

## Thermoelectric Thin Films Grown on Silicon Promise Useful Applications

Thin films made of so-called thermoelectric materials could be used to convert heat directly into electric energy, or vice versa, for a variety of applications, including micro-chip-based chemical and biological sensors and more efficient ways to cool computer chips. Thermoelectrics also hold promise for clean-energy generation because they transform heat into electrical energy without producing carbon dioxide or other emissions.

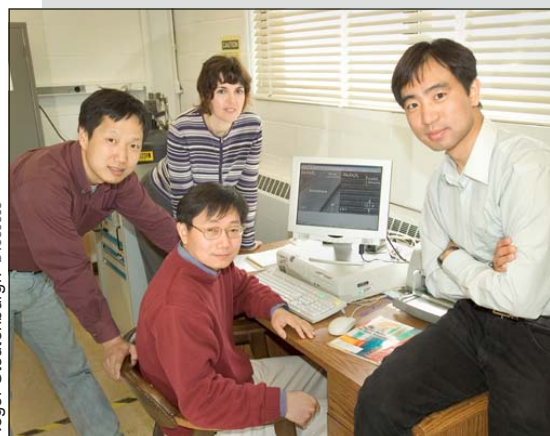
Until now, the development of these applications has been limited by certain properties of conventional thermoelectric materials and by the lack of an economically viable fabrication process. But scientists at BNL have demonstrated the feasibility of growing high-quality thermoelectric thin

films with superior properties on ordinary silicon wafers, promising the use of available state-of-the-art silicon fabrication technology to create new devices.

A paper on this work was published by *Applied Physics Letters*, online on February 16, 2005, and in print on February 21, 2005. The research was funded by the Office of Basic Energy Sciences within DOE's Office of Science.

"Being able to grow this material on a silicon substrate means it's feasible to fabricate devices using conventional silicon technology instead of having to devise a brand-new manufacturing system for thermoelectrics. This makes the idea of using thermoelectric materials for practical applications much more economically viable than had previously been possible," said Qiang Li of the Materials Science Department (MSD), the group leader of this research. The work is being performed by a collaboration of scientists in MSD, Yufeng Hu and Li; the Condensed Matter Physics Group in the Physics Department, Weidong Si; and the Center for Functional Nanomaterials, Eli Sutter.

The thin-film thermoelectric material the BNL team has produced,  $\text{Ca}_3\text{Co}_4\text{O}_9$ , is from a family of layered cobaltates *(continued on page 2)*



Pictured are: Qiang Li (seated) and (from left) Weidong Si, Eli Sutter, and Yufeng Hu.

Roger Stoutenburgh D1530305

## Biodiesel Workshop at BNL Explores Issues of Supply, Demand

Several hundred representatives from government, industry and the potential user community gathered at Brookhaven Lab last week to explore the future of biodiesel fuel on Long Island for transportation and heating use.

Biodiesel is a cleaner burning alternative fuel produced from domestic, renewable resources like soybean oil and contains no petroleum. It can be used in unmodified diesel engines and is a superior lubricant.

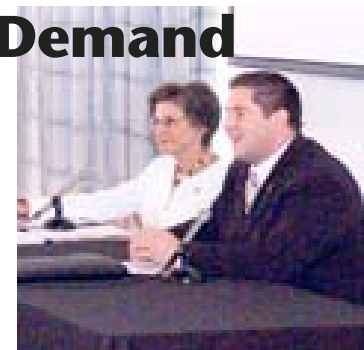
Statewide public and private

sector individuals and organizations interested in the production, supply and uses of biodiesel spent the day listening to government, industry and user perspectives during a series of talks and panel discussions. BNL organized the workshop cooperatively with the Town of Brookhaven, the Long Island Clean Cities Coalition, and the Northeast Regional Biomass Program.

U.S. Representative Tim Bishop (D-NY), who was introduced by BNL Director Praveen



U.S. Representative Tim Bishop addresses Biodiesel Workshop attendees at BNL.



Speakers at the workshop included Suffolk County Legislators Vivian Vilorio-Fisher and Daniel Losquadro.

Roger Stoutenburgh D1530305

Chaudhari, gave the keynote address, in which he encouraged expansion of biodiesel use as part of a comprehensive energy policy. Other speakers included Suffolk County Legislators Daniel Losquadro (Miller Place) and Vivian Vilorio-Fisher (East Setauket), and Thomas Butcher of BNL.

"I am encouraged by this kind of gathering, and by the leadership BNL has given and can give on these issues," Bishop said. "Biodiesel use is a win-win-win technology: environmentally, economically, and politically. *(continued on page 2)*

Roger Stoutenburgh D1716935

## FERN Established To Begin Studies At Upton Ecological & Research Reserve

In late 2003, the Foundation for Ecological Research in the Northeast (FERN) was founded to build on the groundwork and research in ecology established at the Upton Ecological & Research Reserve, 530 acres of undeveloped land on the BNL site that DOE set aside for permanent preservation in 2000.

"FERN is a nonprofit organization that fosters research and educational experiences and distributes data supporting the management of ecosystems based on sound science," said Tim Green, BNL's Cultural and Natural Resources Manager and Chair of the FERN Board of Directors. "We're also dedicated to preserving the Pine Barrens and maritime ecosystems of central and eastern Long Island and related ecosystems in the northeastern United States."

The Upton reserve is located in the Pine Barrens, and provides a home to more than 220 species of plants and 162 species of mammals, birds, reptiles and amphibians. The reserve provides a habitat for approximately 38 endangered or threatened species, or species of special concern, including the endangered eastern tiger salamander and the state-threatened banded sunfish. Other wildlife species that inhabit the area include the wild turkey, red fox, eastern box turtle, hognose snake, and red-tailed hawk.

From 2000 to 2005, the U.S. Fish and Wildlife Service has managed the activities and research at the Upton Reserve, for which DOE funded the agency with \$200,000 per year. With the funding at an end, FERN has stepped in to continue the research and preservation efforts. To do so, the organization is

seeking funding from a variety of sources, including private contributors.

"We have received funds from BSA to assist us in getting started," Green said. "We will also receive \$100,000 from the New York State Environmental Protection Fund through the Central Pine Barrens Commission, and we've recently received funding through the Henry Phillip Kraft Family Memorial Fund, managed through the Long Island Community Foundation."

FERN is dedicated to improving the understanding of Long Island ecosystems, as well as ecosystems throughout New York State and the northeastern U.S. and to preserving these ecosystems. To accomplish its goals, FERN is committed to synthesizing and disseminating ecological information; creating documented and accessible databases; establishing long-term ecological studies, and educating the public, resource managers, and policymakers to address complex environmental challenges.

This summer, FERN will work with the Pine Barrens Protected Lands Council to identify conservation targets and establish methods for documenting and collecting data about the

Tim Green and Jennifer Higbie, both of the Environmental & Waste Management Services Division, conduct post-fire monitoring procedures to determine the depth of leaf litter and the kinds and number of plants that are growing at the site of last fall's prescribed fire at BNL. Similar measurements will be carried out by FERN throughout the Central Pine Barrens this summer.

Pine Barrens. "Once we establish the protocols, we'll gather information about the approximately 50,000 acres of core preservation area in the Pine Barrens on Long *(continued on page 2)*

## Earth Day At BNL Includes FERN Pledge Tree

The Environmental & Waste Management Services Division will be hosting a number of activities during Earth Week, April 18-22, in celebration of Earth Day (watch the Bulletin for more information). All BNL employees, guests, and contractors are welcome to participate and make a pledge to improve the environment, place a leaf on the pledge tree, and make a donation to further ecological research. Donations will be forwarded to FERN. The pledge tree will be located in Berkner Hall. Pledges and donations will be taken on weekdays during lunch hours.

## BSA Distinguished Lecture, 4/18 James Barber on Photosynthesis And Future Energy Needs

James Barber, Ernst Chain Professor of Biochemistry at Imperial College, London, will combine its hydrogen with carbon dioxide to form organic matter and oxygen. Barber and Imperial College colleagues used x-ray crystallography to illuminate the mechanism that underpins the photosynthetic water-splitting reaction. By analyzing these findings, the researchers believe it may be possible to learn how to recreate the process on an industrial scale, allowing hydrogen to be manufactured as a fuel.



James Barber

The BSA Distinguished Lectures are sponsored by Brookhaven Science Associates, the company that manages BNL, to bring before the Lab community and the public topics of general interest. The lecture is free and open to the general public. All visitors to the Laboratory age 16 and over must bring a photo ID.

Barber's research aims to mimic one step in photosynthesis to produce hydrogen as a fuel. In photosynthesis, plants use sunlight to split water and

"Hydrogen derived from the water-splitting in plants could be one of the most promising energy sources of the future," Barber said. "Unlike fossil fuels, it's highly efficient, low polluting and is mobile, so it can be used for power generation in remote regions where it's hard to access electricity." *(continued on page 2)*



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## 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 Recreation Bldg. and at the laundry, both 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](http://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/](http://www.bnl.gov/bera/activities/choir/).

#### Mondays & Wednesdays: Pilates

Mon., Noon-1 p.m. in the Rec. Hall; Wed., 5:30-6:30 p.m. in the Rec. Hall. Christine Carter, Ext. 5090.

#### Mon., Tues., & Thurs.: Kickboxing

\$5 per class. Mon., noon-1 p.m. in the gym; Tues., 5:15-6:15 p.m. in the gym; Thurs., noon-1 p.m. in the gym; Thurs., 5:15-6:15 p.m. in Brookhaven Ctr. North Room. Registration is required. Christine Carter, Ext. 5090.

#### Mon., Wed., & Fri.: Tai Chi

Noon-1 p.m., Brookhaven Center North Room. Adam Rusek, Ext. 5830 or [rusek@bnl.gov](mailto:rusek@bnl.gov).

#### Tuesdays: Welcome Coffee

10-11:30 a.m., Rec. Hall. First Tuesday of every month is special for Lab newcomers and leaving guests. Cindy Ottemann, 849-2646.

#### Tuesdays: BNL Music Club

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

#### Tuesdays: Jiu Jitsu Club

6:30-7:30 p.m. in the gym. All levels, ages 6 and above. \$10 per class. Tom, Ext. 4556.

#### 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](http://www.bnl.gov/bera/activities/toastmasters/default.htm).

#### Tuesdays & Thursdays: Aerobics

5:15-6:30 p.m., \$5 per class or \$40 for ten classes. Rec. Hall. Pat Flood, Ext. 7886.

#### Tuesdays & Thursdays: Aqua Aerobics

5:15-6:15 p.m. Eight-week session. \$20 to attend once a week; \$40 to attend twice a week. Ext. 2873 for more information.

#### Tuesdays & Thursdays: Jazzercise

Noon-1 p.m., Rec. Hall. Preregistration is required. Christine Carter, Ext. 5090.

#### Tues., Thurs., Fri.: Upton Nursery School

8:30-11:30 a.m. Rec. Hall. Two- and three-day program avail. 727-8082 or Ext. 5090, for information.

#### Tues., Wed. & Thurs: Rec Hall Activities

5:30-9:30 p.m. General activities, large-screen TV, ping pong, chess, games, and socializing. Christine Carter, Ext. 5090.

#### Wednesdays: On-Site Play Group

10 a.m.-noon. Rec. Hall. An infant/toddler drop-in event. Parents meet while children play. Kati Petreczky, 821-4131.

#### Wednesdays: Weight Watchers

Noon-1 p.m. Michael Thorn, Ext. 8612.

#### Wednesdays: Yoga

Noon-1 p.m., Brookhaven Center. Free. Ila Campbell, Ext. 2206, [ila@bnl.gov](mailto:ila@bnl.gov).

#### Wednesdays: Open Chess Night

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

#### Wednesdays: Dance Lessons

5:15-8 p.m. Brookhaven Ctr., North Room. BNL Ballroom Dance Club hosts lessons, beginner to adv. John Millener, Ext. 3853.

#### Thursdays: Reiki Healing Class

Noon-1 p.m., Bldg. 211 Conference Rm. Nicole Bernholz, Ext. 2027.

#### Fridays: Family Swim Night

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

#### Fridays: BNL Social & Cultural Club

6-9 p.m., North Ballroom, Brookhaven Ctr., dance lessons, 9-11:30 p.m. general dancing. Rudy Alforque, Ext. 4733, [rudy@bnl.gov](mailto:rudy@bnl.gov).

### — THIS WEEKEND —

#### Today, Friday, 4/8

**\*BREA Talk on Retirement Investment**  
11 a.m., Berkner Hall. Sponsored by the Brookhaven Retired Employees Association (BREA). BNL retiree Frank Federman will speak on "Investment Strategies During Retirement." All are welcome.

### — WEEK OF 4/11 —

#### Monday, 4/11

#### \*Research Library Open House

Mon.-Fri., 4/11-15. Celebrate National Library all this week at the Research Library Open House. Library orientation, database demos and training. All are welcome. See more information in notice, page 3.

## Biodiesel Workshop at BNL Explores Issues of Supply, Demand

(cont'd.)



"Environmentally, we need to worry about global warming, and it's a cleaner-burning fuel," Bishop said. "From an economic point of view, it's also very desirable because we lavish enormous subsidies on U.S. farmers, \$180 billion over the next 10 years for them to not grow crops. If they grew crops to make biodiesel, we would be getting something for the enormous amounts of money the government provides."

"The United States has 3 percent of the world's oil reserves," he continued, "and we use 25 percent of the world's oil. Our dependence on foreign oil is both an economic and a political

problem, and politically, it seems that this is one of the few issues that joins red state and blue state America."

During a legislative panel discussion, Suffolk County's Losquadro described an upcoming pilot project that will use biodiesel in some Suffolk County vehicles. The pilot project may eventually be expanded to include the entire fleet. Suffolk County's Vioria-Fisher expressed support for a biodiesel manufacturing facility in Suffolk County.

Biodiesel industry proponents pointed out that demand for the fuel has risen dramatically since 1999, but said that

distribution will be the key to its continued success. Biodiesel use to replace heating oil, in school bus fleets to cut down on emissions that could be harmful to children's health, and in marine and environmentally sensitive areas were identified as growth opportunities for the industry.

BNL's Tom Butcher, Energy Sciences & Technology Department (ESTD), spoke about the potential for using biofuel to replace heating oil in buildings with oil-fired heating equipment. With his colleague C.R. Krishna, also of ESTD, Butcher has been studying the benefits and potential problems raised

by biodiesel use for heating purposes. BNL's work in this area has been sponsored by the New York State Energy Research & Development Authority (NYS-ERDA) and DOE, and BNL has also collaborated with many New York organizations. BNL will soon be working with the Cornell Cooperative Extension to study the application of biofuels to New York City multifamily buildings.

Other speakers at the workshop represented organizations such as the Northeast Regional Biomass Program, NYSERDA, World Energy and Changing World Technologies.

— Kay Cordtz

## FERN Established at Upton Reserve

(cont'd.)

Island, the first study of its kind in our area," Green said. "We'll establish a geospatial database of information about the Pine Barrens that can be shared with other interested individuals and organizations."

Green also hopes to collaborate with the Nature Conservancy and other local environmental groups to work on baseline biodiversity studies of the Peconic and Carmans Rivers. "We have to determine to what extent the rivers are impacted by invasive plants and animals," Green explained. "Invasive species reduce biodiversity, making the rivers less healthy. For instance,

*Cabomba caroliniana*, an aquatic plant commonly known as fanwort, is invading local rivers. It floats in the water as thick mats and decreases water flow, thereby degrading the habitat for fish. Once we learn more about the types of invasive species that are in the rivers, we can develop management actions to protect the rivers and the native species."

Contributions to FERN are tax-deductible. To make a donation to the organization, send a check made out to FERN to: Foundation for Ecological Research in the Northeast, P.O. Box 962, Upton, NY 11973.

— Diane Greenberg

## Arrivals & Departures

### Arrivals

David Ansel ..... Medical  
Christian Schmidt ..... Physics  
Serban Smaidici ..... NSLS

### Departures

Michael Baldwin ..... ERD  
Herman Bartolomy ..... C-A  
Glen Boyle ..... C-A  
Douglas Caracappa ..... EWMS  
Andrew Como ..... ITD  
Andrew Davis ..... C-A  
Nicholas Flavin ..... Medical  
William Fritz ..... C-A  
Joseph Greco ..... NSLS  
F. Michael Hemmer ..... C-A  
Ubaldo Iriso Ariz ..... C-A  
Stephen Klerk ..... ERD  
Janet Pawson ..... SSD  
Paul Poleski ..... ITD  
Robert Rooks ..... RO/EWMS  
William Rooney ..... Chemistry  
John Rowan ..... Medical  
Stanley Sakry ..... RO/EWMS  
Gordon Saueracker ..... Plant Eng.  
Thomas Sheridan ..... DO  
Mitchell Williams ..... Magnet Div.  
Yongxiang Zhao ..... Physics

## Sci-Fi Event at SBU, Tonight Through Sunday, 4/8-10

This evening and all this weekend, on April 8, 9, and 10, the non-profit organization ICON Science Fiction, Inc., will run "I-CON 24" at Stony Brook University (SBU). About 5,000 members, including many from the media and entertainment worlds, attend this annual convention that promotes literacy and education via interest in science fiction, fact, and fantasy.

Eight members of the BNL community are on the organizational board of the convention, at which two BNL scientists will be speaking: Gary Halada of SBU and BNL's National Synchrotron Light Source Department, and Marcelo Vazquez of BNL's Medical Department. They and many others will participate in talks and panels such as: "From Lances to Lasers," "Robotics in School," "The Future is Really Tiny," "Dragonslaying: Human Space Hazards," and "Larry Summers' Women in Science." To participate, join as a member for a day or more, at the SBU Sports Complex. Membership for three days is \$45, attendance by the day is less. More information is at [www.iconsf.org](http://www.iconsf.org).

## Host Parent Volunteers Needed

### For 'Take Daughters & Sons to Work Day,' 4/28

Parent volunteers are needed to host Little Flower children attending "Take Our Daughters and Sons to Work Day," Thursday, April 28. Contact Susan Foster, Ext. 2888 or [foster@bnl.gov](mailto:foster@bnl.gov).

## Gain Info on BNL's Records Management, 4/14

April is Records and Information Management month. During this month, organizations around the world will focus on educating their members on the importance of good records and information management. BNL's Records Management staff will be in Berkner Hall lobby on Thursday, April 14, 11:30 a.m. – 1:30 p.m., to provide literature and answer questions on records and information management at the Lab. All are welcome.

## Thermoelectric Thin Films on Silicon

(cont'd.)

recently found to have high thermoelectric power. Unlike most conventional thermoelectric materials — which melt or decompose at high temperatures, are easily destroyed by oxidation, and often contain harmful or rare elements — the cobaltates have high melting points and excellent chemical stability.

The scientists used pulsed laser deposition methods for growing cobaltates' films on commercial silicon wafers without any chemical pre-treatment of the substrate or buffer layers. The high-quality films exhibit superior thermoelectric properties.

"In addition," said Hu, the lead author of the paper, "we discovered that nearly perfect crystalline structures of the  $\text{Ca}_3\text{Co}_4\text{O}_{10}$  film can be formed on top of an amorphous silicon-oxide layer, which rarely happens in the crystalline thin-film growing process. Such surprising and intriguing phenomena, together with the self-assembly nature of the cobaltates, open an inviting area for fundamental research."

### Promising Applications

In addition to having a tremendous potential impact on the science and technology of thermoelectric materials used in clean-energy conversion — long

viewed as one of the most desirable forms of energy because it is environmentally friendly — these materials could yield important electronics applications.

For example, says Li, "We can study the chemical reaction of various materials 'painted' on a small silicon chip controlled by thermoelectrics. This 'thermochemistry-on-a-chip' can be automated to be a highly efficient way to control the process of a chemical reaction by rapid cooling and heating, or to be integrated in a probe to identify certain substances used in chemical weapons."

Similarly, scientists could investigate the biological behavior of DNA and manipulate proteins by regulating localized temperature changes on DNA microarrays, a device known as a bio-thermoelectric chip.

Other possible direct applications would be to use thermoelectric devices to actively cool microelectronic processors, make minipower packs for deep space probes, or precisely control the temperature of lasers used in fiber-optic communication.

"These devices, which have no moving parts and are usually very reliable, could replace the noisy fans used for cooling the central processing unit in a computer," said Li.

— Karen McNulty Walsh

## 2004 Environmental Stewardship Awards Wanted: Nominees

As part of BNL's commitment to environmental stewardship, three BNL employees who have demonstrated an outstanding effort in pollution prevention, waste minimization, or resource conservation will be chosen to win the 2004 Environmental Stewardship Award. Awards will be presented at an Annual Earth Day Ceremony to be held on April 22.

If you believe that you or someone you know should be recognized for their environmental stewardship efforts, contact Karen Ratel, Bldg. 120, or [ratel@bnl.gov](mailto:ratel@bnl.gov) by April 15, with the following information:

- Your name, extension, division, and bldg. number
- Nominee name, extension, division, and bldg. number
- A brief overview of employee contribution with any supporting documentation.

## On the Job With BNL's Graphic Designers

Theresa Esposito, Patricia Yalden, and Lisa Jansson face some difficult challenges as BNL's graphic artists: They must transform complex, technical, and very detailed materials into products that are aesthetically pleasing as well as accurate and easy to read. In the process, they must convert documents written in various computer programs into the graphic design programs they work with on Macintosh computers. In addition, they have to keep up with design trends and fast-paced changes in computer technology.

All three of BNL's graphic artists enjoy these challenges and the variety of work they perform. "We get to meet many interesting people," Yalden said. "The key to working with anyone is communication. We have to take time with the customer to understand the project and agree on all the details."

Any BNL employee or guest user with a BNL-related project can request graphic design services, which are free of charge under the Community, Education, Government and Public Affairs Directorate (CEGPA). Design services include posters and displays, brochures and flyers, newsletters, magazine and newspaper ads, presentations, invitations, programs, tickets, name badges, labels, covers, reports, certificates, logos, illustrations, charts, maps, graphs, forms, and customized and specialty design work. Documents are also prepared for printing and reproduction.

### Theresa Esposito

Esposito was interested in design as a high school student. When she graduated from Newfield High School in Selden, she landed a job as a window dresser at Swezey's, the former Long Island department store, where she stayed for two years.



From left: Lisa Jansson, Patricia Yalden, Theresa Esposito

She then worked for two graphic arts firms in Port Jefferson and Commack before she joined BNL as a draftsman in 1979. She became a graphic arts specialist a month later and progressed through various levels of that job until 1986, when she left the Lab for a year to pursue other interests, including starting her own graphics business. She returned to BNL as a graphic artist in 1987, and became a senior graphic designer in 1999.

One of Esposito's main projects is designing the annual National Synchrotron Light Source Activity Report. She creates a template for the layout of the publication, giving it a new look each year. Esposito is currently working on a new design for *Discover Brookhaven*, a publication issued by CEGPA that features articles on the Lab's scientific research.

Esposito has taken several graphic design courses as a BNL employee, and she has done some freelance work in web design. She was married in November 2004, and took a honeymoon in Italy, where she enjoyed the art of old masters. In her spare time, Esposito collects antique pottery

and advertising art books from the 1950s, and she has a penchant for Art Deco furniture.

### Patricia Yalden

Yalden took mechanical drawing courses at Harborfields High School in Greenlawn, and then worked as a draftsman for several Long Island firms before she took a position as a technical illustrator at Dynell Electronics in Huntington, and later, for Dayton T. Brown, Inc., in Bohemia. In 1974, Yalden started freelancing as a graphic artist for BNL, and, in 1982, she joined the Lab as a full-time graphic arts specialist. While at BNL, she earned an associate's degree in graphic design from Suffolk County Community College. She became a graphic artist in 1987, a senior graphic arts specialist in 1991, and a senior graphic designer in 1999.

Among her many projects, Yalden designs the annual Site Environmental Report, which typically is about 200 pages. She also designs a smaller brochure that summarizes the report. "It's a challenge to create a design within the time constraints and budget for production," she said.

"There are a lot of tables and charts as well as text, so I put it together like a puzzle."

Yalden has two grown children and two grandchildren. She is engaged to BNL scientist Russell Dietz, Environmental Sciences Division. In her spare time, Yalden enjoys gardening and cooking. She grows flowers and also tends a small kitchen garden with vegetables and herbs, which she uses in her recipes.

### Lisa Jansson

Jansson was interested in graphic design when she was a student at Miller Place High School, and she earned her B.F.A. in communications design from Syracuse University in 1990. She was an intern during the summer at a design firm in Manhattan while at Syracuse, and, after graduation, she worked in layout and production for Direct Press, a Manhattan-based printing company.

In 1991, Jansson moved to Boston, where she worked for a small design firm for over two years, then came back to Long Island to take a position in the in-house art department at American Recreational Products in Hauppauge. In 1996, she joined Friedman Harris, an ad agency in Hauppauge, and she eventually became the agency's art director. In 1999, she came to BNL as a senior graphic designer.

Jansson recently completed the design for a 600-page manuscript for a BNL scientist. "I had been working on the project, along with other assignments, for a year," she said. Jansson is currently working on the *Newsday FunBook* ad for BNL's Summer Sundays.

Jansson is married and has two children, ages 7 and 3. She does freelance design work, and, in her leisure time, she likes to run.

— Diane Greenberg

### Lifeguard Openings

Lifeguard positions are currently open for the BNL swimming pool. Qualifications include LGT-Lifeguard Training and CPR for professional rescuer. Availability on weekends — Saturdays and Sundays — is essential. Qualified applicants should contact Christine Carter, 344-5090, or ccarter@bnl.gov.

### Coming Up

#### Brookhaven Lecture, 4/20

Saskia Mioduszewski, Physics Department, will talk on "Probing the Matter Created at RHIC," at the 403rd Brookhaven Lecture, at 4 p.m. on Wednesday, April 20, in Berkner Hall. All are welcome.

### Research Library Open House, 4/11-15

In celebration of National Library Week, April 10-16, all are invited to the week-long Open House at the Research Library, Bldg. 477, for an overview of information resources. Information specialists from database providers listed will conduct lunchtime sessions on how to use their services. During these sessions, feel free to bring your lunch. Refreshments and door prizes will be offered. For more information, call the Research Library, Ext. 7761 or 3487, and see the Library's Home Page at [www.bnl.gov/isd/reslib/](http://www.bnl.gov/isd/reslib/).

- Monday, 4/11, Open House, 10 a.m.-3 p.m.
- Tuesday, 4/12, ISI Web of Knowledge, a bibliographic database with cited reference searching. Introductory session, noon-1 p.m., in-depth training, 1-2 p.m.
- Wednesday, 4/13, SciFinder, a bibliographic database with chemical structure searching. Introductory session, noon-1 p.m., in-depth training for experience users, 1-2 p.m.
- Thursday, 4/14, Knovel, a full-text interactive database of hundreds of well respected sci-tech references. Introductory session, noon-1 p.m., in-depth training for experience users, 1-2 p.m.
- Friday, 4/15, Open House, 10 a.m.-3 p.m.



### BSA Noon Recital Opera Scenes, 4/13

On Wednesday, April 13, at noon in Berkner Hall, David Lawton, Music Director of the Stony Brook Opera, will present and appraise staged scenes from a series of opera favorites, with piano accompaniment. Benjamin Britten's work *The Turn of the Screw* will be featured on the program.

All are welcome to attend the BSA-sponsored Noon Recitals, which are free and open to the public. Visitors to the Lab of 16 and over must carry a photo ID.

### Asian Pacific American Association News

May is National Asian Pacific American Heritage month. Due to the many meetings at Berkner Hall in May, the BERA Asian Pacific American Association (APAA) will celebrate their heritage over April and May.

#### Talk by Claude AnShin Thomas, Soldier, Zen Monk, 4/11

A very special event will take place on **Monday, April 11**, noon-1 p.m., when all are invited to a talk and book-signing by Claude AnShin Thomas, a decorated Vietnam combat soldier, Zen monk, and international peace activist. Thomas is the author of *At Hell's Gate: A Soldier's Journey from War to Peace*. This free talk, which will be held in the Hamilton Seminar Room, Bldg. 555, is open to the public. Visitors of age 16 and over must carry a photo ID. Thomas will also speak later that day at the Stony Brook University Wang Center, 7 p.m.

Other events will include:

- a month-long poster display in Berkner Hall lobby
- a joint BERA/APAA bus trip on **Saturday, April 30**, to the Japanese Cherry Blossom Festival at the Brooklyn Botanical Garden, 8 a.m.-5 p.m. Garden admission is free. Purchase bus tickets at \$10 each at the BERA Store, Ext. 3347.
- "Martial Arts Expo." on **Saturday, May 7**, 6:30-9 p.m. at Berkner Hall. Tickets are \$10/adult, \$5/children 12 years and under, at the BERA Store.

### One-on-One Retirement Counseling

A TIAA-CREF consultant will visit BNL on Thursday, April 14, and Tuesday, April 19, to answer employees' questions about financial matters such as understanding the importance of protecting assets against inflation, finding the right funding allocation mix, learning about TIAA-CREF retirement income flexibility, and comparing lifetime income vs. cash withdrawal options.

For an appointment, call Kathy Murphy, 866-842-2053, Ext. 4625 (not the on-site Ext. 4625).

### International Potluck, Dance, 4/17

The Hospitality Committee invites all BNLeers to join them for an international potluck dinner and dance on Sunday, April 17, at 5 p.m. in the Recreation Building. There will be demonstrations of several kinds of international dances, and a chance for everyone to try the dances. Bring a potluck dish to share with six or more people. Wear your nation's costume (optional, of course) and join the Committee for a fun evening. For more information, contact Cindy Ottemann, 849-2646, or [cjottabb@optonline.net](mailto:cjottabb@optonline.net).

## Calendar

(continued)

### Monday, 4/11 (cont.)

#### \*Asian Pacific American Heritage Event Peace Activist Talk

Noon-1 p.m. Hamilton Seminar Room, Bldg. 555. Claude AnShin, Vietnam combat soldier, Zen monk, and peace activist, gives talk, signs his books. All are welcome. See notice below, left.

### Tuesday, 4/12

#### BREA Business Meeting

Noon-1. Bldg. 475C Conference Room. Brookhaven Retired Employees Association (BREA) welcomes all to this monthly meeting. Joyce Tichler, [tichler@bnl.gov](mailto:tichler@bnl.gov).

#### Monthly GLOBE Meeting

5:15 p.m., BNL's Gay, Lesbian, and Bisexual Employee Club meets. For more information and the meeting's location, contact Debbie, Ext. 5664, or Mike, Ext. 2960. For more information about the GLOBE club, see [www.bnl.gov/bera/activities/globe](http://www.bnl.gov/bera/activities/globe).

### \*Wednesday, 4/13

#### \*BSA Noon Recital, Opera Scenes

Noon, Berkner Hall. Opera scenes from Benjamin Britten's *The Turn of the Screw* will be staged by David Lawton, Music Director of the Stony Brook Opera. All are welcome.

### Sunday, 4/17

#### \*International Potluck & Dance — Hospitality Committee Event

5 p.m. Recreation Hall in the apartment area. The Hospitality Committee invites the Lab community to a potluck and dance event. Bring a potluck dish to share. Contact Cindy Ottemann, [cjottabb@optonline.net](mailto:cjottabb@optonline.net) or 849-2646, and see notice, below, left.

### — WEEK OF 4/18 —

### Monday, 4/18

#### \*Start of Earth Day Week

11:30 a.m.-1:30 p.m., all week. Environmental Pledge Tree, See FERN story, page 1.

Twice Is Nice, Wildlife, and Student Art displays, Berkner lobby, all week.

Noon, Berkner Hall. Environmental speaker, Karl Fridenberg of Organic Care. All are welcome.

#### \*BSA Distinguished Lecture

4 p.m. Berkner Hall. James Barber, Imperial College, London, U.K., will talk about "The Structure and Function of Photosystem II." All are welcome to this free public lecture. See story on page 1.

### Tuesday, 4/19

#### Office Supply Swap, BERA Music Club

11:30 a.m.-2 p.m. Berkner Hall lobby. All are welcome to bring unwanted office supplies to swap and shop for free while the Music Club performs.

### Wednesday, 4/20

#### 403rd Brookhaven Lecture

4 p.m. Berkner Hall. Saskia Mioduszewski, Physics Department, will talk on "Probing the Matter Created at RHIC." All are welcome.

### FRIDAY, 4/22

#### BNL Earth Day Celebration

Time to be announced. Berkner Hall. Presentation of Environmental Stewardship Awards. See notice, page 2.

### — WEEK OF 4/25 —

### Saturday, 4/30

#### \*Brooklyn Botanical Garden Bus Trip

8 a.m.-5 p.m. Joint BERA/APAA Heritage event. Join luxury bus trip to the Japanese Cherry Blossom Festival at the Brooklyn Botanical Garden and celebrate "Sakura Matsuri," performances displaying Japanese culture. Buy bus tickets at the BERA Store in Berkner Hall, \$10 each. Garden admission is free.

### — WEEK OF 5/2 —

### Saturday, 5/7

#### \*APAA Heritage Event, Martial Arts

6:30-9 p.m. Berkner Hall. Martial Arts Expo performed by local Long Island studios and on-site BERA organizations. Buy tickets at the BERA Store in Berkner Hall, \$10/adults, \$5/children of 12 years and under.

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](mailto:bulletin@bnl.gov). Write "Bulletin Calendar" in the subject line.

## 2005 BERA Summer Camp, Swimming Lessons Register Your Child by Friday, April 15

### Summer Camp

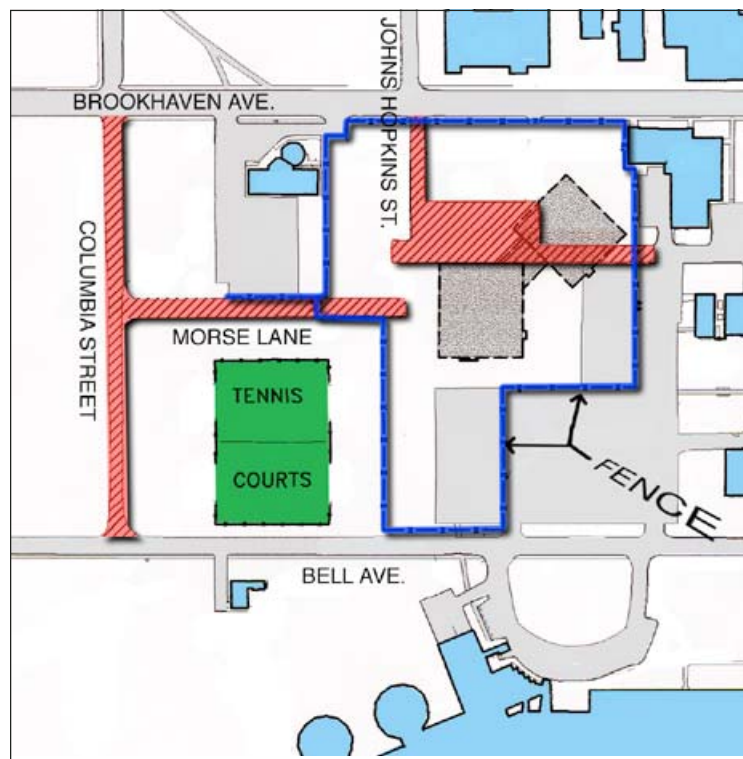
The BERA/Recreation Office will again offer summer camp for the children of employees living on site, and also those from off site. The summer camp consists of a general recreation program that is held in the Recreation Building in the apartment area, from Thursday, June 30, through Friday, August 26. Children enjoy sports, arts and crafts, daily gym & swim time, and weekly swimming lessons. You may sign up your 5- to 14-year-old child for any or all of the eight weeks. Space is limited and all applications must be received by Friday, April 15.

### Swimming Lessons

BERA/Recreation Swimming Lessons will be held at the BNL pool from Thursday, June 30, to Friday, August 26. The program is open to children and grandchildren of BNL employees and retirees. Children must be a minimum of 42 inches tall to participate. Space is limited and all applications must be received by Monday, June 6.

For information and applications, go to the BERA website, or stop in at the Recreation Office in Building 179B. Christine Carter and Joanne Rula will be happy to assist you and answer your questions.

## Roads Closed to Accommodate RSB Construction



In two weeks, three roads in the vicinity of the Research Support Building construction site will be closed for the duration of the building construction, which will continue for one-and-one-half years. Columbia Street, Morse Lane, and John Hopkins Street south of Brookhaven Avenue will be closed to vehicle and pedestrian traffic. These roads are crosshatched on the map above. Columbia Street will be used by trucks to deliver construction materials and is not wide enough to accommodate BNL traffic and pedestrians at the same time safely. Pedestrians should use the sidewalk on Upton Road instead. A fence will be installed around the perimeter of the site, which unauthorized people should not enter. For more information, contact Greg Flett, Ext. 3263.

## Upton Nursery School

Celebrating 40 Years of Helping Children Shine

All BNL parents of three- to five-year-olds are invited to Upton Nursery School's Open House on Tuesdays, April 12 and 19, 9-11:30 a.m., at the Recreation Building in the apartment area. The school's certified and caring teachers provide social and language development and academic readiness to a multi-national student body.

Classes are forming now for the fall Pre-K children, with two and three-day morning schedules available. Drop in or call 727-8082 for information.



## At BERA Store: Trips, Ball Game Tickets, More

Tickets are on sale now at the BERA Sales Office, weekdays, 9 a.m.-3 p.m., for Long Island Ducks (\$10); Mets (5/13-\$40); and Yankees (7/29 & 8/12 - \$46) games. Mets' and Yankees' game tickets include coach bus transportation. Also, check out BERA trips, such as to Nascar at Dover, on June 5, and the Culinary Institute of America, July 5.

## Badminton, Anyone? Singles final today at noon.

The BERA Badminton Club has been holding its "first-in-a-long-time" handicapped singles tournament over the past three weeks. The field of 16 has been narrowed to two, with the final match scheduled for today, April 8, at noon in the west side of the gym. Says Jay Adams, club president, "With nothing but bragging rights on the line, the match is sure to offer plenty of action and excitement. Partisan fans as well as spectators curious about competitive badminton are welcome to attend." For general information on badminton or court use at BNL, contact Adams, Ext. 4994 or jadams@bnl.gov.

## Weight Watchers

Register for the next Weight Watchers series on Wednesday, April 20, noon-1 p.m. in the Brookhaven Center. Each series of 10 weekly meetings costs \$89. Meetings are on Wednesdays at noon. All are welcome.

## On the Menu Ahead

**Cafeteria** - During April, a Special Healthy Menu will be featured to acknowledge World Health Day on April 7. On April 14, the Nibbles Bar will feature South American Arepes in honor of Pan American Day. April's Tastings will include: The Great American Biscuit on 4/14, Popeye's Favorite Spinach on 4/21, and Homemade Low-Fat Muffins on 4/28. Watch for International Pickle Week, and FLIK's Cinco de Mayo Special.

**Center Club** - Every Wednesday is Ladies Night with half-price appetizers from 5 to 7 p.m., and, for four-person groups, free chips and salsa with every pitcher of beer.

## Classified Advertisements

### Motor Vehicles & Supplies

05 YOUTH DIRT BIKE SKYTEAM 150CC - XR100 copy w/elec./kick start. 5-spd. Fr. & rear disk brk., new cond. Trades considered. \$1,400/neg. Ext. 7081 or 929-5502.

04 SUZUKI QUAD - 250cc, yellow, semi auto w/reverse, only used 2 hrs., mint cond. \$5,000. Tom, 338-9313.

03 FORD MUSTANG - convertible. Red w/dk. grey leather int. V6, a/t. - <20K miles. Loaded. \$18,500. Katie, 727-7227.

02 TOYOTA CELICA - Blue, sporty 5-spd, all pwr. Sunroof, alloy wheels, AC, CD/cass, rear spoiler, fog lights. 30+ mpg. 61K mi. \$11,900. Mike, Ext. 7410 or 723-0211.

02 VW JETTA GLS - red, blk int. Monsoon radio w/cd, excel. cond., 5-spd man. 2L 4-cyl./c/c, 31K mi. \$12,500/neg. Richard, Ext. 5284 or 774-2967.

99 CHEVY BLAZER - 4x4, 4dr., loaded, excel. cond, leather int., 6-cyl. auto., tinted windows, am/fm/cd, dark red. 87K mi. \$8,700. James, Ext. 2022 or 929-6896.

99 MERCEDES C280 - black/tan leather, p/moonroof, traction control, Bose 6CD, service records, garaged, excel. cond. 36K mi. \$13,500. Peter, Ext. 2913.

98 FORD F150 - V6, a/t, EFI, 4wd, a/c, p/s, ABS, new tool box, premium wheels. Runs excellently, looks great. 52K mi. \$10,200. Ext. 7430 or 286-6492.

96 PONTIAC SUNFIRE - Black, 4-cyl, 5-spd., a/c, am/fm. New: tires, brakes, rotors, factory clutch. Runs v. well. \$1,000/neg. Laura, Ext. 5035 or 236-6402.

96 MERCURY SABLE - Station wagon, 6-cyl, c/c, p/w, am/fm/cass, a/c, a/t. 150K mi. \$2,000. Paul, 924-8143.

96 MERCURY SABLE - 150K mi. \$2,000. Paul, 924-8143.

94 GMC SIERRA 1500 SLE - ext. cab, short bed, gd. cond., V6, 4.3L, 2wd, a/t, a/c, p/w, p/l, am/fm/cass, fg cap, bed liner. 216K mi. \$3,600. David, 662-2239.

94 SATURN SL1 - a/c, all pwr., c/c, rec. eng., tranny, time belt, rad. 28 hwy/19 city, records & Carfax info. avail. \$2,000/neg. 225-0642.

94 NISSAN MAXIMA - V-6, a/t, new tires, brakes, struts, cv shafts. 130K mi. \$2,800/neg. Ken, Ext. 4514 or 289-8212.

93 HONDA CIVIC - manual, a/c, pwr., c/c, new am/fm/cass., spkrs, 140K full maint., runs well. \$2,000/neg. Sami, 591-4029.

93 NISSAN MAXIMA - 4dr., a/t, m/roof, all pwr., Bose cd/cass. stereo, new tires, brakes, shocks, exh. 130K mi. \$2,000/neg. Ext. 7644.

TRUCK RACK - 6 ft Kargo Master, bed, Craftsmen tool box, diamond plated, total \$325. Daniel, Ext. 4605.

### Boats & Marine Supplies

14' BOSTON WHALER SKIF - 18-hp Evinrude (w/spare for parts) teleflex steering, trailer, extras. \$950/neg. Tirre, Ext. 3288 or 872-8972.

17' WELLCRAFT 1986 - 50hp Yamaha oil-injected motor, trailer & anchor. Needs cleaning, runs well. \$1,200. Sean, 286-4819.

19' GRADY WHITE TOURNAMENT - 130hp Yamaha, Magic Tilt trailer, full encl., VHF & depth finder, swim platform, more. Ready to go. \$11,000/neg. Victor, 878-8302.

BOAT ITEMS - Jabsco oil changer, DieHard battery charger, excel., used 2 yrs., \$25 ea. Mike, Ext. 6090 or 516-983-6874.

BOAT SLIP - Jamesport, NY, Peconic Bay. Deep water, floating dock, no utilities. Up to 25'. Dockside park \$950/yr. Bill, Ext. 2906 or 929-6189.

MARINE ELECTRONICS - Raytheon R20X Raster Radar with 24" Radome \$650; Sitex CVS108 Fish Finder Thru Hull Transducer \$250. Bill, Ext. 7136 or 661-9155.

OUTBOARD MOTOR - Seagull Osprey, lg propeller & long shaft as sailboat auxiliary. Never used. \$800. Ext. 7699 or 821-1435.

### Furnishings & Appliances

FURNISHINGS - formal dining room set, 3 piece sectional sofa, coffee table, floor lamp, maple top kitchen set. Paul, 516-364-0362.

HOSPITAL BED - Bariatric, 48" wide, 5-way w/mattress, \$2,000. 30" wheelchair, never used, \$500. Both 650-lbs rated. Ext. 3981.

BASEBOARD HEATER - 1500W - Free-standing, 4 ft. long; SS pool ladder, in-pool to deck, 3 steps - \$15/ea. Peter, 286-5918.

BED - King size mattress, boxsprings, frame. 3 yrs old. Very comfortable. Must sell. \$400/obo. Nick, Ext. 7139 or 974-0818.

BEDROOM SET - Waterbed Q-size, mirrored headboard, armoire, dresser w/mirror, 2 end tables w/brass lamps. \$500. 205-0373.

CHINA CABINET - JC Penny, oak, glass doors, mirrored, lights/shelves on top, 3 drawers, 2 drs. on base. v.gd. cond., pic avail. \$200 neg. Christine, Ext. 5090 or 821-2558.

DINING ROOM TABLE - solid oak, 2 leaves, 4 upholstered armchairs, table protector pads. \$500. Thomas, 909-1498.

DRYER - Frigidaire Sup Cap, w/auto & time dry cycles, 4-temp opt., almost brand new, cost \$349 ask \$250. 208-0408.

HAIR DRYER & IRON - Conair travel size blow dryer, never used, \$2; Norelco EZ Steam 725 iron, \$2. Peter, Ext. 2913.

LOVESEAT - "England," traditional w/roll arms, subtle blue/brown plaid, great cond. \$250 obo, picture avail. James, Ext. 8370.

MICROWAVE OVEN - large capacity, dark wood color. Working well. \$20. Ext. 4213.

PIANO - Kawai upright. Excel. cond. \$2,000. Katie, Ext. 3868.

POOL TABLE - 7-ft. ProSport w/ accessories, excel. cond. \$300. Jo Ann, Ext. 7009 or 471-7479.

RECLINER - Lane, leather match, swivel/rocker, mushroom, very comfy, vg. cond. \$200. James, Ext. 8370.

WHEELED WALKER - w/brakes and basket, never used, \$50. Adjustable hospital bed table, \$50. Peter, Ext. 3981.

### Audio, Video & Computers

CAMERA - Canon AE-1, 50mm FD lens, 244T spd. light flash, macro focusing zoom lens, carrying-case, booklets, \$299. Ray, 924-4147.

TV - Sharp 27" in excel. cond. \$60. Reddy, Ext. 3747 or reddy@bnl.gov.

### Sports, Hobbies & Pets

BALL PYTHON - Very tame. approx. 4' long w/ 55 gal. tank & stand. \$100. Liz, 727-7227.

BICYCLES - 21" boy Roadmaster mtn. bike, 18-S, gd. cond. \$30; 17" girl Magna mtn. bike, 6-S, gd. cond. \$20. Zheng, Ext. 7604.

CATS - 2 spayed females. Desperately need happy homes! Family member has allergies. Okay to separate, call for details/pics. Susan, Ext. 7414 or 645-7707.

CHINCHILLA - special muted beige color. Male, very friendly. w/ cage. \$300. Katie, 727-7227.

ELLIPTICAL EXERCISER - Low impact ProForm model 485, good condi., price negotiable. 821-4318.

EXERCISE EQUIPMENT - Iron Horse model Roadmaster R-8027-T. Ext. 5337.

PERSONAL TRAINER - NASM Certified Personal Trainer, physical assessment and training in the privacy of your home. Donna, 988-5697.

POOL CUE STICKS - 1960s, one 2-pc. kiln-dried ramin wood, etched; one 3-pc. two-tone maple w/enamel inlay. \$35/both. 803-0506.

POP UP TRAILER - 1994 Viking Deluxe 270, tandem axle, frtg. htr, awng, batt, 2Q beds, slps 6, dlr. mntd. \$3,000/neg. Ext. 2228 or 516-510-7859.

WINE BARRELS - 60-gal. solid Amer. white oak. Used once for red wine fermentation. Gt. for planters, etc. \$50/ea. 764-9335.

### Tools, House & Garden

1970 INTERNATIONAL CUB CADET - garden tractor, 12 hp Kohler engine, 36" mower deck, and snow blower. In good working cond. \$425. Roger, Ext. 4084 or 878-8847.

TOOLS - 30gal/3hp 220 volt Sears air compressor w/hoses \$150; 1/2 hp bench grinder \$50; Car ramps \$15. 205-0373.

### Miscellaneous

BOOTS - 2pr. size 10M Danner Rocky Boots, brand new, never worn. Cost \$150 ea., sell for \$100. 205-0373.

GOWN - floor length, velvet, size 10, Ronni Nicole, slinky, black, scoop neck, bare shoulders. New w/tags. \$35 obo. 803-0506.

MEDELA - Pump in Style, electric, double, excel. cond., works great, all accessories, sells new for \$250+, ask \$120. Eva, Ext. 2295 or 821-1325.

MOVING SALE - Contents of apt: stereo, 32" TV, kitchen table, display case, computer desk, conv sofa/loveseat, lamps. 205-0373.

MOVING SALE - Contents of apartment for sale. Stereo, comp. desk, display case, sofa/loveseat. etc. 205-0373.

### Happenings

BERA SOFTBALL - BERA Softball Meeting Wed. April 13, 488 Room D at 12 Noon. Bring balance of \$ and Final Roster. Ext. 5284.

### Free

CHICKEN & GEESE - live, call for details. John, 924-3528.

### Wanted

CHILD CARE - Seeking a care giver for new born around end of May this year. Must speak Chinese. YingXia & ChengPu, 689-0360.

DONATIONS - Cash and/or food (dry/canned goods) for Thee Island INN Soup Kitchen on Rte. 25 in Middle Island. Barbara, Ext. 2098.

PROJECT SUPPLIES - for school: Pyrex bottle, hand-op. vacuum pump, thermocouple thermometer and dry ice. 387-5629.

VIDEO CAMERA - need to borrow (for free) or buy (if cheap) an old analog video camera, 8mm, PAL system. Tomasz, Ext. 7448.

### For Rent

CENTER MORICHES - 4-bdrm. house on the water, dock, eik, 2 baths, l/r, d/r, f/p, w/d, dish washer, \$2,100/mo. Elaine, 261-7908.

CENTER MORICHES - 4-bdrm. waterfront house, 2 bath, l/r, eik, working fp, dock, \$2,100/mo. Elaine, 261-7908.

E. MORICHES - New lg. bsmt. apt., 1 bdrm., l/r w/full window, eik, bath, priv. ent, driveway pkg., priv. yard, n/s, n/p, tel & cable not incl. \$1,250/mo. Peter, 631-484-2377.

MEDFORD - new 2-bdrm., 10x10, 10x12 bsm't apt., lg. kit., lg. dr/lr, side yard, off-street pkg, all utils incl., no smkg./pets, avail. 4/15. \$1,200/mo. Steve, 374-3967.

RIDGE - 1st fl., 2-bdrm apt., 3 mi. N of BNL. Quiet, private. Util. incl., no/pets/smoking. Call 678-6456 for appointment. \$1,350/mo./neg. Jenny, Ext. 3469.

ROCKY POINT - 1 bdrm, l/r, kit., view on the water (Sound), 10 mi. to BNL. Deposit, month to month (incl. all). \$800/mo. Necati Aga, Ext. 4992 or 849-3414.

SHIRLEY - 1-bdrm apt., full bath, l/v, i/k. \$1,000/mo. Maria, 924-2061.

SHIRLEY - 2 bdrm., 2 mi. to BNL. Water, elec., heat, a/c, cable incl. Grnd.-lvl., (not bsmt), avail. June. \$1,200/mo. neg. 924-0694.

SHOREHAM - 1 bdrm-apt, sep. ent., kit & bath, big yard, sep. therm, cable TV, util. inc., Avail. 6/1, 1 mo. sec. No smoking/pets; 7 min. to Lab. \$750/mo./neg. Ext. 5337.

SOUTH AMITYVILLE - Share 2-bdrm. home, l/r, d/r, den, lg. eik, bsmt., deck, BBQ, fenced yard, avail. now, utils. incl. \$800/mo. 598-0181.

SOUTH Setauket - Sub-lease 1-bdrm. apt., 3-Village SD. Avail. June 24-July 31, extendable. Terms flexible months. Supply w/ benefit. \$1,200/mo. Ext. 6207 or 805-1610.

STONY BROOK - 3 bdrm. house, 2 bath. 3-Vill. SD, walk to LIRR, University. One yr. lease from summer. \$2,800/mo./neg. rent@gradesheet.com. Laszlo, 689-5374.

YAPHANK - New basement apt. 1 bdrm, living area, eik, full bath. No pets/smkg. All util. inc. except phone. Outside ent., 10 min to Lab. \$1,200/mo. Matt, Ext. 7388.

ALENANDRIA, NH - Newfound Lake view from all rooms, priv beach w/swim raft + pool, tennis, sleeps 6, weekly rental. \$1,000/wk. Ed, Ext. 4188 or 806-3598.

MYRTLE BEACH, SC - 2-bdrm. (4 beds), 2.5 BA Townhouse on golf course in Little River, SC. Comm. pool. \$491 - \$813/wk. or \$700-\$1200/month \$491/wk. 631-472-4994.

PRINCE EDWARD ISLAND, CANADA - spacious, 4-bdrm historic farmhouse, 20 acres in Victoria by the Sea. Cent. loc., on shore. \$1,200/mo. Joe, Ext. 2912 or 765-4397.

### For Sale

SELDEN - Spac. 3 bdrm., 2 bath, move-in cond, eik, lg l/r w/berber, d/r, new windows, roof, fin. bsmt, 1.5 car det. gar., taxes w/STAR \$5,492. \$387,000. 584-7000 x410.

SOUTHOLD - young 3 bdrm, 2 bath, l/r, d/r exp. Cape., mint cond. on .5 acre, h/w flr., full bsmt., gar., lg. 4 season rm. overlooking 37-acre woodland. \$489,000. 428-7065.

### On-Site Service Station

The new mandatory New York State motor vehicle inspection (OBD II) is performed by computer. If you have a 1996 or newer vehicle and would like to know more about this procedure, then stop by the on-site service station and pick up descriptive literature or go to the Office of Transportation and Air Quality website at www.epa.gov/otaq/obd.htm. Vehicles dating from 1995 or older will continue to be inspected on the dynamometer.

### In Appreciation

Upon retiring from the Lab after almost 30 years, I wanted to say farewell and thanks to all. I was fortunate to be able to count so many not just as coworkers but good friends. Best wishes to all! — Robert Rooks