and management abilities as well as her great collaborative and inclusive style. I am confident she will be a huge asset to the University and the Laboratory.”

Reno was born and raised in New Jersey and went to school as an undergraduate majoring in physics at what was then Trenton State College (now the College of New Jersey). She left for graduate school at the University of Michigan, where she received her master’s degree in applied physics with an emphasis on space physics. She then spent more than a decade overseeing NASA projects, first as a research scientist for the Southwest Research Institute in San Antonio, Texas, and later as a consultant and owner of her own company, Austin Mission Consulting.

Reno began her career over three summers during graduate school braving Arctic temperatures working on the Magnetospheric Array on the Greenland Ice Cap. She coordinated the field seasons and assembled and led teams of students to the magnetometer sites on the ice cap. There, the teams would download the previous year’s data and fix any broken hardware at the site, all the while sleeping at night in a tent. One year she and her colleagues had to use a chainsaw to dig out a magnetometer that was buried 25 feet deep in the ice. “It was very cool,” she said. “It gave me experience with managing people. It was a lot of coordinating and scheduling and I got quite a bit of hardware and electronics experience.” For her graduate research she performed magnetohydrodynamic (MHD) simulation studies to understand global magnetospheric dynamics.

After graduate school, Reno went to the Southwest Research Institute. She first performed satellite ion instrument calibration but soon moved into operations management for the Interstellar Boundary Explorer (IBEX), a small spacecraft that images the edge of our solar system to explore how the solar wind and the interstellar medium interact. Reno became the Mission Operations Manager (MOM), overseeing reviews and defining all spacecraft interactions with NASA and numerous ground assets before launch, and after launch having responsibility for everything from normal



Chelle Reno

operations to anomaly management and planning for the entire spacecraft.

After three years as a research scientist, Reno formed her own company, Austin Mission Consulting, and for 10 years continued to provide leadership on NASA missions. A challenge with the Prime Mission IBEX orbit was that it was chaotic due to gravitational perturbations by the moon and had to be adjusted to avoid mis-

sion-ending long eclipses. Rather than continue to tweak the orbit, her team found a new class of lunar-synchronous orbits and Reno managed the 2011 transition to this type of orbit, which will remain stable for decades.

Reno joined the Juno mission to Jupiter at launch to review the operational system for the Jovian Auroral Distributions Experiment (JADE) instrument and rapidly became the overall operations manager. She led all operations and managed a complete flight software redesign that included meticulous software validation and verification. “The updated software and operations design were much more robust and collected higher resolution data; it was a great boon for JADE, Juno and the scientific community,” she said.

Reno grew up in Monroe, New Jersey, and she is happy that she and her husband, Joseph Laochalovanich, a computer project manager, and their two children, Lily, 4, and Aiden, 18 months, can be closer to Reno’s large Irish family. Two stepdaughters, Ashlyn, 15, and Lauren, 14, will visit frequently from their primary home in Austin. “I’m really excited,” she said. “I’ve already seen a bunch of family and it feels like home – it’s nice to be back!” she said.

While she and her husband are very busy with their children, Reno enjoys biking, running, ultimate Frisbee, soccer, playing guitar, and doing artwork. She and her family often go to bike races where her husband competes.

Reno said that the Lab is clearly a great community and she is excited to be part of PPPL’s research mission. “I’m really excited about the prospect of working with so many dedicated people to accomplish the goal of sustainable energy,” she said.

All-Hands meeting

continued from page x

In the past three years, the Office of Fusion Energy Sciences’ final budget was close to the DOE’s requested budget, Brog said.

David McComas, Princeton University vice president for PPPL, gave staff an overview of the University’s perspective. He said the University remains strongly committed to PPPL and is working to support the work of the NSTX-U Recovery Team and other performance improvement efforts.

McComas said. Re-competing the contract “would take us away from the work we’re doing to fix NSTX-U and other critical areas across the Lab,” McComas said.

“My take-away message is you need to understand that Princeton University strongly supports the Lab and each



A spill-over crowd of staff members watches the all-hands meeting in the cafeteria. (Photo by Elle Starkman)

and every one of you,” McComas told PPPL’s staff. “We all need to be doing everything we can to make this laboratory the top lab in the DOE complex.”

COLLOQUIUM

O.J.: Made in America An Archival Case Study

Nina Krstic

Producer, *O.J.: Made in America*

Wednesday, June 28

4:15 p.m., M.B.G. Auditorium, Lyman Spitzer Building

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 June 26	Tuesday June 27	Wednesday June 28	Thursday June 29	Friday June 30
COMMAND PERFORMANCE Chef's Feature	Chicken Marsala over Pasta	Carved London Broil with Mashed Potatoes and Vegetable	Chicken Burrito with Rice and Beans	"Super Salad"	Vegetable Chili over Rice with Cornbread
Early Riser	Bacon, Egg & Cheese Croissant	Biscuits with Sausage Gravy	Mango & Blueberry Pancakes served with choice of Breakfast Meat	Turkey Bacon, Egg and Cheese Sandwich	2 Eggs, 2 Pancakes, Choice of Breakfast Meat & Potatoes
Country Kettle	Vegetable Noodle	Cream of Mushroom	Beef Barley	Tuscan Chicken and Pasta	Seafood Chowder
Deli Special	California Wrap	Hummus Turkey Wrap	Buffalo Chicken Salad Wrap	Grilled Ham and Cheese on Texas Toast	Chicken, Mozzarella, Red Onion, Basil, Arugula and Balsamic Tomatoes on French Bread
Grill Special	Pico De Gallo Black Bean Burger with Avocado Sour Cream and Fries	Teriyaki Chicken Cheese Steak with Asian Slaw	Shrimp Tacos	Portobello Mushroom "Cheesesteak"	Roast Vegetable Stromboli
Panini	Jersey Tomato, Fresh Mozzarella, Spinach and Pesto Hoagie	Bratwurst Sandwich	Eggplant Parmigiana	Sausage and Peppers	Foot-long Chili Dog

MENU SUBJECT TO CHANGE WITHOUT NOTICE

HEART HEALTHY

VEGETARIAN OPTION

WEEKLY

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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/>.