

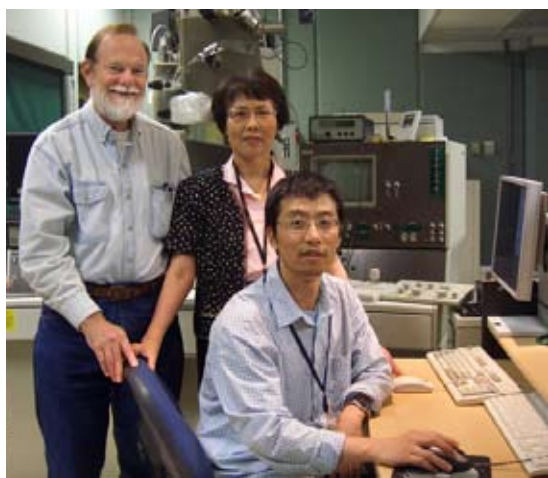
## Pairing Nanoparticles With Proteins

**New ways to tag, engineer molecules for energy conversion, drug delivery, and medical imaging**

In groundbreaking research, scientists have demonstrated the ability to strategically attach gold nanoparticles — particles on the order of billionths of a meter — to proteins so as to form sheets of protein-gold arrays. The nanoparticles and methods to create nanoparticle-protein complexes can be used to help decipher protein structures, to identify functional parts of proteins, and to “glue” together new protein complexes. Applications envisioned by the researchers include catalysts for converting biomass to energy and precision “vehicles” for targeted drug delivery.

The research was published in the July 2, 2007 issue of the journal *Angewandte Chemie*. It was funded by BNL’s Laboratory Directed Research & Development Program, the Office of Environmental & Biological Research within DOE’s Office of Science, and by the Institute of General Medical Sciences within the National Institutes of Health.

“Our study demonstrates that nanoparticles are appealing templates for assembling functional biomolecules with extensive potential impact across the fields of energy conversion, structural biology, drug delivery, and medical imaging,” said lead author Minghui Hu, a postdoctoral student working with James Hainfeld, Raymond



**Pictured are: (from left) James Hainfeld, Luping Qian, and Minghui Hu, BNL Biology Department researchers working on pairing nanoparticles with proteins.**

Brinas, Luping Qian, and Elena Lymar, all in the Biology Department. Collaborators on the research include: Huilin Li, Guiqing Hu, Yanbiao Zhang, and Paul Freimuth, all of Biology, and Joseph Wall, Martha Simon, Beth Lin, and Frank Kito of the Lab’s Scanning Transmission Electron Microscope team, also within Biology.

In the field of energy conversion, scientists have been searching for efficient ways to convert organic fuels such as ethanol into electricity using catalytic electrodes. But making single layers of densely packed enzymes, the functional part of such catalytic electrodes, has been a challenge. This new research shows that precisely engineered gold nanoparticles can be used to “glue” enzymes

together to form oriented and ordered single layers, and that these monolayers are mechanically stable enough to be transferred onto a solid surface such as an electrode.

For this research, the scientists attached gold nanoparticles to an enzyme complex that helps drug-resistant tuberculosis (TB) bacteria survive, which has been studied by Li. The researchers suggest that gold nanoparticles might also be tailored to inactivate this enzyme complex, thereby thwarting drug-resistant TB — a research avenue they may explore in future studies.

In another part of the study, the researchers used pro-

(continued on page 2)

## Three BNLers Receive President’s Volunteer Service Award

**Each Honored for 4,000-Plus Lifetime Hours of Service to L.I. Community**

Three BNL volunteers were among 180 from BNL and University Hospital at Stony Brook to receive a Presidential Service Award, given at one of four levels depending upon the number of volunteer hours they had worked within the community. Jeffrey Kupfer, DOE’s Chief of Staff, Office of the Secretary of Energy, made the presentation to the three honorees at a ceremony held in June at the Lab.

Established in 2003, the President’s Council on Service

*For their 4,000-plus lifetime hours of volunteer work, (from left) Richard Lutz, Plant Engineering Division, and BNL retirees Ella McLean and Richard Skelton were honored with President George W. Bush’s top Volunteer Service Award.*



and Civic Participation created the President’s Volunteer Service Award Program to thank those Americans who set a standard for service to others. DOE is among the more than 14,000 certifying organizations that bestowed more than 610,000 awards to the nation’s volunteers. The award

includes a pin, a certificate of achievement, a congratulatory note from President Bush, and a letter from the President’s Council. When presented through DOE, award-ees also receive a congratulatory letter from Secretary of Energy Samuel W. Bodman.

While at BNL, Kupfer visited several BNL facilities, including the new Center for Functional Nanomaterials and the National Synchrotron Light Source.

(continued on page 2)



**While on a visit to BNL in June to present the President’s Volunteer Service Awards, Jeffrey Kupfer (center), DOE’s Chief of Staff, Office of the Secretary of Energy, is welcomed to begin a tour of the new Center for Functional Nanomaterials by Lab Director Sam Aronson (left) and CFN Director Emilio Mendez.**

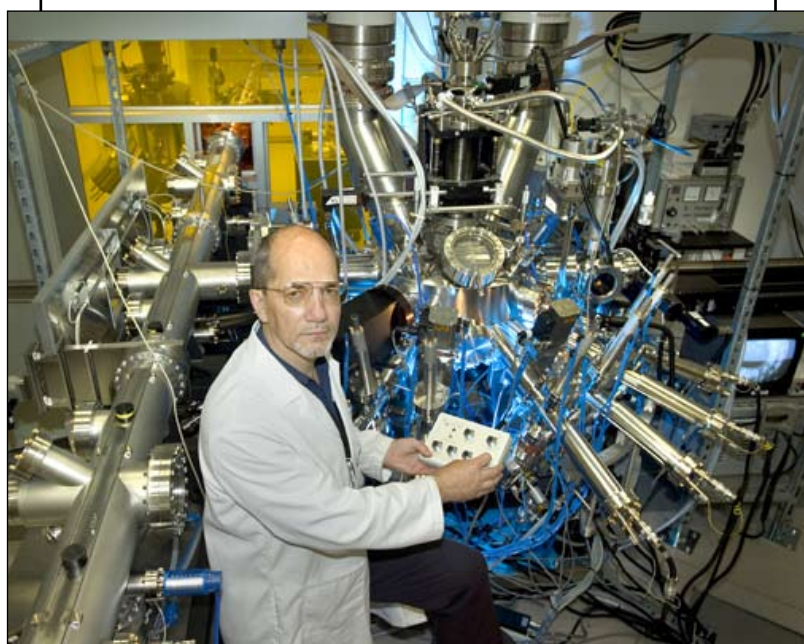


**At the National Synchrotron Light Source, BNL scientist Lisa Miller explains to DOE’s Jeffrey Kupfer her work on using synchrotron infrared imaging to develop improved biofuels, which she performs with biologist C.J. Liu of the Biology Department, assisted by science intern Simone Park of Stony Brook University.**

## Viewing Structural Changes In Copper-oxide Compounds Using Ultra-fast Technique

BNL scientists Ivan Bozovic and Gennady Logvenov, both of the Condensed Matter Physics and Materials Science Division, with the California Institute of Technology’s (CalTech) Nuh Gedik and Ahmed Zewail, winner of the 1999 Nobel Prize in Chemistry, have observed laser-induced structural changes in superconducting cuprates, or copper-oxide compounds that can conduct electrical current with no resistance. Using conventional crystallography methods, scientists previously have been unable to view these changes in structure, known as nonequilibrium phase transitions.

A paper on the research, which is funded by Basic Energy Sciences, Office of Science, DOE, appeared in the April 20, 2007 issue of *Science*. As reported in the article, the BNL-CalTech team used a different approach to studying these phase transitions in cuprates.



Roger Stoutenburgh D260605

**Ivan Bozovic with the molecular beam epitaxy oxide system that he designed and built to deposit materials, atom by atom, onto a substrate, to make multilayers of cuprates.**

First, they used an oxide molecular beam epitaxy system, a technology designed and built by Bozovic, to deposit oxygen-doped lanthanum copper oxide, the cuprate superconductor under investigation, on to a substrate, atom by atom, to make multilayers of the material.

Next, they used ultrafast electron crystallography (UEC) at CalTech to determine the structure of the cuprate. UEC was invented through the development of a field of science known as femtochemistry, which involves the use of a high-speed “camera” to image molecules undergoing chemical reactions. The field itself had been developed from experiments done by Zewail in the 1980s.

“This experiment was unique because we were able to see structural changes on a pico-second [trillionth of a second] time scale, such as occur after exposing a sample to a very short and powerful laser pulse,” said Bozovic. “Using UEC, it is now possible to explore different materials in a similar way. Since reading our results, several groups in the U.S. and Europe have already announced plans to replicate this technique.”

Bozovic explained that UEC technology contains an ultra-fast femtosecond (quadrillionth of a second) laser, which is split into two beams: a pulse used to excite the sample to a higher energy state, and a weaker pulse that produces electrons used as a probe of the cuprate. By varying the time intervals between the pulses, the researchers can “see” — via a detector that captures the diffraction patterns made by electrons bombarding the sample — how the cuprate structure changes over the time frame of a trillionth of a second.

When the length of time between the pulses of laser and electron beams was between seven and 100 picoseconds, the researchers saw a huge increase in the size of the cuprate’s lattice — the arrangement in space of atoms, molecules or ions in a crystal structure. It increased in size by 3 percent, which may appear like a small change, but actually is unusually large, since the same crystal expands only by about 1 percent when heated from 0 degrees Kelvin all the way to the melting point. With pulses between 130 and 1,300 picoseconds, the original structure returned.

The experimental data showed that there is a strong electron-phonon coupling in cuprates. The researchers then deduced that the lattice expansion was due to the phonons, particles of sound that carry vibrational energy.

“This finding promises to be an important contribution to the understanding of the physics of cuprates, including high-temperature superconductivity,” said Bozovic.

— Diane Greenberg



President’s Volunteer Service Award (cont’d)

In the photos below, Jeffrey Kupfer, DOE’s Chief of Staff, Office of the Secretary of Energy, congratulates three notable volunteers from BNL.

Richard Lutz (left), a water treatment engineer at BNL since 1990, has served as a volunteer firefighter in the Ronkonkoma Fire Department for 43 years, and, at present, he is a commissioner within the department. For ten years, he volunteered with the Ronkonkoma Little League, for which he served as treasurer. For the past four years, he has been a volunteer with the Ronkonkoma Chamber of Commerce; the Ronkonkoma Historical Society, of which he is a member of its board of directors; the Veterans of Foreign Wars of Ronkonkoma, of which he is now the post commander; and the American Legion of Ronkonkoma. Lutz said, “I enjoy volunteering and I will continue to volunteer for as long as I am healthy and able to do so because it is an excellent way to give back to the community that I call home.”



Roger Stoutenburgh D3420607

Ella McLean, who started her career at the Lab in 1966 as a clerk and retired in 1988 as a senior photographic technician, has been a volunteer for various local youth and religious groups and at Brookhaven Memorial Hospital for 47 years. She helped to set up the gift shop at the hospital when it first opened in 1957, and, to this day, at age 86, she still volunteers there two days per week. McLean has served on committees of the local PTA, Girl Scouts and Cub Scouts, and she was president of South Suffolk Girl Scouts Council, being the first African-American to serve in that top post. Since 1948, McLean has volunteered as the choir musician and director for Christian Youth Education at her church, the Grace AME Zion Church of Patchogue. She also is treasurer of the church’s board of trustees. “Volunteering keeps me going,” said McLean. “It’s a good reason to get up in the morning. I love it.”



Roger Stoutenburgh D3500607

Richard Skelton, who retired as an environmental coordinator in 1994 after a 38-year career at BNL, has been a volunteer with the Port Jefferson Volunteer Ambulance Corps for 35 years. After qualifying as an EMT in 1973, he became a volunteer at Mather Memorial Hospital’s Emergency Room 1973-1990. Since 1990, he has been a member of the Leadership Council, the hospital’s fundraising group. Currently, Skelton serves on a state-mandated quality improvement team for ambulance personnel at Mather, and he is a member of the hospital’s disaster committee, which was formed in 2002 for emergency preparedness. He also attends a semi-monthly meeting of the Regional Emergency Medical Advisory Committee in Suffolk County. From 1989 to the present, he has been a member of the Port Jefferson Lions Club, and he is chair of the club’s annual holiday food drive. In addition, Skelton worked as a volunteer for the Jerry Lewis Muscular Dystrophy Association Telethon, 1995-2005. “All told, I estimate that I’ve volunteered at least 25,000 hours of my time over the last 35 years,” Skelton said. “It is very rewarding to help the local community. I am thankful that I have the health and ability to continue to help people.” — Diane Greenberg



Roger Stoutenburgh D3440607

Pairing Nanoparticles With Proteins

teins found on the surface of adenovirus, a virus that causes the common cold. Previous studies by Freimuth have characterized how this virus binds to the human cells it infects, and have suggested that modified forms of adenovirus could be used as vehicles to deliver drugs to specific target cells, such as those that make up tumors. One key to this approach would be to enhance strong binding to the target cells. Toward that end, Hu and Hainfeld’s group attached multiple viral proteins

to the gold nanoparticles. Such constructs should have increased binding affinity for target cells and their larger size should extend blood residence time for improved drug delivery. In another application, this new research showed that gold nanoparticles can enhance scientists’ ability to decipher the structures and functionally important regions of protein molecules — the workhorses that carry out every function of living cells and whose dysfunction often leads to disease. With add-

DOE’s BHSO Holds Third ‘Annual Unity Day’



Joseph Rubino D4530607

DOE Brookhaven Site Office (BHSO) Manager Michael Holland welcomes participants to the Annual Unity Day.

The warm welcome of a family celebration greeted all who attended the “Third Annual Unity Day” held by the members of the DOE Brookhaven Site Office (BHSO) on June 18 in a room decorated with flags, crafts, arts, and exhibits from different nations. BHSO Manager Michael Holland expressed his appreciation of the organizers’ efforts in creating a setting to represent the diversity of on-site workers. “Our different backgrounds make each one of us unique,” Holland said. “Yet our separate experiences help us all. As you work with people, you find out that they may have different ways of handling things, and you can find that some other ways may be better than the one you have always used.” Holland welcomed guests to the celebration, including Maria Dikeakos and Anna Lising from DOE’s Office of Science, and representatives from several BNL organizations, including the Diversity Office, the African American Culture Club, Asian Pacific American Association; the Gay, Lesbian, or Bisexual Employee Club (GLOBE); and the Hispanic Heritage Club. This year’s theme for Unity Day was people with disabilities — how to include each one successfully in the workforce. Keynote speaker Rikie Rosenberg of Abilities, Inc., a not-for-profit group that helps match jobs to the abilities of people with special physical or mental needs, explained the mission of the company and how it achieves its



Joseph Rubino D4760607



Joseph Rubino D4510607

(Above) DOE BHSO’s Helen Specia and Nicholas Torres take the “Costumes of the World” quiz (Above, right) Michael Holland, DOE BHSO Manager (Right) With the BNL Diversity banner is Nand Narain of DOE BHSO, one of the event organizers (Below) Many members of the DOE BHSO group who organized and/or participated in the Unity Day event



Joseph Rubino D4490607

goals by teaching and training. Rosenberg congratulated BNL on its record as one of the best Long Island employers to hire people who need technical or other assistance to be able to carry out work responsibilities. She stressed that this problem is not restricted to “others.” “About one in five Americans will suffer some disability,” she warned. “Some are disabled since birth — they mostly accept their situation and train for a job that accommodates their needs. But others, who may suddenly get, for example, diabetes or a heart attack, have to change their life-style and perhaps their job to continue working.” Rosenberg also spoke of how fellow workers should treat people with disabilities. “These people are all individu-

als; they do not see themselves as a group,” she said. In answer to one of several interesting questions following the talk, she explained, “If a person with limited movement drops a pen, ask before you pick it up for them. It may be a sensitive point for that person to be as independent as possible.” Attendees then gave their attention to enjoying a selection of delicious international food, in most cases home-prepared by talented BHSO staff. Amusing and informative quiz games based on international cultures followed, plus a magnificent choice of desserts. Once again, DOE BHSO’s Annual Unity Day drew colleagues from DOE and BNL together and was deemed by all an unqualified success. — Liz Seubert



Joseph Rubino D4860607

(cont’d)

BWIS Summer Reception, 8/1

Brookhaven Women in Science (BWIS) invites the BNL community — employees, facility users, students, retirees, and guests – to a summer reception on Wednesday, August 1, from 5:30 to 7:30 p.m. in the Research Support Building (Bldg. 400) lobby. Refreshments will be served. Information about BWIS programs, including its scholarships, will be available, and BWIS Board members will be on hand to speak with anyone interested in joining the organization about its goals and policies. One of BWIS’s major goals is to promote the advancement of women in scientific and technical careers. For more information about the reception, or if you are interested in joining BWIS or volunteering your time to help with their agenda, contact Helen Todosow, Ext. 7629, or Kathy Walker, Ext. 7105.



## Integrated Safety Management Awareness

**I**ntegrated Safety Management (ISM) is the framework used to help guide all work at BNL and is a key requirement of BNL's contract with DOE. ISM's five core functions call for the Lab, as well as each employee, to define the scope of work; identify and analyze all hazards; develop and implement controls for those hazards; work within these controls; and provide feedback to improve safety in future work.

BNL will undergo a crucial ISM review this August. The auditors will likely interview a wide cross-section of BNL employees. Below is the sixth in a series of general ISM questions for managers, supervisors, and staff. The text below the questions gives examples of processes that may be appropriate as references for understanding the Lab's ISM program.

**Question for Managers:** How do you determine whether you can be more effective or efficient in ensuring that your staff works safely?

**Questions for Staff:** How do you inform your manager/supervisor of the ways that you see to do your work safer or better? Have you ever done that? What was the result?

**Response:** Self-assessment and staff feedback activities associated with work planning are encouraged. Managers actively solicit suggestions from staff as a way of obtaining feedback to improve working safely and more efficiently. Feedback is provided through the following mechanisms:

- Post-job reviews and as formally documented on work permits, work orders, or on other work authorization documents.
- Verbal communication with supervisors, managers, principal investigators, work control coordinators/managers. Standard operating procedures, radiological work permits, experimental safety reviews, work permits, work orders, and/or technical work documents are revised/changed to reflect improved processes.
- Lessons Learned communications are developed and submitted to the BNL lessons learned coordinator.

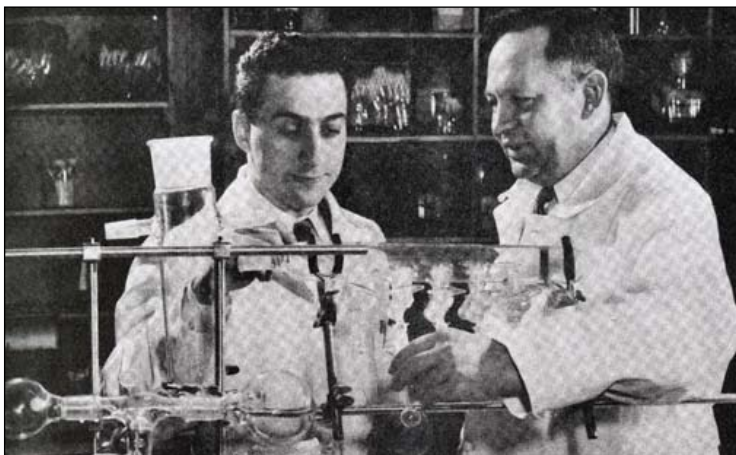
For more information, contact Steve Coleman, at Ext. 8705 or [coleman@bnl.gov](mailto:coleman@bnl.gov).

## Upton Nursery School — Info Meeting, 8/2

Upton Nursery School welcomes the children and grandchildren of BNL employees. All who are interested in registering their three-to-four year old child for two or three mornings a week at the school during 2007-08 should contact the Upton Nursery School, Recreation Office, Bldg. 400A. Children must be three years old by September and potty trained.

A Parent Meeting will be held in Berkner Hall, Room C, to explain details on Thursday, August 2, at 5 p.m. For more information, contact Katalin Petreczky, 821-4131, [julika@optonline.net](mailto:julika@optonline.net), or see [www.bnl.gov/nurseryschool](http://www.bnl.gov/nurseryschool).

# Then & Now — The Biology Department



In early 1948, Biology's Leslie Nims (right) and Benjamin Rubin examine apparatus designed to preserve proteins in their native state.

A "Project Schedule" dated December 15, 1946, shows that the research program of the not-yet-born BNL included five departments: physics, chemistry, biology, medical, and engineering. However, as related in *Making Physics*, the book by Robert Crease on early Lab history, the life sciences in the Lab's earliest days had a hard time becoming established. Crease explains that more attention than expected was needed by the reactor and accelerator projects that were "the lab's *raison d'être*;" also, many of the founders were almost exclusively interested in physics. A third reason was expense: first-class researchers in medicine were costlier than those in other fields.

### Early Challenges

As was illustrated in a "Biology Department Profile" in the March-April 1948 *Isotopics*, the department planned research in three general fields: the effects of radiation on living organisms, studies using tracer techniques of biological mechanisms, and general methods and techniques in biology. Experiments were under way and progress was being made despite the temporary nature of labs set in converted barracks in Buildings T-127 and 128.

But, Crease writes, back in Washington, DC, the Atomic Energy Commission (AEC), which funded BNL, had blocked new developments in both the medical and biology depart-

ments by March 1948. Was all lost? No, Crease says — "Then came a stroke of luck."

The luck depended on the efforts of a new BNL trustee, A. Baird Hastings, a professor of biological chemistry at Harvard Medical School, who decided to fight for life sciences at BNL. He brought in heavy guns in the person of his old friend and teacher, Donald D. Van Slyke at Rockefeller University, "one of the most prominent medical researchers alive." In describing how Van Slyke joined BNL and saved the day for both the medical and biology departments, Crease gives yet another of his many fascinating insights into how much history depends on the people involved.

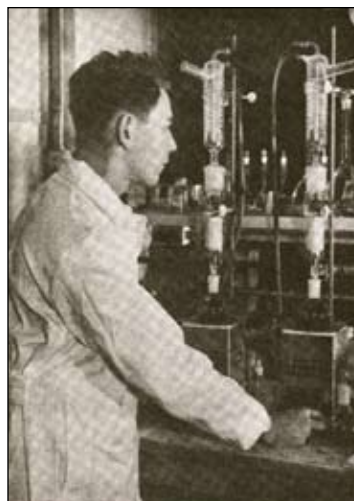
### Past Success, More to Come

As a result, the aims of the planners six decades ago have been fulfilled. Stellar discoveries at the Lab, in many cases depending on BNL's great machines funded by the AEC through to the present DOE (for example, at the National Synchrotron Light Source, and on a smaller scale, at Biology's Scanning Transmission Electron Microscope (see story on pairing nanoparticles with proteins, page 1), have helped to answer some of the most fundamental questions about living organisms.

And today, Biology's basic science capabilities are increasingly focused on bioenergy; for example, how to use plants and



1948: Biology's Robert Steele and Lina Ottolenghi remove germ cells from plant bulbs in a moist chamber to study whether chemical constituents of the plant cells affect the cells' varied sensitivity to x-rays.



1948: Martin Gibbs, Biology, extracts sugar from plant material, a step in the investigation of how plants manufacture their leaf pigments.

microbes to tailor-make oils, to understand how bacteria contribute to biomass sustainability, and to determine how enzymes can be engineered with new properties.

With the Lab's new capabilities in supercomputing, so vital for modern biology, and the investigative tools and techniques becoming available currently at the Center for Functional Nanomaterials and later at the new National Synchrotron Light Source-II, future research horizons are brighter than ever. — Liz Seubert

## Blues Festival, 8/10

On Friday, August 10, the Kerry Kearney Band, the 3AM (3 American Men) Band, and the Jacks O'Diamonds Band will perform at 6 p.m. in the Brookhaven Center, as part of the Dog Days Blues Festival. Sponsored by the BNL Music Club and the Long Island Blues Society, the event is open to the public. Tickets are \$10 each: buy them at the BERA Store or at the door the night of the show. Visitors to the Lab age 16 and over must bring a photo ID.

Headlining the Dog Days Blues Festival will be Long Island guitarist/songwriter and singer Kerry Kearney and his band, well known for performers in small venues as well as in front of thousands at the annual Riverhead Blues Festival.

Veteran musicians 3AM will open the show with a wide variety of classic songs from the 60s, 70s, 80s, and 90s, as well as contemporary music.

Jacks O' Diamonds, a high-energy trio, perform original compositions and versions of songs by Jimi Hendrix, B.B. King and Stevie Ray Vaughn.

## BNL's Summer Sundays Science Learning Center Fun 7/29

BNL's Summer Sunday open days for the public are well under way. Each week, through August 19, a different tour will be featured. Both adults and children can also enjoy a variety of entertaining activities, including the Whiz Bang Science Show and the Brain Teasers exhibit each week. Celebrate the Lab's sixtieth anniversary, and collect commemorative souvenirs while supplies last.

Summer Sundays are offered free, and no reservations are needed. Visitors may arrive any time from 10 a.m. to 3 p.m. The Whiz Bang Science Show will be staged at 10:30 a.m., noon, 1:30 p.m. and 3 p.m. each Sunday. All visitors age 16 and over must bring a photo ID.

### July 29 - Hands-On Fun With Science at the Learning Center

Capture your shadow, see yourself in the mirror exhibit, and enjoy hands-on fun at the Laboratory's Science Learning Center. Learn about the Lab's educational programs, and visit the Long Island Science Center display.

### Future Summer Sundays

**August 5** - Climb Aboard for Safe Family Fun

**August 12** - Today's Forecast Calls for a Balloon Launch

**August 19** - A Perfect Liquid Exists at RHIC



Roger Stouffer/BNL E0250698

## CALENDAR

### — THIS WEEKEND —

#### Sunday, 7/29

##### Hispanic Heritage Club Picnic

Noon-6 p.m. BNL gazebo. All are welcome. Bring your own chairs, picnic, beverages, and a dish to share. Music will be by DJ Alex, but bring instruments to play also and bikes to ride. Other activities will include volleyball, musical chairs, dance contest, and face painting 2-4 p.m. For more information, Yvette Malavet-Blum, [malavet@bnl.gov](mailto:malavet@bnl.gov) or Ext. 5591 or Anna Petway, [petway@bnl.gov](mailto:petway@bnl.gov) or Ext. 4776.

### — WEEK OF 7/30 —

#### Wednesday, 8/1

##### \*BWIS Summer Reception

5:30-7:30 p.m. Research Support Bldg. 400 lobby. Refreshments. All are welcome. See notice, page 2.

#### Friday, 8/3

##### Visit BNL Science Learning Center

Noon-1:30 p.m. Science Learning Center, Bldg. 935, corner of E. Fifth Ave. and Railroad St. All Lab community invited to try interactive exhibits, visit the 3-D visualization theater. See why more 25,000 elementary school children enjoy coming here each year. Some science-related toys for sale. An adult must accompany children under 14 years old.

### — WEEK OF 8/6 —

#### Friday, 8/10

##### \*Dog Days Blues Festival

6 p.m. Brookhaven Center. Featuring Kerry Kearney Band, the 3AM Band, and the Jacks O'Diamonds Band. Sponsored by the BNL Music Club and the Long Island Blues Society. Open to the public, tickets are \$10. Visitors to the Lab of 16 and over must carry a photo ID. See notice below, left.

### — WEEK OF 8/13 —

#### Saturday, 8/18

##### Mem Shannon & 'Bluzman' Blues

8 p.m. Berkner Hall. Mem Shannon and Sam "Bluzman" Taylor. Sponsored by the BNL Music Club and the Long Island Blues Society, the events are open to the public. Visitors to the Lab age 16 and over must bring a photo ID. Tickets are \$15. Buy at the BERA Store, at [www.ticketweb.com](http://www.ticketweb.com) or at the door of the show. Call 631-344-3846 for more information or see [www.liblues.org](http://www.liblues.org).

## Your Input Requested For Survey on Vending Services, 8/1

The BNL community is asked to participate in a survey about the vending machines that deliver food, drinks, candy, etc., on site. These vending services are provided to the Lab through the New York State Commission for the Blind Business Enterprise program.

Through the opinions expressed in the survey, Lab conference support administrative personnel can track customer satisfaction and pinpoint areas in need of improvement. The survey, which starts on Wednesday, August 1, will be available at <http://intranet.bnl.gov/survey/vending/open.asp>.

## Arrivals & Departures

### — Arrivals —

Jeanine Foster .....Fiscal  
John Halinski .....CAD  
Spartaco Margioni .....CAD  
Martine Mirrione .....Medical  
Mikhail Polyanskiy .....Physics

### — Departures —

Richard Savage .....QM



## Classified Advertisements

### Placement Notices

#### LABORATORY RECRUITMENT ONLY

**ASSISTANT STAFF SPECIALIST (A4)** - Requires a bachelor's degree or equivalent experience and excellent oral and written communication skills. Must possess strong interpersonal skills and be able to work with sensitive and confidential information while being discrete and diplomatic. Must be proficient in managing data and developing reports and presentation material using Microsoft Word, Excel and Power Point. Experience with PeopleSoft is highly desirable. The successful candidate will write job descriptions, compose R2A2s, coordinate paperwork for the hire of candidates which will include assisting supervisors with all hire documentation; organize resumes for the recruitment staff and assist in setting up interviews; help to write status reports for DOE presentations; develop and track project organization charts; track MOUs; assist with the annual salary review; coordinate spotlight awards and other incentive awards and new employee procedures. In addition, candidate will be responsible for the development of staffing plans and the reporting of staffing data. Will be employed by the NSLS-II Project, reporting to Human Resources. Send resumes to [peterespo@bnl.gov](mailto:peterespo@bnl.gov) referring to position No. PE 4796.

#### OPEN RECRUITMENT

**RIKEN FELLOW** - The RIKEN BNL Research Center (RBHC) carries out a theoretical research program focused on the physics of the Relativistic Heavy Ion Collider (RHIC), hard QCD/spin physics, lattice QCD and relativistic heavy ion physics that has been established by the Institute of Physical & Chemical Research, Japan (RIKEN). Members of the experimental division of the Center participate on the PHENIX experiment at RHIC. The RHIC is the first polarized proton collider and the Center is playing a major role in developing the RHIC spin program. Applications will be considered for a RIKEN Fellow (up to a five-year appointment entering at the equivalent of Assistant Professor level). Applicants will also be considered for a Research Associate position, which is a two-year position with the possibility of a one-year extension. Scientists with appropriate backgrounds who are interested in applying for this position should send a curriculum vitae and have three letters of reference sent electronically to [samios@bnl.gov](mailto:samios@bnl.gov) or mailed to Dr. N.P. Samios, Director, RIKEN BNL Research Center, Bldg. 510A, Brookhaven National Laboratory, Upton, NY 11973-5000, referencing Position No. KH 4574. Applications should be submitted as soon as possible but not later than August 17, 2007. Physics Department.

**POSTDOCTORAL RESEARCH ASSOCIATE** - The RIKEN BNL Research Center (RBHC) carries out a theoretical research program focused on the physics of the Relativistic Heavy Ion Collider (RHIC), hard QCD/spin physics, lattice QCD and relativistic heavy ion physics that has been established by the Institute of Physical and Chemical Research, Japan (RIKEN). Members of the experimental division of the Center participate on the PHENIX experiment at RHIC. The RHIC is the first polarized proton collider and the Center is playing a major role in developing the RHIC spin program. Applications will be considered for a RIKEN Fellow (up to a five-year appointment entering at the equivalent of Assistant Professor level). Applicants will also be considered for a Research Associate position, which is a two-year position with the possibility of a one-year extension. Scientists with appropriate backgrounds who are interested in applying for this position should send a curriculum vitae and have three letters of reference sent electronically to [samios@bnl.gov](mailto:samios@bnl.gov) or mailed to Dr. N.P. Samios, Director, RIKEN BNL Research Center, Bldg. 510A, Brookhaven National Laboratory, Upton, NY 11973-5000, referencing Position No. FH 4573. Applications should be submitted as soon as possible but not later than August 17, 2007. Physics Department.

**PROJECT ENGINEER II/EMERGENCY COORDINATOR (P-7)** Requires a bachelor's degree in engineering or physics, or equivalent, and a minimum of seven years of experience that includes at least five years' experience in emergency management and planning, policy development, and coordination with organizations with multiple priorities. Ability to communicate concisely and effectively, both orally and in writing, with all levels of management, employees, guests, and representatives of regulatory agencies is required. The ability to prepare professional reports and develop program materials and plans, make recurring, formal presentations and provide effective training in emergency management concepts to varied and diverse laboratory audiences, including senior management, is required. Excellent working knowledge of computer systems, database and spreadsheet management, Microsoft Office products, and web-based business systems is necessary, as is skill in interacting diplomatically with

and fostering an effective working relationship with representatives of governmental and other response agencies. Knowledge of basic environmental health and safety programs desirable. Working knowledge of DOE requirements, in particular, DOE O 151.1C, Comprehensive Emergency Management also desirable. Demonstrated experience in emergency management practices, as well as advanced knowledge of the National Incident Management System (NIMS) and Incident Command System (ICS) required. Working knowledge of federal government techniques for planning and implementing emergency services, including mutual aid systems is very desirable; emergency response experience and/or background is desirable. Will be responsible for the coordination, control, and direction of emergency planning, preparedness, readiness assurance, response, and recovery actions in all phases of emergencies that might occur at BNL. Responsibilities will also include emergency management administrative-support functions including reporting, procedures and plan development, integration of emergency management with environmental, safety, health and radiation protection programs and staff. Provide guidance to staff and support to local emergency coordinators as needed. Ability to obtain a DOE "Q" clearance is required. Facilities & Operations Directorate. Forward resume to [tbuck@bnl.gov](mailto:tbuck@bnl.gov), referring to Position No. TB 4733.

**ASSISTANT GENERAL SUPERVISOR, CONSTRUCTION SUPPORT (T-6)** - Requires a minimum of ten (10) years of construction management experience, including prior supervisory experience as a direct-line supervisor of tradesmen performing construction work. Extensive knowledge of applicable trades is required. Formal training as an OSHA "competent person" for excavation and formal 30-hour training in OSHA Construction Safety is essential. Responsible for assisting the Project Coordination Group in control and administration of the construction phase of line item projects. Will provide full-time, on-site monitoring of the construction Contractor's work by making independent checks to determine conformance with approved contract documents. Monitor contractor's work progress compared to the construction schedule to identify any delay in the construction completion date. Identify working conditions which violate the contractor's Health and Safety Plan or OSHA construction safety requirements. Prepare estimates of changes in contract price and/or contract completion time in connection with contract modifications. Evaluate proposals submitted by the Contractor for such contract adjustments and make recommendations for use in negotiations. Prepare daily field reports, and other reports of the progress of construction as may be required. Prepare partial, interim and final estimates and reports of quantities and values of construction work performed, for payment or other purposes. Assist in analyzing and evaluating Contractor progress schedules, progress payment requisitions and reports submitted in accordance with the terms of the construction contract. Conduct bi-weekly construction meetings with the contractor to plan construction progress and coordination between trades. Prepare construction project schedules and maintain updates. Plant Engineering Division. Forward resume to [sobrito@bnl.gov](mailto:sobrito@bnl.gov), referring to Position No. NS 4731.

**SR. PUBLIC AFFAIRS REPRESENTATIVE/SCIENCE LEARNING CENTER COORDINATOR (A-6, part-time, 75 percent)** - Requires a bachelor's degree in science or education, masters preferred, plus four years of teaching with experience using the Inquiry Method. Must be skilled at transferring scientific research concepts to inquiry based lessons with a focus on BNL-related research. The ideal candidate must be detail oriented, organized, and able to follow through on all projects in a timely manner. Strong interpersonal, communication, organizational and problem solving-skills with the ability to work well in diverse group settings are necessary. Coordinating, training and reviewing staff necessitates prior leadership experience. Writing/editing skills and knowledge of Lab policies and procedures are desired. Knowledge of MS Office and Outlook is required. In addition to teaching in the Science Learning Center, responsibilities will include coordination of Learning Center educators and programs; assisting in the development, design and interpretation of education programs, and piloting new programs. Community Involvement, Education, Government & Public Affairs. Forward resume to [dianah@bnl.gov](mailto:dianah@bnl.gov), referring to Position No. DH 3996.

**STAFF ENGINEER & ENVIRONMENTAL COMPLIANCE REPRESENTATIVE (P-5)** Requires a BS in science or engineering (advanced degree preferred) and a minimum of five years' experience in evaluation and application of environmental regulations to industrial and laboratory operations. Requires general working knowledge of RCRA, CWA, SDWA, TSCA, CERCLA and NYS and local environmental regulations. Demonstrated familiarity with pollution prevention concepts, with strong process engineering skills and ability to proactively analyze projects to identify and eliminate compliance problems and wastes. Demonstrated problem solver.

Familiarity with the ISO 14001 Environmental Management System Standard is a plus. Requires excellent communication and computer skills. Responsibilities will include providing senior level technical support to Departments and Divisions to ensure compliance with applicable laws, requirements, and BNL policy. Environmental & Waste Management Services Division. Forward resume to [tbuck@bnl.gov](mailto:tbuck@bnl.gov) referring to Position No. TB 4628.

**APPLICATIONS ANALYST (I-4)** - Requires a BS degree in physics, computer science, or a related field, and a strong interest in working within a scientific research environment. Experience with programming in C++ and Java is required, as is experience developing user interfaces. Experience with UNIX/Linux and X Windows desirable. Must have good problem solving and communications skills, both written and oral. The successful candidate will work with a team of physicists, engineers, and programmers to develop application software used to control the particle accelerator physics research facilities at BNL. Collider-Accelerator Department. Send resume to [morales@bnl.gov](mailto:morales@bnl.gov) referring to Position No. RM 4638.

**SENIOR DESIGNER (T-4)** - Requires an AAS degree in mechanical technology or equivalent, and minimum of 5 years of experience in 3D modeling of complex mechanical components and systems. Consideration will be given to additional experience in lieu of a degree. Requires working knowledge of engineering materials, machine shop practices and vendor products, as well as demonstrable skill in developing engineering concepts into detailed 3D models and drawings database is required. Substantial experience in specifying Drive components such as motors, gears, bearing, actuators, switches, and connectors is highly desirable. Must evidence working knowledge of engineering fundamentals and Standard handbook formulas and have demonstrated the ability to perform professional level design functions. Good interpersonal skills and strong self motivations are required. Major responsibilities include: develop mechanical designs to meet functional requirements and engineering specifications; generate 3D models and 2D drawings of accelerator and beamline components such as magnets, ultra-high vacuum chambers; Support and alignment system, x-ray absorbers, diagnostics devices, mirrors and monochromators; interpret and ensure conformance to applicable, standards, codes and policies including ANSI Y14.5, document designs through detailed drawings including bill of materials, ECN and catalogue items. Will report to the NSLS-II Design Room Supervisor. Forward resume to [peterespo@bnl.gov](mailto:peterespo@bnl.gov) referring to Position No. PE 4749.

**PUBLIC AFFAIRS REPRESENTATIVE/SCIENCE LEARNING CENTER EDUCATOR(A-4, part-time, 50 percent)** Requires a bachelor's degree, preferably a masters degree, in elementary education and a working knowledge of MS Word and Outlook. Middle School experience and informal education experience are a plus. Requires knowledge of and experience in the Inquiry method. Strong interpersonal and communication skills, with the ability to work well in and adapt to diverse group settings are necessary. Will be responsible for teaching science programs at BNL and in Suffolk County schools and libraries. The candidate will be transferring scientific research concepts to inquiry based lessons with a focus on BNL related research. Community Involvement, Education, Government & Public Affairs. Forward resume to [dianah@bnl.gov](mailto:dianah@bnl.gov), referring to Position No. DH 3997.

**ADMINISTRATIVE SERVICES ASSISTANT (A-2)** Requires a bachelor's degree in business or extensive in-house payroll processing work experience. Must be proficient in web-based tools and Microsoft Office applications (Outlook, Word and Excel) as well as possess strong communication and organizational skills. Must regularly exercise a high degree of discretion and judgment and perform multiple tasks in a fast-paced office environment. Knowledge of BNL's policies and tools; including PeopleSoft HR is highly desirable. Will be expected to: input and extend time and attendance records and to ensure compliance with applicable Lab policies as well as three bargaining unit contracts, interface with and supply information to internal and external auditors and customers, maintenance and analysis of various payroll deductions as well as updating and maintaining employee payroll database information. Payroll Office/Fiscal Division. Forward resume to [dianah@bnl.gov](mailto:dianah@bnl.gov), referring to Position No. DH 4211.

### Motor Vehicles & Supplies

**06 SUZUKI GSX1300R HAYABUSA** - Ltd ed., white, pwr. commander tsukigi titan exhaust, dyno at 175 rwhp, adult driven. 1,800 mi. \$10,600. Lawrence, Ext. 4797.

**05 HARLEY D. SPORTSTER CUSTOM 883C** - white/chrome, excel. cond., windshield, sdle bgs, hway, lights, fwd. ft. ctrls. 3500 mi. \$6,500/neg. Ext. 3505 or 929-6467.

**04 DODGE 1500 QUAD CAB, 8 CYL HEMI** - Auto, 4x4, 4wd, fully loaded, 20" chrm rims, towing pkg, mint cond. 31K mi. \$21,000/neg. Heather, Ext. 4138 or 779-3226.

**01 CHEVY METRO** - ac, 4 cyl., gd. station car, runs well, needs nothing, gets 36 mpg. 130K mi. \$600/neg. Edward, Ext. 7160.

**00 TOYOTA ECHO** - 4 cyl, 5 spd, 2 dr., a/c, am/fm/cd/cass, LoJack, Thule. 120K mi. \$3,000. Jay, Ext. 4994 or 332-0240.

**00 FOREST RIVER CHEROKEE** - 30' 5th wheel, bunks sleeps 8, big slide out, all options, excel. cond. \$10,000. Rich, Ext. 7160 or 929-8294.

**99 TOYOTA CAMRY** - 4 cyl., LE, abs. 82K mi. \$5,500. Joe, 929-1033.

**98 FORD EXPEDITION XLT** - 4WD, 5.4 liter, 3rd seat, leather, 6 CD, loaded, white/tan, excel. cond. (KBB value \$8,600). 126K mi. \$6,900. Rich, Ext. 7294.

**97 AUDI A4** - lthr int., pwr. sunroof, 6 mo. new tranny, new stereo w/iPod jack, drives excellently. 96K mi. \$6,500. 830-1958.

**95 CHEV P/U 1500** - 8cyl a/c, 4wd, 5spd duel range, p/s, p/b, abs, bedliner, new parts, compt maint. recs, excel. cond. 140K mi. \$4,500. Ext. 4211 or 286-3681.

**93 FORD THUNDERBIRD** - 3.8L, v6, new water & p/s pumps, TMU. \$750/neg. MaryAnn, 849-2187.

**92 FORD BOX TRUCK** - lg., great cond., a/c, interior shelving, ladder racks, brand new brakes, sacrifice, must sell. 116K mi. \$4,500/neg. John, 849-4705.

**90 OLDS 98 REGENCY** - luxury, all accessories, immaculate, hardly used, orig. mi., 47K mi. \$2,900/neg., 929-8204.

**85 COACHMAN CRUSADER CAMPER** - 24', sleeps 6, br w/tub & shower, m/wave, sew hwy heater, a/c, 2-20lb lp, batt., many extras. \$2,995/neg. Ext. 7237 or 929-6571.

**83 SOUTHWIND MOTOR HOME 27** - rear bath, cab & roof ac, sleeps 7, fully loaded, runs well, pic avail. 43K mi. \$6,500/neg. Susan, Ext. 7235 or 399-7997.

### Furnishings & Appliances

**DRILL** - elect., phone, ice maker/warmer for car, \$10/ea.; cd player, 2 lamps, \$5/ea.; Vick humidifier, \$8. 891-9430.

**GIRL'S DAY BED** - w/trundle, 2 mattresses. Excel. cond. \$125. Carol, 727-7227.

**KITCHEN TABLE** - New, 3' x 5' chop block style, light pine. No chairs. Picture on req. asking \$100. obo. Sue, Ext. 5690.

**SOFA** - 8', loveseat, 5', gd. cond., \$225/obo; upright freezer, 11.5 cu. ft., 60h/24w/27d, u pick up. Bill, 395-9610.

### Sports, Hobbies & Pets

**CYCLING TRAINER** - CycleOps Magneto, mag trainer for indoor biking w/ progressive resistance, \$120. Ext. 4924.

**FERRETS (3) W/LARGE CAGE** - Loving and playful - they need a good home. Going to college. \$175. Liz, 727-7227.

### Tools, House & Garden

**CHAIN SAW** - Craftsman 16, new cond., \$65. Joe, Ext. 3783 or 487-1479.

**FERTILIZER SPREADER** - Scott's Seed spreader, orig. \$40., ask. \$20. Joe, Ext. 3783 or 487-1479.

**WINDOW FAN** - Holmes Streamline, 4 spds, including sleep setting. \$10. Ext. 3217.

### Miscellaneous

**EUROPEAN CURRENCY** - British pounds. over 30, and a few Euros at a gd. exchange rate. Morris, Ext. 4192.

**FLORAL WREATH** - xl, blue & mauve, beautiful, \$40; Bowflex \$400. Mary, Ext. 3670.

**LOVE SEAT, DESK, ROCKER, BED** - Love seat-\$100; desk-\$100, Rocker-\$200, Twin Bed-75\$. All vg cond. Mamta, Ext. 2176.

**PORTABLE MASSAGER** - Homedics Tony Little Destress Shiatsu, brand new \$22.50. Susan, Ext. 7235 or 399-7997.

**SCIENCE SUNDAY SCHOOL** - For children ages 3-15 at SBU: math/physics, art, Russian, French, ESOL, [www.schoolplus.tonybrook.org](http://www.schoolplus.tonybrook.org). 615-4215.

**TICKETS** - 2 for Yankees vs. Tampa Bay, Sat. 7/21 1:05 p.m. Tier 12, Row P, \$20/ea. Andrea, Ext. 4656.

**TICKETS** - 4 for Yankees vs. White Sox, Thurs., Aug. 2, 1:05 p.m. Box 669, Rox D \$20/ea. Andrea, Ext. 4656.

**TICKETS** - 2, Meat Loaf, Madison Sq. Garden, Fri., July 20th 8 p.m., sect 202 row R seats 9-10, \$180pr., b/o. Ext. 7294.

### Audio, Video & Computers

**CAMERA** - Canon rebel xti eos 400d, 18-55 lens, like new 10mp digital, orig \$900 asking \$575. Lawrence, Ext. 4797.

**CAR STEREO** - Pioneer, 50W/channel, cd/rw/MP3/WMA playback, sat/ipod compat., blue OEL display/screensaver, like new, \$160. Laura, Ext. 7842 or 434-5824.

**CLOCK RADIO** - Sony, undercounter, am/fm/cd, gd. cond., \$20/obo. Ext. 7978.

**DURABRAND IN DASH CAR STEREO** - cd/MP2/cdrw playback w/MP3 display, 45wx4, slide down/detach panel w/rem., barely used \$100. 434-5824.

**FENDER STRATOCASTER** - '02, American std, Tobacco Sunburst, maple neck & fingerboard, immac cond., w/HSC,\$800, firm. Thomas, Ext. 5741 or 828-4106.

**LAPTOP MEMORY** - 1 512mb ddr pc2100 200pin sodimm, \$15; 1 256mb ddr PC2700 200pin sodimm, \$10. Gene, Ext. 7953.

**TV** - Pioneer Receiver w/JBL surround sound spkrs.; \$50, 24" RCA TV, \$50 obo. Sean, 338-9510.

**VCR, DVD PLAYER** - vcr \$10; Panasonic DVD player \$40; comp. speakers/woofer \$5; 4 chairs & coffee table \$10. Ext. 4290.

### Yard & Garage Sales

**RIVERHEAD** - Sat., 7/28, 9 a.m.- 4 p.m., 56 Nadel Dr., off Roanoke Ave., old & new, rain date, Sun., 7/29. 878-6007.

### Wanted

**AIR CONDITIONER** - recent model, at least 6,000 BTU, 120V, under \$75. Ext. 3621.

**BASSINETS OR CRADLES** - asap, prefer one in excel. cond. Wang, Ext. 5673 or 886-1483.

**CLARINET** - for 12 yr. old for school band, gd. cond. Mamta, Ext. 2176 or 355-5630.

**FEMALE ROOMMATE** - share 1 or 2 br. apt., close to Lab. Ext. 3954 or 882-8884.

**INFO ON DEPLOYED FAMILY MEMBER** - Let Adopt-a-Platoon know if you have a deployed family member in the military. Call Ken, Ext. 4935. Ext. 5483.

**VHS TAPES** - transfer old vhs to CD/DVD format. Cheryll, Ext. 2852 or 294-5215.

**WASHING MACHINE** - old and working, inexpensive. 645-5844.

### For Rent

**BELLPORT** - 2 bdrm. apt , util. incl., no smkg/pets, 10 min. to BNL. \$1,100/mo. 803-2588.

**CENTER MORICHES** - 1 bdrm. apt., lg closet, ex strge., full bath, eik, close to lab & town, nice area, sm pet ok, use of yd. \$800/mo. George, Ext. 3868.

**HOLBROOK** - lg. 1 bdrm. bsmt. apt., sep. ent., full bath, plenty of closet space, no smkg/pets. avail. immed., 1 mo. sec. \$1,300/mo. 471- 0306.

**MIDDLE ISLAND** - up to 4 bdrms. to rent, a/c, w/d, new appl., 7 mi. to Lab, \$500/ea. rm + util. or neg. to rent all 4 bdrms. \$1,800/mo. Ext. 3744 or 473-7496.

**MT. SINAI** - 1 bdrm., kit/liv comb, full bath, lg. rms., sep. ent., main flr. w/own outside area, very sunny & bright, no smkg/pets, 1 person pref. \$1,000/mo. Stacy, 331-2002.

**RIDGE** - 1 bdrm., a/c, igp, incl all util., 6 mins to Lab \$500/mo./neg. Rao, Ext. 3387 or 882-8962.

**ROCKY POINT** - 1 bdrm. house, priv. area near beach, newly renovated, no pets, incl. elec./water + sec., \$1,100/mo. \$1,100/mo. 744-5282.

**LENOX, MA** - timeshare, 2 bdrm. unit, Nov. 17-24 \$900/wk. Thomas, 909-1498.

**NEWPORT RICHEY, FL** - 2 bdrm., 2 bth, golf course cond. 2 pools, 2 golfs, tennis, clubhouse, 15 min. to Grt Gulf beach, avail. Dec-March, disc. for taking 4 mo. \$1,400/mo. Ralph, Ext. 2539 or 806-2098.

### For Sale

**BELLPORT** - 4-BR. ranch, 2 bth, l/r w/dble opening fp to den, d/r, eik, oak flrs, screened deck on priv. yard, laundry rm, fin. bsmt: w/4th BR, bar, full bth, 2 rms; gar., 2 sheds, sprinklers, gt. cond. \$449,000; 949-7797.

**EASTPORT** - contemporary, 3 bdrm., 2 baths, great rm., loft office, taxes w/Star, \$6,200, mint, .5 acre, wooded lot, 20 min. to Lab \$469,000 325-1711.

**FARMINGVILLE** - custom ranch, 2500 sq. ft., 3 bdrm., 2 bath, eik, d/r, den, wood flrs., igp, igs, 2.5 cg, many upgrades, dead end st., 10 mi. to lab \$519,900/neg. Carol, 516-906-3348.

**PATCHOGUE** - in Village, updated Victorian, 3 bdrm, eik, dr., 1.5 bath, 2 car gar., all hw flrs., fp, pocket drs., on dead end, 73 Rose, \$379,000. 758-0557, Ext. 20.

### On-Site Services

**ENTERPRISE RENT-A-CAR** - Stop by the on-site office at Bldg. 355, 50 Brookhaven Ave., to check weekend specials, daily rates. Or call Ext. 4888 or see [www.enterprise.com](http://www.enterprise.com).

**ON-SITE SERVICE STATION** - gas, all vehicle services: NYS inspections, new batteries, tires, timing belts, etc., we also service starter motors for boat engines. Done while you are at work. Ext. 4034.

**NAYYARSONS DINING** at BROOKHAVEN CENTER - full menu dinners 5-8 p.m.; specials 5-6:30 p.m. 3-course, wine/soda, coffee, \$10.95 or \$9.95 (no take out); Weds. rib-eye steak, veg., Bud. \$11.95, all plus tax.

### In Appreciation

During the week of July 16, BNL's Adopt-a-Platoon shipped 240 lbs of donated food and other items to Iraq. Thank you for supporting our troops!

To all the generous donors of books for a summer school for young children in Triinidad, thank you so much. Right now they are enjoying the books. Liz Seubert.

### Great Service Ads

A list of services provided by BNL employees, varying from airport service, bartending, childcare, housecleaning, to professional quality wedding photography and much more — is available at <http://intranet.bnl.gov/ads/displayAd-saAll.asp> on the intranet homepage on site. If you are off site, request a copy by e-mail to [bulletin@bnl.gov](mailto:bulletin@bnl.gov) or phone Liz Seubert, 344-2346, leaving a message, your phone number, and address.