

At PPPL THIS WEEK

MONDAY, APRIL 14
PPPL Colloquium

4:15 p.m. ♦ MBG Auditorium

The Many Faces of Fusion

Dan Clery, Science Magazine

WEDNESDAY, APRIL 16
PPPL Colloquium

4:15 p.m. ♦ MBG Auditorium

 Extreme Global Warming: Examples
From the Past

Mark Pagani, Yale University

THURSDAY, APRIL 17
PPPL Colloquium

4:15 p.m. ♦ MBG Auditorium

 Toward Diversity in Flatland: Controlled
Synthesis of 2D Alloys and Heterostruc-
tures

Peter Sutter, Brookhaven Nat'l Lab

UPCOMING EVENTS
April 22
**Earth Day Grounds Clean-up
at PPPL**

 Volunteers needed! Lunch will be
provided. Sign up [here](#)
Apr. 23
Earth Day at PPPL

LSB Lobby and MBG Auditorium

10:30 a.m. to 1 p.m. - Lobby displays

11 a.m. - Green Machine Awards

11:15 a.m. - Speaker John Lee, Deputy

Director for Buildings & Energy

Efficiency Sustainability Policy and

Planning in New York City

Apr. 27
Communiversity Festival

1 p.m. ♦ Nassau St., Princeton

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Café Menu

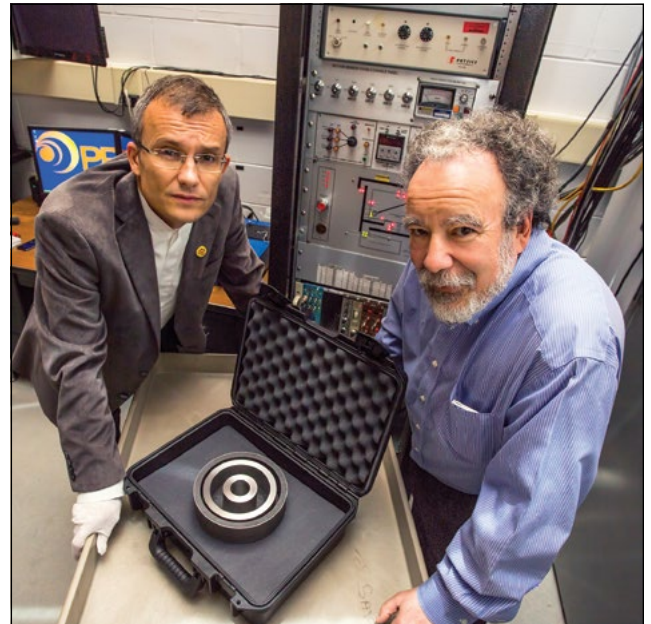
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Princeton and PPPL share in \$25M nuclear arms-control project

By John Greenwald

The National Nuclear Security Administration (NNSA) has named Princeton University and the PPPL participants in a new \$25 million, five-year project to address technology and policy issues related to nuclear arms control. The project will include a unique process that Princeton and PPPL are developing to verify that nuclear weapons to be dismantled or removed from deployment contain true warheads.

Princeton and PPPL will join a consortium of 13 universities and eight national laboratories in the project, called the Center for Verification Technology and led by the University of Michigan. Funding from NNSA, a semi-autonomous branch of the DOE, will include a combined total of \$3.5 million over five years for Princeton and PPPL for their research on verification.



Physicists Alexander Glaser, left, and Robert Goldston display the non-nuclear test object that will serve as a target in their research.

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Cleanup and NYC environmentalist speaker highlight Earth Week at PPPL

By Jeanne Jackson DeVoe

PPPL is celebrating Earth Day this year with a cleanup of PPPL grounds, an Earth Day lunch speaker who will discuss how climate change affects public policy in New York, and a Lab-wide weeklong cleanup.

Volunteers are needed for the Earth Day cleanup of PPPL and surrounding areas on April 22 at 10:30 a.m. Last year, some 32 volunteers collected 350 pounds of trash and another 35 pounds of leaves for composting. The Earth Day cleanup crew will be treated to lunch after the cleanup. Please register [here](#) or contact Joanne Bianco at ext. 3380 by Monday, April 21 if you can help.

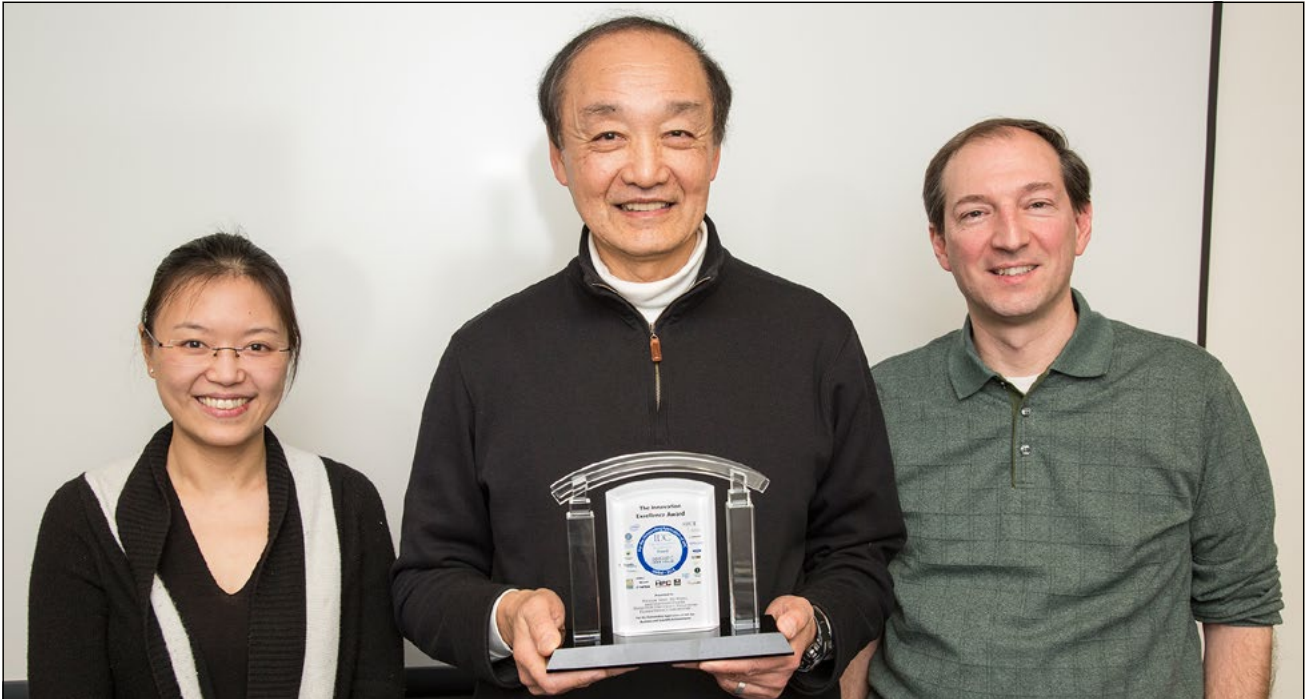
Speaker will discuss planning for climate change at colloquium

On April 23 at 11:15 a.m., John Lee, the Deputy Director for Buildings and Energy Efficiency at the New York City Mayor's Office of Long-Term Planning and Sustainability, will give a special colloquium entitled "[Sustainability Policy and Planning in New York City](#)" in the MBG Auditorium. He will discuss how the city has been implementing a comprehensive sustainability plan to prepare for an anticipated 1 million new residents over the next two decades and to adapt to and mitigate the risks from climate change. A pizza lunch will be served to audience members.

New York City has set a target of reducing greenhouse gas emissions by 30 percent by the year 2030 and has already reduced emissions by 19 percent, achieving the cleanest air quality levels in 50 years. The plan also maps out how the city will meet increasing energy demands and how the city, with

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Tang's team wins Innovation Excellence Award



PPPL physicist William Tang and his team won an HPC (High-Performance Computing) Innovation in Excellence Award from the International Data Corporation for their use of world-class supercomputers such as the IBM Blue Gene/Q machine at Argonne National Laboratory to carry out advanced large-scale plasma simulations with unprecedented spatial resolution and temporal duration. The fusion physics focus of the research team is the development and application of a modern high-performance code that is capable of delivering new insights into the properties of plasma confinement — a key element in designing an efficient fusion reactor. The team won an Innovative and Novel Impact on Computational Theory and Experiment (INCITE) Award for 50 million hours on the BG/Q supercomputer at the ALCF earlier this year. Tang, center, is shown here holding the award with physicists Bei Wang, left, of Princeton University, and Stephane Ethier of PPPL.

Arms Control Project


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"This is an excellent example of collaboration between Princeton and PPPL on scientific issues of great public interest," said A.J. Stewart Smith, Princeton University vice president for PPPL. "This research benefits from the close integration of the main campus and PPPL."

As part of this project, Princeton and PPPL are developing a "zero-knowledge protocol for nuclear warhead verification" — a system to confirm that a putative warhead actually is one without measuring classified information that could lead to nuclear proliferation if the data were to be leaked. The research fires high-energy neutrons at a test object containing non-nuclear materials. This target, called a British Test Object, will be used to test the validity of the novel approach to verification.

"The goal is to prove with as high confidence as required that an inspected item is a true nuclear warhead while

learning nothing about the materials and design of the warhead itself," said Robert Goldston, a professor of astrophysical sciences at Princeton and a fusion researcher and former director of PPPL. He is developing the zero-knowledge protocol with Alexander Glaser, an assistant professor in the Woodrow Wilson School of Public and International Affairs and the Department of Mechanical and Aerospace Engineering at Princeton. Both physicists are associated with the Princeton Program in Science and Global Security.

Princeton also leads a key research thrust of the consortium called "Treaty Verification: Characterizing Existing Gaps and Emerging Challenges" that is part of the NNSA project. "Our work in this area is meant to inform and guide the technical research that all the other groups are doing," said Glaser. "So we are in an excellent position to help make the overall project a great success. It is an exciting opportunity to be part of this effort." 


Earth Day continued from page 1

its 520 miles of coastline, will adapt to climate change. "Clearly New York City has made good early progress in terms of its own greenhouse gas footprint. I think the plan originally focused pretty heavily on that," said Robert Sheneman, head of PPPL's Environmental Services Division. "It is starting to move into the next chapter of that challenge, which has to do with the adaptation to and mitigation of climate change risks."

Green Machine awards and lobby displays

The day's events will also include the Green Machine Awards at 11 a.m. in the MBG Auditorium. The awards are given to PPPLers who have had a positive effect on PPPL's environmental performance by saving energy, recycling materials or equipment, reducing greenhouse gas emissions and other positive effects.

There will also be displays in the LSB lobby from 10:30 a.m. to 1 p.m. of PPPL's environmental efforts, including a display of bio-based products, as well as displays by Sustainable Princeton and other environmental organizations, and PPPL vendors.

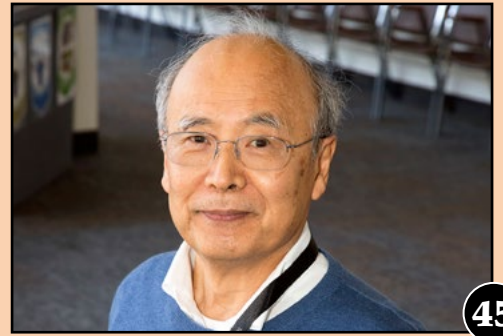
PPPL will have its annual weeklong cleanup in honor of Earth Day from April 21 to April 25. Please clean out your office or workspace and remember to recycle! Additional containers will be provided. Please contact Margaret Kevin-King at 3652 with any special requests. 



Celebrating decades of service at PPPL's Service Awards

PPPL's Service Awards on March 27 celebrated PPPL'ers hard work and service to PPPL and their landmark anniversaries.

Michio Okabayashi and **Joel Hosea** were recognized for having worked at PPPL for 45 years. Okabayashi, shown here at right, is a principal research physicist who worked on the Princeton Beta Experiment (PBX) and PBX-M and has done research on Resistive Wall Modes at the DIII-D National Facility. Hosea, is a principle research physicist and the head of RF Science and Technology.



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Three PPPL'ers were recognized for 40 years of employment at PPPL. They were: **Philip J. Heitzenroeder**, shown here at right, head of PPPL's Mechanical Engineering Division; **Samuel Cohen**, co-director of the Program in Plasma Science and Technology and the Summer Internship Program for Princeton University undergraduates; and **Tom Steer**, the lead technician for the team removing diagnostics and hardware in the NSTX Test Cell in preparation for the NSTX Upgrade.



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Celebrating 35 years at PPPL with Deputy Director for Operations Adam Cohen, second from left, who served as master of ceremonies at the awards, are from left to right: **Robert Herskowitz**, an NSTX machine technician; Cohen; **Robert Budny**, a principal research physicist; **Kenneth Hill**, a principal research physicist; **Leonard Halvorsen**, a mechanical technician; **Marie Iseicz**, head of the Budget Office; **Joanne Savino**, NSTX administrative assistant; **Masayuki Ono**, a principal research physicist and head of the NSTX Department; and **Fred Simmonds**, lead welder in the Tech Shop. Not shown are **Bruce Berlinger**, Heating Systems lead technician; and **Robert Kaita**, a principal research physicist and head of plasma diagnostic operations and acting head of boundary physics operations for NSTX, and co-principal investigator for LTX.

PPPL'ers celebrating 30 years at the Lab with Cohen, second from right, are from left to right: **Christopher Brunkhorst**, a senior RF engineer; engineer **George Labik**; **Ronald Bell**, a principal research physicist; **Penny Neuman**, a staff assistant in payroll and petty cash; **Robert Lamb**, a driver/operator; **Cynthia Phillips**, a principal research physicist; **Benoit LeBlanc**, a principal research physicist; Cohen; and machinist **John Vaccaro**. Not shown here are **Tom Kozub**, the chief engineer for LTX; **Jim MacTaggart**, a systems administrator and programmer/analyst for the Lab's Business Computing Systems; **John Robinson**, a technician with NSTX; and **Larry Sutton**, a senior subcontract administrator.



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Celebrating 25 years at PPPL are from left to right: **Doug Darrow**, a principal research physicist; **John DeLooper**, head of Best Practices and Outreach; and ESU Capt. **Kevin Rhoades**; with Cohen. Not shown are **Steven Green**, an employee in the Janitorial group; and engineer **Subrahmanya Ramakrishnan**.

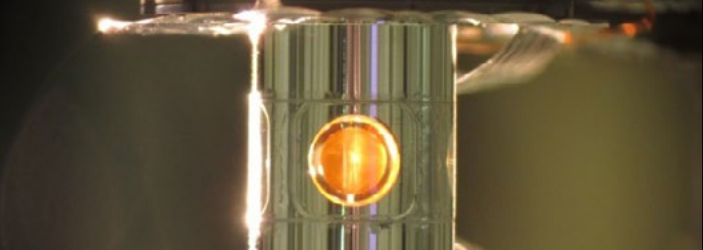

Colloquium Triple-Header at PPPL

Monday, April 14



Dan Clery

Science journalist and author Dan Clery will lead off this week's unique schedule of three colloquia in one week. Clery, a writer for Science magazine and author of "A Piece of the Sun," a wide-ranging account of the quest for fusion energy, will speak Monday, April 14, on "The Many Faces of Fusion," a whirlwind tour through the history of fusion from the 1850s to the present day by way of the people who made it happen. The journey will take in atom spies, superpower summits, hijackings by Palestinian terrorists, the Red Army, South American dictators and the Iraq War.



THE MANY FACES OF FUSION
DAN CLERY, SCIENCE MAGAZINE

Monday, April 14



4:15 p.m. (Coffee/Tea at 4 p.m.) • MBG Auditorium

Wednesday, April 16



Mark Pagani

Next up this week will be Prof. Mark Pagani, director of the Yale University Climate & Energy Institute, who will speak Wednesday, April 16, on "Extreme Global Warming: Examples from the Past." His talk will explore an extreme carbon-induced global warming event called the Paleocene-Eocene Thermal Maximum that took place some 55 million years ago and is considered an analog for future increases in atmospheric CO₂.



EXTREME GLOBAL WARMING: EXAMPLES FROM THE PAST
MARK PAGANI, YALE UNIVERSITY

Wednesday, April 16

4:15 p.m. (Coffee/Tea at 4 p.m.) • MBG Auditorium

Thursday, April 17



Peter Sutter

Peter Sutter of Brookhaven National Laboratory will deliver the week's third Colloquium on Thursday, April 17, on the topic, "Toward Diversity in Flatland: Controlled Synthesis of 2D Alloys & Heterostructures." He will discuss recent advances in developing the synthesis and processing of alloys and heterostructures of 2D materials on metal substrates, and will highlight progress toward meeting key challenges in the controlled formation of these alloys and heterostructures. The combined findings of such work establish a powerful toolset for the scalable fabrication of 2D alloys and heterostructures for research and applications.



TOWARD DIVERSITY IN FLATLAND: CONTROLLED SYNTHESIS OF 2D ALLOYS & HETEROSTRUCTURES
PETER SUTTER, BROOKHAVEN NAT'L LAB

Thursday, April 17 (note special date)

4:15 p.m. (Coffee/Tea at 4 p.m.) • MBG Auditorium

Site Protection Division • TIP • OF • THE • WEEK •

Important PPPL Security Phone Numbers

Please keep near your phone for easy reference.
EMERGENCY PHONE: Security/Fire/EMS 3333
Non-Emergency Security Assistance: 2536
Badge Office: 2898
Booth 6: 2534
Captain's Desk/Emergency Services Building: 3166
Communications Center: 2536
Site Protection Administration: 3208
Site Protection FAX: 3666
 Emergency Evacuation System: Horns, Bells and Sirens followed by specific instructions
 Your Office Location: _____
 Your Office Phone Number: _____
 Your Evacuation Muster Location: _____
 (*Be sure your office phone has an emergency "3333" decal.)

Check Out New Items in the Plasma Hutch!

4 GB FLASH DRIVES \$12.00
UMBRELLAS \$14.50
KEYCHAINS \$ 5.00



Also ceramic mugs, notebooks, pens and all your favorite PPPL clothing!

THE PLASMA HUTCH IS OPEN ON FRIDAYS FROM 11:30 A.M. YOU CAN ALSO PICK UP AN ORDER FORM OR DOWNLOAD ONE FROM THE HR WEBSITE AT HR.PPPL.GOV AND SEND IT VIA EMAIL TO KIM KASTROMARINO AT KMASTROM@PPPL.GOV.

Volunteer for PPPL's Communiversality booth on April 27!

We need your help! Please volunteer for an hour or two on Sunday, April 27 from 1 p.m. to 6 p.m at PPPL's Communiversality booth. This is a fun event in downtown Princeton that draws thousands of visitors. Volunteers help with demonstrations, talk to the public, and hand out brochures and prizes. Contact Jeanne Jackson DeVoe, jjackson@pppl.gov, ext. 2757, to volunteer.



BROCK Café Menu at PPPL

BREAKFAST7 a.m. • 10 a.m.
 CONTINENTAL BREAKFAST 10 a.m. • 11:30 a.m.
 LUNCH 11:30 a.m. • 1:30 p.m.
 SNACK SERVICE until 2:30 p.m.

— MARK GAZO, *Chef Manager*

COMMAND PERFORMANCE
CHEF'S FEATURE

**MON. 14
APR.**



Carolina-Style BBQ Chicken with Macaroni Salad

The XL Steak, Onion and Cheese Omelet with Home Fries

Lentil Sausage Soup

Super Sloppy Joe on a Kaiser Roll with Deviled Potato Salad

Open-Faced Chunky Egg Salad on Naan

Aunt Bee's Pork Chop Sandwich with Sweet Slaw & Chili Sauce

**TUE. 15
APR.**



Eggplant Parmesan Towers with Portobello Mushrooms

Banana Walnut Pancakes with Crispy Bacon

Creamy Corn & Vegetable Soup

Boardwalk Sausage & Pepper Torpedo

Picante Roast Beef Sandwich with Lime & Garlic on a Kaiser Roll

Shrimp Quesadilla with Peppers, Onions & Feta Cheese

**WED. 16
APR.**

National Eggs Benedict Day



Build Your Own Burrito served with Beans & Rice

Eggs Benedict Day!

Curried Chicken & Rice Soup

Grilled Peanut Butter, Banana & Honey on Raisin Bread

Italian Antipasto Sandwich

Chicken & Mushroom Quesadilla

**THU. 17
APR.**



Penne Pasta with Prosciutto & Peas in a Pink Vodka Sauce

Marcus McGriddle French Toast with Sausage, Egg & Cheese

Louisiana Gumbo Day

Teriyaki Chicken Steak Wrap with Peppers & Pineapples with Fries

Shrimp Louie Wrap with Hard-Cooked Egg, Cucumber & Tomato

Veggie Burger Pocket

**FRI. 18
APR.**



Asian Grilled Salmon served with Fried Rice

The Philly Pork Roll, Potatoes, Egg & Cheese on a Kaiser Roll

Maryland Seafood Chowder

Scrambled Egg, Broccoli, & Cheddar on a Torpedo with Home Fries

Greek Chicken Souvlaki Pita

Cheeseburger with Tomato, BBQ Sauce, Cheddar & Bacon on Ciabatta

MENU SUBJECT TO CHANGE WITHOUT NOTICE

VEGETARIAN OPTION

CLICK HERE FOR A PRINTABLE WEEKLY MENU

WEEKLY

Editor: **Jeanne Jackson DeVoe** ♦ Layout and graphic design: **Gregory J. Czechowicz**
 Photography: **Elle Starkman** ♦ Web: **Chris Cane** ♦ Admin. support: **Pamela Hampton**

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