

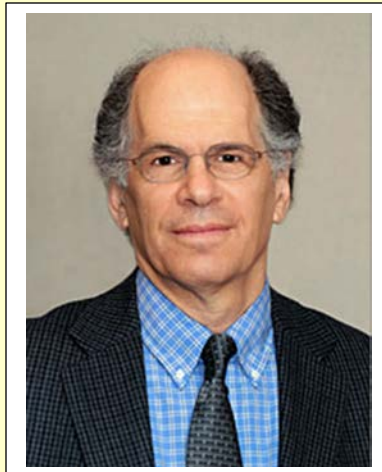
## Safety Culture at PPPL:

We are doing very well  
and we all must do even better

By Stewart Prager

Dear PPPL'ers:

Following the safety incident that occurred on March 8, we are still in the midst of continuing aggressive efforts to assess and improve safety at PPPL. Since the incident, several teams of lab staff have been working hard to investigate the causes of the incident, including lapses in management and safety culture. We are now also investigating safety throughout the entire lab, with an eye toward whether the causes of the past incident might be present elsewhere. The reports compiled to date are available on the ESH&S website at <http://www-local.pppl.gov/esh/Reports.htm>.



As part of the comprehensive review of PPPL safety lab-wide, Princeton University has organized an external review team to provide us with an outside view of safety at PPPL. The team consists of highly accomplished safety experts from other DOE national labs, PSE&G, and the University. The team has already been hard at work reading our many documents and will be visiting the lab for a three-day close-up view on September 5 – 7. The team will be speaking to many staff members; we should all give them our full support and assistance. We very much look forward to this fresh assessment of our safety practices.

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### At PPPL THIS WEEK

#### MONDAY, AUGUST 20

##### **NSTX Physics Meeting**

1:30 p.m. – 3 p.m.

#### TUESDAY, AUGUST 21

##### **NSTX-U Meeting**

9 a.m.

##### **Free blood pressure screening by OMO**

11:30 a.m. – 1 p.m., LSB Lobby

#### FRIDAY, AUGUST 24

##### **D111-D Science Meeting**

1 p.m. – 2:30 p.m.

#### **Attention!**

##### **Take the Google Apps Survey:**

It has been roughly 10 months since Google Apps was implemented here at PPPL. The Laboratory's Information Technology Department is asking you to participate in a short survey to help us learn about your experience with the new system.

Your feedback will be used to determine the areas in which Google Apps excels as well as the areas for improvement.

The survey can be accessed at:

<https://docs.google.com/a/pppl.gov/spreadsheet/viewform?pli=1&formkey=dG45SEdiajJazhZSFZqcTUtLTZUWGc6MQ#gid=0>

Please complete the survey no later than Friday, August 31<sup>st</sup>.

Please contact Steve Baumgartner or Marc Cohen with any questions.

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## Safety Culture at PPPL

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The safety culture survey completed by PPPL staff in May has now been analyzed. The staff rated the overall safety practices and culture at the lab to be of high quality. For example, the majority of staff agreed with the following statements:

- The Laboratory places a strong emphasis on health and safety (90 % of survey results.)
- I always adhere to the core safety requirements of my job (94%)

And only a small percentage agreed with the following;

- Deviation from safe work instructions, rules, and procedures are tolerated as long as there are no accidents (13 %)

However, a significant minority of the staff agreed with the following statements that indicate room for improvement:

- Labor shortages sometimes undermine safety (27 %)
- Sometimes, in order to get work done, safety is compromised (24 %)
- Safety rules and procedures are sometimes ignored (34 %)
- At work, I receive work guidance which is at times vague or imprecise (32 %)
- My primary work group is more safety conscious than others (41%)

And some individual comments on the survey included:

- The output of the management safety walkthroughs and STOP reports indicate a tolerance of repeat safety conditions and actions.
- Meeting the schedule is top priority at PPPL
- I don't see supervisors present in areas where they are responsible
- If your supervisor tells you to do something unsafely, I think most workers will do it because they do not want to be on the bad side of their supervisors.

*"In addition to assessing and making numerous improvements to our safety practices, we are trying to spread the clear message of the primacy of safety in all that we do" -Stewart Prager*

These comments indicate that there are instances at the Lab where safety is compromised in the face of pressure from schedule, labor shortage, or supervisor instructions. We surely operate under time and labor constraints, with pressure to complete work on schedule. But let me be clear: safety should NEVER be sacrificed to meet a schedule deadline in engineering, construction, physics or anything else. No one in the lab should feel pressure, or succumb to pressure, to cut corners on safety. No deadline is that important.

The full results of the survey can be found on the internal ESH&H website (under "Special Reports" within the "Reports & Publications" link).

In addition to assessing and making numerous improvements to our safety practices, we are trying to spread the clear message of the primacy of safety in all that we do. Generally, we are doing very well in safety. But we must do even better. A critical part of this effort is to receive feedback from the lab – suggestions for improvements, information on what is working and what is not, input on our efforts to change. We will be conducting future surveys to track our safety status. But I also encourage you all to provide input to me directly through the director's suggestion box or to the ESH&H Department through the SOS box. Both suggestion boxes are located in the local (internal) PPPL website and can be accessed anonymously.

Thank you for your efforts, past and upcoming, in assuring a safe work environment at PPPL. I will be back in contact after we receive the results of the external safety review.

## *Returning to his Princeton roots:*

### **New Theory Head to join PPPL**

By John Greenwald

**P**hysicist Amitava Bhattacharjee is returning to his academic roots. He arrives as the new head of the Theory Department at the Princeton Plasma Physics Laboratory (PPPL) on August 27, more than 30 years after completing his doctoral work here. He studied at PPPL from 1977 to 1980 while earning his M. A. and Ph.D. in astrophysical sciences from Princeton University, which runs the Laboratory for the U.S. Department of Energy (DOE).

His past came flooding back to Bhattacharjee when he gave a talk at PPPL in February while interviewing for the job, which includes a full professorship in the Princeton Department of Astrophysical Sciences. “When I looked at the audience and saw my former teachers, friends and even former students, I felt that I had arrived,” he said. “That does make this appointment very special to me.”

*Bhattacharjee “brings great breadth, scholarship, and leadership experience to PPPL” –Stewart Prager*

Bhattacharjee comes to PPPL from the University of New Hampshire, where he held an endowed professorship in the Department of Physics and ran the Center for Integrated Computation and Analysis of Reconnection and Turbulence, a joint center with Dartmouth College that is supported by the DOE. Along the way he taught at the University of Iowa and Columbia University, and established himself as a leading theoretician in plasma physics disciplines including fusion energy, space and astrophysical plasmas, and dusty plasmas.

Bhattacharjee “brings great breadth, scholarship, and leadership experience to PPPL,” said PPPL Director Stewart Prager in announcing the appointment. The new department head replaces Allen Boozer, a professor of applied physics at Columbia University who served as interim head of Theory from October 2011 through last May and will teach at Columbia in the fall.

Bhattacharjee takes a broad view of his new role. “First and foremost, I would like to learn what colleagues in the theory group are doing and what really excites them,” Bhattacharjee said. He plans to help develop programs “that continue the PPPL theory group’s pre-eminence in the world in fusion physics and plasma physics more broadly, encompassing space and astrophysical plasmas.”

A key goal will be developing software that high-performance supercomputers can use to simulate the behavior of complex dynamics in plasmas and guide fusion experiments. Creating codes for such computer systems, in which hundreds of thousands of microprocessors operate together, represents the next frontier in computing and “the third leg of discovery, in addition to experiment and theory,” Bhattacharjee said. PPPL is already simulating interesting plasma regimes “in machines that were a dream a decade ago,” he added, and the Laboratory “has a very long tradition of excelling” in the simulation area.

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**Amitava Bhattacharjee, Head, Theory Department, PPPL.**


Photo courtesy of Kristi Donahue, University of New Hampshire Institute for the Study of Earth, Oceans and Space

## New Theory Head

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The fruits of such research could contribute to the National Spherical Torus Experiment (NSTX), the Laboratory's major fusion facility that is undergoing a \$94 million upgrade, and to other fusion projects around the world. These include ITER, the huge fusion experiment that the European Union, the United States and five other countries are building in the south of France to demonstrate the feasibility of fusion power. The Laboratory "has a leading and very important role to play" in contributing knowledge to ITER, Bhattacharjee said. "I hope to help develop a new narrative for plasma theory in the era of ITER," he added, "as fusion moves closer to being realized, and plasma physics thrives as one of the exciting interdisciplinary fields of physics and engineering."

Bhattacharjee grew up in India and received a bachelor's degree in physics with first-class honors from the Indian Institute of Technology in Kharagpur. He came to the United States to study at the University of Michigan, where he earned master's degrees in physics and nuclear engineering before moving on to Princeton.

Joining Bhattacharjee at Princeton will be his wife, Melissa Deem, who has been an associate professor of communication at the University of New Hampshire. She now becomes an associate research scholar and lecturer in the Princeton Program in Gender and Sexuality Studies. The couple has three children: Daughters Shikha, a student at the University of Pennsylvania Law School, and Maya, a recent graduate of the University of Rochester and now a member of the Teach for America Corps in New York City; and son Arun, who is entering elementary school in Princeton. 

## MINDs video highlights the importance of basic research

By Emily Silber

PPPL has taken its Miniature Integrated Nuclear Detection System (MINDS) to the small screen and to a big audience.

In a project managed by the Office of Communications, videographer Kevin Coughlin has created a short video to highlight the key elements of MINDS and the work of the scientists and engineers involved in its design.

The video is part of a package of "Breakthroughs" videos produced by each of the U.S. Department of Energy's national laboratories to showcase the unique research being conducted at these facilities. The PPPL video is currently highlighted on the DOE's website:

<http://www.doe.gov/articles/lab-breakthrough-fusion-research-leads-antiterrorism-device>

Through the video, Coughlin and PPPL collaborators hoped to highlight the impact of scientific research while also showing the determination of scientists to produce new technologies and inventions that benefit society. "It's important to show that basic research can yield surprising and vital results, and deserves support," Coughlin said. "It's also important to recognize initiative shown by scientists like Charlie Gentile, and to acknowledge administrators like PPPL Director Stewart Prager, who create an environment conducive to serendipitous discoveries such as MINDS."

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## MINDs video

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MINDS was developed as an antiterrorism device by a group of PPPL researchers, led by Gentile, Head, Tritium Systems.

Taking a less technical angle, Coughlin also tried to capture the humanistic elements involved in science. “Science doesn’t happen in a vacuum,” he explained. “It’s done by people, for people.” The opening of the video contains images of the wreckage from 9/11 with shots of people covered in white dust and ash being helped out of the rubble. Gentile’s voice can be heard in the background explaining his desire to make the world a safer place. “MINDS was very personal for Charlie,” Coughlin said. “As a native New Yorker, he wanted to do everything in his power to ensure that no city ever experiences the horrors that NYC endured on 9/11. I think this comes across loud and clear in the video, and makes it compelling for non-scientists.”

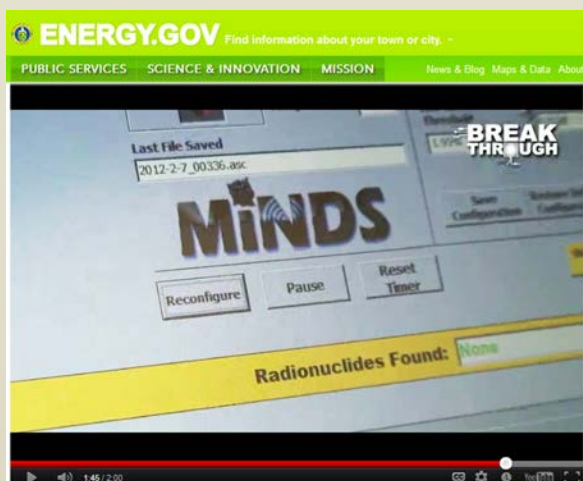
Coughlin explained that the idea of the video started when he met with Kitta MacPherson, Director of Communications at PPPL, and her “ace communications staff and key researchers” for a brainstorming session. “We had a clear idea of what we wanted to achieve and the story we wanted to tell.” Formerly a technology correspondent for The Star-Ledger, Coughlin is an expert at taking complex subjects and making them easily understandable and accessible to general audiences. “The MINDS video is really about the benefits of basic research that the public may not appreciate -- the unanticipated bonuses for society,” Coughlin said.

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In photo at top left, Charlie Gentile, Head, Tritium Systems, PPPL, debuts in “Breakthrough” video production.

In center photo, a glimpse at the MINDs software interface connected to the detector.

In photo at bottom, Kenny Silber, Sr. Systems Administrator for PPPL’s IT Division, demonstrating the MINDs capabilities using a common smoke detector.




## MINDs video

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“We hope that the video will alert society that there are potential radiological threats that can have devastating consequences if they are not thwarted by such inventions as MINDS,” added Kenny Silber, Sr. Systems Administrator for PPPL’s IT Division and one of the co-inventors and lead software engineer of MINDs. “It also shows that PPPL is multi-faceted in that we don’t only concentrate our efforts on fusion research, but also contribute to other societal concerns, in this case the security and safety of our country.”

The creation of the video spanned a period of weeks during which Coughlin returned to the Lab several times to record interviews. “Everyone was extremely cooperative,” he said. “Charlie and members of his team were quite patient in explaining things in layperson’s terms, on- and off-camera.” Using a Sony HD video camera, wireless microphones and a DIY (do-it-yourself) lighting kit, Coughlin collected footage for the video and edited the final product on a Mac using Final Cut Pro.

“I sensed a camaraderie and collaborative spirit in the halls and the labs of PPPL, and the excitement that comes from testing oneself every day against one of the toughest challenges in science,” Coughlin said. “I think it was JFK who said we did not tackle the Apollo project because it was easy, but because it was hard. The PPPL appears to attract people who like the idea of doing the impossible. That’s fun to be around,” he concluded. 

To view the entire series of “Breakthrough” videos, go here:

<http://www.doe.gov/science-innovation/innovation/lab-breakthroughs>



# PPPL Café Menu

BREAKFAST ..... 7 a.m. • 10 a.m.  
 CONTINENTAL BREAKFAST ..... 10 a.m. • 11:30 a.m.  
 LUNCH ..... 11:30 p.m. • 1:30 p.m.  
 SNACK SERVICE ..... until 2:30 p.m.

	MONDAY AUG 20	TUESDAY AUG 21	WEDNESDAY AUG 22	THURSDAY AUG 23	FRIDAY AUG 24
<b>COMMAND PERFORMANCE CHEF'S FEATURE</b>	 <b>PENNE BOLOGNESE WITH A VEGETABLE</b>	 <b>TURKEY PAPRIKASH AND ELBOW MACARONI</b>	 <b>CHICKEN SALTIMBOCCA WITH A WHITE WINE SAUCE AND ROASTED POTATOES</b>	 <b>FISH AND CHIPS WITH TARTAR SAUCE AND A VEGETABLE</b>	 <b>SPICY KUNG PAO PORK OVER BROWN RICE</b>
<b>EARLY RISER</b>	<b>STRAWBERRY AND BANANA PANCAKES WITH WHIP CREAM</b>	<b>THE XL SAUSAGE, BACON, ONION AND TOMATO OMELET W/HF</b>	<b>PORK ROLL, EGG AND CHEESE ON AN OVERSIZED BISCUIT</b>	<b>BREAKFAST PIZZA</b>	<b>BACON, EGG AND CHEESE GRIDDLE SANDWICH</b>
<b>COUNTRY KETTLE</b>	<b>CHICKEN AND WILD RICE</b>	<b>CREAMY POTATO LEEK</b>	<b>PASTA FAGIOLI</b>	<b>COUNTRY VEGETABLE</b>	<b>COUNTRY STYLE SPINACH AND CHICKEN</b>
<b>GRILLE SPECIAL</b>	<b>BACON DOUBLE TURKEY CHEESE BURGER WITH ONION RINGS</b>	<b>TWO BLT DOGS WITH FRIES</b>	<b>SWISS AND MUSHROOM BURGER W/ ONION RINGS</b>	<b>BBQ CHICKEN BURGER TOPPED WITH COLE SLAW W/FRIES</b>	<b>CHICKEN CHEESE STEAK WITH SAUTEED SPINACH AND ONIONS W.FRIES</b>
<b>DELI SPECIAL</b>	<b>GRILLED CHICKEN, RED PEPPERS, TOMATO, PROVOLONE AND BALSAMIC</b>	<b>RANCHERO ROAST TURKEY ROLL UP WITH CREAMY H ORSERADISH SAUCE</b>	<b>CORNEB BEEF AND SWISS WITH SAUERKRAUT AND RUSSIAN DRESSING</b>	<b>ROADHOUSE ROAST BEEF WRAP</b>	<b>TUNA NICOISE ON BRIOCHE</b>
<b>PANINI</b>	<b>CRISPY CHICKEN CORDON BLEU</b>	<b>THE ITALIANO</b>	<b>NAPOLI VEGETABLE</b>	<b>ASIAN PORK BURGER WITH MUSHROOMS, ONIONS, AND TERIYAKI SAUCE</b>	<b>EGGPLANT, MOZZARELLA AND ROASTED RED PEPPERS W/ SPINACH PESTO</b>

**MENU SUBJECT TO CHANGE WITHOUT NOTICE**

[CLICK HERE FOR A PRINTABLE WEEKLY MENU](#)

## WEEKLY

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