

Gold 'Nanoplugs' Wire Up Enzymes Could yield biosensors with greater sensitivity, specificity

Scientists at Hebrew University, Israel, in collaboration with researchers in BNL's Biology Department, have devised a way to use gold nanoparticles as tiny electrical wires to plug enzymes into electrodes. The gold "nanoplugs" help align the molecules for optimal binding and provide a conductive pathway for the flow of electrons.

The research, described in the March 21, 2003, issue of *Science*, may yield more sensitive, inexpensive, noninvasive detectors for measuring biological molecules, potentially including agents of bioterrorism.

The idea behind the technology, says BNL biologist Jim Hainfeld — who had developed the gold nanoparticles and the means of attaching them to other molecules — is to measure the current as an indicator of the number of biological molecules involved in the reaction. One potential application, developed by the Hebrew University collaborators, is to use sensors made from the enzyme-electrode system to measure blood glucose in diabetic patients.

In the *Science* paper, the authors describe how they used gold nanoparticles to attach a glucose-oxidizing enzyme to an electrode and then used this bioelectrocatalytic system to measure glucose levels.



Roger Stoutenburgh D1600303

Jim Hainfeld, Biology Department

"The gold nanoparticle — 1.4 nanometers, or billionths of a meter, in diameter — plays two very important roles," says Hainfeld. "First, it specifically orients the binding of the enzyme to the electrode so it's a very ordered, not random, attachment. Second, since gold is a conductor, it provides an electrical path for the flow of electrons."

When the enzyme oxidizes glucose, electrons flow through the gold nanoparticle into the electrode: the higher the current, the higher the level of glucose.

The experimental results indicate that current flowed seven times faster with the "plugged-in" enzyme system than with the normal enzyme using oxygen as an electron acceptor. Previous attempts to wire the enzyme to an electrode have resulted in lower than normal rates. Higher flow rates increase the ability of sensors made from such a system to detect lower quantities of glucose.

Another important finding was that the measurement of glucose using the plugged-in, enzyme-nanoparticle system was *not* affected by the levels of other substances that can interfere with accurate glucose readings, such as oxygen and

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Brookhaven Town Honors Chemist Diane Cabelli



Roger Stoutenburgh D1563033

Diane Cabelli, Chemistry Department

Diane Cabelli, Chemistry Department, is among the 11 women honored for their accomplishments and contributions to Brookhaven Town at the Town-sponsored Women's Recognition Night on March 20. The Town held the special ceremony in observance of National Women's History Month, and Cabelli was recognized for her contributions to science.

"My 22-year career in chemistry at Brookhaven Lab has been both challenging and exciting," Cabelli said. "I am honored that Brookhaven Town is recognizing my work."

Cabelli uses an electron accelerator to generate and study radicals, which are unstable molecular species that cause damage in biological systems. In the mid-1980s, she began work on superoxide dismutases (SOD), enzymes that detoxify certain radicals produced by respiration. This research has remained her passion.

Recently, Cabelli has been studying the role of SOD in amyotrophic lateral sclerosis (ALS), also known as Lou Gehrig's disease. In ALS, the motor neurons of the brain and spinal cord degenerate, which results in paralysis. The disease is usually fatal within five years from the onset of symptoms.

A large variety of mutations in SOD accounts for approximately 20 percent of the hereditary cases of ALS. Collaborators send samples of the mutant enzyme to Cabelli for analysis. Her results can then be correlated with other properties of the enzyme, so that improved understanding of its action and its role in the disease can be developed. Such research may lead to effective treatment or prevention of the disease.

In addition to making significant original contributions to her field, Cabelli has mentored high school students in chemistry. Most recently, she worked with a Jericho High School student on a project that she submitted to the 2003 Intel competition, for which the student earned semifinalist status. Cabelli has also volunteered to act as a judge in various science fairs, and she has participated in Brookhaven Women in Science Career Day, sharing her insights and experiences as a scientist with local high school girls.

Cabelli earned a bachelor's degree in chemistry from Bryn Mawr College in 1973, and a Ph.D. from the University of Texas at Austin in 1979. She then worked at the Conservation Center, Institute of Fine Arts, New York University, from 1980 to 1981, studying paint pigments in medieval Armenian gospel books. She joined BNL as a research associate in Chemistry in 1981, working her way up to Chemist in 1995. Also, since 1995, Cabelli has served as the Department's environment, safety & health coordinator.

— Diane Greenberg

Welcome to New Director Praveen Chaudhari

On Tuesday, April 1, BNL will welcome Praveen Chaudhari as he begins his tenure as the new Lab Director. Chaudhari joins BNL after 36 years of distinguished service at IBM as a materials scientist and senior manager of research, including ten years as Director, and then Vice-President of Science.

Among his honors, in 1992, Chaudhari received the Morris N. Liebmann

Memorial Award for the discovery of amorphous magnetic films in magneto-optic data storage systems. In 1995, he was awarded the National Medal of Technology for discovering and developing amorphous magnetic materials that are the basis of erasable, read-write, optical storage technology, the foundation of the worldwide magnetic-optic disk industry.

As IBM's Vice President of Science, 1981-1991, Chaudhari was responsible for IBM science programs in New York, California, and Switzerland. During this time, materials research became the basis of the \$2-billion-a-year optical-disk industry. Also under Chaudhari's watch, IBM scientists won the Nobel Prize in physics for two consecutive years: in 1986 for developing the scanning tunneling microscope, and in 1987 for discovering high-temperature superconductivity in a new class of materials.

Chaudhari was introduced to BNL employees at an all-hands meeting in Berkner Hall on January 30 by BNL Interim Director Peter Paul, who will continue at BNL as Deputy Lab Director for Science & Technology, a position he has held concurrently.

In the past two months, Chaudhari has been at the Lab to attend scientific workshops, conferences, and other meetings, visits that have confirmed his remark at the all-hands meeting: "My highest priority will be for us to get to know each other. I hope to work with you to try and make this great place even greater, and I will need all the help that you can give me."

— Liz Seubert

Photo by Roger Stoutenburgh D0260203



Praveen Chaudhari

BSA Colloquium, 4/3

Speth Talks on Complex Systems: Nuclear Physics, Stock Market

On Thursday, April 3, all are welcome when Josef Speth, Director of the Institute of Nuclear Physics (Theory) (IKP) Forschungszentrum (FZ) Juelich GmbH and Professor of Physics at the University of Bonn, Germany, will give a BSA Colloquium at 4 p.m. in Berkner Hall, on "Complex Systems: From Nuclear Physics to Financial Markets."

Coffee and cookies will be offered before the colloquium.

In his talk, Speth will take as his theme complexity as an interdisciplinary concept that addresses the question of how order emerges out of randomness. He will discuss two natural complex systems: nuclear many-body systems and the financial markets.

In the case of nuclear physics, Speth will investigate the chaos-driven decay of giant resonances, whereby collective states are embedded in complex spectra.

In the case of financial markets, Speth will focus on the dynamics and correlations of stock indices. He will point out that such indices, for example, the Dow Jones Index or the DAX (Deutscher Aktien Index), like nuclei, have a finite

number of constituents. Therefore, Speth will say, one may apply the same methods to these indices as to finite nuclei.

This allows investigations of financial correlations in space (among the companies) and time (memory effects), such as dynamics of competition between collectivity and noise in the stock market, decomposing the stock market intra-day dynamics, and others.



Josef Speth

A second, more speculative observation Speth will make is that financial crashes may be the analogue of critical points in statistical mechanics. More specifically, they may be considered as resulting from discrete scale invariance, which gives rise to log-periodic modulations. As Speth will explain, this observation seems to have some predictive power.

Josef Speth received his Ph.D. in theoretical physics in 1968 at University of Munich, Germany. By 1982, he had become Professor of Physics at U.Bonn, as well as IKP Director.

Over the years, Speth has been a visiting professor or scientist at Stony Brook University;

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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 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: Singles Club

12:30-1:30 p.m., Berkner Hall. Contact: Jean, Ext. 4391, Patrick, Ext. 3270.

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/toastmstrs/default.htm.

Tuesdays & Thursdays: Aerobics

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

Tuesdays & Thursdays: Aqua Aerobics

5:15-6:15 p.m. Mary Wood, Ext. 5923.

Wednesdays: On-Site Play Group

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

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. 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 Ctr. 4/12, 5/17. Marsha Belford, belford@bnl.gov or Ext. 5053.

— THIS WEEKEND —

Friday, 3/18

Vendor Day at BNL

Brookhaven Center, North Room, 10 a.m.-noon. Brookhaven will co-host a "Vendor Day," in partnership with DOE, the Small Business Development Center at Stony Brook University, and the Hauppauge Industrial Association (HIA). The participating vendors will be manufacturers or distributors of construction supplies and equipment, computer peripherals, and tools. PPM will be soliciting feedback on the event, and, if it is found to be useful, additional events will be planned focusing on other commodities that the Laboratory commonly purchases.

Searing Heads BNL's Fire/Rescue Group Chief Carroll Retires After 38 Years of Service

John Searing, former manager of BNL's Standards-Based Management System Office, took command of the Lab's Fire/Rescue (F/R) Group on December 26, when he was sworn in as BNL's new Fire Chief. Searing was handed the reins of the F/R Group by then-Chief Michael Carroll, who retired that same day with 38 years of service with the Group, having served as Chief for his last three years.

Searing began working at the Lab in 1989 as a project engineer in the DOE Area Office. He joined BNL in 1993 and, since then, has been in several Lab offices, working on BSA contract requirements, performance measures, occurrence reporting, and safety and health issues.

Since his start at BNL, Searing also served as the F/R Group's safety officer. In late 2001, Searing became the operations manager of the Emergency Services Division, working directly with the F/R group on operations, procedures, and emergency planning.

In addition to Searing's previous close working relationship with the F/R Group, he brings other qualifications to the BNL firehouse. With a B.S. in engineering from Carnegie-Mellon University and an M.S. in management from Stony Brook University, Searing is a New York State-certified emergency medical technician (EMT) and an ex-chief and 16-year member of the Rocky Point Fire Department. The new F/R Chief is also employed as a per-diem instructor at the Suffolk County Fire Academy, and a member and the first Chairman of the Suffolk County Wildfire Task Force.

Searing is working to incorporate the incident-command system — a standardized command structure used by emergency responders across the nation — into the daily operations of the F/R Group. He is also in the process of securing federal grant money to improve BNL



John Searing, Chief of the Fire/Rescue Group



Michael Carroll, Ex-Chief of BNL's Fire/Rescue Group

firefighter training. Said Searing, "I look forward to working with Deputy Chief William Leigh-Manuell to ensure that our firefighters are trained to the highest level possible."

Searing is also working with Emergency Services Manager Frank Marotta to update the Lab's emergency response plan. As Chief, Searing is now the commanding officer of four officers and 21 firefighter/EMTs who respond to approximately 400 alarms each year. "Everyone in the group is well trained, hard-working, and highly motivated," said Searing. "BNL firefighters are committed to the well-being of their fellow employees and to the job they do at the Lab. I have total confidence in their abilities."

In addition to responding to emergency calls, the F/R Group conducts daily drills, building inspections of the approximately 300 buildings and structures on site, and the group checks and maintains over 3,000 Lab fire extinguishers and fire-suppression systems.

"Chief Carroll handed me a well-oiled machine with this group," commented Searing. "We all appreciate and respect Mike's hard work and years of dedication to the firefighters and to the Lab as a whole. His experience and historical perspective will be missed."

Carroll came to the Lab as a firefighter in 1964, having previously served as a firefighter on a crash-rescue truck for Republic Aviation in Farmingdale and as a firefighter in the U.S. Air Force. Other than the 1995 wildfires that threatened areas surrounding the Lab, there are no large-scale fires or other incidents that stand out in Carroll's mind. Carroll is quick to point out that this is a tribute to the high level of firefighter training.

"Yes, there were things that caught fire during my time at the Lab, and, with those incidents, there was the potential for a real emergency to present itself. However, these situations were kept small because of the quick response and high

level of training of the F/R Group," said Carroll.

One of the F/R Group's most important accomplishments that Carroll recalls is the implementation of an emergency medical program in 1975. "Today, all the BNL firefighters are EMTs and the Lab's ambulance is certified to the New York State basic life support ambulance standard," said Carroll. "I am very proud to have had a part in making that happen."

Like Searing's, Carroll's interest in the fire service does not end when he drives through the gate at the end of the workday. He is a 26-year member, an EMT, and an ex-chief in the Community Ambulance of Sayville — the fourth busiest ambulance in Suffolk County.

"During the past year, I have worked very closely with John to make sure the change in leadership would go smoothly," said Carroll. "I leave BNL with the satisfaction of knowing that the Lab's fire safety and emergency response is in capable hands."

— John Galvin

Gold 'Nanopugs' Wire Up Enzymes (cont'd.)

ascorbic acid, which is frequently a problem with other biosensors.

This increased sensitivity and specificity could improve the next generation of glucose-monitoring sensors, particularly those that measure glucose without piercing the skin, which rely on detecting trace quantities.

The plugged-in enzyme technique is not limited to glucose detection. "Many other substances could be attached to electrodes in this way and used to detect sensitively and easily other biological molecules, such as bioterrorism agents or other disease markers," Hainfeld said.

And because such sensors would be intrinsically simple, containing just a few molecules and an electrode, they would be very compact, inexpensive, and disposable.

Wiring enzymes efficiently to electrodes could also provide freedom from dependence on foreign oil. This alternative method of converting available biomass into energy is done in what are called biofuel cells. Biofuel cells use enzymes to oxidize substances such as sugars or methanol and produce electricity directly. The biggest problem so far has been how to connect the electrons produced by the enzymes to an electrode so they may be used. This discovery of a better way to plug enzymes into electrodes takes scientists a step closer to achieving useful biocells.

The Lab researchers were primarily involved in developing the methods for producing and attaching gold nanoparticles to other molecules, and confirming their presence in the glucose-oxidizing enzyme complex using BNL's scanning transmission electron microscope (STEM). Working with Hainfeld are other Biology Department STEM staff, including Joseph Wall, Martha Simon, Frank Kito, and Beth Lin. The researchers at Hebrew University used these tools to make the improved biosensors by labeling the enzyme, wiring it to electrodes, and measuring its activity. BNL's role in the work was funded by the National Institutes of Health and DOE's Office of Science.

— Karen McNulty Walsh

BSA Colloquium (cont'd.)

the Niels Bohr Institute in Copenhagen, Denmark; University of California, Los Angeles; Tel Aviv University, Israel; the University of Adelaide, Australia; Thomas Jefferson National Laboratory; and others. Since 1986, Speth has served as associate editor of the *International Review of Nuclear Physics*, and, since 1995, as a member of the editorial board of *Journal of Physics G*. In 1994, he also served as a member of DOE's Nuclear Physics Review Panel.

During the 1990s, Speth was awarded distinguished fellowships from the University of Johannesburg and the Foundation for Research Development, both of South Africa. In 1998, he was named Professor *honoris causa* at the Institute of Nuclear Physics, Krakow, Poland.

Arrivals & Departures

Arrivals

Richard Langhorn Staff Svcs.
Susan Santana Staff Svcs.

Departures

Dana Carasig Medical
Yibo Mo Mat. Sci.
Kevin Woodson Staff Svcs.

Lessons in Russian For Children 5-6

Sponsored by the Quality of Life Committee, free lessons in Russian language will be offered for children 5-6 years old, at 11 a.m. on Sundays, starting on Sunday, March 30, in the Recreation Hall in the apartment area. To register your child, call 345-0913 or e-mail Zelenski@optonline.net.

In Memoriam

Roman Kuczynski, who had joined the Plant Engineering Division as a carpenter on December 29, 1958, and served 25 years until his retirement on May 31, 1984, died on July 16, 2002. He was 83.

Harvey Thomas, who on March 29, 1954, had become an Accelerator Project senior designer, had retired as a Department of Nuclear Energy research engineer I on September 30, 1986, and had served as a BNL consultant 1992-93, died on October 8, 2002, at age 81.

COMPUTER
TRAINING

The following PC training classes have been scheduled for April and May:

date	class	level
4/1	Windows 2000	1
4/2	Outlook 2000	2
4/3&4*	Access	1
4/7	Word 2000	2
4/8	PowerPoint 2000	2
4/9	Excel 2000	3
4/10&11*	Project 2000	1
4/14	HTML Web Authoring	3
4/15&16*	Access	3
4/29	Word 2000	1
5/1	Windows 2000	1
5/5&6*	Access	2
5/8	PowerPoint 2000	1
5/9	HTML Web Authoring	1
5/12	Outlook 2000	1
5/13	FrontPage	1
5/14	Project 2000	2
5/15	Excel 2000	1
5/16	Word 2000	3
5/20	HTML Web Authoring	3
5/21&22*	FrontPage	2

*Two-day class

The training fee for the on-site classes listed above is \$151 per day of training. All BNL employees with supervisor approval can also register for classes at the New Horizons Computer Learning Centers located in Commack and Westbury. To register for on-site or off-site classes, to view class outlines, expanded schedules, and for other information, go to www.bnl.gov/itd/training or contact Chris Herbst, Ext. 5304 or herbst@bnl.gov.

APAA Needs
Volunteers

In celebration of Asian Pacific American Heritage, the BERA Asian Pacific American Association (APAA) will hold a grand cultural event on the evening of April 26. The goal is to exhibit the culture, history, painting, art, dance, and music from as many nations of Asia as possible. Call Susan Wong, Ext. 7988, or Samantha Lin, Ext. 3471, with your ideas and suggestions, or attend APAA meetings held at Berkner Hall during lunch time every Tuesday.

March is Women's History Month
Many Benefit From FEW Programs



Some of the BNL women staff who attended the 33rd Federally Employed Women's Program are: (seated, from left) the Lab's 2002 FEW coordinator Nerieda Santiago, Energy Sciences & Technology (ES&T) Department; Marriette Faulkner, Physics Department; Debbie Kerr, Physics; (standing, from left) Celeste Voegelin, Plant Engineering (PE) Division; Susan Walch, ES&T; Barbara Langhorne, Procurement & Property Management Division; and Cheryl Henderson, PE.

A very worthwhile experience" was how the 45 BNL women who attended in the Federally Employed Women (FEW) Organization's 33rd National Training Program summed up the event, which was held July 22-26 last year in Orlando, Florida. The aim of the annual FEW training program is to give federally employed women opportunities for professional and personal growth.

In addition to the featured workshops, training sessions are offered by various federal agencies, and attendees may choose from a wide range of topics such as networking, diversity issues, computer presentations, family issues, and using humor in the workplace. As in past years, a course on conflict management was rated highly by BNLers, who agreed that, as a result of their participation, they are better prepared to defuse potentially difficult situations at work and at home.

This year, one of the 2002 program presenters, Marlene Chism, a former factory worker who

is now president of ICARE Presentations, was invited to help BNL celebrate Women's History Month by giving a talk at Berkner Hall on March 21. In her talk entitled "Dance with Authority," Chism spoke of role models such as suffragist Elizabeth Stanton and former slave Sojourner Truth, who became a U.S. evangelist and reformer preaching for abolitionism and women's rights. These models illustrated Chism's message that women at all levels need to empower each other.

According to Nerieda Santiago of the Energy Sciences & Technology Department, who served as the Lab's 2002 FEW coordinator, BNL management has strongly supported sending BNL women to the FEW conference, particularly after many reports of the new ideas and confidence that participants have gained at the program.

— Liz Seubert and Diane Greenberg

To learn more about the FEW organization, see www.few.org.

Exploring Research Library Resources
SciFinder, 3/31

A lunchtime seminar on the SciFinder database, which is available in the Research Library, will be held at noon on Monday, March 31, in Berkner Hall, Room B. SciFinder is one of the few databases in which users can search by (sub)structure, sequence, reaction, and polymer, as well as author and keyword. It provides access to abstracts of articles in chemistry, medicine, life sciences, environmental science, physics, engineering, food sciences, agriculture, geology, material sciences, and polymer science.

All are welcome to attend. Refreshments and door prizes will be offered. For more information, go to www.bnl.gov/isd/reslib/LunchSem.htm.

WalkAmerica

On Sunday, April 27, or May 18, join the BERA team as a walker or a contributor to the annual WalkAmerica.

Sponsored by the March of Dimes, the walk raises funds used to help reduce infant mortality and the incidence of low birth-weight babies.

Registration forms and sponsor sheets are available at the BERA Sales Office, weekdays 9 a.m.-3 p.m.

BNL Hosts Earth Day Run to Benefit L.I. Cares, 4/1
Run now has Grand Prix status

BNL will host its fourth annual 4-mile Earth Day Run on site on Saturday, April 19, at 9:30 a.m. The run is open to the public, and all visitors to BNL age 16 and older are required to bring a photo ID for admission.

This year, the Long Island Track & Field Association, in conjunction with KeySpan, has awarded the race Grand Prix status, a distinction that is expected to draw some of Long Island's top runners, who will vie for Grand Prix points and subsequent prize money for the winners of the most points at the end of the year. The entry fees from the 4-mile run will benefit Long Island Cares, Inc., a regional food bank.

The race will be held on a U.S. Track & Field Federation-certified course consisting of a combination of road and wide trails through the Pine Barrens on the BNL site. The course is relatively flat with some slight rolling hills in the last mile. Miles will be marked, mile splits will be posted, and a two-mile water stop will be available.

Applications, Fees

Applications to enter the race may be downloaded from www.bnl.gov/eday, or call Ext. 5660.

For those who register before April 12, the entry fee is \$18, which is discounted to \$15 if the registrant brings a nonperishable food item for the local food bank. The entry fee for applications postmarked after April 12 will be \$21, or \$18 with a nonperishable food item. Walkers are also welcome for the

same fee as runners. Checks should be made payable to BSA and application forms are to be sent to Peter Pohlott, Bldg. 130.

Children's Free Fun Race, 10:30 a.m.

Children 12 and under are invited to participate in a free, one-half-mile Fun Run at 10:30 a.m. Race day registration/check-in will be held from 7:30 a.m. to 9:15 a.m. in Berkner Hall.

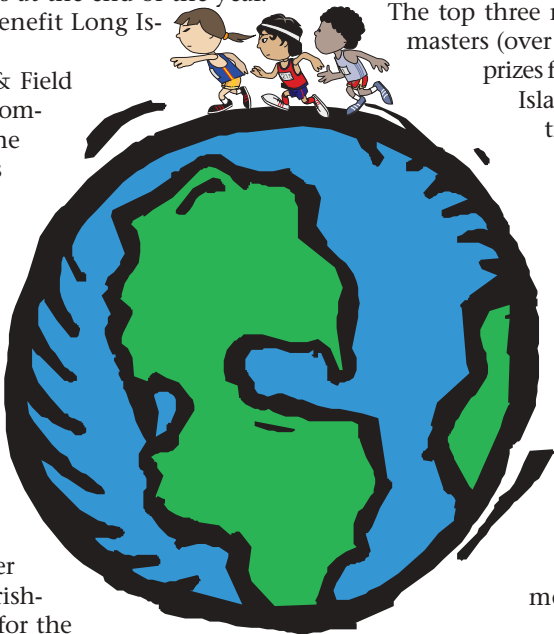
Breakfasts, Prizes

The top three male and female runners and the top three masters (over 40 years old) males and females will receive prizes from Super Runners Shop of Huntington, Long Island. All registered runners and walkers will be treated to a free post-run hot breakfast provided by Flik International. In addition, they will be given a free T-shirt, and all children who participate in the Fun Run will take home a tree seedling to plant in honor of Earth Day.

Long Island Cares, Inc.

Long Island Cares, Inc. is a not-for-profit, community-based, regionally responsive organization working in partnership with charitable agencies in Nassau and Suffolk Counties. The anti-hunger organization and food bank was founded in 1980 by the late singer and activist Harry Chapin in response to the immediate needs of hungry Long Islanders.

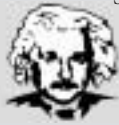
— Diane Greenberg



Calendar
(continued)

Sunday, 3/30

BERA Trip to Museum of Natural History
Einstein Exhibit, Space Show



Some seats remain on the BERA trip to the American Museum of Natural History to see the the Einstein Exhibit and the Space Show in the Haydn Planetarium. Price including museum admission is \$38 for adults, \$30 for children. The bus will leave the Brookhaven Center at 9 a.m. and return about 5 p.m. Tickets and more information are available at BERA Sales Office, Berkner Hall, Ext. 4894.

— WEEK OF 3/31 —

Monday-Friday, 3/31-4/4

2003 BERA Board Elections

Mon., 10 a.m.- 2 p.m., TFCU
Tue., 11:30 a.m.-1:30 p.m., Berkner Hall
Wed., 11:30 a.m.-1:30 p.m., Berkner Hall
Thu., 10 a.m.- 2 p.m., TFCU
Fri., 11:30 a.m.-1:30 p.m., Berkner Hall
See last Friday's Bulletin for additional information.

Monday, 3/31

*Explore Research Library Resources

Noon, Berkner Hall, Room B. Talk on SciFinder database, in which one can search by (sub)structure, sequence, reaction, and polymer, as well as author and keyword. It provide access to abstracts of articles in chemistry, medicine, life sciences, environmental science, physics, engineering, food sciences, agriculture, geology, material sciences, and polymer science.

Wednesday, 4/2

Science Education Forum

Noon-1 p.m., Bldg. 438. All are welcome to join a discussion on interesting and timely issues in science education. Refreshments will be provided. Bring your own lunch. Brian Murfin, Ext. 7171.

Thursday, 4/3

*BSA Colloquium

4 p.m., Berkner Hall. Josef Speth, Institute for Nuclear Physics, Germany, will give a BSA Colloquium on "Complex Systems: From Nuclear Physics to the Financial Markets." All are invited to this free public lecture. See page 1 for more information.

— WEEK OF 4/7 —

Wednesday, 4/9

AT&T Wireless Demo

11 a.m.-2 p.m., Berkner Hall. A representative from AT&T Wireless will present BNLers with special discounts on cellular phones and rate plans. Jon Boswell, 361-8777.

— WEEK OF 4/14 —

Tuesday, 4/15

Verizon Wireless Demo

10 a.m. - 2 p.m., Berkner Hall. A representative will present BNLers with special rates on wireless service. Harry Campbell, 516-458-9122.

Wednesday, 4/16

Science Education Forum

Noon-1 p.m., Bldg. 438. All are welcome to join a discussion on interesting and timely issues in science education. Refreshments will be provided. Bring your own lunch. Brian Murfin, Ext. 7171.

382nd Brookhaven Lecture

4 p.m., Berkner Hall. David Schlyer, Chemistry Department, will talk on imaging awake animals. See next week's Bulletin for more information.

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. Please enter the 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.



Tickets Available

This year, BERA is again offering Long Island Ducks baseball tickets at a cost of \$10 each. The tickets will be sold in pairs only and be limited to two games per person. The seats are in Section 205, Row J, seats 7-10. The first game is on Thursday, May 1.

Tickets for these good seats are expected to sell out quickly, so those interested should hurry to buy them at the BERA Sales Office in Berkner Hall, open weekdays, 9 a.m.-3 p.m.

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.

LAB RECRUITMENT – Opportunities for Laboratory employees only.

NS2870. SR. ADMINISTRATIVE ASSISTANT (A-5) - Requires a minimum of eight years' related Laboratory experience with a minimum of three years as an Administrative Assistant and extensive knowledge of BNL policies and procedures, and DOE requirements in multiple functional areas. Excellent organization, communication, and interpersonal skills and demonstrated ability to manage multiple priorities in a fast-paced environment required. Proficiency with MS Office products, including Word, PowerPoint, Excel, and Outlook necessary. Knowledge of BNL management and budgetary systems, including ATS, CCTS, PeopleSoft, Travel and WebReq highly desirable; HR, accounting and contracting experience a plus. Will report to the Assistant Laboratory Director, Environment, Safety, Health & Quality, operating with minimum supervision, utilizing initiative and discretion in handling complex duties. Will act as point-of-contact and liaison for internal and external inquiries; interface with senior Laboratory management on sensitive and/or confidential matters; will generate and distribute reports and coordinate directorate-wide meetings and reviews; review internal and external requests on Director's behalf, forwarding to appropriate staff for action and completion, and may supervise work of others. Environment, Safety, Health & Quality Directorate.

NS8566. ADMINISTRATIVE ASSISTANT (A-4) – Requires eight years' relevant experience, or an AAS degree in secretarial science with five years' relevant experience, good interpersonal and communication skills, both oral and written, strong network-based communication skills, and good working knowledge of Laboratory policies and procedures. Computer proficiency in MS Office 2000 (Outlook, Excel, PowerPoint) and PeopleSoft HR necessary. Must have the ability to work under pressure, balance priorities and perform multiple tasks. Will operate independently and consistently exercise a high degree of discretion and judgment. Will assist the Director and the Project Manager of the BNL Center for Functional Nanomaterials in the administrative coordination and direction of the Center, the operations and project-related activities, which include, but are not limited to, generating, editing, and distributing documents and correspondence, preparing PowerPoint presentations, maintaining calendars on a daily basis, opening and disseminating mail, arranging conferences and meetings with internal and external contacts, maintaining records and files, arranging travel, processing web requisitions, ordering and account for supplies and materials. Work will involve extensive interaction with DOE sponsors and departments with scientists participating in the CFN programs

and other BNL staff. Center for Functional Nanomaterials.

OPEN RECRUITMENT – Opportunities for Laboratory employees and outside candidates.

MK2612. SCIENTIFIC STAFF POSITION – Requires a Ph.D. in physics, chemistry, or materials science or a related field, and a minimum of three years of postdoctoral experience in synchrotron-based x-ray spectroscopy. Research will involve coordinating and supporting x-ray absorption spectroscopy programs at the National Synchrotron Light Source. Under the direction of R. Pindak, National Synchrotron Light Source Department.

MK2610. SCIENTIFIC STAFF POSITION – Requires a Ph.D. in physics, chemistry, or materials science or a related field, and a minimum of three years postdoctoral experience in synchrotron-based x-ray scattering and/or spectroscopy. Research will involve coordinating and supporting the materials programs at the National Synchrotron Light Source. Under the direction of R. Pindak, National Synchrotron Light Source Department.

MK2611. SCIENTIFIC STAFF POSITION - Requires a Ph.D. in physics, chemistry, or materials science or a related field, and a minimum of three years postdoctoral experience in synchrotron-based x-ray scattering/diffraction/imaging. Research will involve coordinating and planning the nanoscience programs at the National Synchrotron Light Source. Under the direction of R. Pindak, National Synchrotron Light Source Department.

MK2609. ASSISTANT SCIENTIST (S-1) – Requires a Ph.D. in physics, chemistry, or materials science or related field and at least two years of postdoctoral experience in synchrotron-based x-ray scattering and/or spectroscopy. Research will involve coordinating, planning and supporting the scientific programs of the soft x-ray undulator beam line X1B at the National Synchrotron Light Source. Under the direction of C.-C. Kao, National Synchrotron Light Source Department.

MK2809. PLANT BIOCHEMIST (S-3) – Requires a Ph.D. in an area related to biology, chemistry or physics and a background in plant physiology/biochemistry with strong record of obtaining funding and publications demonstrating achievement in this area. Will lead an effort in plant systems biology. Experience in the emerging discipline of systems biology is essential along with demonstrated ability to coordinate projects integrating the efforts of scientists from different disciplines ranging from high throughput analytical methods to bioinformatics. Under the direction of C. Anderson, Biology Department.

MK2796. ASSISTANT SCIENTIST (S-1) – Requires a Ph.D. in radiation biology, cell biology, neurobiology, molecular biology or related field, postdoctoral experience, skills in cell culture, good communication skills, and a willingness to work with U.S. and international investigators. Extended and irregular hours may be required in order to support users; must be willing to travel to national and international scientific conferences. A strong background and/or experience in radiation biology and previous experience in accelerator-based radiobiology is desirable. NASA and non-NASA funds may be available for individual research. As part of a NASA-sponsored project, will join a team of heavy-ion beam-line scientists providing expertise, support and guidance to NASA-sponsored radiobiology investigators at the NASA Space Radiation Laboratory (NSRL) (<http://server.ags.bnl.gov/bnlaggs/nsrl/index.html>) and at the Medical Department Long Term Support Facility (www.bnl.gov/medical/NASA/NASA-home%20frame.htm). The NSRL was previously called the Booster Applications Facility (BAF). Employment in this position is contingent upon the successful completion of a background check by the Drug Enforcement Agency. For additional information, see: www.bnl.gov/medical/Personel/vasquez/vazquez.htm. Under the direction of M. Vasquez, Medical Department.

MK2847. ASSISTANT PHYSICIST (S-1) – Requires a Ph.D. in nuclear or elementary particle physics, experience with data acquisition in large, modern high energy or nuclear physics experiments, and the ability to work in a large collaboration and participate in projects that cross institutional boundaries as part of a team. Should be able to demonstrate expertise in one or more of the following areas: programming in C++ and Java, CORBA, operating systems including Linux, VxWorks, and Windows 2000, Ethernet and Gigabit Ethernet networking, real-time data acquisition electronics, or high speed trigger electronics. Research will be with PHENIX, a large multipurpose detector, performing forefront work in the study of relativistic heavy-ion and polarized-proton collisions at the highest available energies. This position is divided equally between detector operations and physics research, although the demands of detector operations may require intense activity in the first year or more of the appointment in data acquisition work. Under the direction of M. J. Tannenbaum, Physics Department.

MK2125. POSTDOCTORAL RESEARCH ASSOCIATE – Requires a Ph.D. in physics and a detailed understanding of the production of neutral hydrogen beams and gas targets. Experience with atomic beam systems, RF systems, and measurement of target polarization techniques is desirable. Will assume a leading role in the assembly, installation, and operation of a polarized Jet target and the Jet polarization measurement at RHIC. Under the direction of Y. Makdissi, Collider-Accelerator Department.

MK2848. POSTDOCTORAL RESEARCH ASSOCIATE – Requires a Ph.D. in theoretical physics with a strong background in statistical physics and complex system studies. Under the direction of S. Maslov, Physics Department.

NS2795. MEDICAL ASSOCIATES IV (P-1, term appointments) – Requires a bachelor's degree in biology with related experience in tissue culture of eukaryotic cells, biochemistry, cell biology and molecular biology. Experience in handling animals (primarily rodents), basic knowledge of, and demonstrated skills in, anesthesia, euthanasia, microsurgery, and necropsy in rodents necessary. Good communication skills and the ability to work in a group setting are important. Responsibilities will include the maintenance and operation of tissue-culture facilities, set-up of laboratories as well as performing routine computer operations. Will support experimental studies on radiation biology and neurotoxicology, as well as assist the logistic support of NASA users in execution of heavy-ion radiobiology experiments using NASA Space Radiation Laboratory (NSRL) beam lines. Employment is contingent upon the successful completion of a background check by the Drug Enforcement Administration. Medical Department.

TB2797. VETERINARY SERVICE ASSISTANT (CW-1 / 2 part-time positions – 8:30 to 12:30) - Under direct supervision will perform various task connected the care, feeding, cleaning, handling and bedding of laboratory animals, including the general cleaning of quarters and other duties as required. Prior experience working with animals and the ability to work weekend and holiday hours as needed is desirable. Medical Department.

Motor Vehicles & Supplies

01 HYUNDAI TIBURON - black, loaded w/ extras, spoiler, 19K transferrable warranty, \$13,000 firm. Barbara, 732-7186.

99 FORD TAURUS - all power, excel. cond., 35K mi., \$8,500. Brian, 821-4234.

99 HONDA SHADOW - motorcycle, 1100 cc, 4,500 mi., mint cond., \$5,500. Brian, 447-7360.

98 DODGE CARAVAN SE-V6 - all power, 7-8 pass., left & right sliding doors, excel. cond., leaving country, must sell, \$8,000. 281-5565.

98 SUBARU OUTBACK - 5-spd., a/c, p/s, p/b, p/w, excel. cond., garaged, 95K hwy. mi., \$9,000 neg. Kathleen, Ext. 2113 or 298-5345.

97 HONDA ACCORD - red, special edition, all power, 99K mi., excel. cond., dealer serviced, \$9,000. Dean, 727-1554.

97 VOLKSWAGON JETTA - a/t, a/c, p/s, p/b, 4-dr., 97K mi., sunroof, new tires, \$4,500. Brigita, 399-3381.

97 LEXUS ES 300 - all power, premium sound system, new tires, power roof, alloy wheels, 79K mi., mint cond., must sell, \$14,500 obo. Carl, Ext. 5010 or 369-3730.

95 ACURA INTEGRA - 5-spd., a/c, p/s, p/b, 134K mi., GS-R, leather, sunroof, cruise, alarm, \$7,000. Laurence, Ext. 3811 or 208-0312.

95 FORD ESCORT - a/t, a/c, p/s, 92K mi., excel. cond., brand new tires & timing belt, 92K mi., \$2,800. Rachel, Ext. 8331 or 399-2417.

95 FORD T-BIRD - all power, 120K mi., good cond., all inspections until 100K mi., \$3,900. Jamal, 295-8526.

95 SATURN SL2 - dealer maintained, p/w, cruise, new tires, brakes, good cond., 177K hwy. mi., \$2,500. Ext. 4980.

95 VOLKSWAGON GOLF GL - green, a/t, a/c, p/s, p/b, alarm, 93K mi., \$4,000. Rich, Ext. 7013 or 698-5294.

95 YAMAHA BLASTER ATV - runs well, FMF pipes, new grab bar, ITP rims on rear. Kevin, 369-1977.

93 HONDA ACCORD - 10th anniv. ed., black, all power, ABS, 115K mi., dealer maint., looks great, runs well, 23 m.p.g. city/30 hwy. \$3,800. Edward, 325-5949.

93 JEEP CHEROKEE - black w/grey int., 4x4, sport, 4-dr., runs well, \$3,000 neg. Dan, 433-0846.

93 LINCOLN TOWNCAR - fully loaded, garaged, leather, 63K mi., mint cond., \$5,500. Daly, 447-5377.

91 MAZDA 626 - white, 4-dr., a/t, a/c, p/s, p/b, 121K mi., new exhaust, looks good, runs well, 1,200 neg. Arthur, Ext. 7821 or Ext. 1052.

88 GMC 3500 BOX VAN - a/t, p/s, p/b, 130K mi., new tires, brakes, \$3,000; 85 Chev. El Cam., 110K mi., replaced motor & trans. a/t, a/c, p/s, p/b, Bob, Ext. 7779 or 929-4753.

87 CHEVY BLAZER - full size, runs but smokes, good for parts, best offer. George, Ext. 2296.

86 CHEVY ASTRO VAN - a/t, p/s, p/b, \$500. Pierrot, Ext. 2589 or 758-4328.

80 KAWASAKI MOTORCYCLE 440 - \$350. Don, 345-6279.

74 FORD GRAN TORINO - 2-dr., hard-top 302, 2BBL recent valve job, brakes, tires, shocks, \$2,000 neg. Dan, 698-7322.

BATTERY CHARGER - Deltran Battery Tender, 12 volts, auto. switches to float mode to prevent overcharging, excel. cond., \$20. Peter, Ext. 2913.

CAP - fiberglass, excel. cond., fits '99-03 Chevy/GMC full-size short bed, \$550. Lawrence, Ext. 7460.

STEEL CROSS BED TOOL BOX - weather guard, sliding tray inside, w/2 wing-type locking doors, for stepside & mini pickups, excel. cond., \$100. Arlene, 878-8302.

Boat & Marine Supplies

22' WESTERLY SAILBOAT - twin keel, fiberglass, clean, newly painted, many extras, needs some work, \$2,500. 744-3569.

FISHING ROD & REEL - Penn 9/0, Senator Reel, line, matching rod, big fish, mint cond. Annamarie, 878-8967.

HYDRAULIC STEERING CYLINDER - side mount & steering, w/instruct., parts list, \$50; outboard bracket, alum., 23 in., set-back perfect for I/O seadrive conversions, \$150 or \$175 for both. Arlene, 878-8302.

OUTBOARD - Seagull, long shaft, 5 hp, model #WSPOL, at least 20 yrs. old, but works well, well maintained, \$500. 286-5897.

Furnishings & Appliances

BEDFRAMES - 3 avail., new, just opened & packed, \$20/ea. Taejoo, Ext. 5778.

COUCH - white & seafoam green, 3-pc., L/R sectional, \$275; lighthouse picture, blues & pinks, peach frame, \$50. Vicky, 724-8208.

ENTERTAINMENT CENTER CABINET - \$35, good cond. Wally, Ext. 4180.

FREEZER - upright Kelvinator, 10 yrs. old., 16 cu. ft., excel. cond., \$50. Agnes, 727-1483.

LOVESEAT - oval glass & brass table, oriental 9x12 area rug. Evelyn, 864-8119.

Tools, House & Garden

EXTENSION LADDER - 24', alum., type-1, heavy duty industrial, 3" tread, extremely stable, max. load, 300 lb., excel. cond., \$150. 473-6546.

LAWN MOWER - elec., GrassMasters LawnPup, compact, lightweight, powerful, detachable grass catcher, extra blade, cost \$190, ask. \$60. Linda, Ext. 2733 or 395-6784.

LAWN TRACTOR - Sears, 1 yr. old, all lawn attach., elec. start, under warranty, excel. cond., \$700. Arnesen, 744-9812.

OIL BURNER VACUUM - commercial, oil burner soot, Mastercraft, dolly, hoses, extra new wire brushes & bags, mint, \$200. Annamarie, 878-8967.

Sports, Hobbies & Pets

BICYCLE - woman's Raleigh Grand Prix, 10-spd. racer, quick release wheels, generator, excellent condition, \$55. 473-6546.

BIKE - BMX, Haro 4130 Gyro, street tires, Sun rims, Primo seat, Kevin, 369-1977.

CAMERA - Nikon N90s w/vertical grip battery pack, mint cond., rarely used, orig. boxes, \$575. Joe, Ext. 2384.

FISH TANK COVER/HOOD - w/fluorescent light for 20 gal. tank, excel. cond., \$10. Peter, Ext. 2913.

NORDIC TRACK - excel. model, v.g. cond., \$50; Ab Do'er, \$15; stair climber, \$25; fish tanks, assorted sizes, stand. Ray, 758-4937.

R.C. CAR - Traxxas 4-Tec, 4WD, super fast, everything included except charger, \$175. Chris, Ext. 5090 or 821-3720.

STEPPER - Tunturi 704 air resistance stepper w/computer, \$150 firm; Ab Roller, \$20. Donna, Ext. 8389 or 929-0351.

TREADMILL - Sear's Lifestyler Expanse 1000, 2 h.p., 0-10mph, run, walk, incline, all programmable, timer, miles, 5-yrs. old, v.g. cond. \$170. Bob, 928-1806.

Audio, Video & Computers

BOOMBOX - CD, deck, tuner, \$15. Sean, Ext. 6263.

COMPUTER - Intel Celeron 333 MHz, 256M, 4G, \$75. Bert, Ext. 8362.

COMPUTERS - IBM PIII 450 MHz system 8 GB HD CD 56K modem, 15" monitor, win 2K, \$300; Intel Pentium III, 350 MHz, 6.4 GB CD 128M Ram, 56K modem, 15" monitor, Win 2K, \$250. Pierrot, Ext. 2589 or 758-4328.

SCANNER - HP 6800 High Resolution 8x14" Laser Scanner with side reader & software, \$75. Lynn, Ext. 3395.

SOFTWARE - Norton Anti-Virus 2003, 1 year on-line subscription, brand new, \$19. Mike, 344-7861.

SPEAKERS - 4' high Sony, make offer. Janet, 929-3910.

TELEVISION - Zenith, 32", good cond., \$500. Sande, 345-6279.

Miscellaneous

BABY STROLLER - excel. cond., \$30. Warren, Ext. 2080 or 751-5245.

CAR SEAT - infant size, \$15; walker, \$10; glass top table, \$20. Sean, Ext. 6263.

DOUBLE STROLLER - Graco, blue, excel. cond., only used twice, cost over \$150, ask. \$130, will deliver to you. Jason, Ext. 3477.

LOG CABIN - made by Little Tykes, great cond., \$100. Clay, Ext. 2360.

POOL LADDER - used 1 season, excel. cond., \$50 obo. Frank, 839-6327.

RAFTING TRIP - last weekend in Sept. Gaudley, West Virginia. Wally, Ext. 4180.

TODDLER SWINGS & SLED - like new, \$6/ea. Arlene, Ext. 3827.

UNIQUE PINATAS - all occasions, all characters, cartoon, Disney, Sesame Street. Donna, 821-0359.

Lost & Found

KEYS - on Washington, D.C. keychain found in Bldg. 326. Muriel, Ext. 4806.

Wanted

CHINA - must be reasonable, looking for service of 8 or more, additional pieces welcomed, excel. cond. Doreen, Ext. 2457 or Donna, Ext. 6044.

HOME-HEALTH-CARE AID - wanted urgently. Lifting required. Mornings and evenings. Smithtown. Ext. 5090 or 821-3720.

JIU-JITSU ENTHUSIASTS - men, women, children of age seven and up wanted to form a once-a-week (Fridays after 6 p.m.) Jiu Jitsu/Martial Arts Club. Instruction on site in BNL gym. Tom Baldwin, Ext. 4556.

LIFEGUARDS, SWIM INSTRUCTORS - of age 18 and over, wanted for the summer at the BNL pool. Various hours available. Chris Carter, Ext. 5090.

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

WOOD SPLITTER - working cond., reasonable. Mike, Ext. 7861.

Carpool

PLAINVIEW - needs one additional rider/driver, Lab hours: 8 a.m. to 4 p.m. Ron, Ext. 6068.

Happenings

8 p.m. Sat., 3/28, pianist Sam Carr, Physics Dept. will play Beethoven's *Choral Fantasy*, Op. 80, and accompany choir & orchestra in "Kyrie" from Mozart *Requiem*, "Agnus Dei" fr. Haydn *Thersa Mass*, "O Holy night," "Hallelujah" fr. *Messiah*, at First Baptist Church, 482 N. Ocean Ave., Patchogue. All welcome.

Free

CAR - '87 Honda Accord, a/t, 4-cyl., vehicle runs well, must be moved. Bennett, 727-0488.

Services

PRESSURE WASHING - spring clean up houses, pools, decks, fences, porches, patios, etc. Lab discount, best quality & lowest prices. Emil, 921-5189.

921-5189. ROTOTILLING - up to 1 acre, free est., lawns or garden. Paul, 924-8143.

SCISSOR SHARPENING - to all trades & crafts. Professional grinding & honing. At your location. Ext. 2223 or 929-6421.

SCUBA DIVING - charters to Block Island, Fishers Island, night dives. 821-DIVE.

SEAMSTRESS - clothes made and altered. 395-6216 after 4 p.m.

SEAMSTRESS - clothes made & altered, many refs. Donna, 727-7425.

SHEETROCKING AND SPACKLING - call Kevin for free estimate. 567-6621.

SPANISH TUTOR - Regent's expert, refresher, finals. Julie, 831-6916.

TAXES - prepared by tax consultant, your home or mine, reasonable, serving Lab people for over 25 years. John, 732-2472.

TAX PREPARATION - tax preparation performed by CPA, cost effective, professional and reliable service. 821-6339.

TECHNICAL WRITING - experienced technical writer looking for temp., part time work at home. Janet, 821-5731.

TOTAL PET CARE - your pet's happiness is our main concern. Pet sitting transport to medical appt. Reasonable, responsible. Ray/Pat, 924-6784.

TUTOR - math, bio., chem., NYS certified teacher, tutor evenings & weekends, your home, ages 12-18, grades 7-12. Sharon, 821-1999.

TUTOR - certified state teacher will tutor all subjects, grades K-6. Lisa, 698-1173.

TUTOR - experienced teacher will tutor math, ELA prep., English, writing for 4th and 5th graders. Ext. 7238 or 698-2872.

VIDEO RECORDING - & post-production editing; prof., broadcast-quality. Promotional videos for your business, records of your wedding or special events. Khalim, Ext. 3328 or 917-568-3545.

WET SAW RENTAL - 10" diamond wet saw for brick/tile, \$50/day. Dennis, 878-0071.

WORD PROCESSING - meeting your personal/business typing needs, professional, accurate results, school, legal documents, etc., Microsoft Word/WordPerfect. Sue, 631-929-2867.

WORD PROCESSING/TYPING - add professional typing & formatting to your school, business, or personal reports, letters, and papers; accurate, reliable, timely, MS Word/WordPerfect. Ext. 7132 or 793-4551.

A complete list of services is on the Web at the address below, or call Tiffany Minter, Ext. 2345.