



June 8, 2012

Engineering a Safe Work Environment

The following is an excerpt from Sam Aronson's Director's Message in the Monday Memo of Iune 4.

Associate Laboratory Director for Environment, Safety & Health George Goode and I have been talking about how eliminating hazards is a powerful way to improve the safety, and the efficiency, of operations. We have choices

to make following every event, injury, or near-miss.

Too often, we focus on adding administrative controls like retraining workers or rewriting a procedure. But this approach has weaknesses: Workers from a different shift may have to perform the task, or new workers may not have the new training or be aware of the previous incident. Plus, someone can still



make a mistake or unexpected conditions can change the work environment. For these reasons, administrative controls are usually not the most effective corrective actions in preventing subsequent events ^P and injuries. Often, removing the hazard or implementing engineering controls is a more effective approach. Consider the example

from the cylinder fall I wrote about in the Monday Memo of April 30 and the Bulletin of May 4. The investigation of this material handling incident revealed that the load's configuration was inherently unstable, with a high center of gravity, and it was prone to tip over when moved. It turned out this configuration was specified only because... See Director's Safety Message on p.2

2012 NSLS & CFN Joint Users Meeting





Steve Dierker

Harriet Kung

Notes From the Meeting

It was fitting that the banquet for this year's NSLS/CFN Joint Users' Meeting, which took place May from 21 to 23, was held in the future lobby of the National Synchrotron Light Source II (NSLS-II) ring building. The meeting's theme was "Expanding the Toolbox for 21st Century Science" and the new light source will be one of the most advanced, most powerful research tools in the world. But, of course, there were plenty of current topics to discuss, with NSLS as productive as ever — and headed into another two excellent years — and the Center for Functional Nanomaterials (CFN) steadily growing.

The meeting, attended by more than 400 members of the photon sciences community, was generally upbeat, as always. But mixed with the excitement of NSLS-II coming on line were concerns over tough budgets ahead and the looming closure of NSLS at the end of fiscal year 2014. With two years to go until the light goes out at NSLS, meeting organizers put together a forum to discuss the transition, likely to be the first of many such events. (See a summary of the forum on p.2.)

Associate Director of Science for Basic Energy Sciences (BES) Harriet Kung, part of DOE's Office of Science, did not dance around the serious issues during her talk Monday morning. She frankly discussed the priorities of BES in light of budget cuts and stressed the importance of advertising and promoting BES-sponsored research. Although NSLS-II remains fully supported, she said, the budget as a whole is not sustainable and BES core research programs will suffer a "substantial" hit, although some programs in materials and chemical sciences will see increased funding. Kung also discussed the DOE Energy Innovation Research Hubs, research centers established to help solve critical energy-related issues. The hubs have become important part of BES and are examples of the kinds of projects they are eager to fund. During his NSLS/NSLS-II update, Brookhaven's Associate Laboratory Director for Photon Sciences and NSLS-II Project Director Steve Dierker told the crowd that NSLS will soon begin operating in "bare bones mode" as the transition begins to NSLS-II. There are now

eight project beamlines in the works, he said, with a total of 21 beamlines being designed. Within a few years of the start of operations, NSLS-II will have 30 beamlines. This is a large number in a relatively short time.

CFN Director Emilio Mendez summarized many of the positive developments at his facility, which has grown in users and research capabilities since 2007. He described how the CFN will be linked to NSLS-II, partnering on two beamlines.

Attendees were also treated to a very interesting talk by the meeting's keynote speaker, Gina Kolata, senior writer for science and medicine at The New York Times. She discussed recent advances in early onset Alzheimer's research, which she writes about in an ongoing NY Times series. Her talk included some moving stories she has gathered during her research.

Scientific Workshops

Throughout the meeting, scientific workshops were spread across the Brookhaven campus. They included "Applications of Synchrotron Techniques in Plant Biology," organized by Tony Lanzirotti from the University of Chicago and Tracy Pushon of Dartmouth College. The day-long session began with a talk by Catherin Ronning, DOE Office of Biological and Environmental Research, who gave a concise overview of the BER programs relevant to plant biology. Ryan Tappero of Brookhaven's Photon Sciences Directorate delivered a presentation on metal homeostasis in hyperaccumlator plants with the NSLS x-ray fluorescence microprobe. The talk elicited animated discussion about his research on nickel in Alyssum murale, a flowering plant. "The x-ray fluorescence microprobe techniques available at synchrotron light sources provide an opportunity to look at elemental abundance and distribution for samples in a natural state, even live plants," said Tappero. "With a tunable x-ray probe, you can determine the chemical form, or 'molecular speciation,' of the elements in plant tissue. You need to know chemically what's going on to get at the mechanisms. That's a real advantage over conventional particle and electron probes."

2012 RHIC/AGS Annual Users' Meeting 'Frontiers of RHIC Physics'

Plotting the Future for Computing In High-Energy and Nuclear Physics







Michael Ernst Glen Crawford Joe Incandela René Brun Seth W. Pinsky Hundreds of physicists and computation experts convene to discuss how to expand the limits of data collection and analysis

More than 500 physicists and computational scientists from around the globe, including many working at the world's largest and most complex particle accelerators, met in New York City from May 21 until 25 to discuss the development of the computational tools essential to the future of high-energy and nuclear physics. The 19th International Conference on Computing in High Energy and Nuclear Physics (CHEP) was hosted by DOE's Brookhaven Lab and New York University - leaders in expanding the frontiers of data-intensive scientific research and computational analysis.

The conference was organized by scientists from BNL's RHIC and ATLAS Computing Facility (RACF), which provides computing services for Brookhaven's Relativistic Heavy Ion Collider (RHIC) and the U.S.-based collaborators in the ATLAS experiment at Europe's Large Hadron Collider (LHC) — particle accelerators that recreate conditions of the early universe in billions of subatomic particle collisions to explore the fundamental forces and properties of matter — as well as the collaborators in the Large Synoptic Survey Telescope (LSST) project. A central theme of the meeting was how to keep up with ever-increasing needs for data processing and analysis from such complex experiments in a cost-effective, efficient manner.

"This year's conference, focusing on reviewing experiences gained with current computing technologies and, based on the latter, working on evolutionary or even revolutionary steps to take computing in high energy and nuclear physics to the next level, offers us the opportunity to explore exciting new terrain," said RACF Director Michael Ernst in his opening remarks. "Let me invite you to approach this meeting with Columbus' 'spirit of discovery' in mind, taking advantage of the many rays in which you too might explore the unfamiliar — and discover a great deal in the process." Through an interactive program consisting of presentations, workshops, and poster sessions, participants were encouraged to share experiences with data processing at all stages — from how computers closest to complex experiments such as those at RHIC and the LHC "know" which of the billions of events are important to record and analyze, to the final analyses of petabytes of data that use computing resources distributed worldwide - and explore ways they might collaborate or adapt approaches to push beyond current limits and keep costs down.

(energy, intensity, and cosmic) and the need to adapt the DOE strategic plan to respond to recent budgetary developments. He highlighted the essential role that DOEsupported computing resources play in advancing discoveries across frontiers, including how computational simulations are both guiding and validating experimental approaches, with benefits that extend well beyond the physics community to fields such as medicine, aerospace, and global communications.

In writing the next chapter of discovery, he emphasized the need for more commonality and community planning to avoid "reinventing the wheel." The physics community, he said, "needs to own the science case and sell the science case" for the experiments they would like to do next. That's not to say scientists shouldn't take risks. "Risk taking and results are not mutually exclusive," he said. "Part of maintaining leadership is to push for developments. Push back on what's possible today to make something new possible tomorrow."

Meeting the Computing Challenges

As if answering that call, the range of speakers that followed in plenary and breakout sessions presented the current status of research, the computing challenges they face, and a range of strategies to address them.

Joe Incandela, a professor of physics at the University of California, Santa Barbara, and spokesperson for the CMS collaboration at the Large Hadron Collider, gave highlights from the LHC, including the search for the Higgs particle and prospects for 2012. "Computing is the final step in a long journey to realizing the full physics potential of the LHC," Incandela said.

Various speakers from the physics community and the computing industry presented approaches to maximize dat crunching capabilities by integrating the most recent hardware technology with many processing execution units - manycore processors and graphics processing units (GPUs) — into the data analysis process. Among the topics that received the most discussion were improvements to the experiments' computing models in view of abundant network capacities connecting sites around the world. New services are becoming available that will transform distributed computing by featuring easy and flexible deployment and transparent access to an integrated and powerful system to meet the demands of data-intensive science in a broad scope of research disciplines. René Brun, who will be retiring this year from his position at CERN, talked about the evolution of computing in high-energy and nuclear physics over the past decades, in particular about the ROOT package that he and his group developed, a package that was originally designed for particle physics data analysis and contains several features... See CHEP Conference on p.2

Emilio Mendez Erik Johnson

See NSLS/CFN Mtg. on p.2

The View From DOE

"We live in interesting times, and they are getting more interesting," said Glen Crawford, Director of the Research and Technology Division of the Office of High Energy Physics (HEP) within the DOE Office of Science, referring both to the plethora of exciting physics findings emerging from all three frontiers of high-energy physics

The Bulletin

June 8, 2012



Peter Lee, BES X-Ray and Neutron Scattering Facilities Program Manager, during the NSLS-to-NSLS-II Forum

NSLS/CFN Mtg. from p. 1

While Tappero is focused on phytoremediation, others are using these x-ray techniques to explore bio-fuel production on marginal lands and biofortification of nutrient foods.

Another workshop was titled "Unique Tools for Energy Research: Chemical Analysis of Nanostructures Using Electron Energy Loss Spectroscopy (EELS) and Energy-Dispersive X-Ray Spectroscopy (EDS)."

It was an intensive, three-day workshop at the CFN, where attendees heard several talks on how other users have applied the EELS and EDS techniques to their research and had the opportunity to perform hands-on experiments at five state-of-theart transmission electron microscopes and scanning electron microscopes. The workshop was organized by the CFN's Fernando Camino and Dong Su.

The other workshops were:

- "Organic Materials at the Nanoscale: Physics and Applications," organized by Jurek Sadowski, CFN; and Elio Vescovo, Photon Sciences Directorate (PS)
- "Near-Field Infrared Microspectroscopy for Nanoscience: Methods, Instruments and Sources," organized by Larry Carr, PS
- "New Developments in High Resolution Electron Spectroscopy," organized by Nils Martensson, Uppsala University, Sweden
- "Synchrotron Techniques in Microelectronics Research," organized by Abdul K. Rumaiz, PS; Jean Jordan-Sweet, IBM; Peter Siddons, PS; Jun Wang, PS; and Joseph Woicik, NIST
- "Spin-Orbit Coupling in Condensed Matter: Topological Insulators and Related Materials," organized by Tonica Valla, BNL's Condensed Matter Physics & Materials Science Department
- "X-Ray Beam Position Monitors: Hardware and Experience," organized

by John Smedley, BNL's Instrumentation Division; and Petr Ilinsky, Lonny Berman, Peter Siddons, and Kazimierz Gofron, all of PS.

NSLS-to-NSLS-II Transition Forum

"This is happening."

So said Photon Sciences Deputy Associate Laboratory Director for Programs Erik Johnson during a brief introduction to the forum. His words underlined the immediacy of the situation and set the tone for the user community's first round of brainstorming on how they might navigate a significant period of time of diminished (or even no) beamline capacity for their research at BNL. The forum was just a small, early step, yet a clear message to users emerged: now is the time to begin planning.

The format was loose, with a panel of invited guests from other synchrotrons fielding questions that often sparked lengthy discussions. The panel members were: Piero Pianetta, Deputy Director, Stanford Synchrotron Radiation Lightsource; Dennis Mills, Deputy Director, Advanced Photon Source (APS); and, participating by phone, Zahid Hussein, Division Deputy for scientific support and scientific support Group Leader at the Advanced Light Source.

The input from other light sources is vital. Because NSLS users make up nearly one quarter of the DOE synchrotron user community, its absence will stress the entire system, increasing competition for beam time and cutting out some users altogether until NSLS-II is more fully built out. Many facilities are already oversubscribed, at least on certain beamlines. Nationally, the changes during the transition from NSLS to NSLS-II will result in a 15-20 percent reduction in available beamlines. The situation could potentially be exacerbated during the upcoming APS upgrade without careful coordination among the facilities.

Topics discussed included getting beam time at other facilities, remote data collection, moving NSLS endstations to other facilities, and temporarily sending NSLS staff to synchrotrons that have underutilized beamlines due to inadequate staffing levels. Concerns were raised about the feasibility of regional users' traveling to other synchrotrons and the danger of permanently losing users who are forced to drop or postpone their research. While students would likely have an edge in getting beam time, everyone seemed to agree that advisers should discourage students from becoming involved in projects that would be difficult to complete.

Lanzirotti, a representative for the National User Facilities Organization, put up a spreadsheet of the techniques available at other synchrotrons in 2012, 2014, and 2016. He noted that there would be a national increase in availability by 2016 for certain synchrotron techniques. Many people asked for the document to be available online, perhaps alongside a tool for collecting input from users.

Peter Lee, the BES X-Ray and Neutron Scattering Facilities Program Manager, noted that the NSLS-to-NSLS-II transition is a first for DOE. He encouraged people to "think outside the box" and consider developing collaborations as a way to cope with the challenges of the impending transition and the resulting diminished capacity across the DOE synchrotron community.

Photon Division Director Qun Shen laid out the plan for NSLS-II early operations. The first phase will focus on beam performance and will last possibly six months. It won't be until late in 2014 that some beamlines will be ready for experiments. For example, a few "NxtGen" beamlines, those to be created using existing NSLS equipment, may be ready for users by December 2014.

Safety makes science possible at Brookhaven National Laboratory http://intranet.bnl.gov/safety

Director's Safety Message...... from p.1

...the delivery location was designed to accept the load in that way. In this situation, we could re-train workers to handle the unstable load, and take measures to prevent a tip-over by adding additional workers or other controls.

Or, as a better solution, we could work with the vendor to have the material delivered in a more stable configuration and redesign the delivery point to accept this more stable package.

We'll choose the latter solution, to design a better process to favor stability for safer material handling.

Of course, this incident caused a lot of concern across the Lab community. And out of that concern came good ideas for solutions. Take a look at the feedback I received by way of Monday Memo's Queries and Comments section: *http://bit.ly/LrSyXy*. This is the type of care and thinking I want to encourage from all of you.

This will help us reach a goal we must achieve across the Lab sustained safety and operational excellence. George and I want to impress upon everyone just how powerful this kind of solution is. Generally such solutions require greater engagement of workers, management, end users, and vendors, and they often require additional expense. But they are more effective in creating a safe work environment and should be considered before resorting to administrative controls. This was the topic of George's most-recent "Weekly Injuries and Events" report, which is emailed every Friday to supervisors. In addition to a recap of the week's safety performance, he writes about safety topics to help supervisors have conversations with their teams.

Safety Progress

Turning around the Lab's safety performance has been a major priority, and I'm pleased to report we're seeing progress in several areas. Let's keep the favorable momentum going strong.

We've seen great effort by Lab staff to improve our collective safety performance and safety culture: current injury rates are close to where they were in fiscal year 2010 (our best year ever), injuries resulting in days away from work have decreased, several initiatives have been put in place to target injury-prone activities (such as material handling practices and work planning), and increased communication among employees at all levels is positively changing the safety culture. Every Lab employee must be committed to working safely. The consequences of injury or illness can be terrible for the affected employee and certainly put the Lab's future in jeopardy. Safety must receive permanent, ongoing attention; when we stop focusing on safety, we always see an uptick in injuries following soon after.



CHEP Conference from p. 1 ...specific to this field, but that was also adopted by other fields such as astronomy and data mining.

Networking for the Future

At the Monday evening reception, Seth W. Pinsky, president of the New York City Economic Development Corporation (NYCEDC), enthusiastically welcomed the computing group to a city he hopes will play a major role in technological advances of the 21st century. He described a range of initiatives aimed at expanding the city's economy and positioning New York as an international center for innovation, including the recent announcement to establish a graduate scientific research center on Roosevelt Island in partnership with Cornell University and Technion, Israel Institute of Technology. "Cities that are leaders in the innovation economy in the 21st century will be leaders in technology, have significant creative sectors, and will have a vibrant business community with a dynamic mix of world leading big companies and pioneering startups," Pinsky said. Attracting renowned research institutions such as BNL and NYU to convene high-tech meetings such as CHEP in NYC, and establishing a graduate center as a core of applied sciences activity right in the heart of the city, he said, positions New York as one of

those forefront leaders in innovation and advancement fueled by science.

As Michael Ernst concluded, "The meeting was a great opportunity for real-world networking among the people who have built a computing ecosystem that innovates via its diversity." There are countless technological as well as operational examples for this innovation, he said - innovation that starts from a small university group, or a fringe community, and is disseminated across the entire ecosystem because of the relation ships among various partners, and over time becomes the new default based on the merit of the initial idea, implementation, hardening, and ultimately ease of use. "This system of evolutionary development is a solid foundation for future scientific discoveries at Brookhaven, the LHC, and beyond," Ernst said. Karen McNulty Walsh Note: Special thanks go to the members of the local organizing committee who made CHEP 2012 possible: Maureen Anderson, Mariette Faulkner, John DeStefano, Ognian Novakov, Ofer Rind (co-chair), and Tony Wong (co-chair), all from BNL; Kyle Cranmer and his graduate students at NYU; and Connie Potter of CERN. Thanks also to Krista Reimer of BlueNest Events, the operations staffs at NYU's Kimmel Center and Skirball Center, and Tallen Technologies for videotaping and poster board *display services.*

— Laura Mgrdichian

Employee Lunchtime Tour: Lab Water Treatment Plant, 6/15

On Friday, June 15, all are invited to visit BNL's Water Treatment Plant to see how the Lab ensures its supply of clean water. Meet at noon in the lobby of Berkner Hall to start the tour. You will return to Berkner by 1 p.m. No reservations are needed.

Next Blood Drive: 6/19, 20

BNLers have a legacy of caring. For the past 30 years, employees and guest have generously rolled up their sleeves at blood drives on site to give of themselves for the Long Island Community.

To be a blood donor you must: bring a valid photo ID, weigh a minimum of 110 pounds, be between the ages of 16 (with parental permission) and 75 years old (76+ accepted with a doctor's note), eat well (low fat) and drink fluids, and not have donated blood in the past 56 days. Restrictions may apply to individuals from the United Kingdom and Europe.

Schedule an appointment online: *http://intranet.bnl.gov/hr/blood-drive*, or, call Liz Gilbert, at Ext. 2315.

- Departures -Alan Dion...... Physics Joseph Labas Quality Mgmt Xiangbo MengChemistry Dhiraj Naik Env. Sciences Yuko Shiroyanagi Magnet Hidekazu Tanaka Physics Mary Ellen Weilbrenner ... Medical Jia ZhouChemistry

2012 RHIC/AGS Users' Meeting, 6/12 - 15 'Frontiers of RHIC Physics' — Deadline to RSVP Today, 6/8

The 2012 Relativistic Heavy Ion Collider and spin physics. These two workshops will (RHIC)/Alternating Gradient Synchrotron (AGS) Users' Meeting will be held at BNL from Tuesday to Friday, June 12 to 15. The theme of this year's meeting is "The Frontiers of RHIC Physics," a topic of great importance to the RHIC community. The meeting will be focused on the latest results from a variety of running conditions that have been explored in recent years, as well as the possibility of extending RHIC physics to uncharted territories. All are encouraged to attend the workshops on Tuesday and Wednesday to learn and share different points of view on the future of RHIC.

Day One: Physics workshops on heavy ion Nuclear Physics.

run in parallel.

Day Two: Workshop on both machine and detector upgrades and a workshop on eRHIC. Topics will include overviews of current machine and detector plans, discussion of the long-term future of heavy ion physics at RHIC, the decadal plans of the existing experiments, and discussions of machine and detector options for eRHIC.

5-6 p.m. Distinguished Lecture. The day will conclude with a one-hour distinguished lecture on "The Future of Nuclear Physics in the U.S." from DOE's Timothy Hallman, Associate Director of Science for

Day Three: Plenary Session consisting of presentations from all RHIC experiments, BNL management, and funding agencies. It will also include talks on machine operations, thesis awards, and the accomplishments of the National User Facility Organization (NUFO).

Day Four: The last day of the Plenary Session will focus on the outlook of RHIC physics and machine upgrade plans towards the future physics at RHIC and eRHIC. It will also include a summary of UEC activities, UEC election results, and poster awards.

The deadline to register is today, June 8. Register and obtain more information online: www.bnl.gov/aum.

Magnetic Materials, Bleeding-Edge Technology and NSLS: **Questions and Answers With Brookhaven Lab's Darío Arena**

Darío Arena is a scientist at Brookhaven Lab who studies magnetic materials - not the magnets you find on a refrigerator door, but much more complex magnetic materials that are used in everything from electricity generators to computer hard drives and magnetic resonance imaging (MRI) machines that doctors use to look below our skin to diagnose health conditions.

Arena, who lives in Huntington, NY, works in BNL's Photon Sciences Directorate at the National Synchrotron Light Source (NSLS). The NSLS is a huge machine that produces very bright light of many different wavelengths, including the x-rays that Arena needs to probe the magnetic characteristics of compounds and alloys that advance industry and technological applications.

Arena gave the 478th Brookhaven Lecture last month, but in case you missed it, you can meet him and find out about his work here. Joe Gettler

How long have you worked at Brookhaven Lab?

That depends on when you start counting. I came to BNL in 2001, but was employed by the Naval Research Laboratory on a National Research Council Research Fellowship. I was hired by NSLS as a postdoc in 2003 and became a member of scientific staff in 2006.

What's cool about your work?

Without advanced magnetic materials, we could not support our technological civilization. Cloud computing, wireless communication, the Internet, advanced medical imaging and many other technologies could not exist without magnetic materials. We try to develop better materials to provide more efficient performance and even entirely new applications.

What do people need to know about magnetic materials to understand what you do?

Think how a gyroscope works. When its rotor spins fast enough, the gyroscope has two poles, a "top" and a "bottom," and it can balance upright. This illustrates a concept we call angular momentum. The strength of a magnet relies on angular momentum of its atomic constituents. In complicated magnetic alloys, there are lots of tiny "gyroscopes" ordered in different directions and we want to assemble these magnetic ma-

terials into layered structures to enhance certain properties.

What are you working on now?

I use the special tools at NSLS to understand the origins of magnetic ordering in a variety of materials. Recently, a focus of my research has been to use x-rays from the NSLS as a "strobe light" to examine the dynamics, or motion, of magnetism for different elements in a complicated alloy or a structure containing multiple layers. With this approach, we can resolve dynamics on a picosecond timescale, measured in trillionths of a second.

Why do this at BNL?

The NSLS has a long and distinguished tradition with advanced x-ray techniques to examine materials at the "bleeding edge" of technological applications, and magnetic materials have always been part of that history. The capabilities and experience found here are unique.

Have your efforts contributed to any discoveries?

which affects a magnet's strength. At BNL's National Synchrotron Light Source, Darío Arena studies complicated magnetic alloys containing lots of tiny "gyroscopes" for layered structures with enhanced properties in advanced applications, from cloud computing to medical imaging.

Highlight in the Department of Energy PULSE newsletter.

Who does your work benefit?

Our research benefits U.S. industry (magnetic data storage, microwave communications and radar, and permanent magnet manufacturers). Mainly, however, it is for fundamental knowledge.

Who do you work with?

I mainly work with outside collaborators, who represent both local academic institutions such as Columbia, New York University, Yale, and Northeastern, as well as international collaborators in Sweden and the United Kingdom. Closer to home, I've recently started to collaborate with Dr. Yimei Zhu of Brookhaven Lab's Condensed Matter Physics and Materials Science Department.

Who funds your work? And why are they interested in what you're doing?

formational energy research that industry alone can't or won't support because of higher risk for failure, while success would create serious benefits for the nation.

Which award are you most proud of?

The National Research Council fellowship I received was awarded for original research and the program is quite competitive.

Do you have any special talents?

Nothing unusual, I'm afraid. For relaxation, I play volleyball and Ultimate Frisbee, and I read a lot.

What are you looking forward to for your future research?

I'd love to be able to continue this kind of research at NSLS-II, which will play a transformational role in my research. NSLS-II's bright beams will allow us to focus on very small dimensions with very high beam intensity. The building will also be extremely stable to insulate experiments from vibrations that happen all around us throughout the day. That will allow us to look at magnetic materials for more subtle, smaller effects that we couldn't see before.

CALENDAR - WEEK OF 6/11

Tuesday, 6/12

2012 RHIC/AGS Users' Meeting Workshops. See left.

Wednesday, 6/13

*2012 RHIC/AGS Users' Meeting Workshops. See left.

*Voting Registration Assistance 11:30 a.m.-1:30 p.m. Berkner

Hall. See below, left. *Distinguished Lecture by DOE's

Timothy Hallman

5-6 p.m. Berkner Hall. Timothy Hallman, DOE's Associate Director of Science for Nuclear Physics, will speak on "The Future of Nuclear Physics in the U.S." All are welcome. See left.

Thursday, 6/14

*2012 RHIC/AGS Users' Meeting Plenary Session. See left.

Honoring Flag Day

11 a.m.-1 p.m. Berkner Hall. The Brookhaven Veterans Association (BVA) will collect American flags no longer fit to serve as a U.S. symbol. Bring flags, the BVA will dispose of them properly.

*Voting Registration Assistance 11:30 a.m.-1:30 p.m. Berkner Hall. See below, left.

Friday, 6/15

*2012 RHIC/AGS Users' Meeting

Plenary Session. See left. *Employee Lunchtime Tour Noon. Berkner Hall lobby. See notice, p.2.

- WEEK OF 6/18 -

Monday, 6/18

*Defensive Driving Class, Part 1. 6-9 p.m. Berkner Hall, Room B. Part 2, 6/20. See notice below.

Tuesday, 6/19

Blood Drive 9 a.m.-3 p.m. Brookhaven Center. See notice, p.2.

Wednesday, 6/20

Blood Drive

9 a.m.-3 p.m. Brookhaven Center. See notice, p.2. 479th Brookhaven Lecture

p.m. Berkner Hall. Jörg Schwender, Biology Department, will speak on a topic to be announced. All are welcome.

IBEW Meets Tuesdays

The monthly IBEW meetings held at Knights of Columbus Hall in Centereach now will be held on Tuesdays, not Mondays, until further notice. The next meeting will take place on Tuesday, June 26.

Water Quality Report Correction

In the 2012 BNL Water Quality Consumer Confidence Report issued on May 25, 2012, the table on page 3 contained an error. For Chlorides, which are reported in micrograms per liter (mg/L), the Regulatory Limit, or MCL (for maximum contaminate level) should be 250, not 2.



A balancing gyroscope illustrates a concept called angular momentum,

Yes. For example, we have found a number of previously unreported effects such as a weak but important interaction in magnetic multilayers similar to read heads in magnetic disk drives, and an unusual "hidden" magnetic configuration in thin films of ferromagnetic oxides. This last project was identified as a Science and Technology

My work is funded through the NSLS and hence through the DOE Office of Science. I am also a co-recipient of an Advanced Research Projects Agency-Energy [ARPA-E] grant from DOE. The ARPA-E program is designed to support creative unique trans-

Defensive Driving: Two Parts, 6/18 & 25

The next six-hour Defensive Driving (point & insurance reduction) course will be held in two parts on consecutive Mondays, June 18 in Berkner Hall, Room B, and June 25 in the Brookhaven Center South Room, 6 to 9 p.m. The course is open to BNL, BSA and DOE employees, BNL facility-users, contractors, guests, family members, and friends, at \$33 per person. Preregistration is required. To register, call Ed Sierra, 821-1013, and leave a message. Or complete a New York DMV Approved Course Online for \$39.95 with discount (Use code: "SAVE10" for \$10 discount): www.lidrivesafe.com.

Ben Ames Wins Flame Challenge

The Center for Communicating Science at Stony Brook University announced that Ben Ames, a Ph.D candidate at the University of Innsbruck in Austria, won the Flame Challenge - Alan Alda's challenge to explain what a flame is in a way that an 11-year-old would find intelligible and fun. See it here: http://flamechallenge.org/

Voting Information, Assistance, 6/13-14

Members of the apolitical League of Women Voters will staff a table in Berkner Hall lobby from 11:30 a.m. to 1:30 p.m. on Wednesday and Thursday, June 13 and 14. They will answer questions and provide forms for voter registration, change of address, and requests for absentee ballots. All are welcome.

TIAA-CREF Retirement Counseling, 6/18

A TIAA-CREF consultant will visit BNL on June 18 to answer employees' questions about financial matters. Call 1-800-732-8353 or go to www.tiaa-cref.org/bnl and select "set up a meeting."

Cycletrons Annual Noontime Gathering, 6/18 Celebrate 'National Ride To Work Day'

The BERA Cycletrons Club is planning a noontime gathering on Monday, June 18, to attract new members, support motorcycle safety, and commuting to work. Join in for pizza lunch at noon at the Gazebo, \$5 per person. All welcome. Rain or shine. Contact Frank Dusek, Ext. 2022, dusek@bnl.gov.

Classified Advertisements

Current job openings and a statement of job placement policy at BNL are available on the homepage at www.bnl.gov/HR/careers/. To apply for a position, go to www. bnl.gov and select "Search Job List." For more information, call Ext. 2882.

Motor Vehicles & Supplies

11 HONDA ACCORD - 0 mi. V6, Ex Sedan, a/t, dealer maint, new tires/struts, minor body work, like new, \$4,850. 398-3203.

11 COOLSTER PITBIKE - like new Pitbike, 125cc, semi a/t, excel cond, helmet incl size M. \$450. William, Ext. 7117.

08 JEEP GRD CHEROKEE LAREDO - 42K mi. V6, excel, dealer-maint w 30K service, orig owner. \$16,000 neg. 995-0816 10a-7p. 05 JEEP WRANGLER 4X4 - 86K mi. a/c, c/c, hardtop, 6 spd manual trany, running brds, tow pkg, 1 yr warr. \$11,900. Ext. 5711. 02 JEEP GRD CHEROKEE - 108K mi. 4.0 six cyl 4X4, a/t, new tires, brakes, batt, radio w/ipod input. \$4,500 neg. 872-8966. 01 TOYOTA TACOMA - truck, 43.3K mi. vg mech. 4/spd, a/c, a/t, cargo bd linr, clth tilt bnch seat, 4-cyl, 2w/d, 2.4 ltr. \$9,000. Mary, Ext. 6344. 00 MERCEDES-BENZ E-320 4MATIC -97.5K mi. mint, gar, awd, lthr, Sport Pkg, m/ roof, 4 brd new tires. \$9,700, 678-6605.

99 ISUZI RODEO SUV - 148K mi. manual trany, gd running cond, \$2,300. 398-3203. 98 HONDA CR-V - 196K mi. ex trim, a/t, a/c, abs, c/c, p/w, p/l, am/fm cd/cass, r/rack, gd cond, orig. n/s owner. \$3,500 neg. Ext. 5706. 97 NISSAN MAXIMA SE - 177K mi. a/t, gd trany, recnt fr/rr brakes, rotors/struts, fr axles more, lthr, s/roof, \$3,200 neg. 208-0309. 97 HONDA PRELUDE - 81K mi. 2dr coupe, a/t, a/c, p/d, p/w, c/d, 4-whl disc w/ABS, m/roof, 4 extra wheels w/snow tires. \$4,000. Ext. 8403. TIRES – 205-65-16, gd.cond, \$25/pair, 205-65-15 mounted on 5 bolt steel rims, \$20/ ea. Steve, Ext. 4719 or sbennett@bnl.gov.

Boats

20' SEARAY BOWRIDER - '91, I/O 350cu in, new alum trailer, mint, extras. \$4,500 neg. Kenneth, Ext. 7268, 928-1254. 14' SUNFISH SAILBOAT - w/trailer, gd cond. \$600. Michael, 921-1616.

Furnishings & Appliances

47" PANASONIC TV - widescrn rear projection, No HDMI inputs/\$25; Ig tv, pic-up needs truck/van, Brent, Ext. 2455.

CALPHALON UNISON PAN - new in box, 12", sear pan, see-thru cvr, nonstick anod-ized alum, dw-safe, ask \$95. Joe, Ext. 4259. CHILD'S DRESSER/CHANGING TABLE 13 yrs old - white. Grt condition. \$100. 678-3299 or dgordon@bnl.gov.

IKEA FUTON, COMPUTER TABLE SET chair, lamp, Hamilton M/wave, http:// tinyurl.com/csj2u7c. Ruchik, Ext. 8804. MOVING SALE - Kg & Qn mattresses + box springs, snow shovl, desk, baby stuff, more, http://tinyurl.com/7ffo3jf. 995-0816. PORTABLE HOT TUB - 4 person, 12 jets, int. lights, vinyl cover, runs well. runs on 110, \$650. Donna, donnamna@aol.com. RATTAN PORCH SET - Mid Century 3 Band set, couch 71"w, 2 chrs 26"w, pics avail, as is/\$125. brookhaven@optonline.net.

SOFA/BED, L/SEAT, CHAIR - sofa pullout bed, love seat, wing chr w/mahog legs, pics, excel cond, \$325/obo. 662-8155. TVs - 13" Sharp, \$25; 46" Panasonic rear

projection LCD w/remote. \$100. Lynda, Ext. 7235 or fitz@bnl.gov. TWIN BED - incl mattress, photos avail

\$100. Peter, Ext. 4955, pwarnicke@bnl.gov.

Audio, Video & Computers

APPLE COMPUTER PRODUCTS - studio display mon., pwr Mac G5 Processor, no hd, more, \$499/all, pics. gailpohern@gmail.com. IPHONE 4 - white, new in box 8GB, \$400 setup for AT&T, Don, ddavis@bnl.gov.

Sports, Hobbies & Pets

'04 KODIAK K235 CAMPER - 23'L, slide out, dinette, couch, 2 g/bds, m/wave, oven, full ba, heat, a/c, awning, sleeps 6+, \$8000. Ext. 7978. EDDIE BAUER BOCCE BALL SET - new w/



Students and staff from Nassakeag Elementary School with BNL AdoptaPlatoon volunteers. The students filled 50 boxes with supplies for U.S. troops.

Little Kids, Big Hearts **Local Students Gather Donations for Troops**

Inside the walls of the Nassakeag Elementary School in Setauket, students have been very busy collecting and packing up boxes of supplies for U.S. troops. The supplies were donated to the Lab's AdoptaPlatoon (AAP) group, who will mail the boxes to deployed military personnel. Donated items included various toiletries, socks, ready-to-eat soup, pillows, hand warmers, and games.

At the school, BNL AAP volunteers John McCaffrey and Michael Paquette were astounded when they walked into the classroom and found a tower of 50 large boxes decorated in red, white, and blue — all filled to the brim with supplies.

"My jaw dropped. There were so many boxes that I thought they might just be props for a photo," said McCaffrey. "I was amazed, not only at the amount of items, but at the way each box was decorated."

"Even more inspiring was that every box included cards handmade by the students," added Paquette. "We know the troops will enjoy reading these cards that add a special touch to every box.

"We appreciate the hard work of the students and the leadership of the teachers and school personnel who coordinated this project," said McCaffrey.

McCaffrey and Paquette said that this is the largest donation to AAP so far. The project, which included students from 28 classes, was led by kindergarten teacher Joan Sperry, who formerly worked at the Lab, and sixth grade teacher Judy Larsen, with support from Nassakeag Principal Gail Casciano and Assistant Principal Jim Williams.

"We are trying to instill in the children that every good deed starts a good chain reaction," said Sperry. "Each time they do something nice for someone, we recognize them by adding their name to a link on a paper chain. It gives them a sense of accomplishment."

Sperry proudly displays the paper chain in the hallway outside her classroom. Chains from other classrooms can also be seen winding up and down the hallways of the school.

Larsen's sixth graders helped the kindergartners with the project.

"It really was a joint effort," she said. "My students thoroughly enjoyed helping the younger children decorate and assemble their boxes. It gave them a sense of pride and community, which is so important."

Students were asked to bring in donated items, and also to earn money to buy more by doing chores at home.

"Obviously, they were happy to comply," added Larsen, looking at the stack of boxes.

When asked what this project meant to them personally, the students readily responded with comments such as, "I'm happy to help our soldiers," "Please stay safe," and, "Now the soldiers won't have holes in their socks because we sent them new ones."

With the project a huge success, the teachers plan to do it next year. "We appreciate the hard work of the students and teachers," said Paquette. "These donated items that most of us take for granted really make a difference to those away from home serving and protecting our country." — Jane Koropsak

GPS NAVIGATOR - JVC KV-PX9S, v/gd cond, incl accessories/\$30, see http:// tinyurl.com/6swgzoz. 678-2651.

HOT TUB - Portable 4 person, 12 jets, interior lights, vinyl cover, runs well, \$650. Donna, donnamna@aol.com.

INFANT CAR SEAT - w/base \$40/swing/\$20, toddle & infant tub/\$15/, Vintage Table clothes/napkins. forenza.lady@yahoo.com. MEDELA NURSING PUMP - Double sucw/quality items, furn, Sat. 6/9, 9a-3p, 5 Hilltop Rd, 1 mi n. of train sttion, cross st, Quaker Path. 988-1293.

Car Pool

PLAINVIEW LIBRARY - Estab carpool needs 4th. 8am - 4:30 pm, leave Plain-view-Old Bethpage Library @7:15, Elliott Ext 2495, Pat Ext 6195. Leon, Ext. 2682.

EMS and OSH Management System Audits, 6/19-22

By Bob Lee, EMS Management Representative; Ed Nowak, OHSAS Management Representative; John Selva, EMS/OHSAS Project Manager

BNL's commitment to Integrated Safety Management includes certification to the ISO 14001 Environmental Management System (EMS) and OHSAS 18001 Occupational Health and Safety Management System (OHS).

These rigorous standards are a framework for the Lab to continually improve environmental, safety, and health performance. Each requires an annual audit to maintain certification and allows us to display the mark of certification for NSF International, a not-for-profit, non-governmental organization that is the world leader in standards development, product certification, education, and risk management for public health and safety.

From June 19 to 22, select groups will be subject to audits by NSF International. The audits are scheduled with your EMS and Occupational Safety and Health (OSH) representatives and will occur in the following areas:

- Collider-Accelerator Department
- Community Relations Office
- Environment and Life Sciences Directorate
- Environment, Safety & Health Directorate
- · Facilities and Operations Directorate
- Global and Regional Solutions Directorate
- Photon Sciences Directorate
- Physics Department
- Superconducting Magnet Division
- Training Office

What All Employees Should Know

While not all employees will be interviewed, all are expected to know that the Lab has an Environmental, Safety, Security, and Health Policy. This policy is posted throughout the Lab and is available at *http://www.bnl.gov/bnlweb/PDF/ESSHP.pdf*.

Also, all employees must be familiar with the environmental, safety, and health aspects and hazards associated with their work and the consequences that could result from performing work outside of established controls. This is of particular importance with summer student programs.

For information about these programs or the audit, contact:

Environmental Management System (EMS)

Robert Lee, Ext. 3148 John Selva, Ext. 8611 Your EMS Representative Your Environmental Compliance Representative (ECR)

Occupational Safety & Health (OSH) Management System

Ed Nowak, Ext. 8211 John Selva, Ext. 8611 Your OSH Representative Your Safety & Health Representative

RETIREMENT DINNER - Join us in wishing our good friend and colleague Paul Ribaudo all the best in his well deserved retirement. 7 pm, Fri. 6/22 at the Cooperage Inn. \$47 includes Dinner and Gift. Dan, Ext. 2121 or oldham@bnl.gov. THE KING AND I AT NFCT - Don't miss the final weekend in Mattituck, this Thurs, Fri, Sat at 8:30pm, \$20 at www. nfct.com. It takes a community to buy a theater! Laura, Ext. 2520.

WOUNDED WARRIOR BIKE TOUR - July 21 - WWP bike tour from Amagansett to Sag Harbor & return 30 mi and to Montauk 60 mi. Looking for people to ride and support this event. BBQ after. Michael, Ext. 5891

Free

32" TUBE TYPE TV - works. Brent, Ext. 2455.

Wanted

BOOK - CATCHING FIRE - By S. Collins to borrow/read/return. Heather, Ext. 4138. FIREARMS - Firearms Wanted, New or will pay tair s depending on con dition. Joe, 487-1479.

MANORVILLE - 3 bdrm, 3 bath, furnd/unfurnd nonsmkr, no pets, utils not incl, 7 mi to lab. \$1,600/mo. Mikki, 516-445-9386. MASTIC BEACH - 4 bdrm Banch, quiet st, full bath, newly painted, pets OK, sec. \$1,600/mo. Ext. 7658 or ahearnd@bnl.gov. RIDGE - 1 bdrm, kitchenette, full bath, mins to Lab, incls all, sep ent/prkg. \$975/ mo. Lynne, 924-0002.

RIVERHEAD - 3/bdrm, 2/full ba, Western Ranch, kit, dw, l/r, d/r, gar, new windows & furnace, quiet, nr shops, no smkg/pets, refs. cc reqd, 1/mo sec + util. \$2,250/mo. 512-6470. SELDEN, NY - 2br1ba single hse, fenced yd, quiet, w/d,15 min to BNL, 1 mo rent/ sec. \$1,350/mo. 835-5814.

SHOREHAM - 1 bdrm furn apt, l/r, d/r, full kitch & bath, pvt ent/drwy, util incl, no smkg/pets, 1 mo sec, 5 min to Lab. \$1,150/mo. Judy, 357-7959.

For Sale

BAYPORT - 2300 sq ft, Frank L. Wrightstyle mid-cent.-modern hse, 1 wooded acre nr Grt S Bay 4 bdrm 21/2 bath oper flr plan, Ig windws, radiant heat, excel schools, \$525,000. 617-332-6264.

STONY BROOK - Tag/Yard/Garage Sale,

e mesned carry case, \$40. philb@bnl.gov. OUTDOOR DOG KENNEL /RUN - 7.5' x7.5' kennel fr Pet Safe, 4'h, ask/\$120, in Rocky Pt. Melanie, Ext. 3906.

PATIO CANOPY - used 1 yr, has canopy that zips on multiple sides to keep out bugs, easy assembly, \$30. Ext. 4138.

POOL LADDER - For Aboveground Pool. Steps go into the water. Hardly used. \$50. Pics. Nina, 813-0497, vbri1@aol.com. STALLS FOR RENT IN RIDGE - lit ring, plenty of trails, TLC for your horse, sep turnouts, clean, nr Lab! \$525/mo. 924-0002

WOMEN'S SURFBOARD - by Blue, 7'6, 21.5, 2 7/8, grt cond, w/leash, pics avail, \$300/obo. Bryan, Ext. 2765, 320-4822.

Tools, House & Garden

GARAGE DOOR - 8x8 white insulated dr w/glass panels rails incld, nice shape/\$200. Jack, Ext. 7939.

Miscellaneous

GAME OF THRONES BOOKS - Volumes 1 & 2, excl cond, \$10/all. Mark, Ext. 7978. tion at same time, \$150, Nina, 813-0497.

STOUFFER'S COUPONS - free Corner Bistro Sub coupons valued @ \$3.49, selling .50/ea. Heather, Ext. 4138.

WIRELESS PHONE - Virgin Mobil Pre-Paid Arc Phone w/140/balance, ask/\$40. Steve, Ext. 4719 or sbennett@bnl.gov.

'ZARCANA' TICKETS - Radio City Music Hall, to see Zarcna, Sun, June 10, 2pm, sect 3Rdmz4 Row B seats 411, 412, 413, all 3/\$200/neg. Trish, Ext. 6044, 828-2446.

Yard & Garage Sales

BROOKHAVEN HAMLET 11719 - Moving Sale-10 Locust Road, 6/8 & 9th 8a-4p. tools, collectibles, furn, fishing reels, record albums more. brookhaven@optonline.net. MILLER PLACE - Sat, 6/9, Sun, 6/10, 9a-4p, 11 Cypress Ct, off Millr Place-Yaphank Rd, full mttress set/frame. d/r set. furn, clothes, toys, games, more. Ext. 5669, harringt@bnl.gov.

ROCKY POINT - Multi Family, Oak Rd, Sat, 6/9. Oak is off Nymph Rd, which is off Rocky Pt Landing Rd. Melanie, mschwart@bnl.gov.

nappenings

DINNER/SHOW OUTING - for Jonah at Sight n Sound Theatre in PA, Sat, Oct 13, 2012. Deposits due now, call for details. Kim, Ext. 2896, 399-3098, khayes@bnl.gov. KEITH NINTZEL 5K RUN/WALK - A 5K Run/Walk will be held Sat. June 9. 9am through South Sayville to benefit scholarship programs, email for registration form or online @ www.sayvillerunning.com Thanks. Gary, Ext. 2576 or nintzel@bnl.gov. NAT'L RIDE TO WORK DAY – Cycletrons MC Club annual lunch, the Gazebo, noontime June 18th, \$5pp, Support MC commuting & safety awareness. Frank D, 344-2022 or FrankD@bnl.gov.

PANCAKE BREAKFAST - St. Andrew's Episcopal Church, Yaphank, Sat, 6/30, 8a-noon, \$8/adults, \$4/Srs & kids 5-12, gd food, fellowship, raffles! Bring canned food item for LI Cares. info@standrewsyaphank.org.

RETIREE DICK WITKOVER – will present a multi-media program, "Tanzania Photo Safari" at the Riverhead Library, 6/18, 5pm, call to register. 727-3228.

GROCERY STORE CARDS – King Kullen or Stop & Shop needed for families at Thee Island INN soup kitchen in Middle Island; any amount greatly appreciated. Barbara, royce@bnl.gov.

MATTRESS - QU SZ - w/Boxspring, Head Board if poss. Thank you! Rick, Ext. 3005. MONTAUK WEEKEND SUMMER RENTAL looking for hse that sleeps ~10, wkend of July 20th. ababer@bnl.gov.

POP TOPS FROM SODA/BEER CANS collecting for Shriner's Children's Hospital, please send or drop off @ Bldg 400A, Transportation Office. Paula, Ext. 2535.

For Rent

CENTER MORICHES - 1 bdrm apt, full bath, Ig closet, eik, sep bldg, close to all, nice area. \$925/mo. 325-2549.

CORAM - priv rm & b/r, share lg home w/2 males, incls all, off st prkg, safe n'hd, furnd/unfurnd, be agreeable to backgrd/credit check, 1st mo rent/1 mo sec. \$550/mo. 848-4381.

PORT JEFF STATION - Ig upper 1 bdrm, 1 bath Co-op, eik, new applis/windows, a/c, d/w, Indry,/pool on site, great location. \$91,000 neg. Megan, 828-2743.

RIDGE - custom mint 4 BR. 2.5 bath. 2-car gar., over 2000 sq ft, Col. w/updated windows, baths, spa. Lush landscaping on private acre. \$369,990. Ray, 344-3541.

ROCKY POINT - 4brm, 4-ba chalet, 1.2 acres, nr. beach, EIK, granite countrs, ss applis, huge Ir, dr, fp, hdwd flrs, Ige porch, a/c, 2-car gar, igs, quiet, legal m/d. \$435,000. 894-4320.

SHIRLEY - Multi-Unit Investment property. Large ranch w/lge prking lot. Potential for Multi-use or Prof use. 3 signed leases and proof of income. \$275,000. Ext. 8363.

SHIRLEY - 5 bdrm, expanded ranch, .5 acres, 5 min to BNL. \$175,000. 843-215-2581.

SHOREHAM - 3 bdrm, 1.5 ba Col. c-dsac, updated ba & kitch, ss applis, Den w/fp, bsmt, gar, lg wood deck, lg wood shed. \$344,000. Ext. 3347, 744-8793.

Bulletin

Published weekly by the Media & Communications Office for the employees, facility users, and retirees of Brookhaven National Laboratory.

Liz Seubert, editor Joe Gettler, assistant editor Roger Stoutenburgh, photographer

On the Web, the Bulletin is located at www.bnl.gov/bnlweb/pubaf/bulletin.asp. A calendar listing scientific and technical seminars and lectures is found at www. bnl.gov/bnlweb/pubaf/calendar.asp.

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