

## Calendar of Events

### THE MONTH OF MAY

[National Inventors Month](#)

### MAY 11-12

**PPPL Advisory Committee**

### UPCOMING

#### TUESDAY, MAY 17

**PPPL Colloquium**

4:15 p.m. ♦ MBG Auditorium

[Functional capabilities and design of the ITER EC H&CD system](#)

Dr. Mark Henderson, ITER Organization

#### FRIDAY, MAY 27

**Princeton University Reunions Tours**

10-11:30 a.m., 1:30-3 p.m.

### JUNE 6-10

**SULI program begins with one-week course for students**

#### WEDNESDAY, JUNE 8

**Patent Dinner**

6 p.m. ♦ Prospect House

## INSIDE

Retirees **2**

Matthew Parsons Wins Grant **4**

Robotics Coaches Needed **4**

Safety Awards **5**

Federal Bike Challenge **5**

Take Your Child to Work Day **6**

National Inventors Month **6**

New Employees **7**

Menu **7**

## “A dynamo,” Alex Nagy, PPPL’s engineering leader at DIII-D

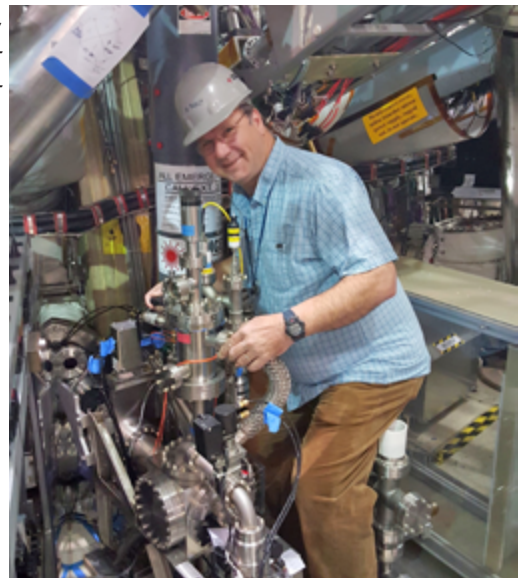
By John Greenwald

**A**lex Nagy joined PPPL as a technician in 1977, earned a bachelor’s degree in electrical engineering five years later and has never looked back. Today he heads PPPL’s engineering operations at the DIII-D National Fusion Facility, which General Atomics operates for the DOE in San Diego, and directs the design and fabrication of myriad projects.

DIII-D, a major magnetic fusion facility, explores the scientific basis for optimizing the tokamak approach to the production of fusion energy. Results of DIII-D experiments complement research done on PPPL’s flagship fusion facility, the recently upgraded National Spherical Torus Experiment-Upgrade (NSTX-U).

“He’s just a dynamo,” said PPPL physicist Rich Hawryluk, who oversees the DIII-D collaboration as head of the ITER and Tokamaks Department. “Give him a job that may be ill-defined and he’ll figure out how to get it done and complete it.”

Concurs physicist Raffi Nazikian, who heads the PPPL collaboration with General Atomics on-site in San Diego: “Alex is a very remarkable and unique individual at DIII-D. He has an incredible capacity to get things done.”



Alex Nagy with the upgraded lithium granular injector originally developed at PPPL. (Photo by Will Brown)

[continued on page 2](#)

## Six-county fire exercise pumps huge volume of water into the woods at PPPL

By John Greenwald

**F**irefighters from 80 New Jersey departments completed a massive exercise last month by pumping almost 4,000 gallons of water per minute into the woods behind PPPL. The six-county drill on April 30 saw departments deliver vast amounts of water through 5-inch wide hoses over more than a mile to train for huge fires like the blaze that consumed half-a-million square feet of warehouse space and caused some \$50 million of damage in Hillsborough in February.

“This showed what you have to do to be prepared for emergencies,” said John DeLooper, acting deputy director for operations, who helped arrange the Laboratory’s role. “You need to become ready for big emergencies and this drill was quite successful.”

Some 250 fire and safety personnel joined the exercise; almost 90 percent were from volunteer departments. Photographers from [New Jersey Fire News](#) and other social networks recorded the event and two county drones taped it from above. News photographer Brian McCarthy posted more than 100 images of the drill on his website, [On Scene News](#). Participants came from Mercer, Middlesex, Monmouth, Hunterdon, Somerset and Burlington counties, with at least one tanker truck from Washington County in Pennsylvania.

[continued on page 3](#)

## Alex Nagy

continued from page 1

Nagy toils from 6:45 in the morning to 6 o'clock at night. He makes rounds with Arnie Kellman, director of DIII-D operations, to check on work in progress and see what needs to be done. "He's very, very motivated and has great enthusiasm," Kellman said. "He's brought a great deal of expertise to DIII-D."

Nagy views challenges as opportunities. "Instead of running away I try to run toward them," he says. Among his recent work:

- **New Super Supply Patch Panel.** He is primary engineer for the design of this hardware, which will connect three DIII-D coil sets to five different power supplies to expand the capability and flexibility of the tokamak.
- **Lithium granular injector.** Nagy led engineering for the upgrade and the December 2015 installation of this PPPL-designed device, which mitigates plasma instabilities called ELMs that can damage the interior of fusion facilities. Physicist Dennis Mansfield and engineer Lane Roquemore developed the original system at PPPL.
- **New control systems for high-voltage neutral beam mod-regulators.** Nagy leads the upgrade of these units, which control the high-voltage pulses that produce neutral beam ions, and has been under way for the past two years. Engineers are currently building the second unit and plans call for the construction of two more.
- **Neutral beam sliding seal.** Nagy's innovative idea, which needs to be tested, for how to shift the angle of neutral beam injections for different experiments. He supervises an engineer who is designing a full-sized model of the hardware to be fabricated this summer.

- **High-power helicon system.** Nagy was the lead engineer of an eight-member team before this project was delayed. It will restart next January, pending funding. The innovative microwave system could drive plasma current more efficiently than neutral beams now do. Nagy heads the antenna design team and will lead the installation of a 1.2 megawatt device called a klystron that will produce the electromagnetic waves.
- **Educational leader.** Nagy regularly joins Rick Lee, fusion education outreach manager at General Atomics, to put on science shows and expositions for school children. Their shows feature physics topics related to fusion science and technology. Nagy also has mentored undergraduate senior engineering student interns on and off for the past 15 years.

Nagy arrived at DIII-D in 1997 after PPPL's Tokamak Fusion Test Reactor (TFTR) was shut down. He had been a chief operating engineer for TFTR and was in charge of accounting for the tritium the tokamak used—a key job that called for measuring how much of the radioactive isotope was retained in the tokamak and piping and how much was shipped back to its source at Savannah River National Laboratory. "It was like keeping track of daily bank deposits and withdrawals on about 15 accounts at once," he recalls.

Nagy devotes as much energy and enthusiasm to his off-hours as to his time on the job. He is a retired Scoutmaster who sits on the science panel of the local Eagle Scout Board of Review for candidates who have a career interest in science. He rides a motorcycle instead of a car and loves to zoom off into the mountains on weekends, taking advantage of the fine Southern California weather. 🍷

## PPPL bids a fond farewell to retiring employees!



**DOLORES STEVENSON**  
Administrator, Engineering  
36 YEARS



**RON STRYKOWSKY**  
IOI project director  
34 YEARS

# Fire exercise

continued from page 1

Firefighters first gathered in the Melvin B. Gottlieb Auditorium, where DeLooper welcomed them and briefly described fusion research at the Laboratory. He made a plasma with a Tesla coil and manipulated plasma with a magnet. Scott Kivet, deputy fire coordinator for Middlesex County and organizer of the exercise, then explained the purpose of the drill with slides of Hillsborough and other huge blazes. “This exercise was another excellent example of the robust and collaborative mutual-aid relationship that we share with our emergency response partners in the surrounding communities,” said Fran White, head of the Site Protection Division.

The three-hour exercise began in the Bristol-Myers Squibb parking lot just off Campus Road. Firefighters set up huge portable tanks, some holding as much as 4,000 gallons, that tanker trucks filled. Engines lined up on Campus and Stellarator roads pumped the water from one truck to another to PPPL Engine 66 and three other units outside the Emergency Services Building at the rear of the Lab—a distance of 1.1 miles. Tankers brought fresh supplies from hydrants on College Road to refill the tanks as they emptied.

At PPPL, fire trucks from Highland Park, Monmouth Junction and Bristol-Myers Squibb joined Engine 66 in pumping water into the woods that absorbed it. “The exercise went well,” said Kivet, who also serves as deputy chief of the Plainsboro Fire Department. “We got to 3,800 gallons per minute,” he said. “This was an eye-opener for the departments and now they’ll digest what happened.”

As for Engine 66, “It more or less exceeded our expectations,” said Capt. Howard Caruso of PPPL. “It’s an older engine and we didn’t know how well it was going to pump, but it maintained a steady flow.”

Planning for the exercise took nearly two months. “It would be great for everyone to have seen this,” said Jamie Dunnigan, emergency planning and training coordinator at PPPL, “to appreciate the complex water supply systems that are needed to protect homes and offices.”



West Windsor crew assembles a five-inch hose.



Scott Kivet, deputy fire coordinator for Middlesex County, speaks to firefighters before the drill.



PPPL emergency service workers with Engine 66 outside the Emergency Services Building. From left: Lt. Robert Lamb, officer Aaron Green and officer Chris Pietsch.



PPPL and Highland Park engines pumping water into the woods behind the Emergency Services Building.



West Windsor firefighter with a five-inch hose at the Bristol-Myers Squibb parking lot.



West Windsor firefighters with portable tank that they have set up.

# Matthew Parsons wins Fulbright Grant for research at ITER

By Jeanne Jackson DeVoe

**M**atthew Parsons, a computational physics programmer at PPPL who formerly was a Science Undergraduate Laboratory Internship (SULI) student, has won a Fulbright grant to travel to ITER, the international fusion experiment in Cadarache, France, where he will continue his work on plasma disruptions.

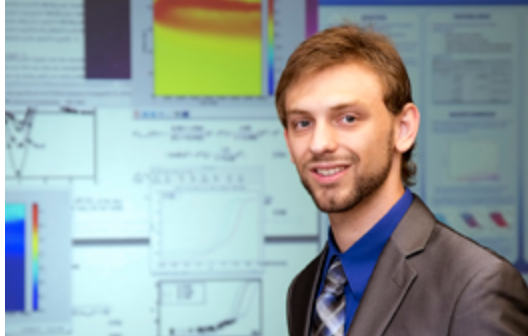
Parsons will spend eight months at ITER from September 2016 through May 2017. He said he has long wanted to work at ITER. But he was a little shocked when he learned about the award because he had just committed to attend graduate school at the University of Illinois at Urbana-Champaign in the Department of Nuclear, Plasma and Radiological Engineering. "I was excited but also a little terrified to have all my plans fly out of the window," he said. "But I had a lot of support." He will postpone graduate school for one year and start the program in September 2017.

Parsons' research at ITER will continue the work he has done at PPPL. He works with other researchers to use computer programs to find patterns in data from fusion reactors in order to build a model that can predict plasma disruptions. He converted from an hourly to full-time position in January. He worked with Eliot Feibush and other researchers at PPPL including Stephane Ethier, deputy head of the Computational Physics Group. More recently, he has worked with physicist Bill Tang using data from the National Spherical Torus Experiment and from the Joint European Torus in England to develop algorithms to make those predictions.

"By having direct access to the research staff at ITER, I will be able to develop a more comprehensive view of their approach to predicting plasma disruptions," he said. "This

will allow me to find the best possible way to contribute to that area of research with the experience that I have gained in disruption prediction here at PPPL."

Parsons said he has been interested in fusion energy since he first learned about it in sixth grade in Westminster, Maryland. His first Boy Scout badge was for nuclear energy. Since that time, he has built an impressive resume even before he graduated from Drexel University in Philadelphia last September with a bachelor's degree in physics.




Matthew Parsons shows a poster of his project at a student poster session at PPPL last summer.

While at Drexel, he did two six-month internships at PPPL from March to September 2014, and from March to September 2015. The SULI program paid for part of those internships, along with some Laboratory Directed Research and Development funding. Andrew Zwicker, head of Science Education, said the award demonstrates the importance of internships like those offered by the SULI program. "This is an impressive accomplishment and shows how valuable it

is for future scientists like Matthew to get hands-on training at PPPL and other laboratories," Zwicker said.

Parsons previously had a six-month internship at the National Institute of Standards and Technology in Gaithersburg, Maryland, and volunteered at the University of Maryland's Cosmic Ray Energetics and Mass Lab.

Parsons said he hopes to continue working with PPPL. "I definitely hope to be here in the future," he said. "I'm really looking forward to maintaining my collaborations during graduate school and then hopefully will find myself back here after that." 

## Robotics coaches needed for all-girls robotics teams

**PPPL's Science Education team is looking for volunteer coaches for a new all-girls FIRST Lego League Robotics team (ages 9 to 13) and the new FIRST Tech Challenge Team (ages 13 to 18) being organized in collaboration with the YWCA-Princeton.**

The teams will meet throughout the fall semester and there are lots of events throughout the spring and summer to engage everyone. The program welcomes volunteers with all kinds of skills.

**Please call Shannon Greco ASAP to volunteer:  
[sgreco@pppl.gov](mailto:sgreco@pppl.gov), 609-243-2208.**

## PPPL & Plasma Science and Technology Department win safety awards

PPPL was recognized for its safety record with the 88th Annual Governor's Occupational Safety and Health Award, which is sponsored by the New Jersey Department of Labor and Workforce Development.

The award recognizes PPPL's safety record based on how many absences employees had due to work-related injuries and illnesses in 2015. The Laboratory had only one such case last year.

"It reflects the good safety record we've had for many years," said Jerry Levine, head of Environment, Safety and Health. "We've been following integrated safety management and we've been able to limit the number of serious workplace injuries to very low numbers for a long period of time. This award is a reflection of that."

The Plasma Science and Technology Department also won the Commissioner's Continued Excellence Award from the state agency for working 10 years without an accident or work-related illness. The department has 36 full-time employees and six temporary employees, working a total of 409,100 hours during that decade without an injury or illness that took someone out of the workplace.

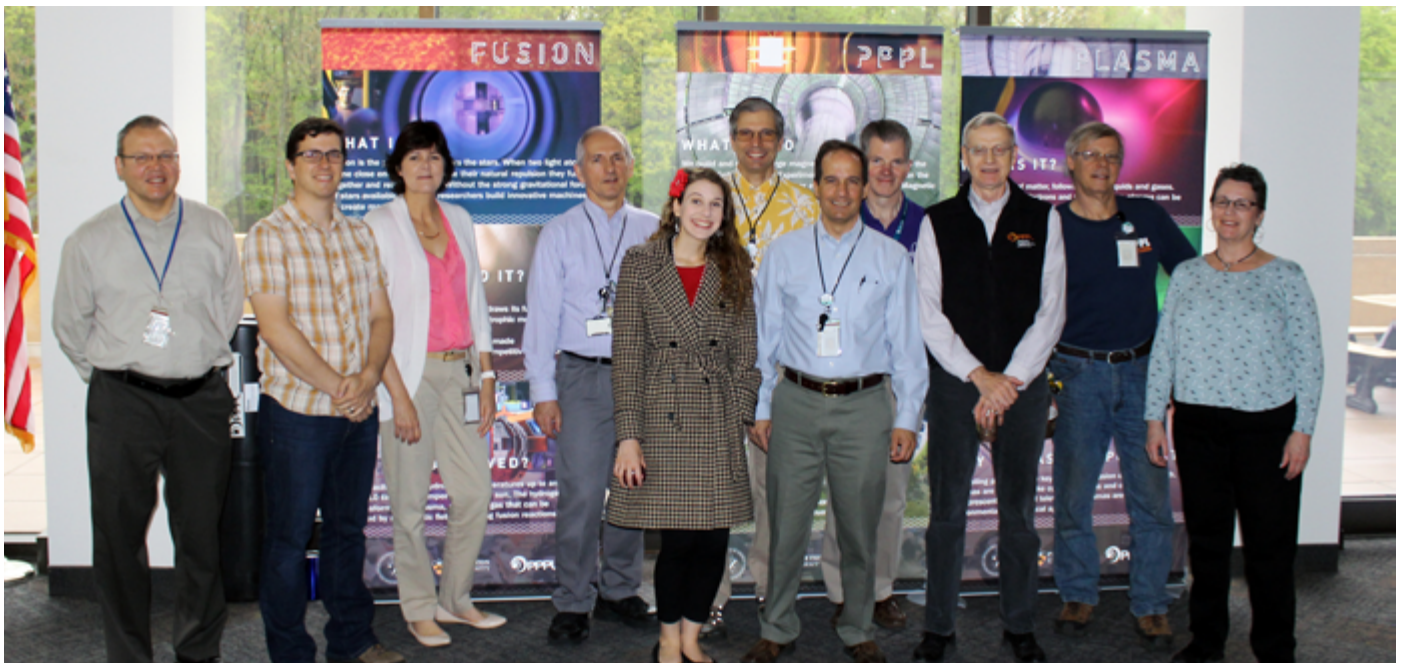
Levine noted that the department works on the Lithium Tokamak Experiment, the Magnetic Reconnection Experiment, the Hall thruster experiment, and other small experiments. "They do a lot of hazardous work associated with keeping those experiments running," Levine said, "and they get a lot of good physics results as well as good safety results as reflected by this award." 📷

## It's not too late to join the Federal Bike Challenge

May is National Bike Month and it's not too late to register for one of six PPPL bike teams [here](#). One of four team captains will contact you with registration information. Then all you have to do is log your cycling miles during May for all your bike rides at home and to work.



As of May 5, 46 people on six teams have registered for the Bike Challenge. The team captains are: Mike Zarnstorff, Dave Johnson, Daren Stotler, Larry Dudek, Theresa Gillars and Rob Sheneman.



Some of the members of PPPL's National Bike Challenge teams kicked off the month with a breakfast on May 3. From left to right: Andrei Khodak, Morgan Styer, Laurie Bagley, Larry Dudek, Dana Eckstein, Marc Sibilia, Rob Sheneman, Daren Stotler, Dave Johnson, Mark Karlik, and Kathleen Lukazik, who organized the event. (Photo by Chris Cane).

## A lesson in plasmas for Take Your Child to Work Day

Members of the Science Education Department and volunteers gave plasma demonstrations for about two dozen children of employees and their parents during Take Our Daughters and Sons to Work Day on April 28. The impromptu event taught children about plasmas during demonstrations that included the hair-raising Van de Graaff generator, making marshmallows expand in a vacuum chamber, and lighting up fluorescent bulbs with a Tesla coil. 📷

[Click here to see more photos.](#)



Han Zhang shows the plasma ball to her son Steven, 7, and to Emily Zhao, 10, daughter of Xin Zhao.



Arturo Dominguez, Science Education program leader, shows the group a half-coated fluorescent bulb as an example of a plasma.

## PPPL celebrates our inventors during National Inventors Month

PPPL congratulates inventors Charles Gentile, George Ascione and Adam Cohen for recently receiving a patent for their invention of an on-demand method to create Technitium-99m, a badly needed isotope used routinely in medical imaging for diagnosis. The invention also won third prize at Princeton University Keller Center's 11th Annual Innovation Forum.



**Do you have an idea that is novel, useful, and non-obvious?  
Maybe you should file an Invention Disclosure Form!**

Contact Laurie Bagley, [lbagley@pppl.gov](mailto:lbagley@pppl.gov) ext. 2425.

# PPPL Welcomes New Employees!



**PRENTICE BISBAL**  
Lead software engineer  
Information Technology



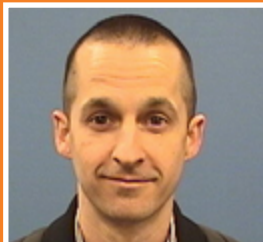
**ANA MARIE DATUIN**  
Administrative assistant  
ES&H



**CHRIS FREEMAN**  
Electronics engineer  
Engineering



**MARK KARLIK**  
Neutral beam  
cryogenics operator  
Engineering



**CHRIS ROAMES**  
Maintenance planner/scheduler  
Engineering



**PAT SCHUROTT**  
Director of procurement  
Business Operations

**BRÖCK**

**MARK GAZO**  
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 May 9	Tuesday May 10	Wednesday May 11	Thursday May 12	Friday May 13
<b>COMMAND PERFORMANCE Chef's Feature</b>	<b>Chicken Marsala</b> with Mushrooms served with Buttered Egg Noodles & Vegetable	<b>Vegetable Fried Rice</b> served with an Egg Roll	<b>COMMAND PERFORMANCE B&amp;C's Steak Palace: Authentic Philly Cheesesteaks</b> served with Fries or Onion Rings	<b>Baked Ziti</b> with Meatballs & Sausage	<b>Fried Flounder &amp; Popcorn Shrimp</b> with Tartar & Cocktail Sauce served with Macaroni Salad & Corn on the Cob
Early Riser	<b>Blueberry Pancakes</b> with Sausage	<b>Sausage, Egg &amp; Cheese Croissant</b>	<b>Ham, Cheddar Cheese &amp; Chicken Tenders</b> on Biscuits	<b>Egg, Bacon, Cheese &amp; Porkroll Sandwich</b>	<b>Steak, Egg, Potato &amp; Cheese Wrap</b>
Country Kettle	<b>Cream of Vegetable</b>	<b>Split Pea</b>	<b>Chicken Rice</b>	<b>Cream of Celery</b>	<b>Beef Barley</b>
Grille Special	<b>BURGERLICIOUS Old McDonald Had a Burger</b> Grilled Beef Burger smothered in cheddar cheese, topped with sliced ham, fried egg and a secret sauce on a grilled brioche bun	<b>BURGERLICIOUS The Simple Man</b> Grilled Beef Burger with American Cheese, Tomatoes, Onions, Dill Pickle Chips, Shredded Lettuce & Secret Sauce on a Grilled Brioche Roll Served with Sweet Potato Fries	<b>BURGERLICIOUS BBQ Beef in a Blanket</b> Grilled Beef Burger with cheddar cheese, bacon blanket, crispy onion straws, dill pickle chips and chipotle BBQ sauce on a brioche roll	<b>BURGERLICIOUS Use it or Blues It: Buffalo Turkey Burger</b> Grilled Turkey Burger with melted blue cheese crumbles, sliced celery, shredded lettuce, tomato, red onion and fiery Buffalo sauce on a grilled brioche roll	<b>BURGERLICIOUS As Gouda As It Gets Burger</b> Grilled Beef Burger smothered with smoked gouda, caramelized onions, and garlic-roasted wild mushrooms topped with Applewood bacon jam on a grilled brioche roll
Deli Special	<b>Grilled Portobello Mushroom</b> on a Kaiser Roll with Provolone Cheese, Lettuce & Tomato	<b>Pesto Chicken Salad Wrap</b>	<b>Bologna &amp; American Cheese</b> on White Bread with Lettuce & Tomato	<b>Liverwurst &amp; Onion</b> on Rye	<b>Chipotle Chicken Wrap</b> with Avocado Marinated in Paprika & Lime
Panini	<b>Grilled Chicken Soprano</b> with Spinach, Roasted Peppers, Fresh Mozzarella & Balsamic Vinaigrette with Pesto	<b>Balsamic Grilled Vegetables</b> on a Multigrain Roll	<b>Turkey, Swiss, Roasted Peppers &amp; Spinach Panini</b>	<b>Texas BBQ'd Chicken &amp; Cheddar</b> with Frizzled Onions & Molasses-Baked Beans	<b>Tuna Melt Panini</b> on Ciabatta Bread

MENU SUBJECT TO CHANGE WITHOUT NOTICE

VEGETARIAN OPTION

**WEEKLY**

Editor: **Jeanne Jackson DeVoe** ♦ Layout and graphic design: **Kyle Palmer** ♦ Photography: **Elle Starkman**  
Science Editor: **John Greenwald** ♦ Webmaster: **Chris Cane** ♦ Communications Director: **Larry Bernard**

The PPPL WEEKLY is published by the [PPPL Office of Communications](#) on Mondays throughout the year except for holidays.

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

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