

Roger Stoulenburgh 02201112

Larry McLerran, Ph.D., Ph.D.

Chalk up a second Ph.D. for BNLER Larry McLerran of the Physics Department. McLerran, Theory Group leader for the RIKEN Brookhaven Research Center (RBRC) and a member of the Laboratory's Nuclear Theory Group, has received an honorary Ph.D. and professorship from the Central China Normal University (CCNU). McLerran specializes in quantum chromodynamics (QCD) — the theory of interactions between subatomic quarks and gluons. This applies to the description of matter made in the early universe.

McLerran was selected to receive the honorary degree and professorship for his contributions in the field of theoretical physics for high-energy particle collisions, and particularly for advancing QCD science in China.

A celebration was held for McLerran on November 6, 2011, at CCNU, which is located roughly 400 miles west of the Pacific Ocean in China's Wuhan province. Among the attendees were dignitaries from China's Ministry of Education and CCNU, as well as colleagues and students.

McLerran's professorship was named after his friend Liu Lian Shou, the late physicist and former Director of the Institute of Particle Physics in CCNU's College of Physical Science and Technology. It includes a grant that McLerran can use to help physics students in China develop into international physics collaborators who can participate in experimental and theoretical work related to BNL's existing Relativistic Heavy Ion Collider (RHIC) and to the proposed future electron ion collider called eRHIC.

"This is a very active area of scientific research where there is much potential for discovery. You get good ideas from young people whose backgrounds allow them to think about things in different ways," McLerran said.

McLerran does not speak Chinese, but he has traveled to China several times since his first visit in 1983. During his first visit, he traveled to a nation that was in the early stages of building a physics program following the changes in policy after the Cultural Revolution. McLerran gave several talks at a high energy physics workshop organized by Liu at CCNU. McLerran followed Liu's work and kept warm relations with him until Liu's death. He also maintained friendships with a number...

See *McLerran* on p. 2

Bon Voyage, BNLER Ernie Lewis

Lewis to set sail from California to Hawaii tomorrow on outfitted ship 'Spirit' to prepare for year-long climate science study 'MAGIC'

This is not a story about the latest mega cruise ship, with five swimming pools, 10 restaurants, a rock-climbing wall, and a casino. The vessel of interest to BNL, the *Horizon Spirit*, will instead be outfitted with radars, aerosol sampling devices, and other high-tech tools. But even without the fancy umbrella drinks, Ernie Lewis, an atmospheric scientist in the Environmental Sciences Department, can't wait to set sail.

Last November, Lewis and several colleagues traveled to California to visit the *Spirit*, a cargo carrier owned by Horizon Lines that makes regular runs to and from Hawaii. Tomorrow, Saturday, February 11, they will embark on a round-trip voyage to investigate how to get the ship ready for a yearlong mission gathering data to improve climate models, a project funded by DOE's Atmospheric Radiation Measurement (ARM) Climate Research Facility.

"We are extremely grateful to Horizon Lines for providing a platform enabling this deployment to occur — and to DOE for approving the project," Lewis said.

"Low marine boundary layer clouds over the ocean exert a large influence on Earth's climate through reflection of sunlight and mediating interactions between air and sea," Lewis explained. "These clouds are a challenge to global climate models — the computer codes that attempt to describe and predict the climate. The models have difficulty in accurately representing these clouds



Above: Scientist Ernie Lewis of the Environmental Sciences Department, with one of the mobile SeaTainer units that will be installed aboard the *Spirit* to take atmospheric measurements during a yearlong mission.

Below: The *Horizon Spirit*, a 272-meter cargo ship, makes the round trip between Los Angeles and Hawaii every two weeks.



and the transitions among their different types — stratocumulus, cumulus, and so on."

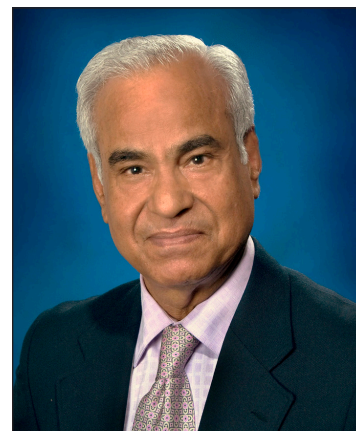
SeaTainer Unit

To gather sufficient data to improve the models, Lewis proposed deploying the ARM Facility's sophisticated scientific instruments

aboard a cargo vessel that already plies a route across an area of the Pacific where these cloud-type transitions are an ever-present phenomenon.

"The *Spirit* makes the round trip from Los Angeles to Hawaii every two weeks, encountering...

See *Ernie Lewis 'MAGIC'* on p. 2



Roger Stoulenburgh 01511110

Srivastava Receives Lifetime Achievement Award in India

At the 43rd Annual Conference of India's Society of Nuclear Medicine held December 8-11, 2011, in Chennai, India, the Society honored BNL's Suresh Srivastava with a Lifetime Achievement Award for his tremendous contributions to the field. Senior medical scientist Srivastava heads BNL's Medical Isotope Research & Production Program in the Collider-Accelerator Department.

At the conference, Srivastava delivered two invited keynote lectures: "Paving the Way to Personalized Medicine: Production of Certain Promising Theragnostic Radionuclides at Brookhaven National Laboratory," and "High-LET Radionuclides for the Molecular Imaging and Therapy of Cancer and Active Atherosclerotic Disease."

Said Srivastava, "It was an honor and a pleasant surprise to receive this award and to talk about the research at Brookhaven and several...

See *Srivastava* on p. 2

475th Brookhaven Lecture, 2/15

'A Really Good Hammer: Quantification of Mass Transfer Using Perfluorocarbon Tracers'

BNL's perfluorocarbon tracer (PFT) technology can be viewed as a hammer looking for nails. But, according to Tom Watson, leader of the Lab's Tracer Technology Group in the Environmental Research and Technology Division, "It's a really good hammer!"

PFTs — colorless, odorless and safe gases — have a number of research uses, from modeling how airborne contaminants might move through urban canyons to help first responders plan their response to potential terrorist attacks and accidents to locating leaks in underground gas pipes.

To learn more about the usefulness and challenges of working with PFTs, join Watson as he gives the 475th Brookhaven Lecture, titled "A Really Good Hammer" on Wednesday, February 15. All are welcome at this free lecture, which is open to the public and will be held at 4 p.m. in Berkner Hall. Refreshments will be served before and after the event. Visitors to the Lab 16 and older must carry a photo ID. To accompany the lecturer to supper at a restaurant off site after the lecture, contact Linda Satalino, lsatalino@bnl.gov, or Ext. 2383.



Roger Stoulenburgh 01600005

Tom Watson (right), with colleagues Bob Wieser and Ernie Lewis (see story above), using the PFT tracer analysis system in New York City

In his lecture, Watson will explain why PFTs are unique tools. Their extremely low background level — detectable at one part per quadrillion — allows their transport to be easily tracked. He will describe how Lab researchers used PFTs during the 2005 Urban Dispersion Program field studies in New York City, gathering data to help improve models of how a gas or chemical release might move around Manhattan's tall buildings and canyons. Closer to home, scientists used PFTs to make ventilation measurements in Bldg. 400 on the Lab site to provide data to test air flow

models used in determining the effects of passive and active air exchange on the levels of indoor and outdoor air pollution. Watson will explore the future of tracers as a tool and present the plans for future research.

Watson earned a Ph.D. in chemistry from the University of Colorado at Boulder in 1990. Before coming to the Lab in 2005, he served as a program specialist, research chemist and as deputy division director at the National Oceanic and Atmospheric Administration in Washington D.C. and in Idaho Falls, Idaho.

— Kay Cordtz

Not Everything Is A Nail

In his lecture, Tom Watson will detail many of the research "nails" that BNL scientists have identified on which to use their perfluorocarbon tracer "hammer." But as he pointed out in a recent article in *Environmental Science and Technology*, not every problem is a nail.

In the article, titled "Feasibility of a Perfluorocarbon tracer based network to support Monitoring, Verification, and Accounting of Sequestered CO₂," Watson concludes that PFTs would be a poor choice for long-term monitoring of sequestered carbon dioxide.

Carbon capture and sequestration (CCS) will act as a bridging technology necessary to facilitate a transition from fossil fuels to a sustainable energy-based economy. DOE's target leak rate for sequestration reservoirs is one percent of the total sequestered CO₂ over the lifetime of the reservoir, or 0.001 percent per year for a 1,000 year-lifetime of a storage reservoir.

"Sequestered CO₂ has to stay there for thousands of years, and we've got to know that it's going to stay there because it doesn't do the climate any good if it leaks out," Watson said. "And if it leaks out at one percent per year, in 100 years most of it is back into the atmosphere and we haven't gained anything. That's the issue."

How can you tell if it's leaking?

See *Nails* on p. 2

Srivastava from p. 1
...collaborating institutions, in particular U.C. Irvine and U.C. Davis, that has led to our developing the concept of ‘theragnostic,’ or dual-purpose, radiopharmaceuticals. Our work is producing ideas for the future that may very well empower the age-long dream of performing personalized, or ‘tailored’ medicine, which will entail diagnostic imaging followed by therapy in the same patient with the same radiopharmaceutical.”

For over three decades, Srivastava has been active in the development of radioactive metals to diagnose and treat disease. His long-term development of dual-purpose radionuclides, in particular tin-117m, which can be used in both the imaging and therapy of cancer and many other diseases that respond to radionuclide therapy, could enable the increased personalization of medical care.

When he first came to BNL in 1975, Srivastava worked on the use of the technetium-99m tracer in medical imaging. He went on to lead the Radionuclide and Radiopharmaceutical Research Division and the Medical Department’s technetium chemistry group in 1983. Around this time, Srivastava played a leading role in the instant technetium-99m red-blood-cell labeling kit’s development. Commercially known as UltraTag RBC, the kit began to be marketed in 1991. It quickly became, and still remains, as a valuable resource in cardiovascular imaging procedures.

In recent years, Srivastava has been a leader in the development of a pain-relieving treatment for bone cancer using tin-117m. The isotope is also undergoing commercially sponsored clinical trials for use in both the imaging and treatment of coronary artery disease. Srivastava has also for many years been involved in developing radiolabeled monoclonal antibodies and viral vector systems for the

imaging and therapy of cancer. In addition, he has investigated the use of positron-labeled stem cells for the imaging of their trafficking and biodistribution.

Srivastava received his Ph.D. in inorganic and analytical chemistry from the University of Allahabad, India, in 1961. His achievements and honors include the 1986 Industrial Research-100 (now called the R&D 100) award, which recognizes the 100 most significant new technologies of the year; the Federal Laboratory Consortium Award in 1988; the Special Recognition Award of the Chilean Society of Biology and Nuclear Medicine in 1989; the BNL Distinguished Research & Development Award in 1995; the Radiopharmaceutical Sciences Council Distinguished Service Award in 1999; the Indo-American Society of Nuclear Medicine Lifetime Achievement Award in 1999; and the 2003 Battelle Distinguished Inventor Award. He has published more than 220 refereed journal articles, 360 abstracts, 26 book chapters, and many seminal review articles. He is the inventor or co-inventor of 29 patented and three statutory inventions. In September 2010, he received the Lifetime Achievement Award at an ISRS (International Society of Radiopharmaceutical Sciences) sponsored symposium in Bressanone, Italy. At the same time, he was honored with the University of Padova’s Gold Medal in recognition of his continued role in the advancement of basic sciences in nuclear medicine.

Srivastava’s research has been funded mainly by the DOE Office of Science’s Office of Biological and Environmental Research and Office of Nuclear Physics, the DOE Office of Nuclear Energy, the DOE and National Nuclear Security Administration Global Initiatives for Proliferation Prevention program, and, in part, by a number of industrial sponsors. — Natalie Crnosija

Attention Mentors:
‘Request a Student’
Program Now Under Way

The Laboratory’s Office of Educational Programs (OEP) is accepting mentors’ requests for summer students. Funding and departmental capacity to host students is expected to go fast, so submit requests as early as possible.

For more information, visit <http://www.bnl.gov/education> and follow the links for mentors.

Ernie Lewis ‘MAGIC’ from p. 1
...atmospheric conditions that are important to numerous climate models,” Lewis said. “The data we collect over a full year of sampling along this route will therefore provide constraint, validation, and support for these modeling efforts.”

The project — dubbed MAGIC, for the Marine ARM GPCI Investigation of Clouds, where GPCI is a project comparing data from the major climate models — will begin in October 2012 and run through September 2013.

Lewis and his team are already working with colleagues from Argonne National Laboratory on a myriad of logistical details. The first step is to determine how the instruments will be installed on the ship.

Some of the instruments are housed in modified 20-foot Sea-Tainer cargo containers that will be placed on deck. These mobile

One More Intel Semifinalist: Amelia Morales

Last month, the Laboratory announced two Intel Science Talent Search semifinalists who did research with mentors at Brookhaven Lab. Since then, word was received that Amelia Morales of Kings Park was also named a semifinalist in the Intel contest for research she did with Nelly Alia-Klein of Brookhaven’s Medical Department.

Alia-Klein mentored Morales, a senior at Kings Park High School, during the summer of 2011. Morales’s project was titled Monoamine Oxidase A Genotype Associated with Negative Emotions in Cocaine Addicted Individuals: A Gene by Disease Interaction. With Alia-Klein, she developed statistical models for studying an enzyme that breaks down neurotransmitters in the brain and affects how people — particularly those addicted to cocaine — develop negative emotions and respond to stress.

Alia-Klein said, “Not only does Amelia have the capacity to understand the analytical data of genetics, statistics, and psychology, she also has the creativity to draw from these different disciplines, make sense of it all, and make a difference.”

McLerran from p. 1
...of other colleagues he met during his visits to China.

Nu Xu, the current dean for CCNU’s College of Physical Science and Technology, is a scientist at Lawrence Berkeley National Laboratory and the spokesperson for the STAR collaboration at RHIC. Xu created the professorship in honor of Liu and nominated McLerran to be the first honoree and to receive the honorary Ph.D. Those who also wrote letters supporting McLerran’s nomination for the honorary Ph.D. included Nicholas Samios, former BNL Director and now the RBRC Director; T.D. Lee, who in 1957 with C.N. Yang won Brookhaven’s first Nobel Prize in Physics, was BNL’s first RBRC Director, and is currently a professor at Columbia University; Jean-Paul Blaizot of France’s Commission for Atomic Energy and Alternative Energies; and E.K. Wang, of CCNU.

“Larry was among the few first foreign scientists who visited China soon after the Cultural Revolution,” Xu explained. “This honorary Ph.D is a big deal, be-

cause it had to be approved by the State Council’s Academic Degrees Committee, which is part of the Chinese government. Not many more than 200 people have been awarded these honorary degrees. Larry is a well-known high energy physicist who can help to boost QCD physical science in China and strengthen our University’s reputation.”

Horizon Spirit’s Route From Los Angeles to Hawaii

“We plan to have two radars, one pointing vertically and one scanning continuously while the ship is underway,” Lewis said. “The installation plan must ensure that these radars and other instruments for collecting data on aerosols and other important variables have clear views of the sky — and of the sea surface, for instruments taking remote temperature readings — while at the same time not interfering with Horizon’s activities.”

During the test cruise, dubbed Leg0 (Leg-Zero) of the study, the



Morales plans to attend college this fall.

OEP’s High School Research Program

Many high school students, including Morales, come to BNL through OEP’s High School Research Program. The program gives 11th and 12th grade students an opportunity to work with BNL scientists and participate in important ongoing research and development programs.

“Brookhaven’s High School Research Program fosters a love for science and research among our students who participate,” said Mary Ellen Fay, Research Advisor at Kings Park High School.

“Dr. Alia-Klein treated Amelia as a member of her lab, giving Amelia the opportunity to work through complex problems that she was capable of solving and, most importantly, grow as a scientist.”

Those interested in mentoring high school students, and students interested in participating in BNL’s High School Research Program, should contact Scott Bronson, (631) 344-4385, sbronson@bnl.gov.

Intel Update

On January 25, 40 of the 300 Intel semifinalists were invited to compete this March in Washington, D.C. for the top award of \$100,000. Five of these finalists were from Long Island, including Anna Sato — daughter of Yimei Zhu of the Laboratory’s Condensed Matter Physics and Materials Science Department — for research she did in Stony Brook University’s Chemistry Department. Morales and the other two semifinalists who did research at Brookhaven, Ross Shulman and David Wu, were not selected as finalists, but as semifinalists, they won \$1,000 each and their school districts were also awarded \$1,000.

— Joe Gettler

Nails from p. 1

“The ambient background of CO₂ is too high and the daily and seasonal variations are too large for you to be able to see a leak,” Watson said. “To detect CO₂ leaks effectively at the surface, a tracer tag in the sequestered CO₂ may be required.”

Watson calculated how much PFT would be necessary to accomplish this detection, and concluded that “the quantity of PFTs needed for tagging sequestered CO₂ is too large to be practical for routine monitoring.”

Tagging at a level that would result in 1.5 times background at a sampler located one kilometer from a leak of 0.01 percent per year would require 625 kg per year of PFT.

“We used grams of PFT in the New York City Urban Dispersion field studies and it worked well,” Watson said. “But if you’re going to tag at a one-part-per-million level and you have 8.6 million tons of CO₂ per year coming out of a power plant, you need 8.6 tons of tracer — that’s more than the total atmospheric burden of PFT.”

He pointed out that the utility of PFTs or any other tracer would be lost if the background levels are allowed to rise indiscriminately.

“The reason that PFT is a good hammer is that the background is detectable at parts per quadrillion levels,” Watson said. “That’s the reason that it works so well. It would be a lot harder to use if the large quantities needed for carbon sequestration increased the background levels. A better use of PFTs would be as a tool in sequestration research.”

To read Watson’s article in *Environmental Science and Technology*, go to <http://pubs.acs.org/doi/abs/10.1021/es2034284>. — Kay Cordtz

team will evaluate travel conditions, measure the ship’s motion, investigate locations for weather balloon launches, and familiarize themselves with ship routines and operation.

“Characterization of the ship’s motion will aid in the construction of so-called ‘stable tables’ designed to allow instruments to remain pointing directly upward as the ship rocks from side to side,” Lewis said.

“Hopefully there will not be much other motion, as I get seasick!” he added.

Once setup is complete, the instruments should operate continuously for the yearlong study. Two technicians will remain on board for the entire cruise, and additional scientific personnel will board for two intensive study periods, one in winter and one in summer, to help gather even more data.

“Collecting data over a full annual cycle will allow us to determine how a wide range of variables changes daily and on seasonal scales, as well as their spatial variability — especially the transition between cloud types and coverage that has proven so difficult to capture in climate models,” 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.”

“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,” Lewis said.

— Karen McNulty Walsh

until 2000 at the University of Minnesota, while also serving as a member and Director of its Theoretical Physics Institute.

McLerran arrived at BNL in 1999 as a senior scientist and led the Nuclear Theory Group until 2004. In 2003, he became the theory group leader for RBRC.

In addition to his new honorary Ph.D. and professorship, McLerran has received a number of awards during his career, including a Brookhaven Science & Technology Award in FY2007 — one of the Laboratory’s most distinguished prizes awarded for the exceptional nature of an employee’s contributions, as well as the level of difficulty and benefit for Brookhaven.

McLerran is also a Fellow of the American Physical Society and a foreign member of the Finnish Academy of Arts and Sciences. He is an Alexander Sloan Foundation Fellow, was awarded the Alexander Humboldt prize in 1988, and received the Hans Jensen prize at the University of Heidelberg in 2009, where he is a Jensen Professor of Theoretical Physics. — Joe Gettler

Celebrate African American History Month

Culture art display in Berkner, 2/16, 17, additional events planned

All are invited to enjoy the display of art and artifacts gathered by members of the BNL BERA African American Affinity Club to celebrate Black History Month. The display will be held on Thursday and Friday, February 16 and 17, in Berkner Hall lobby, 11 a.m.-2 p.m. The art of the late Michael Newton, Long Islander, and silk screen work of Atlanta artist Daw'u will be on show.

Tuesday, February 14, Noon – 1 p.m. Berkner Hall. Video Presentation of a **NOVA program, *The Forgotten Genius (Part I)***. Through re enactments, archival film, and personal interviews, NOVA describes the life of Percy Julian, acclaimed for discoveries in organic chemistry and as the first black director of an industrial chemistry research lab. He earned his masters from Harvard University and Ph.D. from the University of Vienna, and later converted soybeans into steroids on an industrial scale, and helped make the drug cortizone affordable.

Thursday, February 16, Noon – 1 p.m. Berkner Hall. Video Presentation of a **NOVA program, *The Forgotten Genius (Part II)***. See above.

Thursday/Friday, February 16/17, 11 a.m. – 2 p.m. **Art Display,** Berkner Hall lobby

Thursday, February 23, Noon – 1 p.m. Berkner Hall. Sekazi K. Mtingwa of the Massachusetts



This show of African American artifacts was held by the then BNL African American Culture Club members led by Barbara Simpson (right), with (from left) Omar Gould, Carmen Narvaez, Abass Wesson, and Rosa Palmore, in 2006. This year's display by the club, now called the African American Affinity Club, will include art from Ghana, Tanzania, and Egypt.

Leave Your Lunch Bag Home on Tuesdays

Celebrate African American History Month With the BERA AAAC and Nayyarsons Cafeteria Service

Nayyarsons, in collaboration with the African American Affinity Club (AAAC), is happy to present a taste of African and African-American culture this month. On Tuesdays, enjoy African, Caribbean, French/Creole, American/Southern and Latin cuisine offerings and celebrate the flavors these different ethnicities offer.

Institute of Technology will talk on “**Celebrating the Lives of Two Bold Afro-Russians.**” Mtingwa will talk about two geniuses, Alexander Sergeyevich Pushkin (1799-1837) and his great-grandfather, Abram Petrovich Gannibal (1696?-1781), who contributed immensely to literature and civil engineering, respectively. He will explore their impact on the history and soul

of Russia and assess the impact that Pushkin had directly on African-American literary figures during the Harlem Renaissance.

Tuesday, February 28, Noon. Berkner Hall. Video Presentation, titled ***No Short Climb.*** Documentary by Robert Johnson, Jr., focuses on race, workers, and America's Defense Technology.”

— Liz Seubert

Arrivals & Departures

— Arrivals —

Bingchu Huang..... Physics
Mark LukaszczukITD
Xiaoxiang Xi..... Photon Scis

— Departures —

Ivo Dimitrov.....CMPMS
Marcelo Ferreira Photon Scis
Zhihui Pan.....CMPMS

BSA Noon Recital: *La Tragédie de Carmen*, 2/15

In the early 1980's, Peter Brook brilliantly adapted Bizet's *Carmen* to a shorter work titled *La Tragédie de Carmen*. He focused the action entirely on the scenes involving the four principals, Carmen, Don José, Micaëla, and Escamillo, and had the distinguished French composer Marius Constant adapt Bizet's symphony orchestra for a small chamber orchestra. The result is a riveting evening in the theatre, to which anyone who attended a performance of this version during its long run in the Vivian Beaumont Theatre in 1983 will attest. Performed by the Opera Guild, the opera will be previewed in Berkner Hall on Wednesday, February 15, at noon. Sponsored by BSA, the concert is free and open to the public. Visitors to the Lab of 16 and older must carry photo ID.

Fix Your Cracked Windshield Safely — On Site

The presence of vendor trucks in Lab parking lots has been a source of traffic and pedestrian safety concern. So the Lab's Safety & Health Services Division recommends that all employees who need windshield repair service to be done on site by outside repair services take their cars to the on-site service station M&L Auto Care, Inc., located on Rochester Street. M&L offers a safe and convenient location for windshield repair service by outside vendors. You can work directly with your insurance company and windshield repair vendor to arrange service, or M&L will provide the windshield repair service for you.

M&L is open Monday-Friday, 7:30 a.m.-5:30 p.m. To make a service appointment, call Ext. 4034. This service station also performs New York State inspections and all types of vehicle repairs.

AdoptaPlatoon Book & Bake Sale, 3/1

The Brookhaven Veterans Association's AdoptaPlatoon team will host a book & bake sale on Thursday, March 1, 11 a.m.-3 p.m. in Bldg. 400 lobby. Bakers are needed to make cookies, cupcakes, breads (sliced), etc. Contributions should be wrapped individually in cellophane. Items will be sold for one dollar each, so please size accordingly. Please bring baked items to the lobby of Bldg. 400 at 11 a.m. on the day of the sale. All proceeds will go towards AdoptaPlatoon's support of troops in Afghanistan. More information is on our website: www.bnl.gov/bera/activities/va/Adopt-A-Platoon/.

Also, in the AdoptaPlatoon collection bins around site, please give Cup-a-Soups, freeze-dried soup, hot cocoa packets, hand and foot warmers. Or send checks made out to “BVA” with “troops” in the memo line, to P.O. Box 67, Upton, NY 11973.

In Memoriam

Joseph Steimers, who joined the Health Physics Division on April 28, 1952, as a technician B trainee, was promoted to senior technical supervisor by October 1980 and retired on January 1, 1992, died on January 22, 2009. He was 79.

Irma Reilly, who joined the Photography & Graphic Arts (P&GA) Division as a tracer on August 13, 1951, died at 80 on July 13, 2011. She had left the Lab in June 1955, returned in February 58, left in June 59, returned in April 1967, left again in September 1967, and returned in December 1986, and retired as a specialist A-1 on February 26, 1993.

Gerald Dupré, who became a technician B in the Proton Synchrotron Division on December 6, 1954, and retired from the Alternating Gradient Synchrotron Department as a principal technician on February 7, 1981, died at 85 on September 30, 2011.

Dorothy German, who joined the Payroll Division as a clerk C on February 16, 1948, then moved to the Instrumentation & Health Physics Division that year, becoming a health physics technician B in 1951 and retiring as a senior technician on April 26, 1984, died at 97 on November 6, 2011. She had left the Lab on March 1, 1953, returning on April 30, 1956.

George Korhut, who became a junior technician in the Alternating Gradient Synchrotron Department on August 8, 1962, and retired as a technical associate II on May 31, 1984, died on November 10, 2011. He was 89.

Hong-Bo Chiang, who became a scientific programmer II in the Applied Mathematics Department on August 1, 1965, and retired as a computer analyst on December 31, 1989, died on November 17, 2011. He was 81.

CALENDAR

— WEEK OF 2/13 —

Tuesday, 2/14

***NOVA: Chemist Percy Julian (Pt. I)**
Noon. Berkner Hall. see African American History notice, left.

Info on Weight Loss Program

Noon. Bldg. 490. Large Conference Room. Program open to eligible employees. Register in advance: call Michael Thorn, Ext. 8612.

Wednesday, 2/15

***Blood Drive**

9:30 a.m.-3 p.m. Brookhaven Center (Bldg. 30). See below, left.

***BSA Noon Recital**

Noon. Berkner Hall. Opera from Stony Brook. Peter Brook's adaptation of *La Tragédie de Carmen*, with conductor Tim Long. Free, open to the public. Visitors to the Lab of 16 and older must carry photo ID.

***475th Brookhaven Lecture**

4 p.m. Berkner Hall. Tom Watson, Environmental Sciences Department, will speak on “A Really Good Hammer: Quantification of Mass Transfer Using Perfluorocarbon Tracers.” All are welcome to this free lecture, open to the public. Refreshments will be served before and after the talk. Visitors to the Lab of 16 and older must carry photo ID. See p.1.

Thursday, 2/16

***Art Display for African-American History Celebration**

11 a.m.-2 p.m. Berkner Hall lobby. See notice above left.

***NOVA: Chemist Percy Julian (Pt. II)**
Noon. Berkner Hall. see African American History notice, left.

Defensive Driving, Part I

6-9 p.m. Brookhaven Center South Room. See p.4.

— WEEK OF 2/20 —

Monday, 2/20

President's Day: Lab Closed

No Bulletin on February 24.

Thursday, 2/23

***Talk by Sekazi K. Mtingwa, MIT**

Noon-1 p.m. Berkner Hall. Talk on “Celebrating the Lives of Two Bold Afro-Russians,” one of the events celebrating African-American History month. See notice above, left.

Gorman-Metz Scholarship Alert

Application forms for the 2012 Gorman-Metz Scholarship can now be picked up at the Diversity Office, Bldg. 400B. The competitive scholarship awards a one-time sum of \$5,000 each year to a student who has a disability (as defined by the Americans with Disability Act, www.eeoc.gov/policy/ada.html) and is matriculating toward a graduate or professional degree. Preference will be given to studies in science, engineering, and math. (Students with disabilities attending undergraduate schools may apply.)

To be eligible, the applicant must be the son or daughter of a current or retired employee of BNL or the son or daughter of an employee who died while in regular service at BNL. The applicant must also be a college senior who will graduate during the current academic year and who will enter graduate school the following fall. Current enrolled graduate students are also eligible.

More information about this scholarship is given on the memo mailed to all employees on January 18, 2012, or call Rosa Palmore, Ext. 2703. The closing date for receipt of applications at the Diversity Office, Bldg. 400B, is March 30, 2012. The scholarship will be awarded in May 2012.

Got Blood? BNL Blood Drive, 2/15

The next blood drive at BNL will be held on Wednesday, February 15. Long Island hospitals use about 800 units of blood each day — your blood is a very precious gift. If you can give, please 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. Also, you cannot have donated blood in the past 56 days. Restrictions may apply to individuals from the United Kingdom and Europe.

Schedule an appointment by calling Liz Gilbert, Ext. 2315, or online: <http://www.bnl.gov/hr/blooddrive/>. Thank you.

Chasman Scholarship for Women Science Students

Applications are now being accepted for the Renate W. Chasman Scholarship for Women, offered each year by Brookhaven Women in Science (BWIS), a not-for-profit organization whose aim is to promote the advancement of women. This scholarship was established in 1986 to encourage women who have taken a break from formal education to resume their studies in natural sciences, engineering or mathematics. The winner will receive a one-time award of \$2,000.

For application forms and more information, write to: Chasman Scholarship Fund, P.O. Box 183, Upton, NY 11973, or send an e-mail request to bwisawards@bnl.gov. Applications may also be downloaded from the BWIS website: www.bnl.gov/bwis.

Renate W. Chasman (1932-12977) was a noted BNL physicist. Her work influenced the design of particle accelerators around the world, including the National Synchrotron Light Source (NSLS) and NSLS-II, a \$912-million state-of-the-art facility due to be completed at BNL in 2015.

— Natalie Crnosija

Swim Classes for All Ages at the Pool

Come one, come all to the BNL Pool (Bldg. 478) for swimming classes on site. Advance registration is required. Please make checks payable to BERA and mail to the Recreation Office in Bldg 400A.

Adult Swimming Lessons

Those 18 and older are invited for adult swimming lessons on Wednesday evenings from 5:30 until 6:30 p.m., March 7-April 25. Registration is \$80 per person, and includes eight lessons: no make up classes. Sign up before February 29. Questions? Call Sue Dwyer, Ext. 3496, or the Recreation Office, Ext. 2873.

Aqua Aerobics for Seniors

Senior members of the Lab community, including parents of employees, are invited to join aqua aerobics classes, which will be held on Wednesdays, March 7- June 20, from 9 to 10 a.m. Sixteen classes is \$80 per person.

Starfish Swimming Classes for Four-Year-Olds

Swim lessons for children of BNL families will be held on Saturdays, March 31-May 19 (excepting April 7, Easter), 9 to 9:30 a.m. and 9:30 to 10 a.m. Children must be four years old by December 2011, and they must arrive shortly before the class is scheduled and be ready to swim. Registration is \$80 per child — sign up by March 19.

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

08 HONDA CIVIC – 44K mi. 4cyl, 4dr, a/t, a/c, p/s, p/w, p/l, am/fm, MP3, CD, tilt wheel, eng, ABS brakes in excel cond, v/gd tires. \$13,334 neg. 339-3444.

07 BMW 328Xi – 52K mi. awd, 2-dr coupe, a/t, CD-iPod, comfort access pkg, excel cond, priced reduced, must sell. \$18,500 neg. 747-3495.

05 HYUNDAI XG350L – 87K mi. all options, well maintd, recent new timing belt, waterpump, all new ignition syst. parts, \$6,000 neg. Daniel, Ext. 2121, 766-0423.

01 MITSUBISHI GALLANT ES – 106K mi. silver w/gray cloth int, eng recently rebuilt, v/clean in/out. \$3,500 neg. 681-9800.

01 DODGE NEON – 90K mi. 4 dr a/t, recent tune up & oil change; int. gd, ext. fair; aftermarket rims; needs nothing, runs well. \$2,000 neg. 346-8895.

Boats

12' YAMAHA SUPERJET – '94 Yamaha 650 superjet stand-up; all apart, needs new top end. \$600 neg., sale or trade. 816-3554 or jad9817@yahoo.com.

Furnishings & Appliances

BREADMAKER – Welbilt Breadmaker ABM 3500, never used, no manual \$40/obo. Denise, Ext. 4289.

FREEZER – Kenmore upright 12 cu ft, \$225. Bert, 581-4436 or bert@bnl.gov.

HEADBOARD & FOOTBOARD – beautiful, beige & black lacquer, q/size, v/gd cond/\$75, pics avail. Debbie, Ext. 3120 or dreynolds@bnl.gov.

WALL LAMP/SCONCE - Victorian, 2 sets, white glass w/sm flowers &brass, pics avail, both/\$45; one/\$25/obo; bathrm cabinet/white, over commode, \$65/obo. 909-7080.

Audio, Video & Computers

CANON DIGITAL CAMERA – PowerShot A95, 5 megapixels, 3x optical zoom, can record video, uses CF cards, reg batt, \$20/obo. Tony, Ext. 8450 or tony@bnl.gov.

CELL PHONE W/EAR PHONE – Samsung Rogue Cell Phone w/ear phone, Verizon Wireless, VCast Multimedia phone w/ touch screen. BO. Yvette, Ext. 5591.

COMPAQ LAPTOP – Presario F572US w/2GB memory, lightly used, HP branded, 12 cell ext. life batt, all v/gd cond, \$175. Shigeki, Ext. 2635 or misawa@bnl.gov.

DELL INSPIRON 1546 LAPTOP – AMD Dual Core 2.2 GHz X64, 4GB RAM, 320GB SATA,DVD RW, Windows 7 X64 Home Prem., more, \$400. gstevens@bnl.gov.

ENSONIQ SDP-1 – Sampled digital piano w/ full size keys and hammer weighted action, incfs collapsible stand & Yamaha amplified spkr, \$150. Travis, shrey@bnl.gov.

HP INKJET CARTRIDGES – 2 black: 56 C6658A; 2/color 28 C8728A, & 57 C6657A, \$5/ea, orig, unopened pkgs. 566-8261.

LEAPSTER2 LEARNING GAME SYSTEM – By Leap Frog, ages 4-8, 2/systs & cases, recharge batt, int, cable, 6 games: Backyardigans, etc. \$100/all. Ext. 5753.

PANASONIC CAMCORDER – PV-GS31 model, mini-DV tape camcorder, lightweight, own light, can take still pics \$50/obo. Tony, Ext. 8450 or tony@bnl.gov.

TOSHIBA LAPTOP – A135-s4527 w/2GB memory, batt is dead, screen hinge out of alignment, otherwise runs well, \$95/obo. Shigeki, Ext. 2635 or misawa@bnl.gov.

Sports, Hobbies & Pets

2011 JAYCO 29' TRAVEL TRAILER – upgraded a/c, underbody insul,Mag wheels, satel. tv,am/fm/cd/dvd, in/out spkrs,a/t awning, 7 yr ext warr, extras ask/\$19K. 872-5074.

BERA MUSIC CLUB – BERA Music club is reforming and looking for members. Anyone interested in playing/promoting music is invited to attend a meeting at Berkner conf room D at noon, Feb. 21. Pete, Ext. 5761.

BICYCLE – Toy Story 12" Bike, blue w/ training wheels/\$15. Ext. 7918 or difilip@bnl.gov.

BUESCHER SAXOPHONE – Tenor sax, w/case, great cond, serial #485658, \$400/obo. Denise, Ext. 4289.

JOHNNY WEST – Collectors 1966 Marx Johnny West Action Figure, w/accessories ask/\$30. Denise, Ext. 4289.

SKI BOOTS – Rossignol Salto 4/buckle mens size 10-10.5, \$40. 365-9822.

UNIVERSAL GYM – 200lb weight stack w/pec deck, bench press, lat pull down, row, leg lift, roman chair, v/gd cond, \$250. Kevin, 897-2827.

Tools, House & Garden

110V MIG WELDER – needs work, handle smashed, in rough shape but worked well before handle broken, poss. trade for a space heater. 816-3554.

Valentine's Day Notes

To My Spicy Dumpling: Loving you has made my life sweeter, and spicier, than ever. With many adventures to come, I couldn't dream of a better partner. Love always, Cap.

Dear Nan, The past 18 years have been the best and I look forward to 19. Happy Valentine! Love, Bob

Fluffy, you are the love of my life. You're the only one for me. Until eternity. Love your princess

Our Little Man the best son ever. We love you more than you'll ever know. You make our lives complete. Love mom and dad

Group hug, group kiss, grouper face, grouper kiss!! Love you Larry, Larry Jr. and Carrie! Happy Valentine's Day! Love, Mom

Hunbear, You are the love of my life! People search a lifetime to find what we have. I Love You Forever, Buns

To Ron2shuz, When you walked into my life, there was no looking back.

All I wanted was a future with you. Ja cie Kocham! Always, your Peanut

LC: to a wonderful wife and mother, Happy Valentine's Day! I love you. – JC

MJG, you're my "Bun"dle of joy. You make it possible to live w/all those pets! Love, one of your Bubs

Roses Are Red, Violets Are Blue. What Makes us Happy, Is Thinking Of You! Love, JT and Daddy.

LN,You're my best friend as well as my lover; I treasure you just as I have treasured our life together. RN
Team Bosco – You guys are the best and I know 2012 will bring us all a lot of happiness—XOXO, LM

Hi My Love, It is almost our one year anniversary, and what an amazing year it has been! You are a wonderful man, and I love you so much. I love us, and we make an awesome team. I look forward to the many years to come. Even after all the years we have been together, I still think you are YUMMY! Happy Valentine's day my love. Your Wife.

Bunches, You want the moon? Just say the word and I'll throw a lasso around it and pull it down. Love Always, Ants in the Pants

JUN – Happy Valentine's Day to my Loving Husband who makes my HEART BEAT. Love You – SHA

I wish you a smooshy-gooshy, bee's knees, baby cakes, cuddle bunny, honey lips, loofie-goofie, fluffy marshmallow, snookie-ukums, lemon-drops, lum-lums, lolly-pops, smoochie-oochie kind of Valentine's Day. We'll kick back with a glass of Cran-Apple juice and listen to our favorite song: "I Went Back to My Fourth Wife for the Third Time and Gave Her a Second Chance to Make a First Class Fool Out of Me" Love, Zim

Hon- 'Tho time bends our bodies, it's still amazing how wonderfully we fit together. Luv ya desperately...wm

Mi Inamorata, I love your kisses. I love you! Your Shopper/Associate XOXOXO

Happy Valentine's day to Kelly and the girls! Although the road may not always be smooth, I love the ride! Love you guys! – Daddy

Dodo, Matt, Ally, Dando - Love you to the moon and back "infinity" times! Love, ah me!

CG You are way too cool Love KC

Pete G is the best! KC
No one can deny the presence of Building 555 between us. JS, you are the love of my life. –WS

Noa, every time you say 'mine,' I know you are appending it to 'Will you be....' xo always. Daddy.

TB, After 31 years of marriage, 2 wonderful children and many trials and tribulations, you will always be my Valentine.

BJ – Les neiges d'antan brillent de loin, brilleront à jamais. — L

You're the enzyme to my substrate, The green algae to my ocean, The Higgs boson to my quark, For you give me all that matters. In every department, you are sublime And each day, I thank the stars that you are mine. Happy Valentine's Day!

Hey Tony Stark – you're getting a cup! With dirt in it! Wheee! We-we-we-Whееее!

I can't wait to marry you! Xoxo-Z

"Squonk", "Leave It" to you to steal my heart. I treasure our "Groovy Kind of Love". I "Sirius"-ly love you!

Happy Valentine's Day and Happy Birthday to my #1 guy. You will forever be in my heart and soul. Miss you Eddie-Bear.

Julia, Emily, and Andrea...the three loves of my life who always make my heart skip a beat. I love you girlie girls! AJ.

Ziggy, you mean the world to me!

Dear L, Happy V Day, and Happy Anniversary, too. Looking forward to another great year with you. Mmm

Steph- I love you more and more each passing moment. You are my soul mate, my wife, my best friend. I would put the earth on my shoulders for you! Love forever, your admirer, A xoxo

Dear Kayla & Charlie, I have been in love with you since the moment I first saw you both. I look forward to cherishing every moment to come. Mommy xoxoxo

Dear New York Giants,Thank you ever so much for winning Super-bowl XLVI 2012. Congratulations & Happy Valentine's Day. Love, One of your biggest "female" fans!

Deanna & Glorissa, I just wanted to wish you a very Happy Valentine's Day. I cannot wait to go on our cruise together! I love you guys very much! Love, Mom

Mike, I knew you were a very special person when we first met. Each day you continue to show caring and kindness not just to me, but to those around you. You always make time to help, even when you are in a hurry. You remember the special little things that make me happy. Although I may not show it, I want you to know I am so very grateful to be able to share my life with you! Love J

Dada – Happy Valentine's Day to the best daddy on earth! Love, Alice & Kirsten

It's been a year already. Our love is 12 million times stronger. Love you back.

You said "I don't want flowers and candy" but here is an idea. How about we share some brandy? Love to go on a good vacation.

PPYNE – Forty-one Valentine's Days together and still counting! Still looking forward to many, many more. Love always – Me.

Sweetie, My love for you grows stronger each day. Pappy kisses

Dear Captain: Life with you is my favorite adventure. You really float my boat! Love, First Mate S.D.

To WW, Red rope and hot tube! Happy Valentines Day. From WH
Dear Bose, You mean the world to me. I Love forever! Femi.

JS: I love spending simple ways and quiet nights and gentle days with you. Love ES

TO MY BOYS – Mother to the cutest, happiest munchkin in the world and married to my best friend. What more could a girl ask for? Love you to pieces. Happy Valentine's Day! XOXO Mommy // Wifey

Happy Valentine's Day to my loving wife, Charlotte, and adorable son, Alexander. Love, Jim

To My Chocolate Milk Dud: Ups and downs and good and bad you are my best friend and MY love. The chemistry we had from the start is unquestionable and I never want to lose that for the years ahead. With a family and marriage we will grow as forever partners. Together driving cross country in our RV, enjoying life until my last breath. I love you always. Xxoo. Your Lovey.

Dear You, I will "ALWAYS" Love U, Miss U, Need U and Want U. Me.

It's time to enjoy the good life, you deserve it!!! Love, Your Man.....

Sweetie, Just want to say that I Love you. I don't say that nearly enough. Let's take the time to appreciate us. Me

"No more Jokes, a ring for a house, I am getting the best part of the deal – You"

To my lovin bears, Katrina, Tara and Krista, precious angels sent to me from Heaven, LUV Moo Moo

SNOOKIE – Every ACT, Every SMILE and Every SPOKEN WORD means Everything to me!

Happy Hearts Day to my friends, the "Pink Ladies!" You know who you are! Looking forward to more laughter and fun times! JK.

Happy Valentine's Day to all – even those who submitted Valentines with more than 15 to 20 words.
The Bulletin may not feel so sappy next year ;)

Environmental & Safety Audits Continue Until Feb. 17

Details online: <http://intranet.bnl.gov/memo/mm.asp?Issueld=210&Storyld=3>

SONY 8MM VCR DECK OR CAMCORDER – must have stereo in/and outputs, will use it to copy old tapes to DVD, will pay fair price. George, Ext. 2550.

TRUMPET OR CORNET – for beginner, any cond. John, Ext. 4632.

USED CPAP MACHINES – I am collecting used/obsolete CPAP machines which will be refurbished, cleaned & donated. Nancy, Ext. 4567 or nlosinno@bnl.gov.

YOUNG CHILD'S BALLET SHOES - Size 9 for three-yr-old kid wanted, in good cond. Ext. 2346.

For Rent

KISSIMMEE, FL – 1/brdm unit, sleeps 4, \$350/wk; 2/brdm unit, sleeps 6, \$650/wk.; both avail Easter wk -Apr 8-15, both Sheraton Vistana Villages. 813-0497.

ORLANDO, FL – 2/brdm, 2/bath Marriott Timeshare w/ full kitch, sleeps 8, u-pic the resort and wk you want. \$1,500/wk. 873-8959.

WEEKI WACHEE, FL – priv ranch on Gulf, 70m Orlando, 45m Tampa, fly Islip direct, near beach/tennis/park, SW architecture, 3/brdm, 2/bath, d/r, f/p, 2gar, igp in lanai, fruit trees, see review.oktane.net/House-Tour. \$450/wk. 344-5537.

BROOKHAVEN HAMLET – rm in 3 brdm hse, looking for professional, non-smkr/ non drinker, 10 easy mins from BNL, incfs utils, leave a msg. \$700/mo. 294-7505.

CALVERTON – 1 brdm bsmt w/lg glass dr entry, l/r kit w/pantry lots of cabinets, full bath, f/p, lg storage closet incl util. \$1,000/mo. 764-8001, 727-5646.

CALVERTON – Sing. fam. home, 2b/r, 2ba, kitch, d/r, lrg l/r w/vaulted ceilings, shed, no smkg/pets, refs & cc reqd, 2mos at signing, +util, \$1,800/mo. 831-0152.

LAKE GROVE – Housemate share house w/single professional-prv bsmt living area. \$800/mo. Jo Ann, Ext. 7009, 506-9242.

MORICHES – Condo Share - wanted prof. female to share, gated community, furnd brdm, priv bath, w/d, kitch use, incfs utils, no smkg/pets, \$950/mo. Sallie, scrick@bnl.gov.

RIDGE – 1 brdm, l/r, kitchenette, full bath, sep ent/prkg, util incl, quiet neighborhd, mins to Lab. \$975/mo. Lynne, 924-0002.

RIVERHEAD – 3bdm, 2full ba Western Ranch, l/r, d/r, w/d, gar, new wndws & furn, c-d-sac, quiet, nr shops, no smkg/pets, refs & cc reqd, 1mo sec+util. \$2,250/mo. 512-6470.

ROCKY POINT – 2nd fl legal 1 brdm apt, full bth, eik, LR, priv ent, no smkg, access to priv beach. w/elect/water/heat/cable/wless/int, 1 mo rent & sec @ signing. \$975/mo. 494-5474.

SHOREHAM – 1 brdm, furnd, new garden apt, grnd flr, indep ent/drwy/prkg, full ba, kit, l/r, cac, no smkg/pets, nr BNL, 1 mo sec, all util incl. \$1,150/mo. 566-8261.

For Sale

WEEKIE WACHEE, FL – priv ranch on Gulf, 70m Orlando, 45m Tampa, fly Islip direct, near beach/tennis/park, SW architecture, 3/brdm, 2/bath, d/r, f/p, 2gar, igp in lanai, fruit trees, see review.oktane.net/HouseTour. \$125,000 neg. 344-5537.

AQUEBOGUE – 3 levl 3000 sq ft condo, 3.5 ba, cac, central vac, 2 car gar, hot tub, walk on priv beach, 3 zne heat, heated pool, tennis, all appli, patio, upper deck, pond view. \$699,000. Carmine, Ext. 5101.

CALVERTON – cape w/2/brdm, 2/bath, kitch, d/r, lrg l/r w/vaulted ceilings, quiet neighborhd w/views of Swan Lake. \$274,000 neg. Debbie, 831-0152.

ISLANDIA – 2 story town hse, 2 BR/2.5 bath/ loft/eik/dr/lr w/cath ceilings & fp/att gar, gas heat, cac, new carpet, bktyrd w/deck, quiet community w/pool & tennis, close to LIE/ LIRR. \$269,000 neg. Susan, Ext. 7270.

MIDDLE ISLAND – 4 brdm ranch, 2 bath, eik, f/p, cac, pool, deck, fin bsmt, 2 car, sprinklers, shed, 600sq ft shop. \$295,000 neg. Frank, 775-6636.

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.

New Phone Number For Badging Office

The Badging Office in Bldg. 400 now has a dedicated telephone number for any questions about badges, vehicle stickers, etc. You can now reach the office at Ext. 8711, or (631) 344-8711 from off site.

As a reminder, the Badging Office is open Monday through Thursday from 8:30 a.m. until 4:00 p.m. and Friday from 8:30 a.m. until 1:00 p.m.

Defensive Driving: Two Parts, 2/16 & 23

The next six-hour Defensive Driving (Point & Insurance Reduction) course will be held in two parts on consecutive Thursday nights, February 16 and 23, in the Brookhaven Center South Room, from 6 to 9 p.m. The course is open to BNL, BSA, and DOE employees, facility-users, and their families and friends. The cost is \$33 per person. Preregistration is required. To register, call Ed Sierra, Ext: 4080 or 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/.

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