PPPL U.S. DEPARTMENT OF ENERGY
PRINCETON PLASMA PHYSICS LABORATORY
WEEKLY
MONDAY, JULY 9, 2012

At PPPL THIS WEEK

THURSDAY, JULY 12

Theory Seminar

10:45 a.m. - Noon ◆ T-169

Dr. Kimin Kim

GFDL Events and Seminars

12 p.m. - 1:15 p.m. ◆ GFDL Smagorinsky Seminar Room

Understanding the Stratospheric Circulation Changes in the Southern Hemisphere

Pu Lin (University of Washington)

www.gfdl.noaa.gov/events

(Gov't, Univ. or 2 other forms of I.D. needed)

FRIDAY, JULY 13

DIII-D Science Meeting

1 p.m. ◆ B-233

PPPL Honors Inventors

The Laboratory recognized 34 PPPL inventors and collaborators for their technical accomplishments at the annual Patent Recognition Dinner at Princeton University's Prospect House on June 28. PPPL staff members and collaborators received one patent and submitted 15 invention disclosures during Fiscal Year 2011.

"The number of disclosures and the breadth of the inventions they represent continues to increase. We are proud of our inventors, and want to encourage all of our research and engineering staff to continue to develop novel concepts and disclose the inventions that derive from their activities," said Adam Cohen, Deputy Director for Operations at PPPL. The PPPL Committee on Inventions includes Adam Cohen, Philip Efthimion, Charles Gentile, Erik Gilson, Terry Greenberg, Henry Kugel, Lewis Meixler (Chair), Ceil O'Brien, Charles Skinner, Michael Williams, Randy Wilson, Irving Zatz, and Andrew Zwicker.

The inventors at the dinner are shown below. From left are Bill Davis, George Ascione, Manfred Bitter, Tom Kozub, Dana Mastrovito, Charles Gentile, Eliot Feibush, Kenny Silber, Eugene "Buddy" Kearns, Charles Skinner, John Schmitt, Richard Majeski, William Evans, and Zeev Toroker. Not shown are William Berdanier, William Blanchard, Adam Cohen, Samuel Cohen, Kevin Diamant, Abraham Fetterman, Nathaniel Fisch, Igor Kaganovich, Stephen Langish, Vladimir Malkin, Abraham Massry, Matthew Milano, James Morgan, Gerard Mourou, Jason Perry, Benjamin Phillips, Yevgeny Raitses, Ernest Valeo, Shana Weber, Andrey Zhmoginov, and Andrew Zwicker.

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Congratulations to New Staff Research Physicists ►

see story on page 2

Congratulations to the New Staff Research Physicists at PPPL

The Laboratory recently announced the hiring of six postdoctoral researchers as staff research physicists. The researchers are Ahmed Diallo, Brian Grierson, Michael Jaworski, Walter Guttenfelder, Mario Podesta, and Erik Spence. "Please join us in congratulating each of them for their strong achievements and deserved advancement," said Stewart Prager, Director of PPPL, and Michael Zarnstorff, Deputy Director for Research at PPPL, in their announcement to staff. Below are short biographies of the researchers.

AHMED DIALLO

Ahmed Diallo (NSTX)

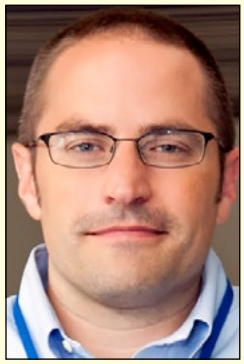
Ahmed Diallo joined PPPL in 2009 as a post-doctoral researcher to conduct experiments on NSTX using the Thomson scattering system, a diagnostic tool for measuring electron temperature and density in plasmas. Diallo, an expert in laser-aided plasma diagnostics, contributed to the recent upgrade of the Thomson diagnostic and was involved in daily NSTX operations. He studies pedestal physics and associated instabilities at the edge of tokamak plasmas. Understanding the physics governing a narrow width at the edge of the plasma —the pedestal — is important for the successful prediction of fusion gain in future fusion reactors, such as ITER. Diallo also develops advanced diagnostics for measuring plasma parameters. Before joining PPPL, Diallo had been a research fellow at Australia National University. He received a Ph.D. in experimental plasma physics from the University of Iowa in 2005. Diallo has authored and co-authored more than 20 scientific papers and presented more than 10 talks. "I was drawn to fusion research because of its huge potential for improving our ability to use clean energy sources," Diallo said. "I also enjoy being part of a research group working toward this common goal to make it a reality."

BRIAN GRIERSON

Brian Grierson (I&T)

Brian Grierson has been on permanent assignment to the DIII-D tokamak at General Atomics in San Diego since receiving a Ph.D. in applied physics with distinction from Columbia University and joining PPPL in 2009. Grierson is currently engaged in measuring the main ion properties of deuterium plasmas. He gave an invited talk on this subject to the 2011 annual meeting of the American Physical Society Division of Plasma Physics in Salt Lake City. "One of the things I try to do when developing tools and programs is to share them with as many people as possible," Grierson said. "This is a big part of collaborative research." As a researcher, "I'm very happy to be in the community of plasma physicists as we're getting ready for ITER," he adds. "This is a great time to be a fusion scientist."

WALTER GUTTENFELDER



Walter Guttenfelder (NSTX)

Walter Guttenfelder tests the ability of gyrokinetic computer codes to simulate plasma turbulence inside the NSTX. "I'm stressing and straining these codes for the NSTX parameters, which are really extreme compared to conventional tokamaks," says Guttenfelder, who received a Ph.D. in electrical engineering from the University of Wisconsin-Madison in 2008. He conducted post-doctoral research at the Centre for Fusion, Space & Astrophysics at the University of Warwick in England before joining PPPL in 2010. Guttenfelder has co-authored 31 refereed papers since 2000 and keeps a baseball glove and a football in his office to toss around with senior research scientist Rajesh Maingi for outdoor recreation. "I like to approach science problems where things look peculiar and weird," Guttenfelder said of his research, "then break them down to where one-plus-one equals two, and then re-build them to help understand how the complex behavior that you observe arises."

MICHAEL JAWORSKI

Michael Jaworski (NSTX)

Michael Jaworski is deputy leader of the lithium research topical science group for the NSTX. His research focuses on probes of the density and temperature of plasma near the plasma-lithium interface. "Plasma-facing components are one of the most pressing issues for fusion," said Jaworski, who gave an invited talk on electron energy distributions to the 2011 annual meeting of the American Physical Society Division of Plasma Physics in Salt Lake City. Jaworski earned a Ph.D. in nuclear engineering from the University of Illinois at Urbana-Champaign in 2009, and spent six months as a postdoctoral researcher there before joining PPPL in 2010. He views liquid lithium as a strong candidate for material for the plasma-material interface, since liquid lithium can be flowed in and out of a tokamak without shutting the machine. Solid materials, on the other hand, are subject to erosion and require periodic shutdowns to replace.

MARIO PODESTA

Mario Podesta (NSTX)

Mario Podesta is a researcher on NSTX whose work focuses on charge-exchange recombination spectroscopy (including real time measurements of plasma velocity), fast ion physics and fast ion-driven instabilities. Charge-exchange recombination spectroscopy is a technique for inferring ion density, temperature and velocity based on measurements of light emitted by impurities that are diluted in the plasma. Podesta joined PPPL's staff as a postdoctoral researcher in 2009 after conducting research on NSTX as a postdoctoral researcher for the University of California-Irvine. Podesta studied nuclear engineering at the Politecnico di Milano University in Italy, and received a Ph.D. from the Plasma Physics Research Centre at the Ecole Polytechnique Fédérale de Lausanne in Switzerland. "Knowing plasma properties such as ion density, temperature and velocity is crucial for a correct interpretation of the plasma behavior. In particular, velocity plays a big role in the stability of tokamak plasmas," Podesta said. "My studies also focus on understanding the interaction between fast ions and a particular class of plasma instabilities called 'Alfvén modes'."

ERIK SPENCE

Erik Spence (PS&T)

Erik Spence, who joined PPPL in 2009 as an associate research physicist, conducts research on the MagnetoRotational Instability Experiment (MRI) and the Liquid Metal Experiment (LMX). He received a Ph.D. in physics from the University of Wisconsin-Madison in 2006 for his research on a liquid-sodium dynamo experiment, and received the Marshall N. Rosenbluth outstanding doctoral thesis award for this work. Spence was a NSERC Postdoctoral Fellow at the University of Toronto in Canada and a postdoctoral researcher at ETH Zürich, Institut für Geophysik in Switzerland prior to coming to PPPL. His research interests focus on the use of liquid-metal experiments to study magnetohydrodynamic instabilities and astrophysical objects. "Liquid metals are cooler than plasmas," Spence said.

— by Patti Wieser and John Greenwald

PPPL'ers tweet about MINDS: From left, Chris Cane, John Greenwald, Charlie Gentile, and Nicole Allen work as a team to answer questions on Twitter about the MINDS device.

In bottom photo, Nicole Allen (left), an engineering summer intern, discusses a tweet with Ken Silber.

PPPL Tweets for MINDS

Charlie Gentile discussed the PPPL-invented MINDS anti-terrorist device with help from the Office of Communications in a DOE tweetup on Thursday, June 28, from 1 p.m. to 2 p.m. The tweetup was part of a DOE series of events to promote its "Breakthrough" videos, which include a video about MINDS that the Office of Communications produced this year.

PPPL shared the hour-long tweetup with two researchers from the Idaho National Laboratory, which has developed a process for producing silicon carbide fiber at a relatively low cost. The tweetup appeared on Twitter's "Trending" board, which means that it was one of the most widely watched events on Twitter at the time. Assisting Gentile during the tweetup were Webmaster Chris Cane, Lead Software Engineer Ken Silber, Science Writer John Greenwald, Photographer Elle Starkman and Nicole Allen, an engineering summer intern who is working with Gentile and who also is a Twitter aficionado.

Gentile tweeted the answers to some 10 questions, or about twice as many as the Idaho researchers fielded, and Cane posted MINDS-related photos to the tweetup site during the event. The PPPL homepage links to Gentile's tweets, which included brief descriptions of how the MINDS device works, the nature of plasma and the role of PPPL.

twitterese

An introduction to Twitterese:

TWITTER:
a microblogging start-up

TWEET:
a single posting

TWEETUP OR TWESTIVAL:
a gathering brought together

MISTWEET:
a tweet later regretted

TWITTER FEED:
a stream of tweets

TWITTERER, TWEETER:
tweet writer

TWEEPS, TWEEPLE:
writers and followers

TWITTERATI:
the most popular tweeters

TWITTERSPHERE, TWITTERVERSE, TWITOSPHERE:
the entire universe of Twitter writers and followers

TWITTIQUETTE:
good manners when tweeting

TWAM:
Twitter spam

TWAFFIC:
Twitter traffic

TWEWBIE:
Twitter newbie

TWISHING:
Twitter phishing scam

TWILLER:
a novel as a series of tweets

TWALKING:
tweeting while walking

Source: PC Magazine

(Above), receiving their awards at the Patent Dinner are, from left, Charles Gentile, Dana Mastrovito, Kenny Silber, and Bill Davis. (Below), the inventors converse before the dinner begins.

Lewis Meixler (left), chats with inventors Dana Mastrovito and Bill Davis during the Patent Dinner festivities. At far left is Charles Gentile. Meixler, the Chair of the Committee on Inventions at PPPL, served as the master of ceremonies during the event.

PPPL BLUEFISHING TRIP

aboard the 80ft. Charter Boat SUZIE GIRL

FRIDAY, JULY 27, 2012 at 5 p.m. (Rain or Shine)
Belmar Marina, 905 Hwy. 35, Belmar, N.J.
COST: $70 *(INCLUDES POLES, BAIT, FOOD, BEVERAGES, FISH CLEANING)*
CONTACT: **Andy Carpe** ext. 2118 / **acarpe@pppl.gov** or
Bob Tucker ext. 3190 / **rltucker@pppl.gov**
RESERVE YOUR SPOT NOW!!! BOAT FILLS UP FAST.
All money due by July 16 — No Refunds.

Brock 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 JULY 9	TUESDAY JULY 10	WEDNESDAY JULY 11	THURSDAY JULY 12	FRIDAY JULY 13
COMMAND PERFORMANCE CHEF'S FEATURE	 CRISPY CHICKEN OVER SPICY MAC & CHEESE	 CREATE YOUR OWN GYRO WITH FRIES	 CHICKEN TETRAZZINI CASSEROLE	 PORK BROWN STEW OVER RICE W/VEG.	 TURKEY MEATBALL PARMESAN HOAGIE
EARLY RISER	Blueberry Pancakes w/ Pork Roll	The XL Broccoli & Cheddar Omelet with Home Fries	Pork Roll, Egg, Cheese and Tomato on a Fresh Bagel	Egg, Sausage, Cheddar, Salsa, Onion Quesadilla	Country Style Biscuits and Gravy
COUNTRY KETTLE	Chicken Rice	Cream of Tomato	Coconut and Curry Turkey Chili	New England Clam Chowder	Spicy Tomato and Chicken Soup
GRILLE SPECIAL	Sloppy Joe Sandwich with Fries	Chicken Tender Parmesan with Fries	Cheese Steak Wrap with Bacon, Onions, Peppers	Chicken Quesadilla Wrap	Hawaiian Burger w/ Fries
DELI SPECIAL	Mini Salad Sandwich Sampler (Choice of 2)	Turkey, Cheese, Cucumber, Lettuce, Tomato	Oven Toasted Roast Beef and Cheddar Hoagie	Fish Filet Sandwich	Caribbean Ham Sandwich
PANINI	Grilled Chicken, Sauteed Spinach, Provolone	Chicken Alfredo Florentine	Prosciutto, Provolone, Red Pepper	Panzanella Panini	Chicken Pesto

MENU SUBJECT TO CHANGE WITHOUT NOTICE

CLICK HERE FOR A PRINTABLE WEEKLY MENU

WEEKLY

Editor: **Patti Wieser** ◆ Copy Editor/Graphic Designer: **Gregory Czechowicz**
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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 Thursday. Other stories should be submitted no later than noon on Wednesday.
Send to: pwieser@pppl.gov ◆ Comments: commteam@pppl.gov ◆ **PPPL WEEKLY** is archived on the web at: http://www.pppl.gov/ppplweekly.cfm