

Deep Ultraviolet Free Electron Laser Reaches New Milestone Using BNL's Unique HGHG Process

Last week, after three years of intense effort in developing a new source of laser light called a deep ultraviolet free electron laser (DUV-FEL), BNL scientists generated very intense ultraviolet light by a process called high gain harmonic generation (HGHG). This process, unique to BNL, was developed under the direction of Li Hua Yu, a physicist at the Lab's National Synchrotron Light Source (NSLS). HGHG will ultimately generate deep ultraviolet laser light with unsurpassed brightness.

"Such intense light," Yu says, "will be a powerful new tool that will reveal fine details of atomic interactions inside materials and the very fast motions of molecules in chemical reactions — all this with a precision unequaled so far."

By using the HGHG process, the DUV-FEL seeks to achieve very short wavelengths of light. While visible light's wavelengths range from 400 nanometers (nm) for blue light to 700 nm for red light — a nanometer being a billionth of a meter — the wavelength of the light produced at the DUV-FEL last week was 266 nm. The HGHG process also generated significant deep ultraviolet light at 88 nm.

The advantages of two current light sources will be combined in the DUV-FEL. By generating very intense deep ultraviolet light, the DUV-FEL will act like a synchrotron, which delivers short wavelengths but less intense light, and a laser, which produces very intense light, but only at longer wavelengths.

Over the last three years, the DUV-FEL has been advancing through many steps, each representing a new technological challenge. The many NSLS scientists, engineers, and techni-

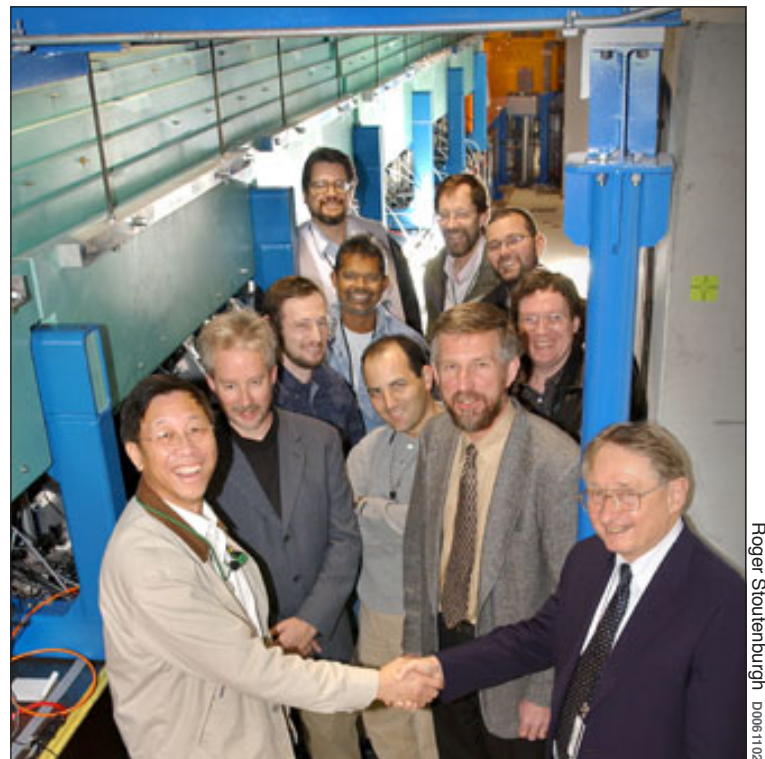
BNL's DUV-FEL is the only free electron laser using the HGHG process, which will allow it to generate the brightest deep ultraviolet light possible so far.

cians who made key contributions to overcome these challenges include physicists William Graves, Erik Johnson, Samuel Krinsky, Timur Shaftan, and Brian Sheehy, postdoctoral

research associates Adnan Doyuran and Henrik Loos, mechanical engineer John Skaritka and radiofrequency engineer Jim Rose. The experiment also benefited greatly from the scientific contributions of Ilan Ben-Zvi, Richard Heese, George Rakowsky, Xijie Wang, and Zilu Wu; the computer control of Kate Berman; and the technical assistance of Joseph Greco, Dave Harder, Michael Lehecka, Phil Marino, and Pooran Singh.

"In addition," says Yu, "valuable contributions were made by many other scientists in past stages of the DUV-FEL. The team spirit of all who have worked on the project helped in achieving the present milestone."

Yu explains that the DUV-FEL can produce such intense light because of a property called "coherence." In both a synchrotron and an FEL, electrons are accelerated to near the speed of light, and then are forced to emit very intense light by going through magnets that bend their trajectories. But while light is emitted at random, or "incoherently," in a synchrotron, it is produced "coherently," in the DUV-FEL, leading to a dramatic increase in intensity, which can be up to 10



Interim Lab Director Peter Paul (right) celebrates the latest milestone at BNL's DUV-FEL with National Synchrotron Light Source (NSLS) Department members (foreground, from left) Li Hua Yu, James Murphy, Adnan Doyuran, NSLS Chair Steve Dierker; (back, from left) Timur Shaftan, John Skaritka, Pooran Singh, Erik Johnson, Henrik Loos, and Brian Sheehy.

million times as intense as current synchrotron light.

"It is as if, instead of having a group of people singing the same song at different times, they sang in unison," says Shaftan.

In the DUV-FEL, the electrons can "sing in unison" in

two different ways, called self-amplified spontaneous emission (SASE) and HGHG. In the first process, electrons interact with light emitted by their fellow electrons, creating small groups of electrons. "Inside each group, all the electrons sing in" (continued on page 2)

U.S. State Department Guest From Sicily at BNL

Receives overview of waste management, community involvement, emergency response



Among Emergency Service Division members who met with Adriana Cogode, Assistant Deputy Director of Italy's Civil & Environmental Protection Department in Messina, Sicily (center), are: (from left) Firefighter/Emergency Medical Technicians (EMT) Joe Perry and Frank Palmeri, Lieutenant Tony Realmuto, Lieutenant Gary Schaum, Captain Bill Leigh-Manuelli, and Firefighter/EMT Allen Licata.

To gain a deeper understanding of how a U.S. national laboratory handles emergency response management, community outreach, and waste management, Adriana Cogode, the Assistant Deputy Director of the Civil & Environmental Protection Department in Italy's Ministry of the Interior in Messina, Sicily, visited BNL in mid-September, with Bernard Seubert, U.S. Department of State (USDoS); and Stefania Coccia-Wade, USDoS interpreter.

Cogode, who is in charge of civil protection and disaster preparedness in the province of Messina, which includes the Mount Etna region, was touring the U.S. as a guest of the USDoS International Visitor Program.

After being welcomed and given an overview of the Lab by Elaine Lowenstein, who leads BNL's Community Involvement Tour Program, Cogode met with

Glen Todzia of the Waste Management Division. Todzia escorted the visitors around BNL's state-of-the-art Waste Management Facility and explained how the Lab managed hazardous and radioactive waste, some of the processes used to handle different types of waste, and how compliance with the regulations of different agencies is ensured.

Cogode next talked with Kathy Geiger, Manager of BNL's Community Involvement Office (CI). Geiger explained that her office works to increase community awareness of BNL operations and to involve community members and groups appropriately in issues and decisions that may concern their quality of life.

CI holds community roundtables open to the public and facilitates a Community Advisory Council through which repre-

sentatives of key stakeholder groups and interested community members can meet monthly for discussions at BNL. CI also builds relationships with local civic organizations and community leaders who can be visited or contacted by phone for one-on-one communication.

Cogode's interest in these programs resulted in her suggesting further contact with Geiger's office next year.

The visitors then met with Frank Marotta, Manager of BNL's Emergency Services Division (ESD), to discuss emergency response issues. Cogode is responsible in Messina Province for crisis management of industrial accidents, earthquakes, fires, and volcanic events such as the present Mount Etna eruption.

With Marotta and ESD's Lieutenant Tony Realmuto, Cogode learned about the network of communications set in place by BNL with Suffolk County, New York State, and Federal Agency officials to ensure successful emergency preparedness. For example, mutual aid agreements between BNL and Suffolk County firefighters and police have resulted in joint training programs that develop communication between the groups. From Realmuto, Cogode also received, in her native Sicilian, an inside account of the job of a BNL firefighter.

A gourmet lunch cooked by Firefighter Al Licata and the Blue Crew followed, and the day was capped with a brief tour of Engine One and the presentation to Cogode of a firefighter helmet. — Liz Seubert

378th Brookhaven Lecture, 11/13

Greene Gives Researcher's-Eye View In Talk About Proton Radiography

A major component of the strategic U.S. defense system is the deterrent posed by an arsenal of nuclear weapons. But many of these weapons are decades old. Have they suffered adverse effects of age, and can they be relied on to function if the need arises?

Although their nuclear components do not seem to degrade significantly with age, the same may not be true for the chemical high-explosive driver components. Yet nuclear testing is undesirable for political reasons and is not currently an option under the U.S.'s 1992 self-imposed moratorium banning nuclear testing.

A scientific solution is being pursued to relieve this di-

lemma. In the DOE-funded Stockpile Stewardship program at BNL's Alternating Gradient Synchrotron and at Los Alamos National Laboratory's LANSCE line, scientists are developing diagnostic tools that can certify the operability of the nuclear weapons stockpile without testing the actual weapons.

Using a technique called proton radiography, static and fast-moving objects can be imaged with high-energy protons to visualize the dynamics of the high explosives in a nuclear device. These are the components most vulnerable to the effects of aging.

To discuss some of this work, George Greene of the Energy Sciences & Technology (ES&T) Department will give the 378th



Brookhaven Lecture, "Proton Radiography: To See or Not to See?" The talk will be given on Wednesday, November 13, in Berkner Hall, at 4 p.m. Greene will be introduced by ES&T Chair William Horak.

As Green will show, the images made using proton radiography show the structure of samples under study with extraordinary resolution. The (cont'd., page 2)

Calendar
of Laboratory Events

- The BERA Sales Office is located in Berkner Hall and is open weekdays from 9 a.m. to 3 p.m. For more information on BERA events, contact Andrea Dehler, Ext. 3347; or Chris Carter, Ext. 2873.
- Additional information for Hospitality Committee events can be found at the Lollipop House and the laundry in the apartment area.
- The Recreation Building (Rec. Bldg.) is located in the apartment area.
- Contact names are provided for most events for more information.
- Calendar events flagged with an asterisk (*) have an accompanying story in this week's Bulletin.

— EACH WEEK —

Weekdays: Free English for Speakers of Other Languages Classes

Beginner, Intermediate, and Advanced classes. Various times. All are welcome. Learn English, make friends. See www.bnl.gov/esol/schedule.html for schedule. Jen Lynch, Ext. 4894.

Mondays: BNL Gospel Choir

5:15-7 p.m. Berkner Hall. All faiths are welcome. www.bnl.gov/bera/activities/choir/.

Mon., Tues., & Thurs.: Kickboxing

\$5 per class. Mon. & Thurs. noon-1 p.m. in the gym; Tues., 5:15-6:15 p.m. in the gym; Thurs., 5:15-6:15 p.m. in Brookhaven Ctr. Registration is required. Mary Wood, Ext. 5923, or wood2@bnl.gov.

Mon., Thurs., & Fri.: Tai Chi

Noon- 12:45 p.m., Brookhaven Center North Room. Adam Rusek, Ext. 5830 or rusek@bnl.gov.

Mondays: BNL Dance Club Ballroom, Latin & Swing Practice

5:30-7 p.m. North Ballroom, Brookhaven Center, except Lab holidays. Jean Logan, jlogan@bnl.gov or Ext. 4391.

Tuesdays: Welcome Coffee

10-11:30 a.m. Rec. Bldg. Hospitality event. Come and meet friends. The first Tuesday of every month is special for Lab newcomers and leaving guests. Hospitality Chair Monique de la Beij, 399-7656.

Tuesdays: BNL Music Club

Noon, North Room, Brookhaven Center. Come hear live music. Joe Vignola, Ext. 3846.

Tuesdays: Aqua Aerobics

5:15-6:15 p.m. \$2 pool fee per class or use pool pass. Mary Wood, Ext. 5923.

Tuesdays: BNL Dance Club Individual & Couples instruction

5-11 p.m. North Ballroom, Brookhaven Center. Ron Ondrovic, ondrovic@bnl.gov or Ext. 4553.

Tuesdays: Toastmasters

1st and 3rd Tuesday of each month , 5:30 p.m., Bldg. 463, room 160. Guests, visitors always welcome. www.bnl.gov/bera/activities/toastmasters/default.htm.

Tuesdays & Thursdays: Aerobics

5:15-6:30 p.m., \$4 per class. Rec. Bldg. Pat Flood, Ext. 7886.

Wednesdays: On-Site Play Group

10 a.m.-noon. Rec. Bldg. A infant/toddler drop-in event. Parents meet while children play. Svetlana Agafonova, 205-5065.

Wednesdays: Farmer's Market

11:30 a.m.-1:30 p.m., Berkner Hall parking lot

Wednesdays: Hispanic Heritage Club
11:30 a.m., Berkner Hall, Room D. All are welcome. Carmen Narvaez, Ext. 3254, or www.bnl.gov/bera/activities/hispanic.

Wednesdays: Weight Watchers

Noon-1 p.m., Brookhaven Center South Room. Mary Wood, Ext. 5923, wood2@bnl.gov.

Wednesdays: Yoga Practice

Noon-1 p.m., Brookhaven Ctr. Free. Ila Campbell, Ext. 2206.

Wednesdays: Open Chess Night

5-8 p.m., Rec. Hall. Christine Carter, Ext. 5090.

Wednesdays: Exercise 101

5:15-6 p.m., Rec. Bldg. \$4 per class or \$35 for 10 classes. Stretching, low-impact aerobics, and other exercises. Pat Flood, Ext. 7886.

Wednesdays: Dance Club Group Lessons

5-9 p.m. North Ballroom, Brookhaven Center. Marsha Belford, belford@bnl.gov or Ext. 5053.

Thursdays: Science Discussion Group

12:30-1:30 p.m., Berkner Hall, Room A or D. Patrice Pages, Ext. 3270, pages@bnl.gov.

Fridays: Family Swim Night

5-8 p.m. at the BNL Pool. \$5 per family.

Fridays: BNL Social & Cultural Club

8-11:30 p.m., Brookhaven Ctr., social. Rudy Alforque, Ext. 4733, rudy@bnl.gov.

Saturdays: BNL Dance Club Monthly Ballroom Dance Social

8-11:30 p.m. Ballroom, Latin & swing dancing, North Ballroom, Brookhaven Center. 10/5, 11/9, Tuesday 12/31, 1/25, 2/15, 3/15, 4/12, 5/17. Marsha Belford, belford@bnl.gov or Ext. 5053.

— THIS WEEKEND —

Friday, 11/8

GLOBE Meeting

The Gay, Lesbian, and Bisexual Employee Club at BNL will hold its monthly meeting. For the meeting's time & location, contact Debbie Bauer, Ext. 5664, or Mike Loftus, Ext. 2960. For more information about the GLOBE club, see www.bnl.gov/bera/activities/globe.

Symposium to Honor Memory of Richard W. Dodson

2-5:30 p.m., Hamilton Seminar Room, Bldg. 555. Symposium to honor the memory of the Chemistry Department's founding chairman, Richard W. Dodson, who died on June 13.

For more information, contact Lois Caliguri, Ext. 4397.

BNL's DUV-FEL Reaches New Milestone Using HGHG Process

(cont'd.)



Roger Stoulenburgh 00071102

The National Synchrotron Light Source Department team working on BNL's deep ultraviolet free electron laser include: (front, from left) Timur Shaftan, Richard Heese, Pooran Singh, Adnan Doyuran, Phil Marino, and Li Hua Yu; (middle, from left) Joe Greco, James Murphy, Xijie Wang, Bill Bambina, Sorin Pop, Brian Sheehy, Zilu Wu, and James Rose; (back, from left) Henrik Loos, Erik Johnson, and John Skaritka.

unison, but the songs between two groups are out of sync," Shaftan says.

In the HGHG process, the electrons interact with light provided by a laser at the entrance of the DUV-FEL, a process leading to groups of electrons, as before. But "this time, not only do you have a united choir in each group, but all groups sing together," Loos explains further. "This 'super-choir' of electrons generates light that is many times more intense than that generated by the SASE process."

While many FELs are currently under development throughout the world, they are all based on the SASE process. BNL's DUV-FEL is the only FEL using the HGHG process, which will allow it to generate the brightest deep ultraviolet light so far. Unlike SASE, HGHG also generates light at wavelengths that are fractions (one-half, one-third, one-quarter, etc.) of the input wavelength.

"Such harmonics can be generated by conventional lasers

when they cross a given crystal or gas," Doyuran says. "But the intensity of these harmonics is much weaker than the input light. The big advantage of HGHG is that the harmonics are much more intense than those produced with a conventional laser."

To benefit from this very intense light, three BNL scientists have already submitted proposals to use the DUV-FEL.

Arthur Suits, Chemistry Department, is interested in using light-induced dissociation of atoms in hydrocarbons to reveal details of their molecular structure and bonding. "The DUV-FEL is really ideal for our experiments," he remarks. "The information we hope to gain using it would be impossible to obtain by other means."

Louis DiMauro, Physics Department, plans to use the DUV-FEL's short and highly intense light pulses to study the interaction of matter with intense, short-wavelength light.

"This tool will open up many

new areas of research in fundamental and applied science," DiMauro comments.

Michael White, Chemistry, intends to use the DUV-FEL to study chemical reactions that occur on the surfaces of materials, for which the product yields are low or where the gaseous products are particularly difficult to detect.

Says White, "In the long term, the DUV-FEL will produce very short pulses that will provide new information on surface processes in real time."

For Yu and his collaborators, these proposals are a clear sign that the efforts of the past three years are coming to fruition.

"The scientific use of the DUV-FEL will be the best reward for all of us and the culmination of a lot of hard work and dedication from the scientists, engineers, and technicians who worked on this project," says James Murphy, NSLS Associate Chairman for Accelerators.

— Patrice Pages

In Memoriam
Per Bak

Per Bak, a tenured member of BNL's Physics Department from March 4, 1983, to September 27, 1996, and a guest senior scientist until September 2000, died in Copenhagen, Denmark, on October 16. He was 54 years old.

Bak earned his Ph.D. in physics in 1974 from the Technical University of Denmark. From 1974 to 1981, he held several short-term appointments at the Lab. On joining Physics in 1983, Bak became part of the Condensed Matter Theory Group, serving for three years as Group Leader. He was named senior physicist in 1987. In 1990, he was honored with the Samuel Friedman Foundation's Rescue Award for outstanding Danish achievements in the arts and sciences, and in 1996, his book, *How Nature Works*, was published.



Per Bak

During the past six years, Bak held professorships at the Niels Bohr Institute at the University of Copenhagen and at the Imperial College in London, England. He was a Fellow of the American Association for the Advancement of Science and the American Physical Society.

Bak was world renowned for his important contributions to the theory of phase transitions and to statistical physics. One accomplishment was the theory of self-organized criticality (SOC), which he developed with Kurt Weisenfeld and Chao Tang in 1987. The SOC theory has had a great impact on science, in fields reaching from physics to biology to economics and beyond.

Said Sergei Maslov of Physics, "Per was one of the pioneers of complex systems research and his ideas have helped to shape and define this emerging scientific discipline. Much of his work was carried out while he was at BNL, where he played a unique and enduring role."

Doon Gibbs, Interim Associate Laboratory Director for Basic Energy Sciences, said, "Per's impact on scientific life at the Lab goes beyond the research he performed while here. Many talented scientists stayed at the Lab as his visitors, research associates, and graduate students. Collectively they contributed towards BNL's reputation as one of the great centers of statistical physics research. Per's many friends and colleagues here and around the world will sorely miss him."

Per Bak is survived by his wife, Maya; children Jakob, Tine, Thomas, and Daniel; his parents; and his brother.

BNL Lecture

(cont'd.)

technology is unique and so effective that the researchers have begun to explore its potential in industrial applications as well.

George Greene joined BNL in 1976, earning his Ph.D. in mechanical engineering from Stony Brook University (SBU) in 1980. Promoted to Scientist in 1983, he has been an active teaching and research member of SBU as an adjunct professor of mechanical engineering since 1984.

Greene is a Fellow of the American Society of Mechanical Engineers and also the editor of the monograph serial publication *Advances in Heat Transfer*, with 38 volumes to date.

Refreshments will be offered before and after the talk.

— Liz Seubert

Arrivals & Departures

Arrivals

Federico Berruto Physics
Huilin Li Biology
Kuo-Shyan Lin Chemistry
Kevin Manning CEGPA
Leisa Mc Gee Fiscal
Seth Rivera Medical
Gomez Wright N&NS

Departures

Zhong-Ye Chen .. Facilities & Ops.
Richard Osgood .. Director's Office
Susan Sevian ITD



Noon Recital, 11/20

Essence, Flute and Piano Duo

Essence, a duo formed in 1998 by pianist Jenny Mitchell and flutist Helen Richman, will perform works by Bach, Foss, Beaser, and Enescu at noon on Wednesday, November 20, in Berkner Hall.

A native of Ottawa, Canada, Mitchell has been heard on CBC Radio, Vermont Public Radio, and German National Radio. This year, she received the Canadian Federation of University Women's Creative Arts Award. Currently on the faculty at the Brooklyn Conservatory of Music (BCM), Mitchell is completing doctoral studies at Stony Brook University.

Flutist Helen Richman has performed at the Banff Centre for the Arts, the SEM Ensemble in Alice Tully Hall, Sequitur, Nexus Arts, the Northeastern Pennsylvania Philharmonic, the New England Symphonic Ensemble in Carnegie Hall, and the Mannes Bach Institute. She is on the faculty at BCM and the Turtle Bay Community Music School.

Noon recitals are free and open to the public. Bring your lunch and come and go as you please. For more information, see <http://music.bnl.gov>.



St. Martin Party, 11/10
Parade, Potluck Dinner

This Sunday, November 10, at 4:30 p.m. at the Recreation Hall in the apartment area, the Hospitality Committee will revive an old German and Dutch tradition: the St. Martin parade.

Children, parents, and all the Lab community are warmly invited to join the parade, and it is suggested that each child should bring a lantern for the occasion.

A potluck dinner will follow; everyone is asked to bring a dish for four people to share. For more information, call Simone Oppenheimer, 929-0043.

Potluck Dinner, 11/23
Join in Thanksgiving

On Saturday, November 23, at 5:30 p.m. at the Recreation Hall in the apartment area, the Hospitality Committee will hold a Thanksgiving potluck dinner. All BNLeers are invited to attend. Everyone is asked to bring a dish for six people to share. For more information, call Monique de la Beij, 399-7656.

APAA, SCC & IAA Clubs’
Holiday Party, 12/7

The BERA-Asian Pacific American Association, the BNL Social & Culture Club, and the Indo-American Association will host a Holiday Party on Saturday, December 7, 5-11 p.m. The evening is planned as follows: **5 p.m.** Dinner at Kings Buffet (LIE Exit 65, pay at the door) **7-11 p.m.** Activities at the Brookhaven Center: North Room, ballroom dancing; South Room, cookies contest, tea tasting, Santa Claus and gifts for children, Karaoke, caroling, arts & crafts, and a magic show. The cost is \$3 for members, \$5 for nonmembers. For more information, call Susan Wong, Ext. 7988, or Rudy Alforque, Ext. 4733.

Gift Idea in Store

At the BERA Sales Office, open weekdays, 9 a.m.- 3 p.m., buy the *2003 Entertainment Book of Long Island*, which costs \$20 and includes many discounts to Long Island attractions, restaurants, movies, etc.

Calling All Carollers

After Thanksgiving, on Monday, December 2, all members of the Lab community, including facility users, retirees, guests, subcontractors, and their families who enjoy singing, are invited to meet in Berkner Hall auditorium at noon sharp to rehearse for the annual Christmas/holiday concert in the cafeteria. It is not necessary to be able to read music.

For more information, contact Liz Seubert, Ext. 2346, lseubert@bnl.gov.

Password Office
Moved to Bldg. 515

The Information Technology Division Account Management Office (Password Office) has been re-located from Bldg. 459 to the modular building attached to Bldg. 515. This office is now housed with the Help Desk and Desk Side Support Services group.

For more information, contact Manager of Customer Support Marty Gormezano, Ext. 3418, or gormezano@bnl.gov.

Nick Weih, BNL Artist
Transforming the Ordinary Into Extraordinary



I don’t paint anything unusual or spectacular, but I see the spectacular in ordinary things,” said Nick Weih, a senior drafting specialist in the Magnet Division, and, in his spare time, an artist who paints realistic landscapes and seascapes in oil.

Weih (pronounced “why”) paints mostly local scenes, and the titles of his work describe their subject matter. “Riverhead Gazebo,” “Backyard Chairs,” and “East Hampton Pond” are titles of some of his paintings featured on a Web site on which a group of artists show their work (www.worldsbestart.com).

Weih has been interested in art since he was a youngster and remembers tracing pictures from comic books. At Bethpage High School, he took art and mechanical drawing classes,

and, in the 1960s, he took advertising and commercial art courses at the State University of New York at Farmingdale. At the same time, he became a freelance illustrator, creating technical drawings for the aeronautic and space industry.

In the late 1970s, Weih landed a job as art director for A.T.R. Communications, Inc., in Farmingdale, a subsidiary of Graphic Presentation Services, Inc. But when the illustration field went through a downturn, Weih turned to drafting, working as a temp for such companies as Hazeltine and Fairchild-Hiller.

It was through a temp agency that Weih came to BNL in 1988, and in 1990, he became a full-time BNL employee, a drafting specialist in the Accelerator Development Department.

In the 1990s, Weih was inspired to develop his artistic talent further, and he took art lessons with local artists, including Joe Reboli, a locally renowned painter who exhibits frequently at Gallery North in Setauket, as well as many other galleries.

Weih has completed several hundred paintings, and he has had prints made of some of them. “With every single painting I do, I learn more,” he said. “The creative process is very exciting.”

Weih has been a member of the BERA Art Society for eight years, and his work will be featured at the BNL Thanksgiving Art and Crafts Show. His work also will be displayed at The Island Gallery in Shelter Island until the end of December.

— Diane Greenberg

Nick Weih and many other BNL artists and crafters will exhibit their work, at the
BNL Employee Thanksgiving Art & Crafts Show
sponsored by the BNL Art Society
Berkner Hall
Monday to Wednesday, November 25-27, 11:30 a.m.-1 p.m.
Monday, November 25, 5-7 p.m., reception with refreshments
All are cordially invited to attend

Benefit Notes

For more information on the following, contact the Benefits Office in the Human Resources Division, Bldg. 185, Ext. 2877, Ext. 5126, or (800) 353-5321.

Sign-Up Deadlines

Wednesday, November 27, will be the deadline for making changes to medical and/or dental coverage for 2003.

Those who want to participate in the health care or dependent day care reimbursement accounts for 2003 have until November 27 to sign up.

Radio City
Extravaganza, 12/1

On Sunday, December 1, join the BERA trip to see the Radio City Holiday Extravaganza noon show in New York City, with some time to shop or snack around Rockefeller Center. Buy tickets at the BERA Sales Office — \$99 for the bus ride and orchestra seats. The bus leaves BNL at 9:30 a.m., returns at 5:30 p.m.

Two-Part Meditation Workshop, 11/12 & 26

On two Tuesdays, November 12 and November 26, clinical psychologist Cheryl Kurash will present the Employee Assistance Program workshop, “Learning to Meditate, Parts V and VI,” from noon to 1 p.m., Room D, Berkner Hall. The theme of this two-session workshop is meditation to reduce stress and enhance health. All are welcome, from beginners to advanced meditation students. Come dressed comfortably since this will be an experiential event.

Cheryl Kurash, Ph.D., is a clinical psychologist who is coordinating a meditation program at Stony Brook University, where she has led workshops since 1985. The BNL programs will be audiotaped and available on cassettes in the Research Library. Check your mailbox for registration forms.

2003 BNL Holiday Schedule

New Year's Day	Wednesday, January 1
Martin Luther King Jr. Day	Monday, January 20
Presidents' Day	Monday, February 17
Memorial Day	Monday, May 26
Floating Holiday	Thursday, July 3
Independence Day	Friday, July 4
Labor Day	Monday, September 1
Veterans' Day	Tuesday, November 11
Thanksgiving Day	Thursday, November 27
Day after Thanksgiving	Friday, November 28
Christmas Eve (½ day)	Wednesday, December 24
Christmas Day	Thursday, December 25

Calendar
(continued)

Saturday, 11/9

*Indo-American Association Holds
Diwali, the Festival of Lights

3 p.m. Berkner Hall. Cultural program of music, dance, with authentic Indian dinner at 7 p.m. Tickets: adults, \$12, children 5-12, \$8. See page 4.

BNL Dance Club Monthly Dance Social
8-11:30 p.m. Ballroom, Latin & swing dancing, North Ballroom, Brookhaven Center. Marsha Belford, belford@bnl.gov or Ext. 5053.

Sunday, 11/10

*St. Martin Parade & Potluck Party

4:30 p.m., Rec. Bldg. The Hospitality Committee cordially invites all. See details top left on this page. Simone Oppenheimer, 929-0043.

— NEXT WEEK —

Tuesday, 11/12

Power Supply & Generator Demo

11 a.m.-2 p.m., Berkner Hall. H.O. Penn Machinery of Holtsville will display the “Green Power” uninterruptible power supply system, “Green Power” natural gas generators, and will present information about reliable electric power systems.

*Meditation Workshop

Noon-1 p.m., Berkner Hall. Room D. Clinical Psychologist Cheryl Kurash will present the Employee Assistance Program Workshop “Learning to Meditate Part V.” See notice below, left. Diane Polowczyk, Ext. 2699.

Wednesday, 11/13

Safety Glass Office is closed today.

It will reopen next week.

Rifle & Pistol Club Meeting

Noon, Conf. Room, Bldg. 535. Membership activities and the use and availability of on-site ranges will be discussed. Jim Durnan, Ext. 5993, Rich Conte, Ext. 5741, or www.bnl.gov/bera/activities/rpc/.

*378th Brookhaven Lecture

4 p.m., Berkner Hall. George Greene presents, “Proton Radiography: To See or Not To See.” See page 1.

*BNL Dance Club Ballroom Dance

Lessons: start of 2nd 8-week series
See page 4. Sign up ASAP. Marsha Belford, belford@bnl.gov or Ext. 5053.

— WEEK OF 11/18 —

Tuesday, 11/19

KAMAN Industrial Technologies

9:30 a.m.-3:30 p.m. Berkner Hall. KAMAN Industrial displays latest linear motion technology from THK-America, Baldor Electric, Duff-Norton. Automation application specialists will answer questions. ATV/VCR will be raffled for all who sign in. Call John Marra, 436-5090 for more information.

Wednesday, 11/20

*BSA Noon Recital

Noon, Berkner Hall. The “Essence,” duo of pianist Jenny Mitchell and flutist Helen Richman will perform works by Bach, Foss, Beaser and Enescu. For more details, see notice on page 3 and http://music.bnl.gov.

Thursday, 11/21

BERA Bridge Club

7 p.m., Brookhaven Ctr., South Rm. Morris Strongson, Ext. 4192, mms@bnl.gov.

Saturday, 11/23

Defensive Driving

9 a.m.-3:30 p.m., Berkner Hall, Room B. Open to BNL, BSA, & DOE employees, BNL facility users, guests, and their families. To register, send a check for \$26 per person, made out to Empire Safety Council, care of Scott Zambelli, P.O. Box 670, Mount Sinai, NY 11766. Include your telephone number. All checks must be received by 11/20. No refunds after 11/20.

*Thanksgiving Potluck Dinner

5:30 p.m., Rec. Bldg. Hospitality Committee Thanksgiving potluck dinner. See notice above, left. Bring a dish to share for six people. Monique de la Beij, 399-7656.

— WEEK OF 11/25 —

Monday, 11/25-27

*Thanksgiving Art & Craft Show.

See notice above, left.

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.

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 employees within the department/division and/or appropriate bargaining unit, with preference for those within the immediate work group; (2) present 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; call the JOBLINE, Ext. 7744 (344-7744), for a list of all job openings; use a TDD system to access job information by calling (631) 344-6018; or access current job openings on the World Wide Web at www.bnl.gov/HR/jobs/default.htm.

LABORATORY RECRUITMENT - Opportunities for Laboratory employees.

TB8544. ADMINISTRATIVE SECRETARY (A-2, term appointment) - Requires formalized secretarial training or the equivalent plus six years of pertinent experience of which at least two years should be with the Laboratory as a Sr. Secretary. Should have the ability to obtain a security clearance. Must possess thorough knowledge of Laboratory practices, policies, and procedures related to assigned administrative functions and possess computer proficiency in MS Office products such as Word, Excel, PowerPoint, Access, and Outlook. Knowledge of IPAP, Web Reqs, and PeopleSoft systems desirable. Will perform secretarial functions for a project team in the Nonproliferation & National Security Department. Will process extensive number of foreign and domestic travel plans for project members inside and outside the Laboratory and for subcontractors. Will act as liaison between project team and various BNL departments as well as have frequent contact with high-level staff at DOE, other national laboratories, and subcontractors regarding travel coordination, and invoice processing and tracking. Typical assignments may include presentation, report and correspondence preparation, scheduling appointments and other administrative duties as well as coordinating and attending weekly teleconferences between DOE and project team members, and recording minutes for distribution. Will be responsible for the correct handling and filing of Russian deliverables and reports, including proper access, reproduction, storage, transmission and destruction of foreign government/access-controlled documents in accordance with Executive Order 12958. Nonproliferation & National Security Department.

OPEN RECRUITMENT - Opportunities for Laboratory employees and outside candidates.

NS2840. OFFICE SERVICES ASSISTANT (CW-2) - Requires several years of relevant experience, excellent communication and organizational skills, the ability to adapt to rapidly changing priorities in a busy environment, and proficiency with computers (Excel, Outlook and Word). Must possess accurate data entry and filing skills. In addition, customer service orientation and a professional and courteous demeanor are required. Knowledge of PeopleSoft desirable. Responsibilities will include the check-in of guests and visitors, and processing passport and visa information for data entry into PeopleSoft, and assisting in other areas of Human Resources on as needed basis. Human Resources Division.

TB3032. SR. OFFICE SERVICES ASSISTANT (CW-3) - Requires an AAS degree or equivalent related experience. A working knowledge of personal computers and exposure to computerized business systems is also required, as is knowledge of Excel, Word and payroll processing and systems. Will input and extend time and attendance records; ensure compliance with applicable Laboratory policies; check reports for accuracy; process checks, leave, and overtime adjustments; calculate retroactive pay and prepare various correspondences. Fiscal Services Division.

Motor Vehicles & Supplies

02 NISSAN MAXIMA SE - 6-spd., leather int., sunroof, Bose, moving to Manhattan, \$23,950. Mike, Ext. 3434.

00 LINCOLN TOWN CAR - all power, 41K mi., carriage top, black on black, loaded, excel. cond. Rosalie, Ext. 3160 or 289-5704.

98 JEEP WRANGLER SAHARA - green/tan, hard top, soft top, a/t, 30K mi., loaded, extras, \$18,000. Jay, Ext. 4994.

98 SUBARU OUTBACK - 5-spd., all power, excel. cond., priced according to blue book value, \$9,000 neg. Kathleen, Ext. 2113 or 298-5345.

96 CHEVY PICKUP S-10 - a/t, a/c, p/s, p/b, 62K mi., bed mat, T-cover, tow hitch, tinted glass, 2-stage multi-leaf springs, excel. cond., \$5,700. Peter, Ext. 5282.

96 DODGE AVENGER ES - red, all power, 76K mi., power sunroof, spoiler, new tranny, excel. cond., \$5,200. Roy, Ext. 6392 or 422-3610.

94 VOLVO 940 - burgundy/tan, orig. own., garaged, 108K mi., excel. cond., \$5,500. Diane, Ext. 2347.

93 MERCURY SABLE LS STATION WAGON - leather, 3rd seat, ABS, keyless entry, \$126K mi., \$1,900. Ed, Ext. 7251 or 765-4147.

92 CHRYSLER LEBARON - all power, 165K mi., needs some adjustments, good cond., \$500. Debbie, Ext. 5340 or 776-0188.

91 CHEVY CORSICA - a/t, a/c, p/s, 178K mi., good cond., \$750. Jim, Ext. 5993.

90 CHRYSLER NY- SALON - all power, 110K mi., excel. cond. \$3,250. Tim, 208-0408.

90 NISSAN SENTRA - white, a/c, 147K mi., 4-spd., am/fm/CD player, good cond., \$650. Yongbin, Ext. 2835.

87 MAZDA 626 - 5-spd., p/s, p/b, 148K mi., reliable, excel. cond., well maint., new clutch & brakes, one owner, \$1,200. Trevor, Ext. 4374 or 331-5642.

87 MERCEDES BENZ 190E 2.3 - tan w/ leather int., all power, 114K mi., sunroof, alarm system, 4-dr., \$3,200. Louisa, 286-5932.

DISTRIBUTOR CAP & ROTOR KIT - GM vehicles w/2.8L eng., 82-86, new, \$15. Susan, Ext. 7647.

WHEEL COVERS - set of four 15" Pontiac bolt on wheel. Fit a variety of GM front drive applications, excel. cond., \$50. Arthur, Ext. 7934.

Boat & Marine Supplies

22' WESTERLY SAILBOAT - twin keel, fiberglass, clean, newly painted, many extra, needs some work, \$2,000. 744-3569.

16' GLASSMASTER CENTER CONSOLE - '87, w/trailer, good cond., depth finder, great for bay fishing, \$3,200. Brian, 878-4356.

Furnishings & Appliances

AIR PURIFIER - Honeywell, HEPA air purifier, covers lg. area, excel. cond., \$75. Arthur, Ext. 7934.

CHINA SET - Churchill china, blue willow pattern, 8 place settings w/sugar & creamer, platter, lg. bowl, 45 pcs., new, in box, \$300. Bob, Ext. 7527.

COMPUTER DESK - simulated oak, \$75. Tom, Ext. 3085 or 744-4535.

DINING ROOM SET - includes table w/4 leaves, custom pads, 6 chairs & lighted china closet, \$300. Steve, Ext. 4846.

DISHWASHER - Kenmore, compact, like new, works well, \$100 obo.; Tappan microwave, full size w/turntable, works well, \$30. Steve, 924-3963.

FURNITURE - IKEA, sleeper sofa "Grinda", \$250, sideboard "Pori", \$135, dining table, \$70, lounge chair, \$65; oak dresser, 1950s, \$60; A/C, \$130. Ext. 8257 or 821-4602.

FURNITURE - couch, chairs, tables, drapes, twin headboard. Nancy, Ext. 4303 or 878-5449.

MICROWAVE - Welbilt, w/operating manual, good cond. Wayne, voice pager, Ext. 3110.

RUG - 9'x12', reddish brown, heavy weight coir, excel. cond., \$50. Larry, 3767.

RYAS RUG - 6'x8", orange, brown, gold, geometric, \$200; Oriental rug, 9'x11", worn, \$100. Bruce, Ext. 4332 or 286-2114.

SOFA & CHAIR - matching fabric sofa, \$50, chair, \$40, structurally sound, purchased new ones. Stephen, 929-6527.

SOFA - Flexsteel, 87" sofa, tropical print, v.g. cond., comfortable, picture avail., \$150. Nancy, Ext. 5744 or 929-4440.

Tools, House & Garden

DRILL PRESS - multi speed, heavy duty, \$50; small woman's bike, 26", Ross 10 speed, \$50. Bruce, Ext. 4332 or 286-2114.

LAWN MOWER - Snapper, ride-on w/hi vac, runs well, 5-spd. w/double bagger attachment, \$250 obo. Maryann, 474-5409.

STOVE - wood/coal, top-loading, iron, includes 3 sections of double wall steel insulated chimney pipe w/cap, \$100. Mike, Ext. 7081 or 929-5502.

Free

ORGAN - Baldwin micro computer orchestra, full-size, you move. Joe, Ext. 4496 or 467-5537.

POOL - kids, one piece, plastic, 8' around, 1' deep, excel. cond. Steve, Ext. 4846.

MICROWAVE OVEN - Litton over-the-range, set up for exhaust duct top or rear, old, good cond. Richard, Ext. 2216 or 734-7342.

Audio, Video & Computers

CD PLAYER - NEC single player, full featured w/remote, excel. cond., \$50. Arthur, Ext. 7934.

PRINTER - multi function, Brother MFC-7150c color printer w/scanner, fax, copier, phone, video capture, excel. cond., manual, software, \$150. Wenge, Ext. 5049 or 737-1996.

SCANNER - Visioneer 7600 series w/Windows 98 software, USB port connection. Trevor, Ext. 4374 or 331-5642.

SURGE PROTECTOR - PNotePro3 for laptop, good on 3 prong type laptops (Dell, IBM, etc.), \$6. Greg, Ext. 5440.

Sports, Hobbies & Pets

NORDIC TRACK - WalkFit 5000, new in box, cost \$600, ask. \$325. Bob, Ext. 7527.

Miscellaneous

BABY EXERSAUCE - excel. cond., \$15. John, Ext. 4028.

BREAST PUMP - Medela, single deluxe, excel. cond., used once, cost \$60, ask. \$30. Steve, 924-3963.

CHRISTMAS TREE - artificial w/ornaments, \$30. Yang, Ext. 3663 or 474-3845.

COMPUTER AND DESK - 150 mHz. Pentium, Gateway 14" monitor & Keyboard, CD ROM, 3.5" floppy, 1.5 GB HD, MS Office, \$150; computer desk, \$25. 751-1884.

MIRROR - lg. framed mirror, 44"x68", good for exercise room or gym, \$50. Lois, Ext. 8600 or 929-4753.

SWING SET - Wood Kingdom, southern yellow pine w/rounded edges, 2 swings, trapeze bar, slide & small fort, v.g. cond., cost \$500 new, ask. \$150. Arthur, Ext. 7934.

TICKETS - 4, Winter Jam 2002 tickets, Nassau Coliseum, 12/2, face value \$65 neg. Sharon, Ext. 3359.

TRAINING WHEELS - brand new, \$15. Debbie, Ext. 5340 or 286-0654.

VACUUM CLEANER - Sears canister vacuum, full featured w/power head & multiple controls, v.g. cond., \$75. Arthur, Ext. 7934.

VIOLIN & PIANO - ¾ size violin, \$100; Yamaha Upright P2F piano, walnut, excel. cond., \$2,300. Bruce, Ext. 4332 or 286-2114.

Yard & Garage Sale

EAST MORICHES - moving sale, 11/9, 9 a.m. - 3 p.m., furniture, books, toys, household items, tools, yard/pool supplies, 5 Oaktree Drive. 878-5449.

Wanted

CLOTHING - for little boys, gently used, 2 to 6, for needy family. Mickey, Ext. 7908 or 473-7460.

DONATIONS - toys, magazines, videos, music cass. & CDs, for children's residential program at the Developmental Disabilities Institute. Kathy Troscher, 366-2968.

DONATIONS - for BNL kitties. Pat, Ext. 7705.

HOUSE EXCHANGE - Grenoble France, family seeking house April - July 2003 to rent or exchange.sophie@grenoble.cnrs.fr.

NURSING STOOL - Steve, 924-3963.

RESEARCH VOLUNTEERS - healthy non-smoking men and women, ages 18 and over, are needed for MRI study. Strictly confidential, fee provided. 344-2773.

ROOMMATE - to share 2 bdrm. apt., must be male, avail. Dec. twhrs@xemacs.com.

TRAINS - Lionel, American Flyer & others, cast metal toys, high cash paid, also have some sets for sale. Bruce, 924-4097.

Happenings

The Riverhead Faculty & Community Theatre presents the musical *Joseph & the Amazing Technicolor Dreamcoat*, 11/8, 11/9, 11/16 & 11/17, at 8 p.m. at Riverhead High School. On 11/10 a matinee shows at 2 p.m. Tickets cost \$8 in advance and \$10 at the door. The matinee show can be discounted for groups of 20 or more. Call 722-8112 for additional information.

Community Involvement

Habitat for Humanity is currently accepting applications for low-income families in need of affordable housing. Applications are being accepted until 11/15. For further information please contact Debbie Reynolds, Ext. 5340.

Services

FLUTE LESSONS - NYSSMA prep levels I-IV, Yaphank area. 924-5505 or yaphankflute@aol.com.

HOLIDAY PIES - order your holiday pies now. Napoli's Italian bakery and pastry shop. Jerry, Ext. 4527 or 864-6291.

ORGANIZING CLUTTER - organize, collections, papers, fabrics, household clutter, free consultations. Kathy, Ext. 3123 or 744-7661.

TUTORING - experienced teacher in reading intervention math ELA prep, 4th grade tutoring math, English, reading, writing 5th grade. Ext. 7238 or 698-2872.

A full list of Services provided by BNLers is available on the Web, see address below, or contact Tiffany Minter, Ext. 2345 or minter@bnl.gov

Pool, Gym Closings

The swimming pool and the gym will be closed this Veterans' Day weekend, November 9-11, and for the four-day Thanksgiving weekend, November 28-December 1.

BERA Indo-American Association Holds Diwali 'The Festival of Lights,' 11/9

Tomorrow evening, on Saturday, November 9, join the BERA Indo-American Association in celebrating the Indian tradition of Diwali — "The Festival of Lights." All are welcome to join the festivities, which will be held at Berkner Hall. The program includes traditional music and dance starting at 3 p.m., and an authentic Indian dinner at 7 p.m.

Tickets are \$12 for adults, and \$8 for children ages 5-12. To reserve your tickets, contact Kumi Pandya, Ext. 7734, pandya@bnl.gov; Achyut Topé, Ext. 5672, tope@bnl.gov; Abhay Deshpande, Ext. 8783, abhay@bnl.gov; or Sharadha Sambasivan, Ext. 4862, sharadha@bnl.gov by today, November 8.

Learn to Dance



CHA CHA, FOXTROT, MAMBO, MERENGUE, LINDY, SWING

Join the BNL DANCE CLUB

8 weeks of lessons start Wednesday November 13th

North Ballroom, Brookhaven Center

Register now for

- 5-6 p.m. quick-start CHA CHA & FOXTROT: 20 people max., 1 instructor, \$40/person

- 6-7 p.m. syllabus MAMBO & MERENGUE: 50 people max., 3 instructors, \$30/person

- 7-8 p.m. introduction LINDY, SWING, HUSTLE, WEST COAST SWING: 50 people max., 3 instructors, \$30/person

Beginner classes fill quickly, so sign up ASAP

Make checks payable to the BNL Dance Club and send to: Marsha Belford, Bldg. 134. For more information, contact Susie Perino, perino@bnl.gov or Ext. 2483; or Ron Ondrovic, ondrovic@bnl.gov or Ext. 4553.

Get to Know Your Lab!

Water Treatment Plant Tour, 11/15

Bill Chaloupka of the Plant Engineering Division will explain the workings of the Water Treatment Plant during the next employee lunchtime tour, on Friday, November 15. The group will meet in the upper lobby of Berkner Hall at noon. A Lab bus will transport participants to the Plant, where Chaloupka will explain the processes that purify drinking water at the Lab. The group will return to Berkner by 1 p.m.

For more information, call BNL Community Involvement's Elaine Lowenstein, Ext. 2400.



Please share - give food or \$\$ to the **BNL FOOD DRIVE**
Send checks to BNL Food Drive, c/o R. Kito, Bldg. 460, or to D. Wadman, Bldg. 599.

Poinsettia Sale

BERA will be selling poinsettias this year to benefit Jack's Dreamhouse, a division of the Timothy Hill Children's Ranch. This 106-acre working ranch, located in Riverhead, is a home for local troubled teens.

The foil-wrapped plants come in various colors: red, white, marble, pink, and peppermint. Plants cost \$8 each and prepaid orders can be made at the BERA Store, Berkner Hall, weekdays, 9 a.m.-3 p.m. Plants may be picked up on Wednesday, December 18.



BERA Holiday Party, 12/6

BERA will hold its Annual Holiday Party on Friday, December 6, at the East Wind Caterers in Wading River from 6 to 10 p.m. All the Lab community — employees, guests, facility users, retirees, and their families — are invited to celebrate this holiday event together.

The cost is \$48 if tickets are purchased before November 15, and \$60 if purchased between November 18 and November 29. Ticket price includes full open bar, cocktail reception, hors d'oeuvres, salad, two pasta specialties, four hot entrees, cake, coffee, and DJ music. Purchase tickets by Friday, November 29, at the BERA Sales Office in Berkner Hall.

BERA Toy Drive Begins Monday, 12/2

The 2002 Toy Drive will begin Monday, December 2, and will run through Friday, December 20. This is the 17th year that BERA has participated in the drive. Organized by Brookhaven Town, the drive helps bring happiness to young people in the local community during the holidays. Donate new, unwrapped toys for children of all ages at the BERA Sales Office in Berkner Hall, weekdays, 9 a.m.-3 p.m. or at Christine Carter's office, Bldg. 179B. For more information, call Andrea Dehler, Ext. 3347, or Christine Carter, Ext. 2873.

