

THIS WEEK

THURSDAY, AUG. 31
Procurement Lunch & Learn
 12 p.m. ♦ B318
[See page 5 for details.](#)
FRIDAY, SEPT. 1
Public Tour
 10 a.m.
<http://www.pppl.gov/about/tours>

UPCOMING

MONDAY, SEPT. 4
Labor Day
 Laboratory closed

SEPT. 5-8
**IAEA TCM on Energetic Particles
in Magnetic Confinement**
 MBG Auditorium

WEDNESDAY, SEPT. 13
**PPPL Inventor Recognition
Reception**
FRIDAY, SEPT. 15
PPPL Big Bang Bash
 11 a.m.
[See page 3 for details.](#)

 The next issue of the PPPL
 Weekly will be on Sept. 11.

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PPPL has a new interim director and is moving ahead with construction of prototype magnets

By Jeanne Jackson DeVoe



Rich Hawryluk

Princenton University Vice President for PPPL David McComas announced last week that Rich Hawryluk has been appointed interim director of the Laboratory while an international search for a permanent director moves forward. Hawryluk, who has been heading the NSTX-U Recovery Project is an internationally-known physicist and a former deputy director of PPPL.

“Rich has earned my highest respect and the respect of his colleagues and staff at PPPL and of researchers throughout the world for his work as a scientist, project manager, and leader. I am delighted he has agreed to head the Laboratory as we move into the next phase of the NSTX-U recovery,” McComas said.

[continued on page 5](#)

PPPL physicists essential to new campaign on world’s most powerful stellarator

By John Greenwald

Physicists from PPPL are providing critical expertise for the first full campaign of the world’s largest and most powerful stellarator, a magnetic confinement fusion experiment, the Wendelstein 7-X (W7-X) in Germany. The fusion facility resumes operating on Aug. 28, and will investigate the suitability of its optimized magnetic fields to create steady state plasmas and to serve as a model for a future power plant for the production of a “star in a jar,” a virtually limitless source of safe and clean energy for generating electricity.

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A great day for an eclipse at PPPL



David McComas, second from left, Princeton University vice president for PPPL, who hosted, the event, takes in the eclipse with from left: Joe Winston, Yonghong Wu, Ambica Nandanavanam, and Sylvester Vinson.
 (Photo by Jeanne Jackson DeVoe)

[See page 9](#)

Extent of Cause review recommends increased emphasis in several areas for “get-well” effort

By Jeanne Jackson DeVoe

External review teams looking at PPPL’s implementation of the underlying systems, policies, and procedures that led to the shutdown of the National Spherical Torus Experiment Upgrade (NSTX-U) last summer are recommending aggressive near-term actions to appoint accomplished project managers to lead the NSTX-U Recovery Project and PPPL performance improvement or “get well” campaign.

The teams also recommend fundamental improvements to PPPL’s quality assurance program and key engineering procedures needed for the NSTX-U Recovery project. Among the near-term actions the review team recommended are that PPPL should evaluate “critical support functions” for the NSTX-U project and assess the level of support needed in quality assurance, project management, procurement, project controls, and engineering and configuration management.

Peer review, part of the Extent of Cause review

The peer review was part of PPPL’s overall work plan to meet the U.S. Department of Energy’s (DOE) Notable Outcome 4.2 mandate, commonly known as the Extent of Cause review:

Conduct a review of policies and procedures for design, construction, installation, commissioning and operations of NSTX-U and other construction activities and projects. Develop corrective actions to ensure the highest quality project management across the lab.

The eight-week peer review, completed in early August, was conducted by a 15-member team assembled by Les Hill, head of the Extent of Cause review, that was led by Bob McCallum, of the consulting firm McCallum Turner Inc. Subject matter experts from MIT, Fermilab, Oak Ridge National Laboratory, Brookhaven National Laboratory, DOE-Chicago, and other McCallum-Turner staff consultants staffed the team.

There were a total of 38 peer review recommendations spread across the management systems that define how PPPL plans and executes projects. These include engineering design, configuration management, work planning and control, project management, training and qualification, quality assurance, contractor assurance, and performance management. Weaknesses and opportunities were observed

in these areas that were linked to the NSTX-U coil failure, other events and issues, and performance problems noted in DOE annual feedback reports.


Next steps: Consolidating results and integrated corrective action plan

The results of the peer review are being analyzed and consolidated with the results of other investigations and analyses, such as the NSTX-U coil failure root cause analysis, to establish an integrated corrective action plan (ICAP), which is PPPL’s performance improvement or “get well” plan. Throughout fiscal year 2018, PPPL will draw upon Princeton University and external assistance from across the DOE complex in making substantial changes to key management systems with the goal of transforming Laboratory performance. These improvements will be anchored by leadership development initiatives that will address the results of PPPL’s FY 2017 Organization Diagnosis.

“We’re looking to design and implement a change agenda that provides for long-term, enduring performance improvement,” said Hill.

The Extent of Cause review report and ICAP are nearing completion and are one of two “notable outcomes” required by the DOE by the end of September. The other notable outcome required by the DOE by that deadline is an Extent of Condition review and corrective action plan analyzing all the systems on the NSTX-U and detailing the systems most in need of immediate improvements. The NSTX-U Recovery Team is putting together a detailed corrective action plan based on the review concluded in May, the conceptual design review in July and the cost and schedule review in September.

“Moving forward from this is going to require changes in our processes, in how we think, how we behave, how we lead and how we communicate,” Hill said. “We need an open mind, open eyes and the commitment from the entire Laboratory to attack this on all fronts.”

Hill noted that communications and Lab staff engagement is vital to a successful “get well” program implementation and he said detailed information will be forthcoming. 



Engineers Irving Zatz, left, and Joseph Petrella perform tests on the PF1A upper coil during a forensic investigation last fall. (Photo by Elle Starkman)

Acting associate director of Fusion Energy Sciences visits PPPL

James Van Dam, acting associate director of science for Fusion Energy Sciences (FES) in the U.S. Department of Energy's Office of Science, toured the Laboratory and met with PPPL leaders and researchers during an Aug. 14 to 15 visit.

Van Dam met with Pete Johnson, head of the Princeton Site Office, Terry Brog, then acting director of PPPL, David McComas, Princeton University vice president for PPPL, and several researchers.



James Van Dam, acting associate director of Fusion Energy Sciences (FES) in the DOE's Office of Science, in the National Spherical Torus Experiment-Upgrade test cell, with Stefan Gerhardt, deputy director of engineering for the NSTX-U Recovery Project, left, and Jon Menard, head of NSTX-U Research. (Photo by Elle Starkman)

Van Dam was enthusiastic about a tour he took led by physicist Jon Menard, head of National Spherical Torus Experiment-Upgrade (NSTX-U) Research. Menard discussed research on the NSTX-U, while physicist Stefan Gerhardt, deputy engineering director of the National Spherical Torus Recovery Project and Charles Neumeyer, engineering director for the Recovery Project, discussed progress on the Recovery Project. Brog and Al von Halle, head of electrical engineering, were also on the tour. The group visited the NSTX-U Control Room, the NSTX-U test cell, and the center stack, which has been removed from the vacuum vessel. "Next time I come back I'd like to see it all put together and operating," Van Dam said after the tour.

The physicist is no stranger to PPPL. He did some research at PPPL on the Poloidal Divertor Experiment (PDX) as a postdoctoral fellow at the Institute for Advanced Studies in 1980, working with physicist Marshall Rosenbluth.

He returned to the Laboratory years later as head of the Program Advisory Council when Ed Synakowski was head of research and deputy program director of the National Spherical Torus Experiment. Synakowski went on to become Van Dam's boss when Van Dam became director of the Research Division of FES and Synakowski was the associate director. Van Dam became the acting associate director recently after Synakowski left that position to become the University of Wyoming's vice president for research and economic development.

Van Dam joked that he knows every hotel in the area. "For these many decades I've been constantly eating at Hoagie Haven," he said, referring to the well-known sandwich shop in Princeton.

Van Dam did graduate work at the University of California, Berkeley, and the Institute of Plasma Physics at Nagoya University in Japan before receiving his Ph.D. in physics from UCLA in 1979. After the one-year stint at the Institute of Advanced Studies in Princeton, Van Dam moved with Rosenbluth to the University of Texas at Austin when the Institute for Fusion Studies was established in 1980. He later became the associate director and then the director of the Institute. A theoretical physicist in plasma physics and fusion energy and a long-time member of the American Physical Society, Van Dam has published more than 100 papers and two books. 📖



James Van Dam, right, shares a laugh with, from left: Charles Neumeyer, NSTX-U Recovery Project engineering director; Michael Zarnstorff, deputy director for research; Jon Menard, and Stefan Gerhardt. (Photo by Elle Starkman)

The PPPL Big Bang Bash 2017

Friday, Sept. 15
11 a.m.

Enjoy great food, fun games and team-building activities, and the opportunity to network and socialize with friends and colleagues and meet new ones!

The Big Bang Bash includes:

- An antique & specialty vehicle show
- A cultural fair
- A United Way community service project
- A dunk tank and other activities

Engineer Joseph Petrella receives “challenge coin” for identifying potential risk in NSTX-U bakeout system

David McComas, Princeton University vice president for PPPL, bestowed a challenge coin on engineer Joseph Petrella, the responsible engineer for cooling and bakeout systems on the NSTX-U Recovery Project, for identifying a potential risk in the bakeout system.

McComas gave out the specially designed coin, which has the Princeton University logo on one side and the PPPL logo on the other, during a meeting of the Recovery Team on Aug. 15.

“It’s been an incredible effort,” McComas told the Recovery Project team. “In many ways the future of the Lab rests on this particular process. I wanted to thank you all but I also wanted to single out one individual and that’s Joe Petrella.”

Charles Neumeyer, the engineering director for the Recovery Project, made the following remarks on Petrella’s actions:

“The initial design of the NSTX-U bakeout system, circa 1998, relied on the use of a heat-transfer fluid known as DOWTHERM. This fluid has a boiling point significantly higher than water, facilitating operation at ~150 degrees C. However, the use of

that fluid was ultimately disallowed, on account of the flammability risk of DOWTHERM, and the system was run with pressurized water as the heat transfer fluid.

“In the course of completing the DVVR preparation in his new role as the bakeout system RE, Joe Petrella identified a potential safety hazard in the system. A BLEVE, or Boiling Liquid Expanding Vapor Explosion, can occur when pressure is rapidly lost in a system where that pressure is used to prevent the boiling of a fluid. This can result in rupture of the pressure system, damage to nearby systems, and/or risk to nearby personnel. Joe then identified a number of cost-effective industry standard solutions to eliminate this BLEVE risk while preserving the function of the system. When implemented, these steps will result in a substantial improvement in the safety of NSTX-U bakeout operations.

“By way of Joe’s initiative and actions, an event that could have been life-threatening and devastating for PPPL is being preempted.” 📌



Engineer Joseph Petrella, center, with David McComas, Princeton University vice president for PPPL, left, and Charles Neumeyer, engineering director for the NSTX-U Recovery Project. (Photo by Elle Starkman)

Leadership changes

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Hawryluk said that he was grateful for the opportunity to lead the Laboratory where he has worked for more than four decades. “I feel deeply about this place,” he said. “It has given me enormous opportunities to do research, as well as scientific and technical management. I feel it’s incumbent on me to do all I possibly can to give the scientists and the engineers and the staff here exciting and productive scientific opportunities both in the near future as well as for the long term.”

Terry Brog, who served as interim director since September 2016, will return to his previous position as deputy director for operations and chief operating officer that he assumed in June of 2016. Stacia Zelick, who served as interim deputy director for operations under Brog, will continue to serve in a leadership role. Michael Zarnstorff, the deputy director for research, will remain in his position. The NSTX-U Recovery Project will now be led by physicists Jon Menard, head of NSTX-U research, and Stefan Gerhardt, deputy engineering director for the project. Charles Neumeyer will remain as the NSTX-U Recovery Project engineering director and deputy head of engineering.

The leadership change comes as PPPL moves ahead with constructing prototype magnets in preparation for replacing the one that failed last year and for five others that were built under similar conditions.

Construction of the first prototype magnet follows a comprehensive review of each system of NSTX-U by a team of engineers and scientists from PPPL as well as nearly 50 external experts from the United States and around the world.

Many challenges are ahead for the Laboratory, Hawryluk said. In addition to the pressing need to rebuild NSTX-U, the Laboratory must address issues raised in the Extent of Cause analysis required by the DOE after the coil failure ([See story page 2](#)). These issues include “strengthening our engineering processes and our oversight and quality assurance processes,” Hawryluk said. At the same time, he noted, PPPL must address important workplace issues identified in the recent Organizational Diagnosis staff survey.


Hawryluk said that one of his first tasks as interim director is to meet with staff members in small groups to discuss the leadership changes and to enlist their help in meeting the challenges ahead. “Frankly, there’s an enormous amount of work that needs to be done and I’m committed to doing it but I also realize that I can’t do it by myself,” he said. “For the Laboratory to succeed, we must utilize the talents, creativity and skills of all of the staff. My job is to enable other people to address the issues facing the Laboratory and to set a firm foundation for the future director.”

Hawryluk and McComas both thanked Brog and Zelick for their leadership during the past several months. “I’m extremely grateful for all the work that Terry and Stacia have done in their respective roles over the last year,” McComas said. “These have been very trying times,” Hawryluk added. “They’ve done an enormous amount to restore our relationship with the DOE and to improve the Laboratory.” He also noted that it was his pleasure to work with the NSTX-U team and, in particular, Charlie Neumeyer, Stefan Gerhardt and Jon Menard who “are very dedicated to bringing NSTX-U back on line.”

The new interim director has been at PPPL for most of his career. He came to PPPL in 1974 after receiving a Ph.D. in physics from MIT. He headed the Tokamak Fusion Test Reactor, then the largest magnetic confinement fusion facility in the United States, from 1991 to 1997. Hawryluk oversaw all research and technical operations as deputy director of the Laboratory for 11 years from 1997 to 2008. He was then head of PPPL’s ITER and Tokamaks Department from 2009 to 2011. From 2011 to 2013, Hawryluk worked at ITER in France, serving as the deputy director-general for the Administration Department of ITER.

In 2013, Hawryluk returned to the Laboratory as head of the ITER and Tokamaks department. He remained in that position until he became head of the Recovery Project last year. Hawryluk has received numerous awards during his career including a Department of Energy Distinguished Associate Award, a Kaul Foundation Prize for Excellence in Plasma Physics Research and Technology, a Fusion Power Award, and an American Physical Society Prize for Excellence in Plasma Physics with Rob Goldston and James Strachan. A fellow of the American Association for the Advancement of Science since 2008 and of the American Physical Society since 1986, he also chairs the board of editors of *Nuclear Fusion*, a monthly journal devoted to controlled fusion energy.

Hawryluk and his wife Mary Katherine Hawryluk, a school psychologist working with special needs children at the New Road School in Parlin, New Jersey, met as undergraduates and have been married for 41 years. They have two grown sons: Kevin, who lives in Chicago, and David, who lives in Los Angeles. In his spare time, Hawryluk is an avid reader.

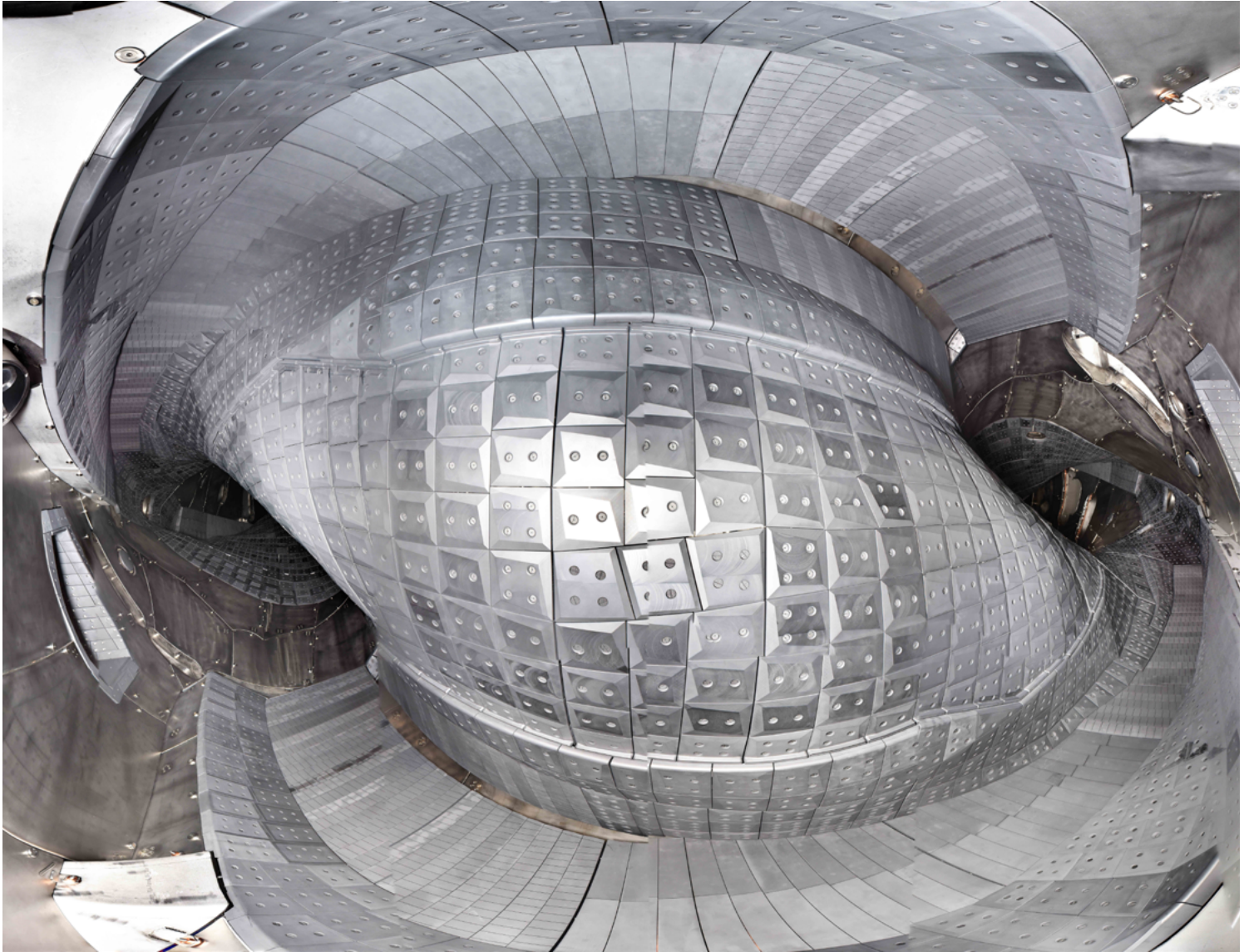
“I’m taking on this task because I really believe in PPPL and its critical role in furthering the field of plasma physics with the goal of developing fusion energy,” Hawryluk said. “I am committed to addressing issues that are central to the long-term success of the Laboratory.” 

Procurement Lunch & Learn

Thursday, Aug. 31
12 p.m.
B318

Do you work with staff in Procurement? Want to learn more about the Procurement process? Come to Procurement’s “Lunch & Learn” and talk with Patrick Schurott, the Lab’s Procurement director. Topics include:

- FAQs – Everything you ever wanted to know!
- Fact & Fiction – Dispelling myths
- Manage your expectations
- Approved Purchasing System
- Mutual R2s – Roles & Responsibilities



A fish-eye view of the interior of the W7-X showing graphite tiles that cover magnetic coils. (Photo courtesy of IPP)

The W7-X started up in December 2015, and concluded its initial run in March, 2016. The facility has since been upgraded to prepare for the high-power campaign that is set to begin.



Sam Lazerson
(Photo by Elle Starkman)


Deeply involved in the new 15-week run are PPPL physicists Sam Lazerson and Novimir Pablant, who are spending two years at the Max Planck Institute of Plasma Physics in Greifswald, Germany. Lazerson, who previously mapped the W7-X magnetic fields with barn-door sized magnetic coils built by PPPL, heads a task force that will plan and run a series of experiments on the

stellarator. Pablant, who designed an x-ray crystal spectrometer to record the behavior of W7-X plasma, will operate the diagnostic together with a German spectrometer and will contribute to planning and executing research.

“This will be the first run of the machine in its designed configuration,” said David Gates, who heads the stellarator physics division at PPPL and oversees the Laboratory’s role as lead U.S. collaborator in the W7-X project. The new run will test a device called an “island divertor” for exhausting

thermal energy and impurities. The campaign will also increase the heating power of the stellarator to eight megawatts to enable operation at a higher beta — the ratio of plasma pressure to the magnetic field pressure, a key factor for plasma confinement.

Such progress marks steps toward lengthening the confinement time of the hot, charged plasma gas that fuels fusion reactions within the optimized machine. “The goal is to increase plasma confinement compared with traditional stellarators,” said Gates.

Going forward, Max Planck engineers plan to install a U.S.-built “scraper element” on the W7-X after completion of the initial 15-week campaign. The following phase will study the ability of the unit, originally designed at Oak Ridge National Laboratory and completed at PPPL, to intercept heat flowing toward the divertor and improve its performance. Plans call next for installation of a water-cooled divertor in 2019 to further increase the allowable pulse length of the stellarator. 



Novimir Pablant
(Photo by Elle Starkman)

Young scientists show off hands-on research projects at Aug. 16 poster session

By Jeanne Jackson DeVoe

For Dhruvit Patel, a rising senior majoring in mechanical engineering and physics at Rutgers University, the 10 weeks he spent at PPPL were a welcome opportunity to do hands-on research.

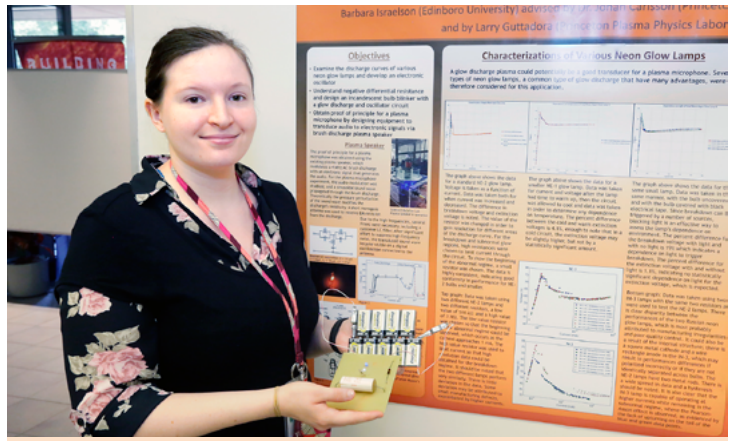
He spent the summer working on a nozzle that can be used to coat the inner wall of a tokamak with lithium, a liquid metal. But before he even got started, he had to do a lot of research and preparation.

"I learned the majority of things that really have to happen before you begin the experiment," he said. "I learned a lot about how to think scientifically."

Patel was one of 21 students in the Science Undergraduate Laboratory Internship (SULI) program who took part in an Aug. 16 session at the U.S. Department of Energy's (DOE) PPPL. Also taking part in the poster session were Community College Internship (CCI) program students, engineering interns, and high school interns, bringing the total number of participants to 32.



Richard Reksoatmodjo, of Embry-Riddle Aeronautical University-Prescott in Arizona, tells Tori Sikkema about his research project. (Photo by Elle Starkman)



Barbara Israelson, of Edinboro University, with her poster on "Neon Glow Lamps: An Alternative Approach," which she worked on with physicist Johan Carlsson and others. (Photo by Elle Starkman)

Challenging projects

"I'm very proud of them," said Deedee Ortiz, the Science Education program coordinator, who organizes the internship programs at PPPL. "It's impressive. They work on very challenging projects."

Physicist Egemen Kolemen worked with four SULI students over the summer. "The only way to learn anything is hands-on and they get that opportunity here," Kolemen said. "They work hard and they learn that if you work hard and do your research, you can do anything."

New Jersey legislators Assemblywoman Nancy Pinkin and State Sen. Linda Greenstein also attended the event, along with a representative from Assemblyman Erik Peterson's office. "We need science more than ever today," Greenstein said. "I definitely have a lot of respect for these young people, whose work I know we're going to be hearing a lot more about in the future."

Madeline Griffin, a mechanical engineering major at Notre Dame University, and Kerry Jones, a junior majoring in electrical engineering at the University of Connecticut, worked with engineer Charles Gentile to design a portable tritium cleanup system. In addition to learning about tritium, the two young women said they also learned about the design process. "I learned that your first idea won't be the actual idea," said Jones. "I learned how much your idea will change by the time you get to an actual design," Griffin added.

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New Jersey Senator Linda Greenstein, right, talks to high school intern Hikmah Okoya, a rising freshman at Bowdoin College, about her research. (Photo by Elle Starkman)

Poster session

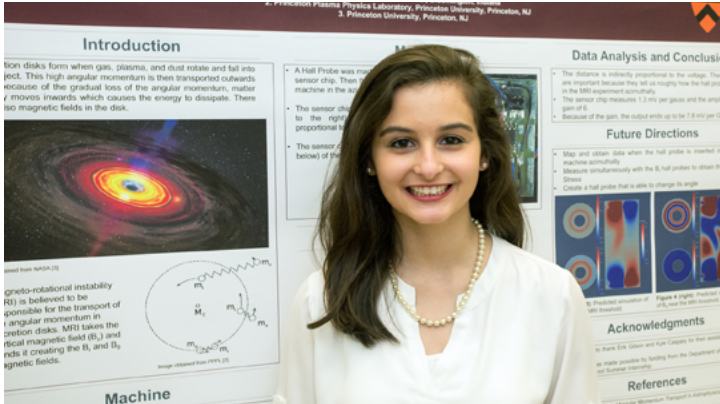
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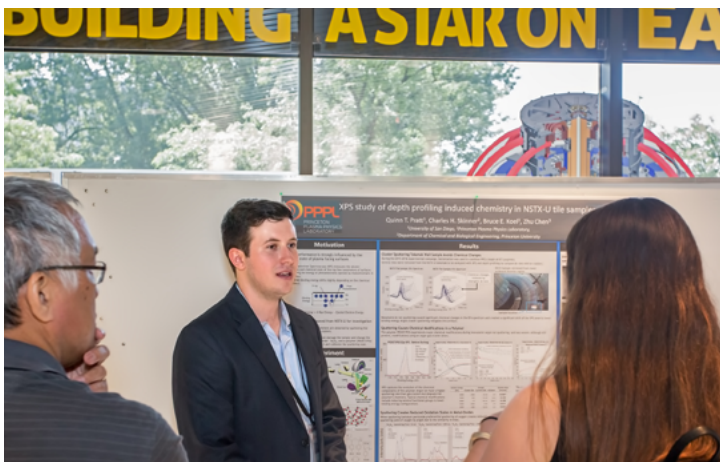
New Jersey Assemblywoman Nancy Pinkin, center, talks to SULI student Dhrupal Patel, of the University of Illinois at Urbana-Champaign, about his research. (Photo by Elle Starkman)

Learning to ask questions

Hikmah Okoya, a high school intern who graduated from the Northstar Academy in Newark and is attending Bowdoin College this fall, said she also learned a lot about the scientific process in her work on a neutron bubble counter. “I’m someone who likes to rush to get a result but this project really does require time and understanding,” she said. “It taught me to ask questions when I need to.”



Maria Lysandrou, a high school intern who recently graduated from Bloomington High School South in Bloomington, Indiana, and is entering the University of Chicago this fall, displays her poster on “Modifications to the Hall Probes in the Magneto-Rotational Instability Machine,” research she did with physicist Erik Gilson and others. (Photo by Elle Starkman)



Quinn Pratt, a SULI student from the University of San Diego, who worked with physicist Charles Skinner and others, discusses his research. (Photo by Elle Starkman)

For Dhrupal Patel, a SULI student from the University of Illinois at Urbana-Champaign majoring in nuclear radiological engineering, the program was an opportunity to see a variety of research fields. “I got to see all these other research areas, like liquid metal, that I hadn’t even considered,” Patel said.

Nathaniel Barbour, a SULI program participant and senior majoring in physics at Yale University, said he has been interested in plasma physics since high school. When he met PPPL physicist Arturo Dominguez, a Science Education senior program leader, at a conference for the National Society of Black Physicists, “it was like finding the mother ship,” Barbour said.



Nathaniel Barbour, of Yale University, discusses his research. (Photo by Jeanne Jackson DeVoe)

Barbour said he learned a lot about machine learning on his project designing a machine-learning program that uses data from lower currents in plasma to predict high currents that can cause disruptions in fusion experiments.

The internship also helped him see a clearer career path, Barbour said. “I always wanted to work in fusion some day, I just didn’t know how to get there,” he said. “One of the things I’ve taken away from the program is there’s so many areas that have to be solved for fusion to become a reality.”

The SULI and CCI programs are funded by the U.S. Department of Energy’s Office of Science. Many of the students will present their research at the American Physical Society’s Division of Plasma Physics Conference in Milwaukee this October. 📍

PPPL'ers keep their eye on the sky at Aug. 21 eclipse viewing

Dozens of PPPL'ers had fun watching the partial eclipse on Aug. 21 with special solar glasses, a telescope that projected the eclipse onto the wall and an assortment of boxes and other homemade viewing equipment. David McComas, the Princeton University vice president for PPPL, himself a NASA scientist, provided 50 solar glasses for PPPL staff and took part in the festivities himself. Engineer Marc Sibilía provided a homemade Dobsonian telescope for which he ground the lens himself. Several other people brought their own viewing inventions, some of which were simply a punched hole in a piece of paper. There were "oohs" and "ahs" as the eclipse covered more and more of the sun and the weather remained sunny until the eclipse reached its maximum of about 75 percent when a few clouds rolled in. 📸



Tyler Gilson, 11, son of physicist Erik Gilson, views the eclipse through a cereal box next to the telescope built by engineer Marc Sibilía, to his right. (Photo by Raphael Rosen)



The crowd outside the LSB reacts as the eclipse blots out most of the sun. (Photo by Jeanne Jackson DeVoe)



Engineer Marc Sibilía with an image of the eclipse from his telescope shining onto a post in the courtyard. (Photo by Larry Bernard)



Lena Scimeca assists Caitlin Jones, age 9, daughter of Jennifer Jones. (Photo by Raphael Rosen)



Mary Payne looks at the eclipse through a cereal box as Ryan Fregosi looks on. (Photo by Jeanne Jackson DeVoe)



Alana Coleman watches the eclipse. (Photo by Raphael Rosen)



A crowd of people outside the LSB turn their eyes toward the sky. (Photo by Jeanne Jackson DeVoe)



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 Aug. 28	Tuesday Aug. 29	Wednesday Aug. 30	Thursday Aug. 31	Friday Sept. 1
COMMAND PERFORMANCE Chef's Feature	Chicken Parmigiana over Pasta	Baked Potato Bar	Chicken Burrito with Rice and Beans	"Super Salad"	Beef Chili over Rice with Cornbread
Early Riser	Bacon, Egg & Cheese Croissant	Sausage, Egg and Cheese Biscuit	Mango & Blueberry Pancakes served with Choice of Breakfast Meat	Turkey Bacon, Egg and Cheese Sandwich	2 Eggs, 1 Pancake, 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 Veggie Burger with Avocado Sour Cream and Fries	Teriyaki Chicken Cheesesteak 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 Hot Dog

	Monday Sept. 4	Tuesday Sept. 5	Wednesday Sept. 6	Thursday Sept. 7	Friday Sept. 8
COMMAND PERFORMANCE Chef's Feature	Labor Day	Baked Ziti with Garlic Bread	Chicken Gyro served with Greek Salad	Pineapple Chicken served over White Rice	Four-Cheese Baked Macaroni and Cheese with Stewed Tomatoes
Early Riser	★ ★ ★	Greek Breakfast Wrap	Chicken Omelette	French Toast Sticks	2 Eggs, Choice of Breakfast Meat & Tater Tots
Country Kettle		Chicken Noodle	Tuscan Bean	Split Pea	New England Clam Chowder
Deli Special		BLJT (Bacon, lettuce and Jersey tomato)	Vegetable Sub with Hummus	Turkey with Cheddar, Bacon and Cranberry Mayo	Italian Chopped Antipasti Wrap
Grill Special		TBD	TBD	TBD	TBD
Panini		Spicy Pepperoni Ciabatta	Pretzel Melt with Ham and Swiss	Falafel Wrap	Tuna Melt English Muffin with Fries

MENU SUBJECT TO CHANGE WITHOUT NOTICE

HEART HEALTHY

VEGETARIAN OPTION

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The PPPL WEEKLY is published by the PPPL Office of 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/>.