the Bulletin

BROOKHAVEN NATIONAL LABORATORY

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Superconducting Magnet Researchers Develop Exciting New HTS Technology

Promising breakthroughs toward a muon collider, more

World records have been broken this year not only in sports by Olympic athletes in London, but also in high temperature superconducting magnet technology by the Superconducting Magnet Division (SMD) staff at BNL.

Superconducting magnets, which are essential in accelerators like the Relativistic Heavy Ion Collider (RHIC) and the Large Hadron Collider (LHC) in Switzerland, are made with conventional Low Temperature Superconductors (LTS) and require cooling by liquid helium, now in short supply. They operate at temperatures below 5 Kelvins (K) (-450 degrees Fahrenheit) and magnetic fields below 10 Teslas (T). For the past decade, however, Lab researchers have explored a new class of superconductors called High Temperature Superconductors (HTS) that can operate at temperatures as high as 77 K, achieved by cooling with cheap, plentiful liquid nitrogen, or can create very high magnetic fields — more than 20 T — when cooled to about 5 K.

"Brookhaven was one of the first national laboratories to start research and development [R&D] on HTS magnets at a time when there were many skeptics," said Peter Wanderer, who heads the Superconducting Magnet Division. "We were encouraged by BNL management to take on this exploration, which has been well rewarded. Recent success at BNL has advanced the technology to a level that HTS magnets are now being considered seriously in the upgrade of current accelerators, for example, the LHC, and future accelerators, such as a muon collider."

Joseph Rubino D0111012

With two of their world-record-breaking solenoid coils in the foreground are members of the Superconducting Magnet Division (SMD): (front, from left) William Sampson, High Temperature Superconducting Magnet R&D Group Leader Ramesh Gupta, and Lakshmi Lalitha; (back, from left) SMD Head Peter Wanderer, Richard Meier, Piyush Joshi, Mechanical Engineering Group Leader Michael Anerella, Sebastian Dimaiuta, Ray Ceruti, Toby Levine, Glenn Jochen, Michael Shivers, Kengo Nakao, and Tom Van Winckel. Among those not in the picture are: Frank Corbin, John Cozzolino, Joe D'Ambra, Arup Ghosh, Henry Hocker, Dean Ince, William McKeon, Joseph Muratore, Ed Sperry, Jesse Schmalzle, and Yuko Shiroyanagi.

Achievements

Examples of BNL past achievements in HTS R&D include a 100-millimeter (mm) aperture coil made with 1.2 kilometers of HTS, which achieved a peak magnetic field of 9 T — a record high field for an HTS coil of this size. Another success has been a 25-mm aperture coil that reached 16 T — a record high field for an HTS coil, beating the previous record by about 50 percent.

"We are fortunate to have a very skilled and creative team of scientists, engineers, and technicians contributing to this pioneering HTS magnet R&D," said Ramesh Gupta, who heads the HTS Magnet R&D group. "William Sampson, a senior scientist and winner of the IEEE award for Applied Superconductivity Research, plays a key role."

Goal: Muon Collider

Since 1969, scientists have been interested in the idea of colliding…

See ***Magnets*** *on p. 2*

Robert Hill to Talk on Creating Safety Cultures in Academic Institutions, 10/11

Robert H. Hill, Jr.

Robert H. Hill, Jr., Chair of the American Chemical Society's (ACS) Joint Board/Council Committee on Chemical Safety, and a Public Health Program Manager with Battelle in Atlanta, Ga. will give a talk on "Creating Safety Cultures in Academic Institutions," on Thursday, October 11, at 11 a.m. in the Hamilton Seminar Room, Chemistry Department, Bldg. 555. All the Lab community is encouraged to attend this talk, which will also be webcast live at WBNL (*http://www.bnl.gov/video*).

As Hill will describe, to assist in building and reinforcing strong safety cultures in academic institutions, the ACS Committee on Chemical Safety (CCS) formed the Safety Culture Task Force. The Task Force identified elements of strong safety cultures, topics and resources for laboratory and chemical safety education, and recommendations to build and enhance safety cultures in academic institutions.

The Task Force's resulting report, *Creating Safety Cultures in Academic Institutions*, was approved by CCS at the 243rd ACS National Meeting in San Diego and is now available on the CCS website at *www.acs.org/safety*. The report was dedicated to those scientists who lost their lives or were injured in laboratory incidents.

As identified by the Task Force, the elements of strong safety cultures include: leadership and management; teaching laboratory and chemical safety; strong safety attitudes, awareness, and ethics; learning from previous incidents; establishing collaborative relationships; promoting and communicating safety; and funding and substantial effort by institutional administrations.

Hill's presentation will review the essential elements of the report, and discuss recommendations that, if implemented, can result in a strong safety culture.

Hill received his Ph.D. in chemistry from the Georgia Institute of Technology and his B.S. in chemistry from Georgia State University. He has worked in or managed laboratories for 30 years, including experience in occupational and environmental health at the Centers for Disease Control and Prevention. He has served as Member-at-Large, Chair-Elect, Chair, and Immediate Past Chair in the ACS's Division of Chemical Health and Safety, and he has served on the Board of Editors of the *Journal of Chemical Health and Safety* since 2000.

'MAGIC' Lab Launches to Study Clouds' Effects on Weather, Climate

Climate instruments mounted aboard the 'Horizon Spirit' container ship begin taking data

A Horizon Lines container ship outfitted with meteorological and atmospheric instruments installed by DOE scientists from Argonne National Laboratory (ANL) and BNL began taking data this week for a yearlong mission aimed at improving the representation of clouds in climate models. The study, a collaborative effort between DOE's Atmospheric Radiation Measurement (ARM) program Climate Research Facility and Horizon Lines, marks the first official marine deployment of the second ARM Mobile Facility, AMF2, and is likely the most elaborate climate study ever mounted aboard a commercial vessel.

"We are very grateful to Horizon Lines for giving us the opportunity to install our research equipment aboard the *Horizon Spirit*," said lead investigator Ernie Lewis, an atmospheric scientist at BNL. The *Horizon Spirit* makes a roundtrip journey from Los Angeles to Hawaii every two weeks, which allows for repeated measurements over the same transect at different seasons.

"Collecting data on a wide range of atmospheric conditions over an entire year, including the transitions among cloud types along this particular route, will give us a large amount of data to help refine and validate models of Earth's climate," Lewis said.

The project — dubbed MAGIC, for the Marine ARM GPCI Investigation of Clouds, where GPCI is a project comparing results from the major climate models — will take place through September 2013.

"We are excited to deploy the AMF2 sensors and the infrastructure that supports them on the *Horizon Spirit*. This represents the culmination of four years of hard work in designing, building and preparing to deploy aboard an ocean going vessel," said AMF2 Technical Operations Manager Michael Ritsche, an atmospheric scientist at ANL.

Clouds and Climate

Low marine boundary layer clouds over the ocean exert a large influence on Earth's climate through reflection of sunlight and by mediating interactions between the atmosphere and the ocean, Lewis explained. However, global climate models have difficulty accurately representing these clouds and the transitions among their different types. Extensive data collection from a marine environment with variable cloud cover could significantly improve these models.

Horizon Spirit's route crosses just such a region, making it ideal for assessing the effects of changing cloud conditions. This region is important to a wide range of climate models included in the GPCI project.

"*Horizon Spirit*'s route from Los Angeles to Honolulu lies almost on top of the GPCI line, providing a great opportunity for extensive data collection," said Lewis. "We approached Horizon about working together on this project with the idea that our equipment could be installed on the ship with no disruption of their ordinary operations."

"Horizon Lines is happy to cooperate in the year-long MAGIC project to improve climate modeling," said Pete Strohla, Vice President of Operating Services at Horizon Lines. "Our hope is that better understanding of climate change will facilitate more accurate weather forecasting, which in turn will help our industry plan safer and more fuel-efficient vessel routes."

See ***Magic Study*** *on p. 2*

Roger Stoutenburgh D0081211

Above: BNL scientist Ernie Lewis and one of the mobile SeaTainer units now installed aboard the *Horizon Spirit*, a 272-meter cargo ship that will take atmospheric measurements during a yearlong cloud/climate study.

Below: The *Horizon Spirit* makes the round trip between Los Angeles and Hawaii every two weeks.

Calendar
of Laboratory Events

- *The BERA Store in Berkner Hall is open weekdays from 9 a.m. to 3 p.m. For more information on BERA events, contact Andrea Dehler, Ext. 3347, or Christine Carter, Ext. 2873.*

— REGULARLY —

Weekdays: Free English for Speakers Of Other Languages Classes
Beginner, Intermed., Adv. classes, various times. All welcome. Learn English, make friends. See *http:/www.bnl.gov/esol/schedule.asp* for schedule. Jen Lynch, Ext. 4894.

Mon. & Thurs.: Yogalates
Noon–1 p.m. at the Rec Hall (Bldg. 317). Registration required. Ext. 2873.

Mon. & Thurs.: Kardio Kickboxing
12:15–1:15 p.m. in the gym (Bldg. 461). $5 per class. Ext. 2873.

Mon., Tues., Thurs., & Fri.: Tai Chi
Noon–1 p.m., B'haven Cntr (Bldg. 30), N. Rm. Free. Adam Rusek, Ext. 5830, *rusek@bnl.gov*.

Mondays: Pilates
5:30-6:30 p.m., Rec. Hall (Bldg. 317), Registration required. Ext. 2873.

Tuesdays & Wednesdays: Zumba
Tuesdays: Noon–1 p.m., in gym (Bldg 461). Wednesdays: 5:15–6:15 p.m., at the Rec Hall (Bldg. 317).

Tuesdays: Hospitality Welcome Coffee
10:30 a.m.–noon at the Rec Hall (Bldg. 317). Meet over coffee. Children welcome. Ext. 2873.

Tuesdays: Free Knitting Lessons
2-4 p.m. Rec. Hall, Bldg. 317. All are welcome. Free materials & instruction.

Tuesdays: Toastmasters
Two monthly meetings: 1st & 3rd Tuesdays, 5:30 p.m., Bldg. 463, Room 160. Guests and visitors welcome. *www.bnl.gov/bera/activities/toastmstrs/*.

Tuesdays: Aerobic Fitness
5:15–6:30 p.m. Rec Hall (Bldg. 317).

Tuesday & Thursday: Aqua Aerobics
5:30–6:30 p.m., at the pool (Bldg. 478).

Wednesdays: Ballroom Dance
Hour-long sessions begin at 5:30, 6:30, and 7:30 p.m., Brookhaven Center (Bldg. 30). Vinita Ghosh, Ext. 6226.

Wednesdays: Play Group
10 a.m.–noon. Rec Hall (Bldg. 317). Parents meet while children play. For events, see *http://www.meetup.com/BNL-playgroup* or call Ext. 2873.

Wednesdays: Yoga
Noon–1 p.m., B'haven Center (Bldg. 30). Free. Ila Campbell, Ext. 2206, *ila@bnl.gov*.

1st Wednesday of month: LabVIEW
1:30–3 p.m., Bldg. 515, 2nd fl. Seminar Rm. Free technical assistance from LabVIEW consultants. Ext. 5304, or Terry Stratoudakis, (347) 228-7379.

Thursdays: BNL Cycletrons Club
5 p.m., Brookhaven Center. First Thurs. of month. Andy Mingino, Ext. 5786.

Thursdays: Reiki Healing Class
Noon–1 p.m., Call for location. Nicole Bernholc, Ext. 2027.

Thursdays: Postdoc Social Night
6:30 p.m. ASAP Lounge (Bldg. 462). *www.bnl.gov/asap*.

Thursday: Judo Class
7:30 p.m. Gym (Bldg. 461). Tom Baldwin, Ext. 4556.

Fridays: Family Swim Night
5–8 p.m. Pool (Bldg. 478). $5/family. Ext. 2873.

MAGIC Study from p. 1

ARM Mobile Facility

A group from ANL in charge of the deployment has spent the past nine months preparing the instruments and optimizing their performance for shipboard data collection. Many instruments, including an aerosol observing system developed by BNL scientists, are housed in three modified 20-foot SeaTainer cargo containers designed for mobile deployment. Other instruments include radars that are mounted to tables designed to maintain stable "vision" despite the inherent rolling of the ship's deck as it plies the waves. All of these instruments were installed aboard *Horizon Spirit* while it was in port in Los Angeles in September, with final preparations made while en route to Hawaii and back.

"Altogether, the AMF2 comprises a suite of instruments to measure properties of clouds and precipitation; aerosols; and infrared, visible, and ultraviolet light, as well as meteorological and oceanographic conditions," Lewis said. "These ship-based measurements can provide much more detailed information than can be determined from satellites, and these data will prove a valuable addition to other measurements that have been made in marine conditions, albeit for much shorter periods, for many of these quantities."

The science team — which includes researchers from Lawrence Livermore National Laboratory in addition to Brookhaven, as well as collaborators from NASA, Stony Brook University, and a number of other universities and private consultants — is anxiously anticipating the data that will arise from this endeavor.

"In the end, these data will greatly enhance our understanding of clouds, aerosols, Earth's energy and water balance, and the interactions among them in the marine environment, providing an unequalled dataset for evaluating and improving climate models," said Lewis. "Our data, which will be placed in the ARM Data Archive, will be made available to anyone who is interested."

MAGIC is funded by the DOE Office of Science.

— Karen McNulty Walsh

SBU Student Yixiong Yang Wins Mow Shiah Lin Scholarship

Yixiong Yang, a graduate student at Stony Brook University has won the eighth annual Mow Shiah Lin Scholarship. The scholarship, which is sponsored by the Asian Pacific American Association at BNL and consists of $1,000 and a plaque, honors the distinguished late BNL scientist for whom it was named.

Yang's studies focus on the catalysis of renewable fuels through the hydrogenation of carbon dioxide into useful energy to assist in resolving the issues regarding the energy crisis and the greenhouse effect.

"It is a privilege and an honor to be this year's recipient of the Mow Shiah Lin Scholarship," said Yang. "I plan to continue my research on renewable energy in the future."

Mow Shiah Lin began his career at Brookhaven Lab in 1975 as a postdoctoral fellow and advanced to co-lead a research team working with an environmental remediation company to use selected bacteria to convert toxic oil wastes, such as used motor oils, into useful products. In 2001, Lin shared an R&D 100 Award, given by *R&D Magazine* for the top 100 technological achievements of the year, for developing a technology to recover silica from geothermal brine. Lin died suddenly of a brain aneurysm at the height of his career in 2003, and his coworkers, friends and family contributed funds to establish the scholarship.

Roger Stoutenburgh D3460912

At the scholarship presentation ceremony were: (front, from left) Asian Pacific American Association scholarship committee members Hue-Anh Pham, Susan Eng Wong, Maria-Gracia Webster, and Marie Van Buren; scholarship awardee Yixiong Yang; spouse of the late Mow Shiah Lin Beth Y. Lin; and Lin family members Samantha Lin Alvarado, Lee Alvarado, and Josephine Alvarado; (back from left) Robert Alvarado, Yang's BNL advisor Ping Liu, and Yang's BNL/Stony Brook University advisor, Michael White.

In remembrance of the manner in which Lin began his career, the scholarship is granted annually to an Asian immigrant with a student visa who is matriculated at an accredited institution of higher education on Long Island (including Brooklyn and Queens) working toward a graduate degree in environmental & energy technology, biology, or chemistry.

Yang earned her B.S. in applied chemistry from Beijing University of Aeronautics and Astronautics. She is currently working toward her Ph.D. in physical chemistry at Stony Brook University.

— Jane Koropsak

Magnets from p. 1

…muon particles, which because of their unique properties, could reveal new physics. With the discoveries of a Higgs-like particle at the LHC, there has been renewed interest in a collider using muons because they would be well-suited to detailed studies of these particles.

However, several required technologies for muon colliders are not yet developed, according to Robert Palmer of the BNL Physics Department, who has been working on a muon collider for many years. One challenge has been to develop extremely high field superconducting magnets — 30 T or more — that are essential for achieving high luminosity, a term related to having a sufficient number of collisions.

For this purpose, the past achievements of Gupta's group developing solenoid coils of 9 T and 16 T peak fields are very promising.

"In the next step," said Gupta, "we will put the two record-breaking solenoids together and add a few more coils. If all goes well, we will reach more than 20 T."

These magnets are being developed as a part of a collaboration with Particle Beam Lasers (PBL), Inc,. through the Small Business Innovative Research (SBIR) program. The high performance conductor material is provided by SuperPower, Inc.

Gupta explained that reaching 20 T with HTS alone will be an important milestone in the technology. This, when combined with a solenoid of about 10 T made with conventional superconductors, offers a clear path to 30 T.

HTS Advantages

Rather than developing a program that is narrowly focused on a single design or application, the group is taking advantage of the unique properties of HTS for developing technology for a variety of applications.

Among these is a low field (below 1 T) HTS solenoid operating at about 20 K for the BNL Energy Recovery Linac (ERL), being built in the Accelerator R&D Division of BNL's Collider-Accelerator Department. A medium field magnet (2-3 T), subjected to extremely high radiation and heat loads has been developed for the Facility for Rare Isotope Beams (FRIB), planned for Michigan State University. The FRIB magnet has demonstrated stable operation at high temperature (30-50 K) with record heat loads. These demonstrations have led to making HTS magnets, for the first time, part of the baseline design of a major accelerator facility.

The Magnet Division has also successfully built HTS magnets with coils carrying over 4,300 amperes, a record high current in HTS coils.

Meeting the Challenges

A major challenge with any high-field magnet is dealing with the large stress and strain on the conductors created by huge magnetic forces. To overcome this, the Magnet Division's mechanical engineering group, led by Michael Anerella, is building a special segmented support structure for high-field magnets.

Another major R&D effort is to protect HTS coils from permanent damage in the event of a "quench," or a sudden loss of their superconducting properties.

"Piyush Joshi has developed new fast electronics that detect small changes in voltages even against the large background noise and large inductive voltages," said Gupta. "This development has so far proven to give enough warning to shut down the system and extract the stored energy, but significant work still remains for large systems."

HTS Magnets in Other Applications

While successful development of HTS magnets is expected to revolutionize accelerator technology, it is likely to have a major impact on many other fields as well. These include magnetic levitated trains (Maglev), Magnetic Resonance Imaging (MRI), Nuclear Magnetic Resonance (NMR), other medical uses, energy storage, as well as national security.

Another significant project for the group is the design, construction, and testing of a large, about 25 T HTS coil for a high energy density Superconducting Magnetic Energy Storage (SMES) system. In this project, the Magnet Division is working with scientists in the Condensed Matter Physics and Materials Science Department to develop SMES technology in partnership with industry. This, if successful, will create a SMES system with energy density considerably greater than has been previously possible.

— Liz Seubert

Green Card Lottery

BNL's Office of International Services is announcing news of the U.S. Department of State's Diversity Visa Lottery program to all foreign nationals and interested members of the BNL community. This annual program, which dates from the Immigration Act of 1990, makes permanent resident visas (green cards) available to persons who meet certain eligibility requirements through a computer-generated, random drawing method. Annually, this program allocates up to 50,000 "diversity lottery" visas, drawn randomly, to people from countries with historically low rates of immigration to the U.S.

Only Some Are Eligible

For the fiscal year 2014, natives of the following countries are not eligible to apply because these countries sent a total of more than 50,000 immigrants to the United States in the past five years: Bangladesh, Brazil, Canada, China (main-land born), Colombia, Dominican Republic, Ecuador, El Salvador, Haiti, India, Jamaica, Mexico, Pakistan, South Korea, United Kingdom (except N. Ireland), and Vietnam.

The next application period for will start on October 2 at noon Eastern Daylight Time (EDT) and will continue until November 3 at noon EDT. For more information, go to: *http://1.usa.gov/NPnnZ7*.

BSA Distinguished Lecture, 10/9

By Michael Devine, Director,
Harry S. Truman Presidential Library

'The Atomic Bombs President Truman Did Not Drop'

4 p.m., Tuesday, October 9, Berkner Hall. Free and open to the public. Visitors to the Lab of 16 and older must have photo ID.

BSA Scholarship Forms Available

Applications for the 2013 BSA Scholarships are now available from the Human Resources Division. Completed forms must be sent to the Scholarship and Recognition Programs (SRP) division of the Educational Testing Service (ETS) no later than November 15, 2012.

Each scholarship will be in the amount of $2,500 per year. Stony Brook University will provide matching $2,500 scholarships for all winners of 2013 BSA scholarships who are admitted to SBU and enroll as full-time undergraduates.

For more information, see the September 21 Bulletin or contact Leesa Allen at (631) 344-2700.

Beyond Out-of-the-Box

The Cabinet Shop designs, builds, and modifies custom furniture and fixtures at BNL

If you've shopped at the Swedish-based furniture store in the big blue warehouse, you know that stylish "one-size-fits-all" furniture can now be assembled with just a few tools and a few hours to decipher the instructions. But when prefabricated furniture from a box doesn't quite meet the specific needs of Brookhaven Lab's scientists and staff, members of the Lab's own Cabinet Shop can design, build, and modify whatever is needed and make it fit just right.

"At a unique place like Brookhaven where there's a lot going on, sometimes one-size, modular, prefabricated furniture doesn't fit all — literally and figuratively," said Kent Heckman, who supervises the Cabinet Shop, along with the Sign and Lock Shops and the core group of carpenters on site. "We have very skilled craft and trade workers who can help."

Three craft workers make up Brookhaven's Cabinet Shop: James Giacalone, Chris Frosina, and Andrew Fox. Together, this team has more than 97 years of cabinet-building and fine carpentry experience.

The members of the Cabinet Shop team have worked on many different projects around the Lab. They have built prototypes for experiments and shipping crates for special magnets and other scientific equipment. They built a wooden halfpipe for the bed of the Lab's MRI instrument. They have also designed and built entire kitchens, display cases, desks, and cabinets or made them more ergonomically correct. They hang television screens and automatic external defibrillators across the site too.

"The members of the Cabinet Shop are great to work with," said Brookhaven biochemist John Shanklin, whose research is focused on plants as "green factories" for producing specific renewable resources and bioenergy. "For both labs and offices, they have come up with creative, custom solutions to make optimal use of available space, helping my team achieve our goals."

Heckman added, "We have new ways to order materials and plan work, so now we're able to get jobs done more efficiently and reduce the prices of our services from previous years."

Roger Stoutenburgh D2430912

Members of Brookhaven Lab's Cabinet Shop — (from left) Andrew Fox, James Giacalone, Kent Heckman, and Chris Frosina — in their workshop

Thinking of Calling in the Cabinet Shop?

Prototypes, shipping crates, kitchens, desks — if you work in one of the Lab's science directorates and think there's a way the Cabinet Shop could help you, contact the space manager (*http://intranet.bnl.gov/roco*) for your building. If you work in one of the support directorates, contact your facility project manager (*http://intranet.bnl.gov/ifm*).

Minding Eyes and Fingers

While few tools are required to assemble a living room's worth of prefabricated furniture, the Cabinet Shop members work with table saws, screw guns, drills, and overhead routers to complete their projects.

"We work with a lot of tools that could be dangerous," explained Giacalone. "We have to be careful, because an accident could end up leading to huge repercussions."

"We're a small, close-knit group and we look out for each other," added Frosina.

With fingers and eyes often only inches away from spinning saw blades and drill bits, Heckman, Giacalone, Frosina, and Fox don their safety glasses, gloves, hearing protection, and any other personal protection equipment (PPE) that can reduce the possibility of an accident. The crew also meets every morning to discuss work planned for the day and identify any possible hazards. These precautions have paid off — the team has not had a recordable injury or first aid case since 2001.

"We like the work we do, so we do it safely to prevent problems from getting in the way," Fox said.

Need Some Help From the Cabinet Shop?

"If something that comes out of a box isn't quite what you need or the way you need it, you're not stuck," said Heckman. "Our craft workers in the Cabinet Shop can modify what you have or build what you need from scratch."

BLUEPRINT

With the Research Operations Coordination and Oversight (ROCO) and Integrated Facility Management (IFM) programs — two initiatives of the Blueprint, the Lab's plan for growth and development — now in place, most people don't need to call the Cabinet Shop directly. ROCO and IFM were designed so that people in specific roles can coordinate these types of projects, so the Lab's researchers don't have to.

If you work in one of the Lab's science directorates and think there's a way the Cabinet Shop could help you, contact the space manager (*http://intranet.bnl.gov/roco*) for your building. If you work in one of the support directorates, contact your facility project manager (*http://intranet.bnl.gov/ifm*). — Joe Gettler

In Memoriam

Harry Kimmerling, who joined the Central Shops Division on April 23, 1979, as an experimental machinist, and retired on December 30, 1992, as a tool & instrument maker, died on September 2, 2012. He was 81.

Gerard Blackford, who came to the Lab in the Director's Office as a budget analyst on October 6, 1969, and retired from the Budget Office on April 28, 2000, as a budget administrator, died on September 1, 2012. He was 76.

Peter Fish, who joined the Plant Engineering Division on May 16, 1977, as a carpenter, and retired as a carpentry supervisor on December 31, 1996, died on August 27, 2012. He was 76.

Sheila Land, who became a custodian in the Plant Engineering Division on July 23, 1984, and retired from the Procurement & Property Management Division as a stores clerk on February 22, 2008, died at age 63 on August 26, 2012.

Manny Hillman, who spent three months as a chemistry research assistant at the Lab from June 20, 1951, then joined the Department of Nuclear Energy as an associate chemist on December 1, 1959, died on August 24, 2012, at the age of 83. He was granted a continuing appointment in 1967, and retired from the Department of Applied Science as a chemist on January 2, 1986.

Mary Dohrman, who joined the Health Physics Division on July 26, 1948, as a technician C, and retired on July 27, 1984, as a senior technician, died on August 16, 2012. She was 90.

Edward Woessner, who joined the Plant Engineering Division on February 19, 1968, as a refrigerator and air conditioner engineer, died on August 15, 2012, at age 75. He had retired on May 9, 1999.

Arrivals & Departures

— Arrivals —

Hyun You Kim	CFN
Wenyan Liu	CFN
Andrei Nomerotski	Physics
Wenchao Qu	Biosciences
Huidong Zhang	CFN

— Departures —

Krassimira Alexieva-Botcheva	Biology
Simon Edwards	C-AD
Jasmine Hatcher	Chemistry
Maryann Julian	NST
Chaminda Kodituwakku	Photon Scis
Gyanendra Kumar	Biology
Jayeeta Lahira	CFN
Yingchuan Li	Physics
Lawrence Margulies	Photon Scis
John Nagy	Env Scis
William Nettles	Env Scis
Kensuke Okada	Physics
Barbara Panessa-Warren	Sust Energy Techs
Yuzen Shen	Photon Scis
S. David Smith	Medical
Daniel Torres Rangel	CFN
Mark Wahlert	ITD

CALENDAR

Friday, 10/5

AdoptaPlatoon Mum Sale
11 a.m.-1 p.m. Berkner parking.

***Healthfest: Table Tennis Tournament**
5 p.m. Rec. Hall. Website below.

— WEEK OF 10/8 —

Tuesday, 10/9

BSA Distinguished Lecture
4 p.m. Berkner Hall. Michael J. Devine, Director, Harry S. Truman Presidential Library, will talk on "The Atomic Bombs President Truman Did Not Drop." Sponsored by Brookhaven Science Associates, this free lecture is open to the public. Visitors to the Lab of 16 and older must carry photo ID.

Wednesday, 10/10

***Healthfest: 400-Yard Swim**
Noon. Pool. See website below.

Thursday, 10/11

***Talk on 'Creating Safety Cultures'**
11 a.m. Hamilton Seminar Room, Bldg. 555. All invited to this talk on "Creating Safety Cultures in Academic Institutions," Robert H. Hill, Jr., Battelle, and Chair of ACS Committee on Chemical Safety.

***Healthfest Fair**
11 a.m.-1:30 p.m. Berkner Hall lobby. Health screenings, exhibits.

Friday, 10/12

***Healthfest 5k Run**
Noon. Bldg. 435, Biology.

— WEEK OF 10/15 —

Monday, 10/15

***Healthfest: BERA Free Trial Classes**
See *www.bnl.gov/bera/*.

Wednesday, 10/17

Q Source Inc. Industrial Suppliers
11 a.m.-1:30 p.m. Berkner Hall lobby. Representatives of quality product brands, e.g. Brady, Metro, IAC, for industrial assembly and production, electronic, parma sector and laboratory needs. Contact Nicole Alexander, *qsales@qsource.com* or 563-0600.

***EAP Lunchtime talk**
Noon. Berkner Hall, Room B. "Resolving Conflicts Creatively," talk by Jude Treder Wolff, Magellan Health Services. See p.4.

***BSA Noon Recital: Quartet**
Noon. Berkner Hall. See left.

BNL Art & Crafts Wanted For Fall Show, 11/19-21

BNL artists, photographers, sculptors, and crafters — your most beautiful work is needed for the BNL Art Society's upcoming Art and Crafts Show sponsored by the BNL Art Society, the BNL Camera Club, and the BNL Crafts Club, to be held at Berkner Hall, Monday to Wednesday, November 19–21, 11:45 a.m.–1:30 p.m.

BNL employees, retirees, facility users, guests of BNL, and family members 15 years and older, may all contribute up to three pieces. Deliver exhibits for the show to Berkner Hall, 2 to 4 p.m. on Friday, November 16, and collect them on Wednesday, November 21, 1:30 to 3 p.m. Liz Seubert or Joe Gettler, Bldg. 400C, or e-mail the information to *lseubert@bnl.gov* and *jgettler@bnl.gov* by Monday, November 5.

BSA Noon Recital, 10/17
Amphion String Quartet To Perform at Brookhaven

Hailed for its "gripping intensity" and "suspenseful and virtuoso playing" by *San Francisco Classical Voice*, the Amphion String Quartet was selected as a winner of the 2011 Concert Artists Guild auditions. The Quartet will perform on Wednesday, October 17, at noon in Berkner Hall. Sponsored by Brookhaven Science Associates, the concert is free and open to the public. All visitors to the Lab 16 and older must bring a photo I.D.

The Amphion String Quartet was recently appointed to a three-year residency at Lincoln Center's Chamber Music Society Two (CMS). This appointment affords the young members of this quartet three full seasons of participation in every facet of CMS activity: performances on

all stages during the New York concert season, international and national tour appearances, recordings on both the in-house CMS Studio Recordings label and the *CMS Live!* digital download series, concert broadcasts on the national radio series Performance Today from American Public Media, and Live From Lincoln Center television broadcasts.

The Quartet was awarded first prize in the Piano and Strings category as well as the Audience Choice Award at the 2010 Plowman Chamber Music Competition held in Columbia, Missouri. Additionally, the Quartet received the first prize at the Hugo Kauder String Quartet Competition in New Haven, CT. Highlights of the 2011-2012 season included an appearance at the Schneider Concert Series in New York City, a world premiere of a string quartet by John Sichel in New Jersey, as well as performances at the Metropolitan Museum of Art and the Tertulia Chamber Music series.

For the concert at BNL, the Quartet will perform Hugo Wolf's *Italian Serenade*, Janacek's *Intimate Letters* quartet, and Mendelssohn's *Quartet No. 3*.

— Jane Koropsak

Brookhaven National Laboratory
HEALTHFEST2012

The BNL community is invited to participate in the annual month of health, safety, and wellness events held during the entire month of October. There is something for everyone. Details: *http://1.usa.gov/OPWypj*

Alex Reben V0011012

Tight Corners Inspire Pepper's Safety Idea

Building 197 has narrow hallways and tight corners, which led to people nearly knocking into each other. Employee Susan Pepper saw the potential for injury — but she also thought of a way to see around the corners and solve this safety concern. Watch the video to learn how she proposed her safety idea and the result: *http://1.usa.gov/QetkPM*.

Safety makes science possible at Brookhaven National Laboratory

Two EAP Talks Ahead

'Resolving Conflicts Creatively,' 10/17

'Bring Out the Best In Others,' 11/14

The Lab community is invited to attend a talk by Jude Treder-Wolff of Magellan on "Resolving Conflicts Creatively." Sponsored by the Employee Assistance Program headed by Nancy Losinno, the talk will be given at noon on Wednesday, October 17, in Berkner Hall, Room B. The speaker will address topics such as increasing your "emotional intelligence" on the job, and adding to your skills at getting along with others more effectively.

Treder-Wolff will give another talk in this series on Wednesday, November 14, also at noon in Berkner Hall, Room B. This talk is titled "Bring Out the Best in Others."

Seating is limited, so registration is required by emailing *nlosinno@bnl.gov*. You may register for one or both of the talks.

Roger Stoutenburgh D1210412

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 HARLEY DAVIDSON WIDEGLIDE – w/ PowerCommander, Vance & Hines pipes, S&S air cleaner, more, $13,000. 902-5453.

07 SUBARU LEGACY OUTBACK 2.5 – 72K mi. awd, auto, ABS, a/c, cloth, heated seats, r/rack, 1/owner, all maint, $11,500. 929-3388.

04 CHEVY AVEO LS SEDAN 4D – 54K mi. a/t, a/c, p/s, p/b, fm/cd/mp3, 1.6L 4 cyl, fuel inject, excel. $7,500 neg. slaketrac@gmail.com.

03 ACURA TL – 85K mi. Type S, loaded, clean, excel cond, orig owner, all maint records, Will consider trading with a pickup truck. $9,000 neg. Ext. 2337, 751-1318.

01 CADILIC DTS – 99K mi. Pearl white, loaded, gd cond. $4,000. Bob, 886-1142.

99 DODGE GRD CARAVAN SE – 142K mi. clean, 7 pass, bckt seats, a/c, abs, pw, new batt/brakes/exh., needs tranny work but still drives, repair/part out. $750 neg. 764-8811.

95 CHEVY MONTE CARLO – 110K mi. Z34, 3.4 ltr, 220 hp, racing motor, dual overhead cams, 10dsk CD, leather, spoiler, rem start. $5,000 neg. 875-0584.

91 VOLVO 940 – 102K mi. all/p, a/t, 4/dr, lthr, s/roof, anti-lck brks. $1,800. 764-8136.

RIMS W/TIRES – 4 18" RT6 Enkei 360, prfct; 6 Lug; excel, w/like-new tires; used on Dodge Durango, ask/$700; pics. 813-6583.

Furnishings & Appliances

COFFEE MAKERS – Cuisinart grind-and-brew/$30; Mr Coffee 4-cup/$10; Mr Coffee espresso maker/$10; all black in color. lmiller@bnl.gov.

DINING ROOM SET – Formal table 44" x 62" w/3 leaves & 6 chairs, pics avail, $600/neg. Lynda, Ext. 7235 or fitz@bnl.gov.

DOUBLE STROLLER/TODDLER BED – frt/bck drk blue/$20; Tddlr bed/conv. from Sleigh bed crib, nat. wood finish w/crib mattress/$40; pics avail. Peter, Ext. 2460.

DRYER – Maytag, 6.0 cu ft, model/MDE9606AYW, white, excel, cond, user's manual, photos avail, $99. 751-8403.

END TABLES – 2, med color wood w/ glass tops, gd cond, pics avail, $100/both. 897-2736 or storan@bnl.gov.

FREEZER – United, heavy-duty upright. 60x28x24. Good working condition. $100. 902-5453.

KITCHEN TABLE & CHAIRS – Beige kitch table w/4-5 metal chrs, w/cushioned seats $200/neg, pics. Peter, Ext. 2460.

LOVE SEAT – off white w/stripes & floral pattern, mint cond, delivery possible/$50. 838-5879.

POTTERY BARN KIDS BED – Full size, metal frame, paid $400, will take $150, you pick up. dmcarthur@bnl.gov.

SOFA – photos avail, 88"x 4" off white w/ light floral tapestry, ideal for l/r guest rm, lg, comfy enough for sleeping $200/obo, Jane, Ext 2198 or lysik@bnl. Ext. 2198.

TABLES, MORE – glass top coffee tbl; wood end tbl, mrble top tbl w/2 drs/drwrs; side chair, dry sink $60-$200, pics; H. Beach Food Processr w/3 blades/$20. fitz@bnl.gov.

TODDLER BEDS – 2, 1/white, 1/dark wood, comes w/Sealy Mattress/$100/ea/obo. Matthew, Ext. 3716 or milardo@bnl.gov.

Audio, Video & Computers

MGM – 92"viewing area, 16:9 Hdtv Format; mount on wall/ceiling; ask $60/, new, in unopened box. Charles, Ext. 5476, 872-9268.

POWERED SAMSON MONITORS – 2 slightly used, 15", in/outdr, Samson DBA500 pwrd, built in amp, pics. $450. 347-581-3731.

TUBE TV – 27" JVC, gd cond, $25/obo. Charles, Ext. 2616, cweilbrenner@bnl.gov.

WII BUNDLE (BLACK) – Mario Cart w/ Wheel, 5 games, 2 controllers, and charge station. Like new. Asking $240. Anya, 347-581-3731 or arajnauth@bnl.gov.

Sports, Hobbies & Pets

BICYCLE – Bratz kid's bike, styled after the Schwinn Stingray, purple w/silver stars, banana seat, monkey handlebars, springer shock absorber/$95. 335-8063.

BICYCLE TRAINER – Roller trainer, Nashbar BN-PR11 model, like new/$50. 838-5879.

DISCUS FISH – 5/need a new home, v/colorful tropical fishes, sizes 2.5- 3" to 4.5-5.5", $40-$130, pref. sell to genuine fish lovers/hobbyist. 344-3245, rhijuta.d@gmail.com.

MOUNTAIN BIKE – Honda 24 inch 10 spd $50 neg needs front brake cable. Richard, Ext. 7129, 516-779-3116.

WEAVING/RUG LOOM – Union Loom Works #36, made early 1900s, manual & lg box of carpet warp thread incld, $175; pics www.corwincorner.com/4sale. 764-0360.

WETSUIT – Youth size 12, like new, pd/$110, ask/$50. Ext. 7235 or fitz@bnl.gov.

Tools, House & Garden

GRANITE FIREPLACE BLOCKS – 300+, reclaimed from 1940s f/p, various sizes 7-24", thicknesses to 8", have 1/flat side/$450; www.corwincorner.com/4sale. 764-0360.

LAWN MOWER – Lawn-Boy 21", easy stride, 6.5HP, excel cond, op's manual, extra blade, starts on 1 or 2 pulls/$100; Scotts spreader/$10, all excel cond. 751-8403.

SHED – Country Style Kaufold, 10'x14', gray vinyl sided w/3 blue drs, windows, v/sturdy, solid flr, vented, $2400, www.corwincorner.com/4sale. 764-0360.

XMAS DECOR & LAX REBOUNDER – Lawn Ornaments, motorized pre-lit deer, small pre-lit trees, $50 per set. Lacrosse Rebounder, new, $150. dmcarthur@bnl.gov.

Miscellaneous

ANTIQUE BRASS ANDIRONS – v/gd cond, 19.5"/L, 7-3/4"w at base, 17"d Ext. 2295, 764-0360.

AUTHENTIC DOONEY & BOURKE BAG – lg, cream color, w/signature D&B, never used/$50. dmcarthur@bnl.gov.

CHILD'S NORTH FACE COAT – Black, very warm, small 7/8 $50. dmcarthur@bnl.gov.

GODDAUGHTER PHOTOFRAME – for 4x6 photo, 7x9 overall size; w/short poem, pink/white, new in pkg/10, also 6" pink wall cross, new in pkg/$8. Ext. 7114.

HARLEY LEATHER JACKET – HD 105th Anniv, sz XXL, on e-bay for $280, excel cond, $125/obo, pics avail. Charles, Ext. 5476, 872-9268 or lasalla@bnl.gov.

PARTY GOWN – Emerald green satin w/ corset back, fits 14-16, crystal beading, drop waist, sweetheart bodice, worn once, orig/$420, ask/$150. 516-241-4598.

SAPPHIRE BLUE PARTY GOWN – Size 12-14, flr length w/front slit, silver beading, new w/tags, orig $400, ask $150. 516-241-4598.

VANITY COUNTERTOP – w/sink, faucets and plumbing, mount to existing frame or gd for parts/$65. Karl, Ext. 3116.

Yard & Garage Sales

FLANDERS – Oct 5-6-7, 8 am, many houses, furn, shed, antiques, granite block, nails, sinks, tires, loom, kidstuff, crafts. Meadow Brook La. rain/shine, Ext. 2295, 764-0360.

Community Involvement

ENGINEERS WITHOUT BORDERS – Stony Brook student chapter seeks volunteers. All fields: public health, business, etc. Sustainable projects to meet basic human needs. www.ewb-usa.org. Chris, ccullen@bnl.gov.

Happenings

US OPEN MARTIALARTS CHAMPION – For People who want to join: http://tinyurl.com/9cpxbeu; to watch: http://tinyurl.com/8wpkh7o. tianmux002@gmail.com.

Free

CONFETTI – for party; cowboy themed, cowboy boots & hats; blue/gold/red, 10 bags. Kathleen, Ext. 7114.

FREE SAND (2 YDS) – clean sand for concrete or stabilizing a patio. You pick it up and load it. Flanders/Riverhead area. Ext. 2295, 764-0360, mimi@corwincorner.com.

Wanted

ADOPT-A-PLATOON – Monetary donations gratefully accepted towards mailing shipments to our platoon stationed overseas and to send goodie packages to BNL family members. Thank you. Joanne, Ext. 8481.

ALBANIAN SPEAKING – want to relearn how to speak Albanian. Can anyone help? Vera, Ext. 5843 or vzoccoli@bnl.gov.

BNL FAMILY MEMBERS IN MILITARY – If you have a family member who has been deployed overseas, please contact Adopt-a-Platoon so we may send them a goodie package. Joanne, Ext. 8481.

BOYS BMX BIKE – Looking for a donation for a family in need, the child is about 12, probably around 125 lbs. 294-5392.

CHAINSAW REPAIR – cracked primer ball, needs replacement on 14" Macullough, reasonable. 821-2586 or kamcn26@optonline.net.

COMPUTER ACCESSORIES – need monitor, keybrd/ mouse for Apple computer, require for school; reasonable or giveaway. Nina, Ext. 5894, 813-0497 or vbri1@aol.com.

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.

TRAILER – enclosed, size to carry Harley. Joe, 831-4830.

Lost & Found

KEYS – 2, found in the road at the intersection of Cornell & Johns Hopkins. Gordon, Ext. 3586 or corbin@bnl.gov.

SAFETY GLASSES – Lost around bldg/510 in U. W. Marx area, blk case w/Ed R. X-7251 on it. Reward of $30 if returned, no questions asked. Ed, Ext. 7251, 516-924-4299 or richards@bnl.gov.

For Rent

FORT MEYERS BEACH, FL – Thanksgiving wk (11/17-24) Beachfront 2bdrm, 2bth, kitch, laundry rm, l/r & d/r, screened porch, pool, deck w/BBQs, frig&sink, sunsets. $1,000/wk. Mary Ann, Ext. 5124.

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

MASTIC – Cozy 2 bdrm sing. fam. house, 1 ba, lr/dr combo, fenced yard. Small pet considered. 2 mo sec req., utilities not included. Avail Nov. 1. $1,525/mo. 775-8703.

MASTIC – Victorian 3/bdrm 2/full ba hse for 3/people, quiet, nr all. Heat, TV, cable, int, l/r, d/r, f/p, new big eik, own bdrm, all incl, no smkg/pets. $800/mo neg. 210-369-8254.

PATCHOGUE – bsmt apt, 1 bdrm, full kitch, furnd, priv entry, no smkg/pets. $850/mo neg. Maria, 738-9570.

RIDGE – sharing house with other BNL employees, very nr Lab; all utils included. $595/mo neg. Min Gao, 917-721-2277.

ROCKY POINT – studio apt w/kitchenette, full ba, part below grd w/French dr entry, all utils incld, 1/mo sec, avail Oct 10. $700/mo. Justine, Ext. 2114 or jhaupt@bnl.gov.

SHIRLEY – 1 bdrm apt, l/r, full kitch & ba, no smkg/pets, pvt ent/drvwy, util incl 1/mth sec, 10 min to Lab, $1200/couple; single: $1,000/mo. Diana, Ext. 3681, 922-0104.

SHOREHAM – on cul-de-sac, 1/bdrm, 1/sm office, l/r, kitch, full bath, priv ent, drvwy, own thermo, a/c, cable, DVR box & int, w/d, $1,350/mo. 445-7838.

For Sale

CENTER MORICHES – Victorian 5 bdrm, 3.5 ba, Jacuzzi, lg kit w/brkfst nook, fam rm w/fp, hwd cer flrs, fin bsmt/attic, 2-car gar, prof. garden, 0.83 acres. $559,000. 766-7189.

CORAM – lg 1 bdrm co-op, updated kitch & b/r, laundry across from unit, in/outdr pool & gym. $99,900. Warren, Ext. 8329 or whalbig@bnl.gov.

MIDDLE ISLAND – 2 bdrms, eik, wood flr, gated w/golf court, 2 club houses w/inside pool, excise rm, majoong rms. $219,000 neg. Annmarie, 516-647-9849.

PATCHOGUE – WATERVIEW CO-OP, 1/bdrm unit w/eik, Fairharbor On The Water, 2nd flr crnr unit w/balc/boat dock, laundry avail, pet friendly, $114,000. brandon@linxc.com.

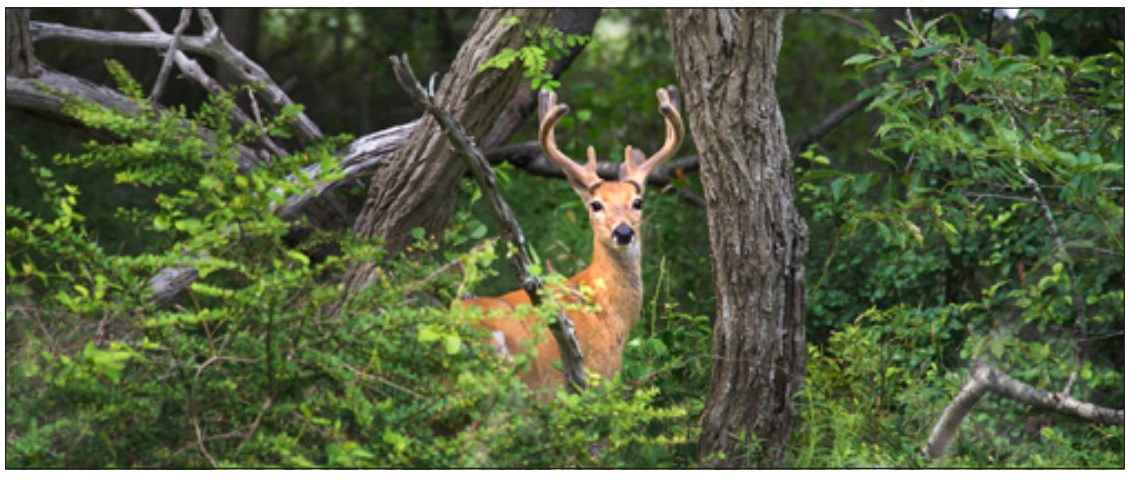
PATCHOGUE – fully updated 3 bdrm/2 bath hse, low taxes, see MLS listing# 2527567 for pics, $229,000 neg. 901-4302.

PATCHOGUE VILLAGE – 3 B/R, 1 bath ranch, oil heat, central A/C, full basement, hdwd floors. Pictures avail. $222,000 neg. 793-9111 or wjleonhardt@bnl.gov.

PORT JEFF STA. – 3/bdrm, 2/ba Co-op 2nd flr, new b/rms, neutral w/w rugs, applis, gated comm w/swimpool, BBQ, laundry, near SBU/BNL. $142,000. 431-4551.

RIDGE – 3 bdrm, 1 ba (option for addl .5 bath) hse in Longwood, mins to Lab, grt area, cac, 1 car gar, neg. $259,000 neg. Joe, Ext. 3252 or jcosentino@bnl.gov.

SAYVILLE – expnd'd ranch, 10/rms + sunrm, den w/f/p, 3/bdrm, 1.5 ba up, 3 rms + .5 ba dwn, igp, cac, 1car gar, new kitch, heat, gutters, excel. $340,000. 431-4551.



Roger Stoutenburgh D5790712

Catch Up on BERA Trips, Events

Tickets for these trips are now on sale at the BERA Store, Berkner Hall, open Monday through Friday from 9 a.m. to 3 p.m.

Culinary Institute Of America & Boscobel House: Mon., 11/12 (Holiday Monday) Dep. BNL 8:30 a.m., Gourmet lunch incl., tour Boscobel, arr. BNL about 7 p.m. $60/person.

Do-as-You-Please in New York City: Sat., 12/1, dep. Lab 10 a.m., dep. midtown 7 p.m. $10/person, under 3 free on lap.

BERA Holiday Party: Fri., 12/7, $60/person full buffet, bar, DJ, at Hotel Indigo, Riverhead. Spend night for $72 with full breakfast.

Radio City Christmas Spectacular: Sun., 12/9, dep. Lab 7 a.m. (9 a.m. show,) then see tree, etc. Dep. NYC 3:30 p.m. $70/person.

NY Nets: At new Brooklyn facility vs. Houston Rockets on 2/22, 2013, $60/person 7:30 p.m. game; and vs. Dallas, 3/1, 2013, $75/person for 8 p.m. game.

In Appreciation

Just want to thank all my friends here at BNL for the wonderful retirement party and gift. I have been at BNL for 11 years and will cherish the memories and friends I have made along the way. Thank you! — Maryann Julian

Thank you to everyone who attended my retirement party and helped to make it such a special night for me. It is a pleasure & honor to know all of you and I will miss every one of you. — Celeste Tymann

the Bulletin

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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*.

Bldg. 134, P.O. Box 5000
Upton, NY 11973-5000
phone: (631) 344-2345
fax: (631) 344-3368
e-mail: *bulletin@bnl.gov*