



Stephen Schwartz

Roger Stoulenburgh D0891004

Why Hasn't Earth Warmed As Much as Expected?

New report on climate change explores the reasons

Planet Earth has warmed much less than expected during the industrial era based on current best estimates of Earth's "climate sensitivity" — the amount of global temperature increase expected in response to a given rise in atmospheric concentrations of carbon dioxide (CO₂).

A study released online on 19 January, 2010, and that is to be published in the *Journal of Climate*, a publication of the American Meteorological Society (AMS), examines the reasons for this discrepancy. Stephen Schwartz of BNL coauthored the paper with Robert Charlson of the University of Washington; Ralph Kahn, NASA Goddard Space Flight Center in Maryland; John Ogren, NOAA Earth System Research Laboratory in Colorado; and Henning Rodhe, Stockholm University.

According to current best estimates of climate sensitivity, the amount of CO₂ and other heat-trapping gases added to Earth's atmosphere since humanity began burning fossil fuels on a significant scale during the industrial period would be expected to result in a mean global temperature rise of 3.8°F—well more than the 1.4°F increase that has been observed for this time span. Schwartz's analysis attributes the reasons for this discrepancy to a possible mix of two major factors: 1) Earth's climate may be less sensitive to rising greenhouse gases than currently assumed and/or 2) reflection of sunlight by haze particles in the atmosphere may be offsetting some of the expected warming.

"Because of present uncertainties in climate sensitivity and the enhanced reflectivity of haze particles," said Schwartz, "it is impossible to accurately assign weights to the relative contributions of these two factors. This has major implications for understanding of Earth's climate and how the world will meet its future energy needs."

A third possible reason for the lower-than-expected increase of Earth's temperature over the industrial period is the slow response of temperature to the warming influence of heat-trapping gases. "This is much like the lag time you experience when heating a pot of water on

Stephen Schwartz comments:

It is somewhat ironic that this paper appeared as we were experiencing a cold snowy winter in the Northeast U.S. The paper is not about any particularly cold season in a given location but rather is calling attention to the discrepancy between the low warming of the planet in the past 100 years compared to expectation based on forcing by greenhouse gases and the present best estimate of climate sensitivity. It may turn out that we are lucky and climate sensitivity is lower than that best estimate. Alternatively, it may turn out that much of the forcing is being offset by atmospheric aerosol particles, which, like incremental CO₂, are created largely by fossil fuel combustion, but which, unlike CO₂, are short lived in the atmosphere. The cooling influence of these particles may well be masking the much greater warming that would be expected based on the present best estimate of climate sensitivity. In that case the present warming commitment is much greater than the temperature increase observed to date. The concern, from the perspective of planning the way the people of the country and the world will meet their future energy needs, is that we don't know what the actual situation is.

a stove," said Schwartz. Based on calculations using measurements of the increase in ocean heat content over the past fifty years, however, this present study found the role of so-called thermal lag to be minor.

A key question facing policymakers is how much additional CO₂ and other heat-trapping gases can be introduced into the atmosphere, beyond what is already present, without committing the planet to a dangerous level of human interference with the climate system. Many scientists and policymakers consider the threshold for such dangerous interference to be an increase in global temperature of 3.6°F above the preindustrial level, although no single threshold would encompass all effects.

The authors emphasize the need to quantify the influences of haze particles to narrow the uncertainty in Earth's climate sensitivity. This is much more difficult than quantifying the influences of the heat-trapping gases. Charlson likens the focus on the heat-trapping gases to "looking for the lost key under the lamppost."

See Climate Change on pg. 2

New Findings on Quark Soup Produced at BNL's RHIC

Research at RHIC is funded primarily by DOE's Office of Science and by various national and international collaborating institutions. For a complete list of RHIC funders, go to: <http://www.bnl.gov/rhic/funding.asp>.



Joe Rubino D4230508

'Perfect' Liquid Hot Enough To be Quark Soup

Protons, neutrons melt to produce 'quark-gluon plasma' at RHIC

Recent analyses from the Relativistic Heavy Ion Collider (RHIC), a 2.4-mile-circumference "atom smasher" at BNL, establish that collisions of gold ions traveling at nearly the speed of light have created matter at a temperature of about 4 trillion degrees Celsius — the hottest temperature ever reached in a laboratory, about 250,000 times hotter than the center of the Sun. This temperature, based upon measurements by the PHENIX collaboration at RHIC, is higher than the temperature needed to melt protons and neutrons into a plasma of quarks and gluons. Details of the findings will be published in *Physical Review Letters*.

These new temperature measurements, combined with other observations analyzed over nine years of operations by RHIC's four experimental collaborations — BRAHMS, PHENIX, PHOBOS, and STAR — indicate that RHIC's gold-gold collisions produce a freely flowing liquid composed of quarks and gluons. Such a substance, often referred to as quark-gluon plasma, or QGP, filled the universe a few microseconds after it came into existence 13.7 billion years ago. At RHIC, this liquid appears, and the quoted temperature is reached, in less time than it takes light to travel across a single proton.

"This research offers significant insight into the fundamental structure of matter and the early universe, highlighting the merits of long..."

See Hot Enough on pg. 3



Michael Herbert CN2-21-99

'Bubbles' of Broken Symmetry In Quark Soup at RHIC

Data suggest symmetry may 'melt' along with protons and neutrons

Scientists at BNL's Relativistic Heavy Ion Collider (RHIC) report the first hints of profound symmetry transformations in the hot soup of quarks, antiquarks, and gluons produced in RHIC's most energetic collisions. In particular, the new results, reported in the journal *Physical Review Letters*, suggest that "bubbles" formed within this hot soup may internally disobey the so-called "mirror symmetry" that normally characterizes the interactions of quarks and gluons.

"RHIC's collisions of heavy nuclei at nearly light speed are designed to re-create, on a tiny scale, the conditions of the early universe. These new results thus suggest that RHIC may have a unique opportunity to test in the laboratory some crucial features of symmetry-altering bubbles speculated to have played important roles in the evolution of the infant universe," said Steven Vigdor, BNL's Associate Laboratory Director for Nuclear & Particle Physics, who oversees research at RHIC.

Physicists have predicted an increasing probability of finding such bubbles, or local regions, of "broken" symmetry at extreme temperatures near transitions from one phase of matter to another. According to the predictions, the matter inside these bubbles would exhibit different symmetries — or behavior under certain simple transformations of space, time, and particle types — than found in the surrounding matter. In ...

See Broken Symmetry on pg. 2

Meet Jeffrey Keller, Entrepreneur in Residence

Keller here to identify, help develop innovative energy technologies invented at BNL and funded by DOE that are ripe for commercialization

"General Electric (GE) turns technology into products every day," GE's Jeffrey Keller explained on his first day at BNL as the Laboratory's entrepreneur in residence. "There is a lot of commercial value in the research done at national labs such as Brookhaven, but scientists generally aren't marketers. I'm here to help with the business of taking technology to the marketplace."

Trained in both science and business, Keller, who is currently manager of external technology initiatives at GE in Niskayuna, NY, brings his expertise in identifying energy technologies that are ripe for commercialization to his new, part-time position at BNL.

After he earned a B.A. in biology from the University of Virginia in 1997, Keller began his career as a mergers and acquisitions analyst at Harris Williams & Co., an investment bank in Richmond, Virginia. But he wanted to combine finance with a career in technology, so



Jeffrey Keller

Roger Stoulenburgh D0600210

in 2000 he decided to study cell and developmental biology at Vanderbilt University, eventually earning a Ph.D. in that field in 2006. He next attended Cornell University, where he earned an M.B.A. in 2007. He then began working at GE's Electric Global Research Center in 2007 as a business development manager and was promoted to his current position in 2008.

During his one-year term at the Lab, Keller will be stationed

at the Lab's Office of Technology Commercialization and Partnerships, where he plans to be on site about four to six days per month. First on Keller's agenda will be a review of BNL's portfolio of inventions that have not yet been licensed. Based on this review, he may contact selected innovators to determine if their work may be ready for commercialization. Also, innovators at the Lab are welcome to reach out to Keller. He is bound to confidentiality according to a nondisclosure agreement.

DOE's Energy Efficiency & Renewable Energy Office (EERE) launched the Entrepreneur in Residence Program in 2008 to enhance the commercialization of technologies that were funded by EERE. The National Renewable Energy Laboratory, Oak Ridge National Laboratory and Sandia National Laboratories were the first labs to participate in the program. Brookhaven was chosen to take part in the second round...

See Jeffrey Keller on pg. 2

In Memoriam

Kurt Minati, who became a senior designer in the Alternating Gradient Synchrotron Department on August 22, 1955, and retired as a senior mechanical engineer on September 30, 1984, died on November 20, 2008. He was 87.

Josephine Nobile, who joined the Health Physics Division on September 7, 1960, as an area survey technician, and retired on July 1, 1983, as a principal technician, died on January 3, 2009. She was 88.

George Schidlovsky, who worked in the Medical Department for several months in 1954 as a guest researcher, then joined the department as an associate scientist on September 1, 1977, died at the age of 82 on September 19, 2009. He had transferred to the Department of Applied Science in 1984, becoming a biology associate I, and retired as a senior biology associate on March 31, 1992.

Robert Jeffries, who joined the Alternating Gradient Synchrotron Department on September 17, 1973, as a technician III, and retired as a multi-trade supervisor in the Plant Engineering Division on March 21, 2002, died on October 22, 2009. He was 63. In 1975, he had become an electrician apprentice in the Personnel Division, then moved to Plant Engineering as an electrician A in 1979, being promoted to planner/estimator in 1988 before earning his final supervisory title.

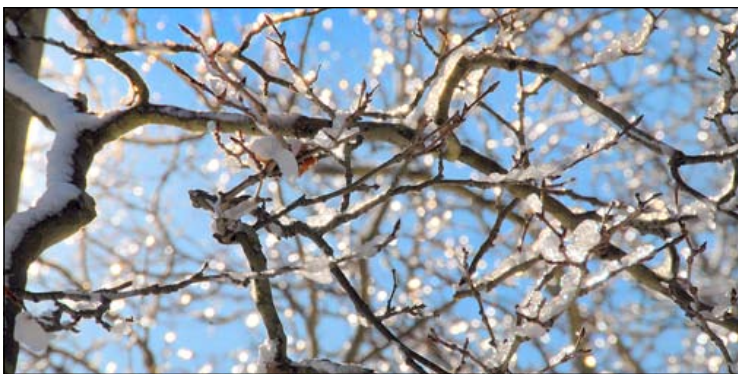
William Tuttle, who came into the Physics Department with Life Number 1217 on August 11, 1947, as a technician A, moved to the Alternating Gradient Synchrotron Department in January 1971, and retired as a senior electrical engineer on September 30, 1982, died at age 91 on November 6, 2009.

Herbert Susskind, who joined the Department of Nuclear Energy on July 31, 1950, as a junior chemical engineer, died at 80 on December 2, 2009. He had moved in 1969 to the Department of Applied Science as an associate chemical engineer, then to the Medical Department in 1977 as an associate biomedical engineer. He was named biomedical engineer in October 1977, retiring on September 30, 1994, but returning to work as a research collaborator until September 30, 2005.

Stanley Sajnacki, who joined the Reactor Division as a pile operator D on February 4, 1952, died on December 3, 2009, at the age of 85. He had retired as a nuclear operator A on August 29, 1986, then returned as a temporary nuclear reactor operator from March 4, 1987, until September 15, 1989.

Colleagues and family members who would like to contribute information or remembrances about BNL retirees who have died, to be posted on that retiree's page in the Bulletin Obituary section, www.bnl.gov/bnlweb/pubaf/bulletin/obit/, may contact Liz Seubert at lseubert@bnl.gov or Ext. 2346.

There was so much to fit in this issue of The Bulletin that we had to print the jobs and classified ads on a special supplement. Don't miss it!



Joseph Rubino D1740210

Update on NASA Space-Radiation Study

In December, the Lab notified employees about a proposed outside-user study on the effects of space radiation at the NASA Space Radiation Laboratory (NSRL), which Brookhaven operates for NASA. Subsequently, researchers at McLean Hospital, a psychiatric facility of Harvard Medical School, submitted their NASA-funded proposal. This study has drawn significant public interest, as indicated by a recent *Newsday* article.

All studies at the NASA facility require approval by Brookhaven's animal care, scientific advisory, and safety review committees. At this time, the Laboratory has made no decisions regarding whether this proposed experiment will move forward at NSRL.

The McLean Hospital proposal was reviewed once by the Institutional Animal Care and Use Committee, which requested additional information from the researcher. In addition to a decision from this committee, there are additional reviews by the Scientific Advisory Committee for Radiation Research and two safety committees. BNL follows a very deliberate review process to evaluate proposed research before granting access to its user facilities.

Note: The Laboratory will keep employees informed as the proposal moves forward.

Climate Change from pg. 1

Schwartz observes that formulating energy policy with the present uncertainty in climate sensitivity is like navigating a large ship in perilous waters without charts. "We know we have to change the course of this ship, and we know the direction of the change, but we don't know how much we need to change the course or

how soon we have to do it." The early online release of the paper is available at AMS's journals online site. Research at BNL was funded by the DOE Office of Science.

— Mona S. Rowe

For more information, go to http://www.bnl.gov/bnlweb/pubaf/pr/PR_display.asp?prID=1067 and <http://www.ametsoc.org>.

Broken Symmetry from pg. 1

...addition to the symmetry violations probed at RHIC, scientists have postulated that analogous symmetry-altering bubbles created at an even earlier time in the universe helped to establish the preference for matter over antimatter in our world.

RHIC's most energetic collisions create the kind of extreme conditions that might be just right for producing such local regions of altered symmetry: A temperature of several trillion degrees Celsius, or about 250,000 times hotter than the center of the Sun, and a transition to a new phase of nuclear matter known as quark-gluon plasma. Furthermore, as the colliding nuclei pass near each other, they produce an ultra-strong magnetic field that facilitates detecting effects of the altered symmetry.

Now, early data from RHIC's STAR detector hint at a violation in what is known as mirror symmetry, or parity. This rule of symmetry suggests that events should occur in exactly the same way whether seen directly or in a mirror, with no directional dependence. But STAR has observed an asymmetric charge separation in particles emerging from all but the most head-on collisions at RHIC: The observations suggest that positively charged quarks may prefer to emerge parallel to the magnetic field in a given collision event, while negatively charged quarks prefer to emerge in the opposite direction. Because this preference would appear reversed if the situation were reflected through a mirror, it appears to violate mirror symmetry.

"In all previous studies of systems governed by the strong force among quarks and gluons, it has been found to very high

precision that events and their mirror reflections occur at exactly the same rate, with no directional dependence," Vigdor said. "So this observation at STAR is truly intriguing."

At RHIC, the parity-violating bubbles are formed in a random way, possibly with oppositely oriented charge separation in bubbles at different locations. Averaged over many events there would appear to be no parity violation, even though there were violations locally in each event. Although allowed by quantum chromodynamics (QCD), the underlying theory that describes the strong nuclear force, such local strong parity violation has never been detected directly.

"The key to observing the effect in high-energy nuclear collisions is to study correlations among the particles emerging from the collision," said Nu Xu of Lawrence Berkeley National Laboratory, the spokesperson for the STAR collaboration.

The theory suggests that particles with the same sign of electric charge should tend to be emitted from such local parity-violating regions in the same direction, either both parallel, or both anti-parallel, to the magnetic field arising in the collision, whereas unlike-sign particles should be emitted in opposite directions.

"We have observed a correlation among emitted charged particles of the predicted type, with the degree of directional preference increasing as the collisions vary from head-on to more grazing," Xu said.

— Karen McNulty Walsh

For more detail, and to see the video of "Hot Quark Soup Produced at RHIC," go to http://www.bnl.gov/bnlweb/pubaf/pr/PR_display.asp?prID=1073.

Call for Technology Maturation Funding Proposals

Deadline for receiving proposals: 4/15

BNL's Office of Technology Commercialization & Partnerships (TCP) is soliciting proposals for the third annual competition for Technology Maturation (TM) awards that will begin in Fiscal Year 2010 (FY10). Funding for new TM projects is expected to begin this July. It is important to note that for FY10 there will be just a single call for proposals for TM funding. The purpose of the TM Program is to facilitate technology transfer from BNL to the private sector. TCP anticipates funding projects aimed at moving research from the "proof of concept" stage to a degree of development sufficient to support pilot-scale operations. The TM program will fund late-stage research that can be transferred to a partner at the end of the funding period. For more details, including the TM program review procedures and criteria, see: http://www.bnl.gov/tcp/SponsoredResearch/tech_mature.asp. For more information, contact the Office of Technology Commercialization and Partnerships, oispr@bnl.gov, Ext. 2634, or Ext. 4151.

Jeffrey Keller from pg. 1

...along with Argonne, Lawrence Berkeley and Lawrence Livermore National Labs.

While Keller will focus on energy technologies funded by EERE, any technologies that further the mission of EERE are eligible to be considered for commercialization, provided that DOE funds them. Once Keller identifies a promising technology, he will prepare a business plan for evaluation by his colleagues, and work with his team within GE to assemble a management team and raise capital to "spin out" a new company based on the BNL technology.

Keller will look for technologies that are unique and "the first in the field." Innovations that open new markets or are disruptive to established cost or performance parameters are of most interest. "The risks of venture capital investing are extremely high, and in order to offset those with commensurate returns, we look for technologies that have the potential to go far beyond what cur-

rently exists in the market," Keller said. He is particularly interested in renewable energy and energy efficiency technologies, as well as technologies to remediate greenhouse gases. To be considered for commercialization, a technology should have the potential to attract a large market.

"Like all venture capitalists, GE can provide funding to develop a promising technology," Keller said. "What is unique about our early stage investing efforts is that we also bring unparalleled expertise in converting technology to products as well as the commercial platforms of GE businesses to pull technology to market quickly and in volume."

Under the EERE program's license agreement, royalties garnered from a commercialized invention would be shared among the newly founded company, the inventor, and the Laboratory. The percent of equity share for each would be negotiated.

To arrange an appointment with Keller, contact him at keller@ge.com.

— Diane Greenberg

Hispanic Heritage Club Offers \$500 Scholarships

The BERA Hispanic Heritage Club is accepting applications for five \$500 scholarships for high-school seniors. Applicants should:

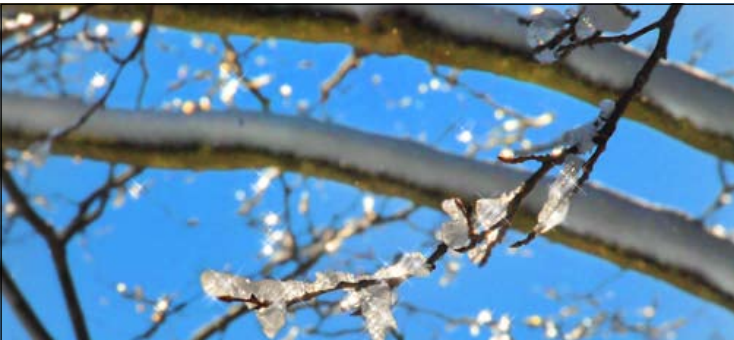
Be a high school senior graduating in 2010; have a minimum 3.0 cumulative GPA on a 4.0 scale (or equivalent); be accepted by a college for fall 2010 classes to pursue a degree in science or engineering; be a Long Island resident attending Bellport, Brentwood Union Free, Central Islip, Longwood, Patchogue-Medford, Riverhead, Sachem Central, or William Floyd High Schools; have some degree of Hispanic ancestry; and be a U.S. citizen or legal permanent resident with a valid permanent resident card. For more information, see www.bnl.gov/bera/activities/hispanic, or contact Yvette Malavet-Blum, malavet@bnl.gov, Ext. 8900.

Brookhaven Retirees Annual Luncheon, 6/9

The Brookhaven Retired Employees Association (BREA) will hold the seventh annual Get-Together Luncheon on Wednesday, June 9, at the Bellport Country Club. Be sure to mark your calendar. More details will follow.

TIAA-CREF One-on-One Retirement Counseling

A TIAA-CREF consultant will visit BNL on Thursday, March 18; Tuesday, March 30; and Wednesday, March 31 to answer employees' questions about their financial matters. For an appointment, call 1-800-732-8353 or go to <http://www.tiaa-cref.org/bnl> and select "set up a meeting."



Joseph Rubino D1740210

Arrivals & Departures

— Arrivals —

Carmelo Cortes Info. Tech.
Alex Tkatchev Physics
Yuan Yao NSLS-II

— Departures —

Mark Doherty Chemistry
Yunseok Jang CMP&MS
Donna Occhiogrosso... Info. Tech.
Yucel Yildirim CMP&MS

One-on-One Fidelity Counseling On-Site

A Fidelity representative will be in Bldg. 400B in the Human Resources & Occupational Medicine Division on Friday, March 12 to answer employees' questions about their financial matters. For an appointment, call 1-800-642-7131 or go to www.fidelity.com/atwork/reservations.

Brookhaven Physicist Drills South Pole for Winter Vacations

Some people enjoy relaxing vacations at tropical beaches or scenic mountain resorts, but not physicist Johan Bengtsson of the National Synchrotron Light Source II Project (NSLS-II). He prefers trips to Antarctica, a place known for its harsh climate and barren landscape, where fewer than 200,000 people have dared to venture.

"I spent my first 25 years in Sweden and had always wanted to go to the North Pole for a research project," said Bengtsson.

Two years ago, his wish began to take shape when he heard about an "extreme science" project called IceCube, which is a one-kilometer-cubed, neutrino-detecting telescope that is being built deep into the ice at the South Pole. The National Science Foundation (NSF) funded project, like all Antarctic research, is regulated by the international Antarctic Treaty, which requires that the undertaking have minimal impact upon the region's natural serenity and beauty.

IceCube seemed ideal for making Bengtsson's dream expedition a reality, only at the opposite polar ice cap from the one he had envisioned, a slight 180-degree modification. He found the opportunity at a time when he was eager for a hands-on project, after working mainly on computer simulations to guide the NSLS-II conceptual design for four years.

Bengtsson applied for a hot water drilling position and has since spent his last two vacations in Antarctica's frigid summer climate at the Amundsen-Scott South Pole Station. Working eight-hour swing shifts six days a week, Bengtsson was part of a team operating a hot



Above: BNL's Johan Bengtsson

Right: Bengtsson (right) and colleagues display their newly constructed snow boat, which they built while working at the Amundsen-Scott South Pole Station.



Bengtsson and colleagues on the IceCube project in Antarctica.

water drill that used 200 gallons per minute of 190°F water at 1,000 pounds per square inch to melt 8,000-foot (ft) holes in the 9,000-ft thick glacier.

After the ice-holes were opened, cables beaded with 60 sophisticated neutrino-detecting spheres, or strings, were then lowered into the 200,000 gallons of melted ice during the subsequent critical 24-hour period, during which the water begins to refreeze.

Bengtsson discovered that the protocol for working under

extreme conditions was somewhat different from his previous projects.

"With five megawatts of thermal power in the drill head and working in temperatures 40 degrees below zero, if anything major happens, you don't try to fix it, you run the other way," said Bengtsson.

When not testing his impromptu science abilities at the drill, Bengtsson spent most of his free time outside his 50-square-ft living quarters in search of exercise and enter-

tainment. The tiny, eclectic ice-community offers mostly activities based on the seasonal workers' interests.

During the last drilling season, the vast, empty scenery reminded Bengtsson of his sailing days, and he was inspired to construct a wind-powered snow boat in his spare time.

"It was like being on the ocean with the horizon surrounding on all sides," said Bengtsson.

Despite limited resources in the isolated community, he and a colleague managed to scrounge up some plastic packaging materials and make a 130-square-ft broad-seamed sail.

After recruiting two more coworkers to help construct the frame, they completed the contraption just before the end of the last drilling season. Unfortunately, the wind picked up with enough speed to power the boat only once before he had to leave.

"Now, with the snow boat built and in need of further testing and improvements, I would really like to go back again," said Bengtsson.

Next year is the last season that Bengtsson can work as a hot water driller since the telescope's construction is nearly complete, with only twelve strings remaining to be installed. Even if it he is unable to return next year, he is hopeful that he will find a way back.

"The station could always use seasonal maintenance personnel," he added.

In the meantime, Bengtsson has found that he really appreciates the comforts of his home and work-life north of the equator. — Tianna Hicklin

CALENDAR

— WEEK OF 3/1 —

Tuesday, 3/2

BSA Distinguished Lecture

4 p.m. Berkner Hall. Economist Robert J. Shiller, Yale University, will talk on "Animal Spirits: How Human Psychology Drives the Economy and Why It Matters for Global Capitalism." Paperback copies of Shiller's latest book, *Animal Spirits*, will be sold for \$11 each at the end of the talk. All are welcome to this free event, open to the public. Visitors to the Lab of 16 and older must carry a photo I.D.

— WEEK OF 3/8 —

Thursday, 3/11

Summer Camp Expo

11 a.m.-1:30 p.m. Berkner Hall lobby. Representatives from summer camps will provide information and registration forms. BERA Summer Camp information will also be available.

— WEEK OF 3/15 —

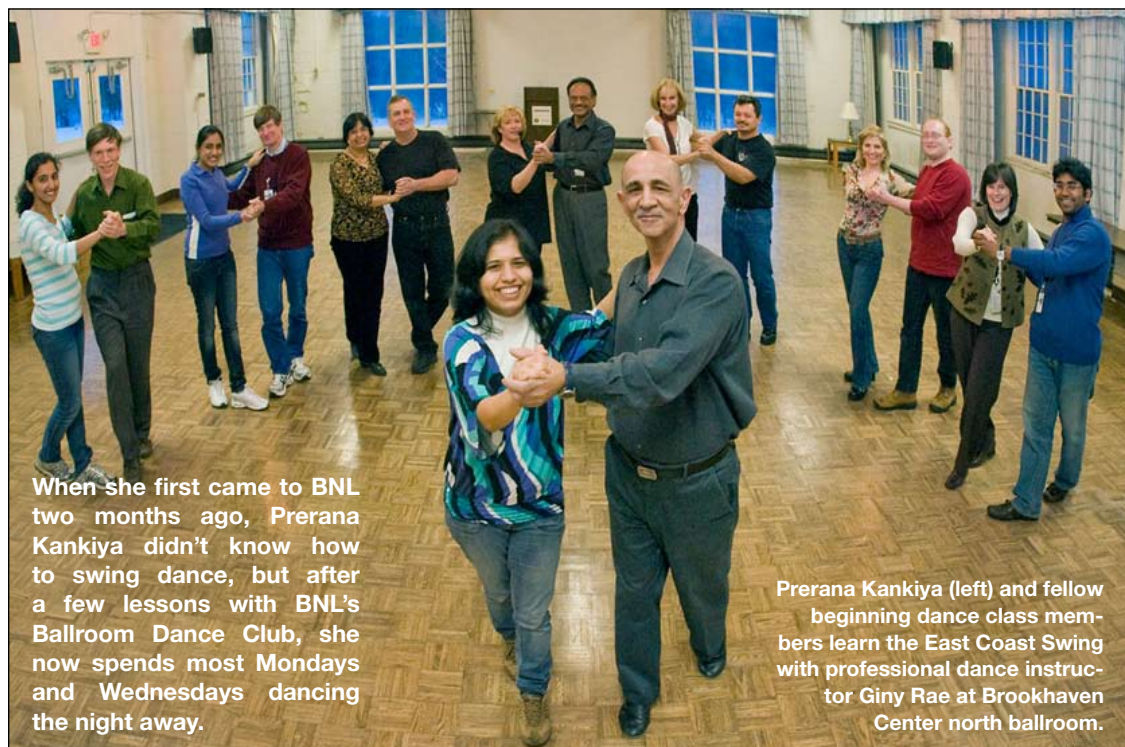
Wednesday, 3/17

BSA Noon Recital

Noon. Berkner Hall. Violist Jennifer Summ, winner of three major international competitions: the Concert Artists Guild, the William Primrose competition, and the International Competition of Geneva, will perform. Sponsored by Brookhaven Science Associates, the company that manages BNL, the concert is free and open to the public. Visitors to the Lab of 16 and older must carry a photo I.D.

Note: This calendar is updated continuously and will appear in the Bulletin whenever space permits. Submissions must be received by the preceding Friday at noon to appear in the following week's Bulletin. Enter information for each event in the order listed above (date, event name, description, and cost) and send it to bulletin@bnl.gov. Write "Bulletin Calendar" in the subject line.

So — You Think You Can't Dance?



When she first came to BNL two months ago, Prerana Kankiya didn't know how to swing dance, but after a few lessons with BNL's Ballroom Dance Club, she now spends most Mondays and Wednesdays dancing the night away.

Prerana Kankiya (left) and fellow beginning dance class members learn the East Coast Swing with professional dance instructor Giny Rae at Brookhaven Center north ballroom.

"I had never ballroom danced before, but it seemed like a great way to meet people since I was new here," said Kankiya, who recently joined the Collider-Accelerator Department as an applications analyst.

After learning some basic dance steps from former U.S. dance champion and certified Latin and standard dance instructor Giny Rae, Kankiya found that Rae's teaching style made swing dancing simple to learn and that the club members were fun and helpful.

"It's a very diverse crowd,

which I like," said Kankiya. "And, because of all the other beginners, you don't feel alone in not knowing how to dance."

"The more time you spend dancing, the easier it is to learn new steps," said Rae. "And time can be made up by cramming; it doesn't take years to catch up when you spend time practicing."

That was certainly true for Kankiya, who attended almost every one of the free Monday night practice sessions to smooth out her dance moves and socialize in between weekly lessons.

"The practice sessions are a great refresher before the next lesson," said Kankiya. "The more advanced students are there to help and are very encouraging. They even taught me some more intricate dance steps."

"Some of us have been dancing for a number of years, so we like to help the beginners out," said Vinita Ghosh, an advanced dance student who often attends the practice session at the end of her day working as a physicist in the Nonproliferation & National Security Department.

The club attracts people for

many different reasons, from those who have always wanted to learn to dance to people looking for a fun way to exercise or who just want to meet new people.

Kankiya was simply looking for a fun social activity and found that with a little practice anyone can learn to dance.

So if you have always wanted to learn to dance, simply sign up or sample the first two classes by showing up at the start of the next lesson series and see what moves Rae can teach you.

Beginners have nothing to lose — except their two left feet — with a two-lesson free trial offered to new students before they need to pay for the class.

There is still time to join the present class series, which began on February 24. You can arrive at 5:15 p.m. on the second day of the series, which is Wednesday, March 3, in the Brookhaven Center north ballroom. Lessons are \$35 for the series — almost half the price of other six-week dance courses on Long Island.

Classes are open to all BNL employees, retirees, official BNL visitors, and their immediate families (spouse or child 16 and older). Those who qualify are welcome to bring one guest.

"I'm delighted that I tried it," said Kankiya. "I learned so much and it's a great way to meet people, and of course, everybody walks out smiling."

— Tianna Hicklin

Hot Enough from pg. 1

...term investment in large-scale, basic research programs at our national laboratories," said William F. Brinkman, Director of the DOE Office of Science. "I commend the careful approach RHIC scientists have used to gather detailed evidence for their claim of creating a truly remarkable new form of matter."

According to Steven Vigdor, BNL's Associate Lab Director for Nuclear & Particle Physics, who oversees the RHIC research program, "These data provide the first measurement of the temperature of the quark-gluon plasma at RHIC."

Scientists measure the temperature of hot matter by looking at the color, or energy distribution, of light emitted from it — similar to the way one can tell that an iron rod is hot by looking at its glow. Because light interacts very little with the hot liquid produced at RHIC, it bears accurate witness to the early cauldron-like conditions created within.

Said Vigdor, "The temperature inferred from these new measurements at RHIC is considerably higher than the long-established maximum possible temperature attainable without the liberation of quarks and gluons from their normal confinement inside individual protons and neutrons.

"However," he added, "the quarks and gluons in the matter we see at RHIC behave much more cooperatively than the independent particles initially predicted for QGP."

For more detail, and to see the video of "Hot Quark Soup Produced at RHIC" go to http://www.bnl.gov/bnlweb/pubaf/pr/PR_display.asp?prID=1074.

— Karen McNulty Walsh



United Way representatives receive a \$172,530 check at a ceremony following three months of fundraising by BNL employees. From left, Michael Cooney, United Way; Carol Parnell, BNL United Way Campaign Chair; Sarah Mahler, BNL United Way Campaign Co-chair; Sam Aronson, BNL Director; and Dawn Loccisano, United Way.

Generous Fundraising Results: United Way and Haiti Relief

This year's United Way campaign elicited overwhelming generosity from Brookhaven employees. The campaign resulted in a whopping \$172,530 in donations — a 5.5 percent increase over last year — for the charity that provides education, income and health opportunities to those in need in local communities.

The holiday auction was the highest grossing special events fundraising activity. Employees bid on department-sponsored gift baskets in a silent auction, raising \$11,898 of the total \$17,192 in special events proceeds. Also included at the holiday auction were a used book sale, a yard sale, jewelry and accessory sale, raffles for two round-trip tickets on Southwest Airlines, and a jeweler-donated gold bracelet.

Other activities that contributed to the special events proceeds included the Building 400 bake sale, NSLS's bake sale

and sandwich day, the supervisor dunk tank, the Asian tea house and Physics Department-sponsored Café Physique.

In addition to the special fundraising efforts, individual pledge donations were collected and also totaled more than the previous year, with increased leadership donations (those donating over \$500) and employee and retiree gifts.

Another way employees contributed was through the volunteer program. Brookhaven Science Associates, the company that manages Brookhaven Lab, offered a large donation in exchange for employees volunteering time at a charity of their choice. A total of 185 employees took up the challenge and contributed over 1,200 hours, earning United Way the maximum \$10,000 donation.

Haiti Relief

A short time after the United Way Campaign closed, news

of a major earthquake in Haiti spurred BNL's United Way campaign captains back into action. They set up donation tables in Building 400 and Berkner Hall and collected \$4,450 for Haiti relief organizations in one day.

The funds were divided between five organizations: the American Red Cross, AmeriCares, Clinton-Bush Haiti Fund, Doctors Without Borders, and the United Nations Children's Fund (UNICEF), according to the selections employees made at the donation tables.

Additionally, "Change for Haiti" collection jars were set out next to cash registers in Berkner Hall for one week, which accumulated an extra \$340 for AmeriCares.

For individual United Way fundraising event totals, visit the 2009 United Way Campaign website at <http://intranet.bnl.gov/unitedway/fundRaising.asp>.

— Tianna Hicklin



Defensive Driving With Ed Sierra

Rain, snow, or fog. Angry or careless drivers. Deer or turkeys crossing the road. Gas pedals sticking. Many hazards can get in the way as you drive to the places you need to reach each day.

"A lot of people don't realize that driving is the most dangerous thing we do," said Ed Sierra of BNL's Quality Management Office. "But there are a lot of things we can do to minimize the risks."

For the past three years, Sierra has taught the Point and Insurance Reduction Program, commonly known as "Defensive Driving," on site to help people minimize risks while driving. He is certified to teach the course by New York State's Department of Motor Vehicles and is also a trained Human Performance Improvement instructor.

The defensive driving course Sierra teaches can save drivers money by lowering car insurance rates. It can also reduce points on a driver's license from previous traffic violations. But most importantly, it can keep drivers out of trouble and help them respond quickly and safely to hazards that might arise on the road.

"I don't like to refer to traffic 'accidents'," Sierra said. "That word makes them seem unpredictable or inevitable, when

really, studies show that 80 percent can be avoided if a driver has only one more second of time to react to a hazard."

One way that Sierra recommends to prevent these events is to follow the "Two-Second Rule."

"This is an easy one to stick to," Sierra explained. "While you're driving, pick a reference point — a tree or a certain sign. If you pass that reference point at least two seconds after the car in front of you, you should have enough time to safely stop your car to prevent an event."

Sierra also regularly emphasizes that drivers "pay attention to attention," and focus on driving while they are driving.

Sierra teaches the defensive driving course on site each month, and it costs \$38 per person. The course can also be taken online for \$39.95 (including a \$10 discount). Either way, all BNLers, BSA and DOE employees, users, contractors, other guests, and their family members are encouraged to complete it.

For more information including dates, times, and to sign up, visit the program's website online: http://www.bnl.gov/esh/shsd/Article_Defensive_Driving.asp.

Why not drive safer when you drive home? — Joe Gettler

Musical Takeover at BNL, Friday and Saturday, March 26 & 27

Two magnificent concerts are in store at the Lab for late March — on Friday, March 26, Appalachian Mountain bluegrass folk music will take the stage — on Saturday,

March 27, wild gypsy jazz will take over. Two deep-rooted, unique styles of American music, interpreted by acclaimed musicians at the peak of their skill —

different, compelling. Don't miss either, come to both! And get your friends out from New York City and all around — bring them along. See you there.

Traditional Country Music Arrives On Long Island via 'The Crooked Road' Virginia bluegrass musicians will perform, 3/26

The success of the Academy Award-winning film *O Brother, Where Art Thou* and its Grammy-winning soundtrack revived interest in the uniquely American folk music of the Appalachian Mountain region of southwestern Virginia. This traditional style of music is very much alive and well and, sponsored by BERA, BNL will host an evening of music and fun when musicians from Virginia's "Crooked Road" project perform at Berkner Hall on Friday, March 26, starting at 8 p.m.

The Crooked Road refers to an area within the Appalachian region of southwestern Virginia with a deep-rooted and rich musical heritage. Through "The Crooked Road: Virginia's Music Heritage Trail," founded in January 2003, the tradition is being preserved. The "Trail" meanders along the rural Appalachian Mountains through scattered towns and several small cities tying the region together.

Among the musicians who will perform are singer and bassist Linda Lay and her husband David on guitar. Their recent CD (with Sammy Shelor on banjo) *Taking the Crooked Road Home* is a collection of fascinating songs about life in the Virginia hills, embroidered with gorgeous fiddle and mandolin. The evening will also feature a special guest appearance by recording stars Jonny Clutch and the Jambusters. Discovered by John Lohman, official Folklorist of the State of Virginia, Clutch was slicing roast beef and singing behind the counter of a corner deli when he was whisked off to the recording studio where his recent hit album, *It Takes One to Know One* (CD Baby.com), was rushed into production.

Tickets are \$15 in advance at the BERA Store in Berkner Hall and www.ticketweb.com and \$20 at the door. All visitors to the Lab 16 and older must bring a photo I.D.

— Kay Cordtz

Now We Hazz — Jazz! 3/27

Guitar virtuoso Frank Vignola & the Hot Club With guitarist, banjo player 'Bucky' Pizzarelli

Berkner Hall will spring to life with wild, gypsy jazz music on Saturday, March 27, when guitar virtuoso Frank Vignola and the Hot Club perform the music of jazz legend Django Reinhardt. Joining Vignola on stage will be "Bucky" Pizzarelli, the American jazz guitarist and banjoist. Sponsored by the BNL Music Club, the concert, which starts at 8 p.m., is open to the public. All visitors to the Lab 16 and older must bring a photo I.D.

To celebrate the music by the legendary jazz musician Django Reinhardt, born 100 years



ago, Vignola has assembled Frank Vignola's Hot Club with a topnotch quintet. Reinhardt led the well-known Quintet of the Hot Club of

France in the 1930s and 1940s.

The *New York Times* proclaimed, "Only a musician of the caliber of Frank Vignola could dare tackle the monumental task of honoring the centennial of the legendary Django Reinhardt."

Tickets for the show are \$25 in advance and \$30 the day of the show. Buy tickets at the BERA Store, through www.ticketweb.com or at the door. Advance ticket purchase is recommended.

For more information on Frank Vignola and to listen to audio clips go to: <http://www.frankvignola.com>. — Jane Koropsak



Classified Advertisements

Placement Notices

The Lab's placement policy is to select the best-qualified candidate for an available position. Candidates are considered in the following order: (1) present benefits-eligible employees within the department/division and/or appropriate bargaining unit, with preference for those within the immediate work group; (2) present benefits-eligible employees within the Laboratory; and (3) outside applicants. In keeping with the Affirmative Action Plan, selections are made without regard to age, race, color, religion, national origin, sex, disability or veteran status. Each week, the Human Resources Division lists new placement notices, first, so employees may request consideration for themselves, and, second, for open recruitment. Because of the priority policy stated above, each listing does not necessarily represent an opportunity for all people. Except when operational needs require otherwise, positions will be open for one week after publication. For more information, contact the Employment Manager, Ext. 2882. Access current job openings on the World Wide Web at www.bnl.gov/HR/jobs/.

To apply for a position, go to www.bnl.gov. Select "Job Opportunities," then "Search Job List."

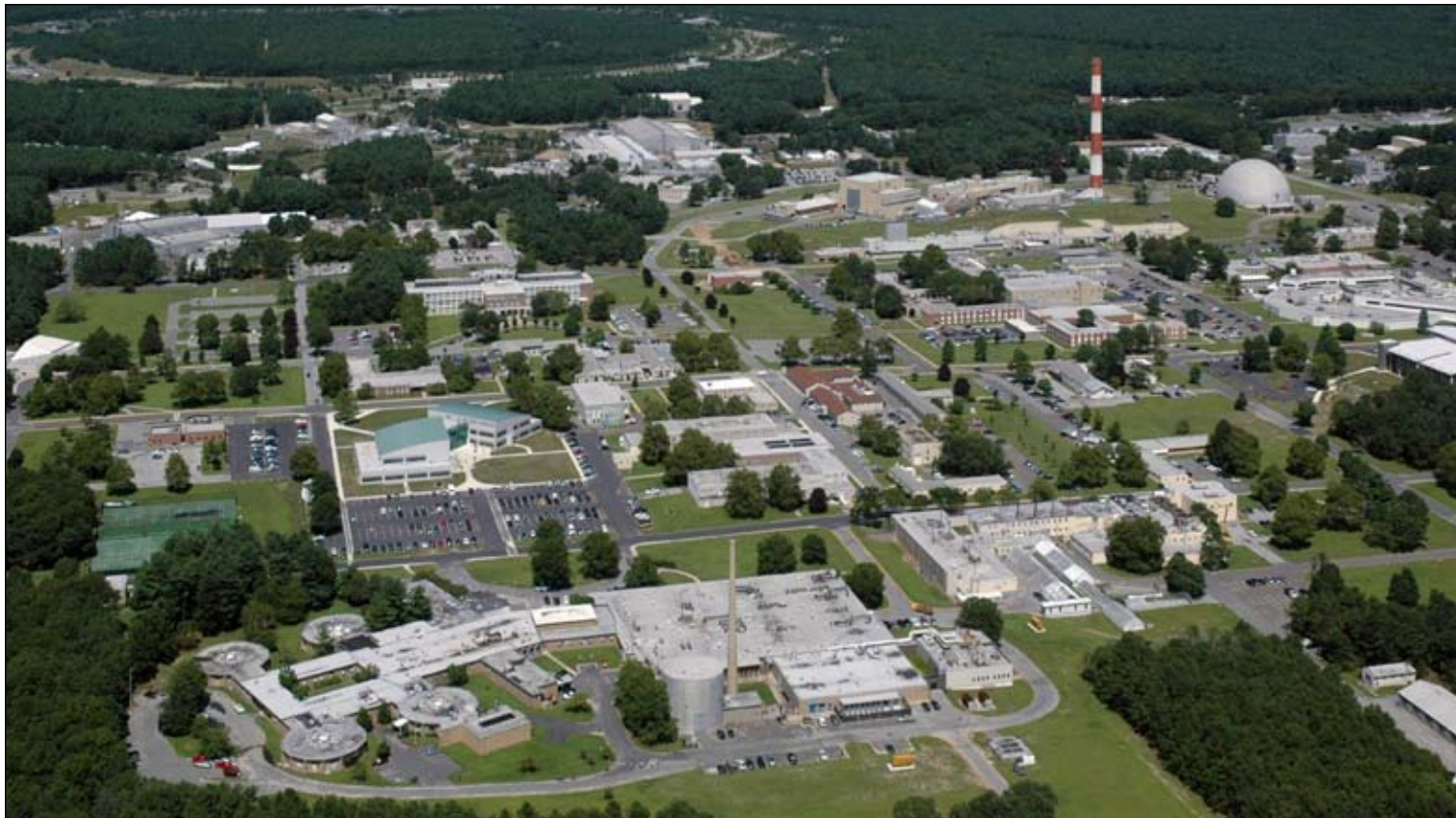
LABORATORY RECRUITMENT - Opportunities for laboratory employees only.

HUMAN RESOURCES ASSISTANT (A-2, term appointment) – Responsible for performing a variety of administrative tasks in support of Employment and the Benefits Office within the Human Resources & Occupational Medicine Division. Assist Employment's recruitment staff in a dynamic work environment: greeting and directing employees and candidates, handling heavy telephone and email inquiries, making complex appointment scheduling and travel arrangements and meeting challenges to perform with competing priorities. Assist Benefits Office with maintaining benefits records and preparation of documents. All work will be performed utilizing a variety of automated office systems such as HR – PeopleSoft for providing data from queries, manipulating detailed information within Excel spreadsheets, etc. Works as part of a larger team as well as independently within established procedures and guidelines, often handling non-routine office matters. Requires formal secretarial or office administration training or equivalent, plus four years of directly related administrative experience in the Human Resources profession. Strong knowledge and proficiency with Microsoft Office products (including Word, Outlook, Excel, and PowerPoint) as well as PeopleSoft-HR is required. Excellent communication skills, both verbal and written are essential. Must be proactive, have the ability to work under pressure, balance priorities, and perform multiple tasks with emphasis on confidentiality and discretion. Human Resources & Occupational Medicine Clinic. Apply to Job ID #15216.

SR. OFFICE SERVICES ASSISTANT (term appointment) – Requires a high school diploma with formal secretarial or office administration training or equivalent and a minimum of three years' relevant secretarial experience of which two years should be at the Laboratory. Knowledge of Lab policies, practices and procedures in assigned functional area is also required. Excellent oral and written communication skills are required, as are knowledge of MS Word, Outlook, PowerPoint, and significant experience with Excel and database systems. Responsibilities include all administrative tasks in the subcontractor's office. Accounting administration and reporting is required. Tasks include, but are not limited to, coordinating all aspects of subcontractor timesheets, and reviewing, processing and entering into time reporting system. Will create and prepare, for both subcontractor and BNL, a monthly site visit report to track vendors and visitors. Will create and maintain a Purchase Order Status Report for the tracking of all shipping and receiving documentation showing all aspects of the transaction from inception to completion. Will input all travel expenses for Project Manager, Superintendent, Supervisor and D&D technicians. Environmental Restoration Projects. Apply to Job ID #15207.

MATERIAL HANDLER (L-3) - Performs a variety of laboring and manual tasks in stores operations such as moving, loading, unloading, sorting and storing of materials. May operate motorized equipment pertinent to stores operations. Keeps stores facilities in neat condition. Procurement & Property Management Division. Submit Transfer Request form to Diana Hubert in HR, Bldg. 400B, Job # 15219.

MATERIAL HANDLER (L-3) (TEMPORARY) - Performs a variety of laboring and manual tasks in stores operations such as moving, loading, unloading, sorting and storing of materials. May operate motorized equipment pertinent to stores operations. Keeps stores facilities in neat condition. Procurement & Property Management Division. Submit Transfer Request form to Diana Hubert in HR, Bldg. 400B, Job # 15220.



Situated on 5,300 acres on Long Island, New York, Brookhaven National Laboratory employs more than 2,900 people.

OPEN RECRUITMENT – Opportunities for Lab employees and outside candidates.

POSTDOCTORAL RESEARCH ASSOCIATE (Inorganic Chemistry / Electrochemistry) – Requires a Ph.D. in physical chemistry, theoretical/computational chemistry or a closely related field and a significant background in computation. Experience in inorganic chemistry and/or electrochemistry is highly desirable. Will conduct theoretical/computational research focusing on efficient photoelectrochemical water splitting and CO₂ reduction which are necessary to convert electrical equivalents to hydrogen and reduced C₁ compounds for fuels. These studies will be carried out in close collaboration with a complementary experimental effort, and will address fundamental questions regarding the coupling of multi-equivalent redox processes for H-H and C-H bond formation using transition-metal centers in complexes, in nanoparticles, and on catalytic surfaces. Will strive to improve electrocatalysts for producing renewable fuels (H₂ and methanol) via low-energy pathways using earth-abundant materials. Under the direction of J. Muckerman, Chemistry Department. Apply to Job ID #15213. (*See NOTE.)

POSTDOCTORAL RESEARCH ASSOCIATE (Accelerator Physics) – Requires a Ph.D. in accelerator physics. Experience in the design and application of instrumentation for measuring properties of particle beams, in accelerator and/or accelerator component modeling and proficiency in scientific data analysis and data reduction is also required. Familiarity with analogue and/or digital electronics and signal processing techniques, computer controls and programming is desired, as is experience in laboratory test and measurement techniques and experience in higher-level applications such as beam feedback. The work will involve the design and analysis of diagnostic systems used for the detection of properties of particle beams in support of accelerator operations in the Collider-Accelerator Department. Under the direction of M. Minty, Collider-Accelerator Department. Apply to Job ID #15214. (*See NOTE.)

POSTDOCTORAL RESEARCH ASSOCIATE (Membrane Protein Biochemistry, Biochemical Structure-Function Studies, Metallo Biochemistry, Plant Biochemistry) - Requires a Ph.D. in biochemistry, chemistry, plant biology or genetics. Experience in enzymology or metabolic engineering with knowledge of molecular biology is preferred. Specific emphasis on biochemical-genetic analysis of recombinant enzymes and lipid analysis is desirable. The project involves structure-function studies on lipid modification enzymes such as desaturases and hydroxylases. Biochemical and crystallographic approaches will be employed to determine enzymatic mechanisms. Candidates should submit a CV, a description of research interests, and list the names and email addresses of three references (in one document). Under the direction of J. Shanklin, Biology Department. Apply to Job ID #15217. (*See NOTE.)

POSTDOCTORAL RESEARCH ASSOCIATE (Organic Photovoltaics) – Requires a Ph.D. in chemistry. The research area is in the charge generation and transport in films of conjugated polymers for organic photovoltaics. An individual is sought to aid in studies designed to obtain a new level of understanding of the nature charge carriers in films for organic photovoltaics (OPV). OPV's are a promising class of materials with great potential to deliver electric power from sunlight more cheaply than can be created by burning fossil fuels, but serious barriers pre-

vent OPV's from reaching their potential. Increased understanding of charge carriers in such devices will play a major role in removing those barriers. To accomplish this goal, studies will measure the yields, mobilities and optical absorption spectra of carriers as they evolve from isolated polymer chains in solution to polymer films used to make OPV cells. Results will provide insight into charge trapping in films that lead to reduced mobilities, and provide input into studies of geminate escape of charge pairs formed from dissociation of excitons at heterojunction interfaces. Tools utilized will be a combination of ultrafast laser and impulse radiolysis techniques at LEAF. Will participate in development of required new experimental capabilities, including microwave conductivity, and apply them to make pioneering measurements on OPV films. Under the direction of J. Miller, Chemistry Department. Apply to Job ID #15218. (*See NOTE.)

PROJECT ENGINEER II (P-7) Candidate must have a bachelor's degree in an engineering or other relevant technical discipline and minimum of seven years' experience in operations (including business, engineering, and R&D operations). Must have experience in process analysis or engineering of complex processes or design projects and have procedure writing and process mapping experience. Must also have outstanding abilities in project management, and have excellent writing, communication and presentation skills. Demonstrate application of advanced project management techniques or certification as a Project Management Professional (PMP) is required. A strong proven ability across a number of continuous improvement methodologies such as Six Sigma or Lean Six Sigma Methodologies is preferred. Must be proficient in MS Office software suite of programs such as Outlook, Word, Excel, Power Point and Visio. This position reports directly to the SBMS Manager within the QMO. The Business Project Engineer (BPE) will work with cross-functional teams and line organizations to develop, modify, and improve institutional processes and procedures in support of R&D functions. Lead and conduct facilitation of process workflow and modeling sessions and create workflows using BPM (Business Process Modeling) compliant notation. Will build and organize highly-engaged interdisciplinary teams for analytical process mapping. Will lead complex analytical process design teams in Project Lifecycle Management to create various lab-wide process workflows. Will resolve or assist in the resolution of complex problems with coordination of functional departments and within the QMO. Under minimum supervision, will support project leadership and work to ensure adherence to established work scope, schedule and budget. Under minimal direction, will create metrics for accurate data collection to be used for tracking and trending report analysis for SBMS processes. Will recommend solutions to complex problems and ensure solutions are in compliance with all established procedures, programs and policies. As directed, will interface with other laboratories on Battelle-BNL-led efforts and initiatives and perform work as required. Will make recommendations for the continuous improvements of SBMS processes and services. Quality Management Office. Apply to Job ID #15215.

MECHANICAL RESEARCH ENGINEER (P-7/P-9) - Requires a BSME (Masters' preferred) with a minimum of seven years of experience with stress and thermal analysis, mechanical design, and manufacturing techniques. CAD/CAE computer skills with

ANSYS, Mechanica, Pro-E, AutoCad, or equivalent programs are required. Excellent written and verbal communication and good interpersonal skills are required to interact with a diverse group of engineers, scientists, and technical staff. Familiarity with systems and components used with particle accelerators such as vacuum systems, high voltage/high current equipment, optical equipment, high precision remote positioning systems, and/or magnets is desirable. Will do design, analysis, component selection, specification, construction, testing, and commissioning of custom components and systems for upgrades to the Relativistic Heavy Ion Collider. This will include system design, computer analysis and modeling, evaluation of prototypes, construction and installation of equipment, acceptance tests, commissioning and operation, upgrades, and system improvements. Experience with particle accelerators is a plus but not necessary. A desire to do creative engineering to develop and build unique equipment is required. Will be hired at either the P-7 or P-9 level depending on years of experience. Will report to the C-AD Mechanical Systems Head. Collider-Accelerator Department. **ERAP Eligible: \$1,000. Apply to Job ID #15204.

ADVANCED TECHNOLOGY ENGINEER (I-7) - Requires BA/BS degree or equivalent experience, and a minimum of five years of work experience as a network engineer in Cisco environments. Demonstrated ability to work independently designing local area networks and ability to configure Cisco routers, switches and related networking equipment required. Thorough knowledge of and experience with networking services to include DNS, DHCP, QoS/MPLS, firewall and security-related technologies, wireless and network management applications required. In addition to having technical knowledge base, must demonstrate the ability to solve complex networking problems under pressure, with minimal supervision. High commitment to customer service and the ability to maintain flexibility in rapidly changing environments essential. Day to day responsibilities include independent troubleshooting of network-related performance issues, customer engagement for both problem resolution and solutions development, and assisting in the design on complex global network environments supporting multiple institutions and scientific collaborations. Position requires 24 hour on-call availability approximately one week out of every six, and occasional after-hours work as required. CCNA certification an absolute requirement, with CCNP certification highly desirable. Ideally, will have demonstrated experience in scientific or academic environments similar to what is found at Brookhaven National Laboratory. Information Technology Division. Apply to Job ID #15191.

APPLICATIONS ENGINEER (I-6)/ADVANCED APPLICATIONS ENGINEER (I-7) One-Year Term - The National Synchrotron Light Sources Directorate's Business Systems Development Group is seeking a well-qualified individual to assist in the development of custom software to address business needs. These projects include but are not limited to: the proposal system, project controls systems, and budgeting systems, allowing each system to be used for multiple projects. Will operate independently and handle multiple priorities in designing, coding, testing, supporting, and documenting business applications. Will act as a resource and coordinate with management, support staff, technical personnel, vendors, and users to solve problems as required.

Will maintain and enhance existing NSLS and NSLS-II systems as well as develop new applications. Adherence to strict deadlines is essential. Requires a bachelor's degree in computer science, information technology or a closely related field, at least three years of relevant experience, excellent communication skills, strong problem-solving and broad technical skills, and demonstrable experience with ASP.Net, VB.Net, IIS, SQL Server (or Oracle), ADO.Net, HTML, CSS, and JavaScript. Experience as a SharePoint developer and familiarity with Classic ASP, VB6 and COM is highly desirable. Reports to the Manager, Business Systems Development, Light Sources Directorate. **ERAP Eligible: \$1,000. Apply to Job ID #15209.

PROJECT ENGINEER (P-5, term appointment) – Requires a bachelor's degree and at least three years of experience in physical science or engineering, and experience in one or more of the following: international or domestic nuclear safeguards, nuclear non-destructive and destructive assay measurement technology, containment and surveillance technology, systems analysis, and information technology. Excellent written and oral communication skills, proficiency with software tools such as Word, Excel, PowerPoint, and Outlook, a demonstrated ability to work independently and with other scientists/engineers, a proactive and detail-oriented approach to work, and excellent organizational skills are required. Experience working in a project management role desirable. Responsibilities will include responding to requests from the IAEA for technical safeguards assistance, preparing documentation, monitoring projects through completion, and interacting with IAEA, US government and contractor representatives. US citizenship and a Q clearance, or the ability to obtain one, required. This job will require periodic domestic and international travel. Nonproliferation & National Security Department. Apply to Job ID #15201.

MECHANICAL STAFF ENGINEER (P-3/P-5) - Requires a BSME with a minimum of three years of experience with stress and thermal analysis, mechanical design, and manufacturing techniques. CAD/CAE computer skills with ANSYS, Mechanica, Pro-E, AutoCad, or equivalent programs are required. Excellent written and verbal communication and good interpersonal skills are required to interact with a diverse group of engineers, scientists, and technical staff. Familiarity with systems and components used with particle accelerators such as vacuum systems, high voltage/high current equipment, optical equipment, high precision remote positioning systems, and/or magnets is desirable. Will assist in design, analysis, component selection, specification, construction, testing, and commissioning of custom components and systems for upgrades to the Relativistic Heavy Ion Collider. This will include system design, computer analysis and modeling, evaluation of prototypes, construction and installation of equipment, acceptance tests, commissioning and operation, upgrades, and system improvements. Experience with particle accelerators is a plus but not necessary. A desire to do creative engineering to develop and build unique equipment is required. Will be hired at P-3 or P-5 depending on years of experience. Will report to the C-AD Mechanical Systems Head. Collider-Accelerator Department. **ERAP Eligible: \$1,000. Apply to Job ID #15205.

(Jobs continue on back page)

Classified Ads
(cont'd)

EDITORIAL ASSISTANT (A-2) - Candidate must have some formal training and a minimum of four years experience which demonstrates the ability to perform a broad range of editorial assignments. A bachelor's degree in journalism, writing, communications or closely related field may offset qualifying experience on a 1:1 basis. Must have excellent writing abilities, and verbal and communication skills; proficiency in grammar and knowledge of publication formatting standards. Experience using the Microsoft Office Suite of programs such as Word, Excel, Power Point and Outlook is required, as is experience in expediting the production, editing, and publication of documents and web pages, and enabling the delivery of such electronic files to clients. Prior experience working with Standards Based Management System (SBMS) is preferred. Under general direction, performs a variety of support functions for the production and publication of scientific, technical, and administrative documents. Prepares, edits, and proofreads documents and graphics to ensure completeness, readability, and correctness. Performs liaison activities between BNL subject matter experts, other authors, and publications personnel. Supports the authors in the development and maintenance (e.g., archiving, history, linking) of Lab-wide procedures published in SBMS. Provides expertise in making editorial suggestions to clients as related to content. Support the key workflow process modeling sessions, which will encompass team facilitation using Business Process Modeling Notation (BPMN) standards. Provides recommendations on process workflow activities in full support of facilitation and documentation related tasks. Quality Management Office. Apply to Job ID #15208.

ELECTRONIC TECHNICAL SPECIALIST/SR. TECHNICAL SPECIALIST (T-2/T-3)- Requires an AAS degree in electronic technology plus at least two years of relevant work experience. Must be familiar with electronic test equipment, and experienced in design and construction of custom built circuits. Good communication skills and the ability to work from electrical drawings are necessary. Should be capable of analyzing and solving system problems. Under minimum supervision, will build custom circuits from schematic drawings and assemble chassis using basic mechanical fabrication techniques. Ultra High Vacuum experience or experience with lasers is a plus. Will support Superconducting Accelerator and Electron Cooling Experiment research personnel with a number of R&D experiments. Will be hired at T-2 or T-3 level depending on years of experience. Collider Accelerator Department. **ERAP Eligible: \$500. Apply to Job ID #15211.

*NOTE: BNL policy states that Research Associate appointments may be made to those who have received their doctoral degrees within the past five years.

**ERAP stands for Employee Referral Award Program. When a BNL employee refers a person for ERAP eligible career opportunities and that person is hired, the employee gets a referral award, either \$500 or \$1000, as reflected in the posted job description. All opportunities are listed at <http://www.bnl.gov/hrlcareers/> and employees may also log on to view all ERAP-eligible positions and sign up for automatic alerts. For more information, contact Nancy Sobrito at sobrito@bnl.gov.

Motor Vehicles

06 SUBARU B9 TRIBECA LTD – 43.2K mi. Navig System, Lthr int, Heated seats, Pwr seats, 6 CD Changer, MP3, Premium Sound, A/C Front & Rear 3rd Row Seats, Multiple Airbags, S/roof. Blue Bk Values: 23,655. \$18,500 neg. Ext. 2589, 516-380-5300.

06 TOYOTA SIENNA – Excel condition, original owner, well maintained, loaded with extras, must sell. Mike, 806-1410.

06 HONDA ODYSSEY EX-L – 71K mi. leather seating, all weather mattress incl. \$15,000 neg. Yuji, Ext. 2735, 205-5677 or goto@bnl.gov.

05 2505 TRAVEL TRAILER FRONTIER BY KZ – Great Family Camper. Sleeps 8-10. 25' extends to 30' at site. UVW is 4773 lbs. Fully loaded. Well maintained by original owner. Call for more info, pictures, & specs. \$13,500 neg. Jim, 275-0745.

01 HONDA ACCORD EXL – 119K mi. no accidents V4, leather, all pwr cd/satt, c/c, p/s, a/c, remote start, great cond. \$5,600 neg. 742-1202 or cjz_chen@yahoo.com.

99 MAZDA MIATA – 58K mi. 5 spd, a/c, c/c, elec, windows, premium stereo, Enkei 16x7 wheels, white & black interior, 29/ mpg, excel cond. \$6,500 neg. Kenneth, Ext. 8463, 878-7655 or ksexton@bnl.gov.

97 TOYOTA AVALON – 120K mi. excel cond, blue, 4 dr, 6 cyl, a/t, a/c, p/l, p/s, p/w, ABS brakes, alum rims, new am/fm stereo w/CD/cass player, great value. \$1,700. Lee, Ext. 2482.

Furnishings & Appliances

\$75 FULL SIZED WOOD BED FRAME – Full sized wood bed frame. Cherry veneer finish. Needs work, but still functional. \$75. Regina, rnash@bnl.gov.

ELECTRIC DRYER – Kenmore/\$50. Don, 630-6573.

FURNITURE – Moving - must sell ikea full size bedroom, dining room table (Ethan Allen) and more. Too many to list. Anne, aschroed@bnl.gov.

HEATER/RADIATOR + COFFEE MAKER – Patton oil filled elect radiator heater/\$20; Gevalia 12-cup Coffee Maker, white,brand new/\$12. Jane, Ext. 2198, 591-1183 or lysik@bnl.gov.

METAL BUNK BED – Tubular Metal Bunk Bed. Twin over Full. Red color. Only full size mattress included. Picture avail. upon request. Price:\$200. s.horkil@hotmail.com.

MICROWAVE CABINET – solid wood on wheels by Catskill Craftsmen (orig \$225) 52.5"Hx25"Wx18"D w/towel rack, drawer, cabinet storage, Photo avail. \$50/obo. Jane, Ext. 2198, 591-1183 or lysik@bnl.gov.

PIANO – Upright. Winter brand. Needs tuning. Can help move. Reduced to \$200. Lynda, Ext. 7235 or fitz@bnl.gov.

TABLE AND CHAIRS – Ikea expandable round dining table plus 3 chairs, great shape, \$100. Ext. 3319.

Audio, Video & Computers

35" CRT TV – Mitsubishi CS-35307 with TV stand, \$50. Michael, Ext. 2550, 744-7360 or santana@bnl.gov.

52 – Projection Screen. On wheels in excellent condition, 3 yrs. old. Too large for room. Ask. \$450. Ext. 7216, 445-4027 or minter@bnl.gov.

CASSETTE TAPES – Selling 80 original cassette tapes plus two wooden storage racks that holds them all. \$10. Jim, Ext. 2432 or higgins@bnl.gov.

JUNO – G Synthesizer and Piano, brought last Christmas, pics and demonstration avail, \$900/not neg, tax incl, spkrs not incl, 3 mi from lab. Jonathan, ridgedroid@gmail.com.

PHOTO & NEGATIVE SCANNING – www.pictureperfectscans.com scans & color corrects 35mm slides, photos, negatives & converts them to DVD. Music slide-shows available. Port Jeff. 928-6469.

Sports, Hobbies & Pets

ENGLISH RIDING SADDLES – 2 English Riding Saddles for sale. In pristine condition. Please call/write for photos. Yvette, Ext. 5591 or malavet@bnl.gov.

PILATES TOTAL GYM – Brand new, in the box. Never used. Purchased from HSN. \$250.00. Melinda, Ext. 2280 or markstaller@bnl.gov.

ROLLERBLADES – Zetrablade inline skates; men's size 9-10; plus wrist, elbow, and knee pads; like new, \$55. diamond@bnl.gov. David, Ext. 2604.

Tools, House & Garden

SAW – Delta, 10" Miter model 36-220, used, gd cond/\$50. Rolf, Ext. 2305.

STANLEY ROUTER – 71 1/12 1911-24 vintage, gd cond, base painted w/rust proof, \$30; architect scale, new, \$2. Susan, 949-4046 or susiec@centernoricheslibrary.org.

Car Pool

PLAINVIEW – Established 3-person car pool meeting in Plainview looking for 4th person. Hours: 8am to 4:30. Ronald, Ext. 6068.

Miscellaneous

14 KT GOLD BRACELET – – "Hugs and Kisses" (xoxo) design w/safety clasp in original box. PHOTO AVAIL. \$200. Jane, Ext. 2198, 516-817-0999 or lysik@bnl.gov.

CHORKIE PUPPY – Chihuahua/Yorkshire Terrier Mix - One Female Puppy (Black) - DOB 11/29/09 \$200.00. Linda, Ext. 7187.

GRAVE SITE – Pinelawn Memorial Park, Garden of Freedom South. One plot w/2 graves and beautiful bronze plaque. \$3,500. Bob, 631-588-0677.

GUITAR STRINGS – new, in package, Dean Markley, nickel steel elect, reg/10-46, \$2.50/per pkg. Susan, 949-4046 or susiec@centernoricheslibrary.org.

HEELYS – girls black/pink size USA 13C UK 11 w/ gently used indrs, wheels are removable and are not marked, pd/\$54.99, ask/30. Michell, Ext. 2541 or mchineae@bnl.gov.

KARAOKE MACHINE -GAMES – incl some tapes; microphone can be used w/speaker sep/\$10; games: Monopoly/ new/unopened/\$6; Outburst/like new/\$4; Mintrap/new/unopened/\$5 . Jane, Ext. 2198, 591-1183 or lysik@bnl.gov.

MINK COAT – Full length Mink Coat - Size 10 (M) Excellent Condition Asking \$500. Linda, Ext. 7187 or niksa@bnl.gov.

PARAFFIN SPA PLUS – – by Homedics; NEW-Never used, orig/\$39.99; extra paraffin refill also included \$20. Jane, Ext. 2198 or lysik@bnl.gov. . Jane, Ext. 2198, 591-1183 or lysik@bnl.gov.

TRAVEL CLUB – Interested in creating a BNL Travel Club? Meet in B400 Lobby, Wed,3/3, 5 PM. Joann, Ext. 7459.

TREADMILL FOLDING PROFORM – reduce for quick sale, crosswalk model, folds to save space w/upper body arm workout/\$250. Jane, Ext. 2198, 591-1183 or lysik@bnl.gov.

WOMEN'S WILSONS LEATHER JACKET – Black, inside lining doesn't come out. Size Large. Pictures upon request. Asking \$25. Rachel, Ext. 3500 or irachel@bnl.gov.

WOOD PALLETS – Four foot wide wood pallets - great for basement. Free - you pick up. Linda, Ext. 7517.

Happenings

RADIO CITY BUS TRIP – to see SHEN YUN Performing Arts Show Brilliant,In spiring,Glorious, Feb 20th @ 2pm, \$83/pp, bus leave the North Shore Library at 10:30am. George, Ext. 4033.

SHEN YUN PERFORMING ARTS – Chinese New Year Show, Radio City, Feb.20, 21 BNL Discount Code & Link: SYBNL15 https://webticketcenter.com/ny/ Brilliant, Inspiring,Glorious. George, Ext. 4033.

Free

INTERIOR DOOR – 36" hollow core, luan, incl frame and hinges, new, never installed, unfinished, u pic up. 734-2593 or sduffin@bnl.gov.

PORTABLE INFANT CRIB – Working condition. Covered with dust. Ext. 3485.

TELEPHONE SOUND AMPLIFIER – For telephones with cords. Enhances and amplifies volume of phone calls for people with high-frequency hearing loss. Brand new, never used. Rick, Ext. 3005.

Wanted

6 MONTH RENTAL – Looking for 2-bdrm home to rent in the Longwood School district, June to Dec. Ridge is preferred. Michael, 744-7360 or santana@bnl.gov.

ADOPT-A-PLATOON – Monetary donations gratefully accepted towards mailing shipments to military overseas. Thank you. Joanne, Ext. 8481.

BASKET DONATION – Get rid of those unwanted empty baskets from Christmas. They're needed for a Chinese Auction. Donna, Ext. 2826.

BASKETS – Looking for baskets, all shapes & sizes, for Chinese Auction/Craft Fair to be held Aril 17th at Riverhead H.S. Darlene, Ext. 5191.

BED FRAME - QUEEN – Looking for metal frame for queen size box spring/mattress. Ext. 4731 or pizzulli@bnl.gov.

CAMCORDER SERVICE – Looking for an expert to service Canon Hi8 camcorder. Please call Ext. 4290.

DONATIONS OF DOG/CAT FOOD – needed for pets of struggling families/elderly. Donations go to LI Cares which distributes to pantries on LI. Also if you can help w/collection bins in your Bldg pls call. Kathleen, Ext. 3161 or kratto@bnl.gov.

HAIRSTYLIST – Looking for certified hairstylist to perm, cut, color, style and travel to Riverhead for elderly women who can not make it to a salon. Need to be patient and caring. Diana, Ext. 3681 or teich@bnl.gov.

HI 8 CAMCORDER – Needed to play Hi8 tapes. Please call Ext. 4290.

HOCKEY PLAYERS – Looking for players for friendly game. Deck, roller or ice. All skill levels welcome. Email me with your preference. Joe, jcsentino@bnl.gov.

MEMBERS BNL MOTORCYCLE CLUB – meet first Thursday of the month at center club 5pm all welcome or call tim 2350. Timothy, Ext. 2350.

NEW/GENTLY USED CLOTHES – all sizes, children's books, toys to be donated to 76 families living in a shelter. Laura X4027,lbuscemi@bnl.gov and. Kathleen, Ext. 3161 or kratto@bnl.gov.

VENDORS WANTED – for Craft Fair to support Riverhead NJROTC. \$35 for a 10x10 space. Fair to be held on Saturday, April 17th at Riverhead High School. Dawn, 369-5575 or dawn1492@aol.com.

For Rent

BELLPORT VILLAGE, – UPSTAIRS 1-Bdrm Apt in 2-Family house; fully carpeted; LR/Kitch combo; private entrance/driveway; utilities included; 1-mo security req'd; avail 4/1, \$1,125/mo. Jim, 275-0745.

BELLPORT VILLAGE – Large 1-bdrm downstairs apt in 2-family house; wood floors throughout; LR, DR, Kitchen; full use of yard, Private entrance/driveway; util incl; 1-mo security; avail 4/1; \$1,325/mo. Jim, 275-0745.

BROOKHAVEN HAMLET – lg studio, full kit and bath, priv ent and patio, grnd level, no smkg/pets, 1 mo sec, avail, 3/15, util incl. \$750/mo. Donna, 803-0429.

CALVERTON – 1 bedroom basement apartment separate entrance 10 mins from lab. \$800/mo. 516-903-4783.

FARMINGVILLE – Room in Lg. house, share bath, l/r, d/r, kitch. Incl. elec, wifi, phone, cable. \$450/mo. Ben, 513-8275 or benonium@gmail.com.

MASTIC BEACH – Apartment for Rent: 1bdrm, large open living/dining room+ kitch., 15min to Lab, directly on the Bay, deck, perfect view, rent incl. internet/Tv, perfect for postdoc or young couple. \$1,000/mo. Raif, seidl@bnl.gov.

MILLER PLACE – share lg furn, colonial house in prof, resid. area 8 mi, to BNL, full kit, own bdrm, int/tv/heat/a/c, all incl, responsible non-smkr. \$675/mo. 744-8386.

BERA Updates

Interested in Running for the BERA Board?

Contact a member of the 2010 BERA Nominating Committee: Betty Elder, Ext. 3562; Maureen Fazzio, Ext. 5179; Toni Hoffmann, Ext. 5257; Barbara Moebes, Ext. 7159; or Kim Mohanty, Ext. 4402. The election for BERA Board members will be held during April 5-9. Candidates are needed!

BERA Mini-Camp

The Quality of Life/BERA/Recreation Office will offer a BERA Mini-Camp for the five-day Spring Break period, March 29 – April 2. Attendance will be by lottery and will be limited to 50 children who are between 6 & 11 years old by January 2010. The cost for the week's mini-camp will be \$185. Applications with complete details are available at <http://www.bnl.gov/bera/recreation/forms.asp> or at the Recreation Office in Bldg. 400 or the gym, Bldg. 461. All applications must be received by 4 p.m. Friday, March 5, for the lottery on Monday March 8. You will be notified by March 9 if chosen.

Summer Camp EXPO

BERA will sponsor a Summer Camp Expo at Berkner Hall 488 on Thursday March 11. Stop in for BERA Summer Camp information as well as information on other area camps.

AdoptaPlatoon Needs Help From Donors

This March, the Brookhaven Veterans Association's AdoptaPlatoon committee is collecting baby wipes, chapsticks, Gold Bond medicated powder, and corn starch powder to send abroad. Peanut butter and jelly are also very welcome. Please drop off your gifts at the clinic in Bldg. 490, the Bldg. 400 lobby, the Bldg. 488 lobby, and the Physics Library in Bldg. 510.

Buy Daffodils To Benefit Cancer Research

BERA is selling daffodils to benefit the American Cancer Society. Make a \$10 donation for a bouquet of ten fresh-cut daffodils. Prepay at the BERA Store in Berkner Hall, weekdays 9 a.m.–3 p.m. The flowers will be delivered during the week of March 15.

American Red Cross Lifeguard Training

Registration is open for the American Red Cross's Lifeguard Training. Trainees must be at least 15 years old, pass a mandatory swimming pre-test on Sunday, March 21, 3–6 p.m., and attend every session: April 11, 18, and 25, and May 2, 9, and 16. Sessions will be held 2 – 6 p.m. at the pool in Bldg. 478. The course and certifications cost \$325/ person, including a \$50 non-refundable deposit. For more information and to register, call Heidi Jochen, (631) 921-6218.

PATCHOGUE – 1 bdrm (loft style) 1 bth apt. Prefer 1 person. 10 min to Lab, priv yd/patio/drive, l/r, kit. Util and wash/dry incl. 1/2 mon sec. \$900/mo. Beth or Cheryl, 758-0830 or cheryllc@bnl.gov.

PORT JEFFERSON STATION – Colonial, 3bdrm, 1.5 bath, fin bsmt w/possible 4th bdrm, l/r,d/r,eik, gas heat, fen yd, no smkg, young families on block, Comsewogue SD, sec deposit req. \$1,800/mo. 413-5012 or gtlarlady1@aol.com.

ROCKY POINT – 1 bdrm. furnished apt, patio,two large closets, bright, quiet co-op community, private parking,15min. to Lab, 20min to Stony Brook, near stores. Incl Gas/heat/water. Available Mar.16. \$1,000/mo. mrrngwu@yahoo.com.

ROCKY POINT – 1 bdrm upper unit, kit, bath, l/r, balcy, quiet co-op comm, nr stores, Indry rm on prem, prkg, no smkg/pets, cac, incl gas/water. \$1,150/mo. 806-5965.

ROCKY POINT – 1 bdrm, 2nd flr, priv drwy, incl some util, no smkg/pets. \$795/mo. 821-3287.

ROCKY POINT – 1 bdrm apt, eik, l/r, d/r, w/d, 3 closets, off st prkg, priv ent, 9 mi to BNL, +1/mo sec. \$1,000/mo. 849-4708.

SHOREHAM – 1 bdrm, brand new, garden apt, grnd flr, indep. entr/drwy, full bath, kit, l/r, cac, no smkg/pets, few mi. to BNL, 1 month secur., all util.incl. \$1,100/mo. 566-8261.

WADING RIVER – 1 bdrm apt.eik.,lg l/r, full bath,priv. ent. 10 min. BNL , utils incl. single non-smoker only,no pets 1/mo/ sec. \$900/mo. 929-3419.

YAPHANK – “Unfurnished Bedrooms for rent in new 3 bdrm home, 4 miles from BNL. Off Mill Rd & Rte 101. \$650.00 a month includes all utilities & Dish TV. Call 631.375.0257 to see rooms.” \$650/mo. Adelia, Ext. 8252 or jthompson1@bnl.gov.

MELBOURNE BEACH, FL – 3/2 Ranch, unfurn w/appli, great rm, screen porch, 2 car gar, cac, priv ocean beach access, borders State preserve, 1 yr lease preferred, photos avail, nice beach community. \$1,100/mo. 774-3115.

NEW BERN, NC – Time Share, Waterwood Townhouses on Lake, 2 bedrooms, sleeps 8,relax away from the hustle and bustle of tourist attractions, 7/18-7/25, http://tinyurl.com/af8zc5. \$550/wk. Linda, Ext. 3750.

For Sale

JAMESPORT – 3 level, 3,000ft condo 31/2 baths,3 zone baseboard heat, walk to beach, cent a/c & vacc., deck & patio,indoor hot tub,pool,tennis,w to w rugs, 2 car gar. \$785,000 neg. Carmine, Ext. 5101.

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.



Please — remember to give to the **BNL Food Drive**, bins are ready in most Lab buildings.

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