BROOKHAVEN BULLETIN
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BROOKHAVEN NATIONAL LABORATORY

DOE Reports Results of Groundwater Tests in Manorville

The U.S. Department of Energy (DOE) issued a press release on Tuesday, August 20, reporting that groundwater sampling at BNL indicates that an agricultural pesticide used by the Lab decades ago has moved south from the Brookhaven site.

The chemical is located in an undeveloped area of Manorville, about 1,000 feet west of Weeks Avenue and about 500 feet south of North Street, and it is 90-130 feet below land surface.

BNL used the chemical, known as ethylene dibromide (EDB), in the 1960s and 1970s to sterilize soil in its biology fields, which are in the southeastern portion of the site. In addition to its common use as a pesticide in agriculture, which was largely banned by the U.S. Environmental Protection Agency in 1984, EDB was also used nationwide as an additive in leaded gasoline. EDB is still used today, for example, as a wood preservative.

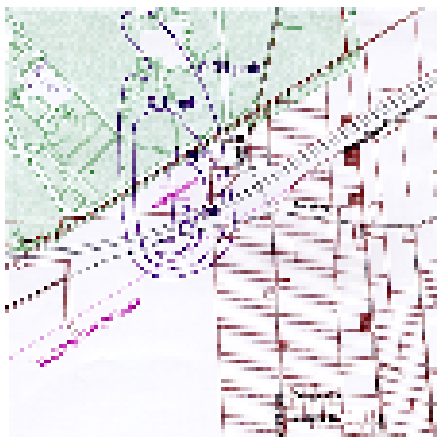
"DOE and the Lab are investigating remediation alternatives to prevent any possible future exposure to the contaminant," said Bill Gunther, Head of BNL's Office of Environmental Restoration (OER). According to Gunther, DOE and the Suffolk County Water Authority are already discussing plans to provide public water to the North Street/Weeks Avenue area of Manorville.

The Suffolk County Department of Health Services has been sampling for EDB in this residential area for a number of years. The county's residential sampling program has shown only two wells, on adjacent properties, contaminated with EDB.

One was found in 1992, at 0.2 parts per billion (ppb) of EDB, and the second in 1994, at 1.2 ppb. The New York State Drinking Water Standard for EDB is 0.05 ppb. Neither well is in use, and the source of their contamination is unknown.

Most recently, 120 residential wells tested in the fall of 1995 showed no EDB contamination.

Representatives of DOE's Brookhaven Group and OER are now going door-to-door to meet with residents in the North Street/Weeks Avenue area of Manorville, to explain groundwater sampling results, hear home owners' concerns, answer questions and discuss public-water hookups.



Contours on map show location of ethylene dibromide contamination from BNL, in parts per billion (ppb).

Residents are invited to participate in the decision on how to remediate the EDB contamination from BNL by attending a public meeting in the fall, where community comments on remediation alternatives will be solicited. Alternatives include: groundwater extraction and treatment, public water hookups, natural attenuation with additional monitoring and no action.

Over the past four years, hundreds of samples have been taken from groundwater monitoring wells in the Manorville area by both BNL and the Suffolk County Department of Health Services. These samples have shown a range of values for EDB, from below minimum detection levels to 3.5 ppb.

— Mona S. Rowe

What They're Saying . . .

Caldicott Questions BNL Activity

"As a physician, having taken the Hippocratic oath, I just can't imagine how people can be involved in an activity that kills their fellow human beings."

— Antinuclear activist Helen Caldicott

In a talk sponsored by Fish Unlimited in the parish hall of St. Andrews Catholic Church in Sag Harbor on Monday, August 12, Caldicott, co-founder of Physicians for Social Responsibility, made the above statement about people who work at BNL.

She had been talking about the tragic plight of a four-year-old girl who lives about four miles southeast of the Lab and who has developed a rare cancer of the tongue and throat. Caldicott said that this particular form of cancer is "caused by cesium-137, which is emitted from Brookhaven."

There is no scientific evidence to support Caldicott's statement.

The child's sad situation cannot be blamed on cesium-137. According to medical oncologist Jean Howard, Medical Department, chromosomal abnormalities are associated with this tumor, although the ultimate cause of primary rhabdomyosarcoma is not known.

It is also almost impossible that radioactive emissions from BNL's operations would cause our neighbors any harm. The dose projection for the Lab's largest airborne emitter of cesium-137, the tritium evaporator at the High Flux Beam Reactor (HFBR), is an infinitesimal 0.002 millirems per year, for a person residing at the site boundary 24 hours a day. This same individual would receive only 1 millirem from all potential BNL sources — water, air and soil — but would absorb some 300 millirems of radiation each year just from natural background sources.

Cesium-137 is also present in our environment as a result of atmospheric testing of nuclear weapons, and few places have been more contaminated by this radioactive fallout than the Marshall Islands. Jean Howard is Director of the BNL team that goes to the Marshall Islands annually to monitor health effects of people who were exposed to fallout following a 1954 nuclear weapons test on Bikini Island.

The Marshall Islands Nuclear Claims Tribunal has established a list of medical conditions that are "irrebuttably presumed to be the result of the Nuclear Testing Program." As of January 1994, rhabdomyosarcoma was *not* on the tribunal's list of 27 medical conditions. Also, rhabdomyosarcoma is not on the list of radiogenic cancers as reported by the National Research Council (BEIR V report).

BNLers are *not* involved in killing anyone. In fact, they are involved in two very life-affirming clinical trials where Brookhaven's reactors are helping cancer patients to ease their suffering. At the Brookhaven Medical Research Reactor, people with the almost certainly fatal brain cancer glioblastoma multiforme are enjoying a better-quality life after boron neutron capture therapy. And people coping with the agonizing pain of bone cancer are experiencing sometimes total relief from their pain after treatment with tin-117m, a compound produced at the HFBR.

After the August 12 meeting, Caldicott was given a letter from Sue Davis, BNL's Associate Director for Reactor, Safety & Security, inviting her to visit Brookhaven to survey the Lab's operations. So far, Davis has received no acknowledgment of the letter.

Helen Caldicott will be speaking at the Unitarian-Universalist Fellowship of Bellport, Brown's Lane, Bellport, on Sunday, September 8, at 10:30 a.m.

— Anita Cohen

Brookhaven Lecture: Getting the Facts on Fat

Health-conscious Americans today are consuming less fat, but they are also consumed with anxiety about fat.

Anyone who has been on a diet or has high cholesterol knows that saturated fats are so-called "bad fats," and unsaturated fats are "good fats." And they know, all too well, that too much of any kind of fat can make you fat.

Despite the nutritional concern about fats nowadays, many people don't know what makes a fat saturated or unsaturated. And even scientists poorly understand how the process called desaturation occurs.

But BNL Biochemist John Shanklin, Biology Department, and his team have made significant progress in understanding desaturase, an enzyme that acts to desaturate fats. Their work, though it is basic research, may have applications in many industries that depend on unsaturated plant oils, including the food, pharmaceutical and chemical industries.

Roger Stoutenburgh

John Shanklin, Biology Department, collects seeds from transgenic *Arabidopsis* plants containing a modified fatty-acid desaturase gene.

Shanklin will explain his latest research and discuss its potential applications in the 318th Brookhaven Lecture on Wednesday, August 28. Titled "Engineering Enzymes to Make Better Oils," the lecture will be given at 4 p.m. in Berkner Hall.

Fatty acids are the building blocks that form the membranes surrounding all living cells. Fats play important roles in human nutrition: They facilitate the uptake of vitamins, allow correct neural development and are an important source of energy.

Cells first manufacture lipids as fatty acids in which the carbons are saturated with hydrogen. Then, the desaturase enzyme springs into action, robbing some fatty acids of two hydrogens. This leaves a chemical double bond, thus making the fat unsaturated or desaturated.

Shanklin will describe how he and his colleagues have isolated and sequenced the genes for desaturase from several plants and have determined the structures of the castor plant's desaturases using the National Synchrotron Light Source, as reported in the August 15 edition of the *EMBO*

(continued on page 2)

Inside this Issue:

SEP Working to Reduce Workers' Compensation Costs at BNL

It was a dark and stormy night.

Suddenly, a wail pierced the dark, damp air. It was the sound of a BNL fire truck responding to a fire alarm in the Environmental and Waste Technology Center, Bldg. 830.

But what happened next was no mystery. BNL firefighter Bill Rabatin jumped from the truck loaded down with 60 pounds of fire-fighting equipment and crumpled to the ground.

"My left knee blew out," he recalled. "It didn't feel stiff, but I woke up the next morning and my knee looked like a balloon."

This incident marked the beginning of Rabatin's six-month recovery and relationship with BNL's Workers Compensation Program.

"It was frustrating, yes, but it hasn't been a terrible experience because of the people I've been working with," Rabatin said.

Rabatin worked with the Occupational Medicine Clinic (OMC) and with Jack Ellerkamp, Workers' Compensation Administrator, and Linda Greves, both of BNL's Safety & Environmental Protection (SEP) Division. They ensure that every injured employee receives prompt medical care and returns to work as soon as possible.

Rabatin's injury has been a success story, but other BNL employees have been less fortunate. Getting injured at work can be a physically and financially devastating experience for both the employee and employer. As a result, SEP is taking important steps to improve the workers' compensation program.

Roger Stoutenburgh

BNL firefighter Bill Rabatin discusses his Workers' Compensation case with (back, from left) Jack Ellerkamp and Steven Hoey, and (front) Linda Greves, all of the Safety & Environmental Protection Division.

What Can You Do to Help?

In terms of reducing BNL's injury rate and Workers' Compensation costs, "Everyone has the responsibility to do his or her job safely," said Steven Hoey, Safety & Environmental Protection (SEP) Division. This includes:

- identifying and correcting hazards in the workplace,
- making sure that you have the proper training for the job and areas that you work in,
- reporting — not ignoring — an unsafe condition if you see one, and
- notifying your supervisor and the Occupational Medicine Clinic *promptly* of any injury, no matter how minor it may seem.

"Your minor injury could be a precursor to someone else's major injury," said Hoey. "The SEP Workers' Compensation Office is available to help you every step of the way. Let's work together to make BNL a safer and more productive place to work." — S.G.

Expenses Have Tripled

Workers' compensation and general liability expenses have more than tripled since 1991, exceeding $2 million in 1994, thus setting off an alarm for Lab administrators. Although BNL's injury rates and costs are still below those of the private sector, they are higher than at other similar U.S. Department of Energy (DOE) facilities, leaving room for improvement.

Workers' compensation costs are amplified by both direct and indirect costs associated with injuries. Direct costs include medical expenses and wages. Indirect costs, which are four to six times more than the direct costs, include such things as hiring and training a temporary employee while the permanent employee recovers, paying overtime to other employees who have taken on the ailing employee's tasks, and overall delays to experiments and projects.

Lost work days, which have increased significantly since 1992, have cost the Lab almost ten times as much as medical expenses. The number of lost work days at the Lab is greater than at many other similar facilities.

A closer look at BNL's program has revealed, "People are getting injured and, as a result, losing a significant amount of time," said Steven Hoey, Safety Engineering Group Leader, SEP.

This is a result of a combination of factors, such as insufficient communication or training, incomplete evaluation of work hazards, or a lack of awareness about alternatives, such as the "return to work" program.

Initiative to Regain Control

"We are trying to regain control of the dollars going out the door," Hoey said. To do so, BNL has developed an intensive Worker Safety Initiative.

This program has three major goals: First, it will improve safety training for both managers and workers to correct a major weakness identified by external auditors.

Second, it will make improvements in high-risk workplaces, including the electrical and traffic-safety programs. It will also ensure prompt and effective accident investigations and will track all injuries more thoroughly.

Finally, it will reduce the cost of lost time due to worker injuries by providing better case management.

"We want to reduce the frequency and severity of accidents, and provide opportunities for people to return to work sooner," Hoey said.

After using 60 percent of his sick days, Rabatin returned to work in a less intensive capacity, while he continued therapy for his injured knee.

"I usually assume the house watch," he said, which gave him an important, but not physically demanding job. Rabatin was able to return to work on light duty, and Fire Chief James Roesler was very receptive to this.

BNL has about 200 workers' compensation cases per year. In 1995, about 50 percent of injuries were in the bargaining unit, which includes tradespeople and other technical personnel with physically demanding jobs. These people also accounted for about 75 percent of the days lost and 62 percent of costs.

Back Injuries Most Expensive

The most expensive type of injury are back injuries, which also cost the most in lost work days. The medical expenses for back injuries are more than double the next most expensive type of injury, which are injuries of the lower extremities — legs, ankles, feet and knees.

Stepping down from the fire truck, Rabatin tore two ligaments in his knee and fractured the top of his tibia. After two weeks of therapy, Rabatin's knee "really didn't feel better." At that point, Liberty Mutual, BNL's Workers' Compensation insurance carrier, in conjunction with the OMC, assigned Rabatin a "rehabilitation nurse," to keep track of his case.

After seeing the damage on an MRI, "She said I needed surgery," he said. On April 3, Rabatin's knee surgery was authorized, and it took place on April 15.

Rabatin's nurse met him each step of the way attending doctor's appointments with him and calling him regularly to find out how he was doing.

"They took a 52-year-old knee and overhauled it," Rabatin said. He returned to full duty on August 15.

Implementing the Worker Safety Initiative should result in fewer injuries, a safer work environment, lower Workers' Compensation costs and better resources for injured employees.

"The Safety & Environmental Protection Division is a resource for preventing accidents and investigating accidents after they happen," Hoey said. "Employees and management need to be aware of the steps to take to prevent injuries and address them properly if they do happen.

"The more money we save, the more money we will have for science, hiring new people and maintaining jobs," Hoey said. — Sarah Gilbert

Note to Employees:

Attendance at lectures, meetings and other special programs held during normal working hours is subject to supervisory concurrence.

BNL Lecture (cont'd.)

Journal, published by the European Molecular Biology Organization.

Understanding how desaturases work, Shanklin will explain, is a critical step towards improving enzymes for commercial purposes and introducing them into crop plants.

For example, making nylon requires a diacid — similar to a fatty acid — that is currently manufactured from petroleum, which is a nonrenewable resource. If such diacids can be obtained from plant oils, then the supply will become renewable.

Another example of a "better oil" resulting from a genetically engineered enzyme might be a low-cal margarine, free of saturated fat, cholesterol and trans-fatty acids.

Shanklin will also discuss another research breakthrough, reported in the August 6 issue of the *Proceedings of the National Academy of Science*, in which he and researchers from Pennsylvania State University identified a gene that is linked with plant resistance to harmful insects. They found that certain geranium varieties resistant to spider mites and aphids produce a viscous material containing compounds called unsaturated anacardic acids, which are synthesized from unsaturated fatty acids.

This finding may have major implications for agriculture and industry, making it possible to genetically engineer crop plants, such as tomatoes and potatoes, to be insect-resistant and to produce specialized oils far more economically.

Born in Manchester, England, Shanklin earned his B.Sc. in biology in 1981 from the University of Lancaster, England. He came to the University of Wisconsin-Madison to earn his M.Sc. and Ph.D. in forestry and crop physiology, in 1984 and 1988, respectively.

After three years as a postdoctoral student at the U.S. Department of Energy Plant Research Laboratory at Michigan State University, he joined BNL in 1992 as an assistant biochemist in Biology . In 1994, he was named associate biochemist, and, this year, he assumed his current title. Shanklin is also an adjunct professor in the Biochemistry Department at the State University of New York at Stony Brook.

After the lecture, all are invited to join Shanklin for discussion and refreshments. Those wishing to have dinner with the speaker at a restaurant off site should call Donna Zadow, Ext. 3415. — Diane Greenberg

Equipment Demo

Silicon Graphics will demonstrate its latest products and software on Tuesday, August 27, from 10 a.m. to 3 p.m., in its "magic bus" parked outside of Berkner Hall. For more information, call John Spiletic, Ext. 4112.

BWIS to Present Chasman Scholarship

On Thursday, August 29, at 4 p.m., Brookhaven Women in Science (BWIS) will present the 1996 Renate W. Chasman Scholarship to Mary Carlucci-Dayton of East Patchogue, a physics major at the State University of New York at Stony Brook.

All are invited to the ceremony and reception in Room B of Berkner Hall; refreshments will be served.

The Chasman scholarship is a one-time award of $2,000 that BWIS presents to a Long Island woman who has returned to school, following an interruption, to pursue her education in the physical or natural sciences, engineering or mathematics. It honors the memory of the late Renate W. Chasman (1932-1977), a BNL accelerator-physics theorist.

Arrivals & Departures

Arrivals

Dawei Lin.....Biology
Rajasekhar M. Rao.....Chemistry
Kelli M. Stauning.....Biology

Departures

This list includes all employees who have terminated from the Lab, including retirees:

Alan Budhu.....Reactor
Maria J. Sanchez.....RHIC
Bonnie M.H. Tamminga.....AGS
Gavin M. Watson.....Physics

To Protect *Everyone's* Data — Safeguard *Your* Computer

So far during this calendar year, over 25 viruses have been found in BNL computers. In some cases, however, no damage was done. The danger had been averted by Lab staff whose first move, after switching on their computers or inserting a floppy disk into the floppy disk drive, was to check for viruses.

"One problem about viruses is that they don't necessarily do any immediate, noticeable damage," said Stuart Kern, Computing & Communications Division. "So if your computer is attacked and you don't usually check for viruses, then your machine can become the source of a lot of infection without your knowing it."

Also, as Kern explained, if checking for viruses is not a daily practice, it is difficult to know how far back to search records for trouble.

"Even people who regularly back up all their files should realize that, without a virus check, they could have been storing contaminated data for days," he stated. "And, with the Internet and the frequent exchange of software, PCs as well as other computers are much more vulnerable than they were."

Viruses are not the only way in which BNL's computer and data assets can be compromised. Once or twice, Kern said, outsiders have stolen, or "sniffed," the password of a legitimate BNL user and then used that password to log into that account.

Once in, the intruder usually tries to exploit vulnerabilities to gain other passwords, or, sometimes, to get superuser privileges. In this way, the intruder can often hide his or her presence, while capturing any information in that computer or even information, such as passwords or e-mail, on any computer sharing the same local area network

To address these concerns, Kern said, many computers have already been made secure.

But, in addition, BNL Director Nicholas Samios has set up a 22-member Computer and Data Protection Advisory Committee, chaired by Kern. The committee is charged with advising Samios on present and foreseeable vulnerabilities of Laboratory computer and data systems, best practices for protection of these systems, and policies and procedures for implementing such protection.

The committee members were chosen from among many Lab departments and divisions for their demonstrated interest in and knowledge of computer and data protection. Membership will last three years except for initial appointments, and the committee will meet at least four times a year, reporting to BNL Deputy Director Martin Blume.

"We will keep Lab management apprised of existing and new events, and advise on cost-effective measures to resolve any problems," said Kern.

"The greatest need is to increase everyone's awareness of their personal responsibility, so that all computer users on site automatically use procedures that will protect their own and their colleagues' data and equipment," Kern continued.

"My goal," he concluded, "is that all computers at the Laboratory will have automatic and easy-to-use security measures in place, so that our computer users will feel secure about the continuity and integrity of the computing environment at BNL."

— Liz Seubert

Anti-Virus Software: Free and Available

BNL has just received a new anti-virus software package, with enough licenses to protect all the Lab's **IBM-compatible PCs.**

The package — IBM AntiVirus, a state-of-the-art set of tools giving protection from computer viruses to DOS, Windows, Windows95, WindowsNT, OS/2 and networked PCs — is now available through the Computer Security Representative of each department at BNL.

It should replace Data Physician, which was originally supplied by the U.S. Department of Energy, but is now out of date. AntiVirus should also replace the shareware version of F-Prot, which was used as an interim solution on many PCs.

The AntiVirus package was selected over many other similar products because of its success in identifying and disinfecting the viruses that BNL's PCs have caught.

Macintosh users should note that the Lab still recommends the latest version of Disinfectant, which is free and can be downloaded from the World Wide Web at ftp://ftp.acns.nwu.edu/pub/disinfectant/.

— L.S.

Life Don't Mean a Thing If You Ain't Got That Swing

If you've been wanting to learn to dance to all the 40s Big Band and 50s rock-and-roll favorites, here's a golden opportunity: For its fifth year, beginning September 11, the BNL Ballroom, Latin & Swing Dance Club will feature just that — a year of dance instruction in the lindy and six-count swing, and more.

What's more, if you take the Dance Club's progression of lindy and swing classes or the others offered this year, then you will be ready for the Lab's 50th Anniversary Big Band Bash, which the Dance Club will hold next spring, on a date to be announced.

Usually held in the North Ballroom of the Brookhaven Center, lessons are taught by Giny Rae and Peter Sciurca, former Empire State Ballroom Champions, with assistance from Sean Breaton, an amateur International-style ballroom competitor.

During a series, each one-hour class features two dances at a specified level (level I is beginner, level II is advanced beginner, etc.). The first dance listed for a class is taught the first four weeks, and instruction in the second dance is given during the last four weeks. Review classes are for those who have already taken classes at the levels listed.

If a minimum of 40 people sign up for each eight-week class, then the cost per person is $25. BNL employees, retirees and on-site contractors, their families, friends and dance partners are all invited to join the classes. No partner is necessary, as equal numbers of men and women usually sign up.

To register or for more information, contact: Marsha Belford, club president, Ext. 5053; Ron Ondrovic, 1st vice president, Ext. 4553; or Rudy Alforque, 2nd vice president, Ext. 4733.

time	series 1 9/11-10/30/96	series 2 11/6/96-1/15/97	series 3 1/22-3/12/97	series 4 3/19-5/7/97	series 5 5/14-7/2/97
5:30 p.m.	**review: cha-cha & fox trot I-IV**	rhumba & waltz I	rhumba & waltz II	rhumba & waltz III	rhumba& waltz IV
6:30 p.m.	lindy & 6-ct. swing I	lindy & 6-ct. swing II	lindy & 6-ct. swing III	lindy & 6-ct. swing IV	**review:** lindy & 6-ct. swing I-IV
7:30 p.m.	**bolero & salsa I**	**bolero & salsa II**	**review:** mambo & tango I-IV	samba & Viennese waltz I	samba & Viennese waltz II

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C-W Dance Club

To determine the Lab community's interest in participating in country-western dance lessons on site on Tuesday evenings, the BERA Country-Western (C-W) Dance Club is conducting a telephone survey.

Previous and existing club members as well as potential future participants are invited to call Marilyn Johnson, club president, Ext. 2546, to vote on the following: Will you attend on-site lessons in line and/or couples' C-W dancing? If so, then do you have a preference regarding instructors? Will you volunteer to organize the class or other club activities? Please respond by September 20.

Inside Info

On June 27, **Brookhaven National Laboratory** was one of 33 organizations, businesses and individuals honored with Certificates of Appreciation "for their enthusiastic participation in the Town of Brookhaven INTERFACE."

Brookhaven Town's INTERFACE programs draw on private and governmental resources to help provide for those who might otherwise go without.

With contributions from employees, BNL has donated 205,325 pounds of groceries to the INTERFACE Food Drive since November 1988 and given more than 50 items each year for over 12 years to its Christmas Toy Drive.

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In addition to the letter of appreciation from Brookhaven Town's Chief Fire Marshal Joesph Sauerwein (see Brookhaven Bulletin, August 16, 1996), Brookhaven Town Supervisor **Felix Grucci Jr.** added his "praise and gratitude" in a letter to BNL's **Fire/Rescue Group** in the Safety & Environmental Protection Division.

Grucci commended the group for being the hazardous-materials (haz-mat) incident-response unit on call during the Town's Division of Fire Protection's two-week participation in the recovery of the wreckage of TWA Flight 800, July 17-August 1.

Grucci noted, "[W]ho could have guessed that the partnership between Brookhaven Lab and the Town would have been solidified so soon? Our haz-mat operations withstood the toughest of tests. Please extend my best wishes and those of my colleagues on the Town Board to BNL's Fire/Rescue Group, and our appreciation for a job superbly done."

Amateur Radio

The BERA Amateur Radio Club will next meet at noon on Thursday, August 23, in Room C, Berkner Hall.

All BERA members and licensed amateur-radio operators are invited to attend.

For more information, call Chris Neuberger, Ext. 4160, or Nick Franco, Ext. 5467.

St. Joseph's on Site

A representative from St. Joseph's College, Patchogue, will be in Berkner Hall on Tuesday, August 27, from 11 a.m. to 2 p.m., to provide information about the college's adult degree programs. These include: organizational management, health administration, community health and human services, nursing and general studies, and certificate programs in many health and business areas.

In addition, St. Joseph's policies on granting credits for non-collegiate training and life experience will be explained. For more information, call Marie Losquadro, 447-3261.

Met Opera Tickets

Family-circle tickets for the following performances during the 1996-97 Metropolitan Opera season will go on sale on Wednesday, September 11, at the BERA Sales Office in Berkner Hall.

Tickets are $26.50 each. Employees may purchase as many pairs of tickets as they wish. All sales will be final; no refunds or exchanges.

Fri., Oct. 4	*The Bartered Bride*
Sat., Oct. 5	*La Traviata*
Fri., Oct. 18	*Andrea Chenier*
Sat., Oct. 19	*The Bartered Bride*
Sat., Nov. 2	*Rigoletto*
Fri., Nov. 22	*Carmen*
Sat., Nov. 23	*L'Elisir D'Amore*
Fri., Dec. 6	*Cosi Fan Tutte*
Sat., Dec. 14	*A Midsummer Night's Dream*
Fri., Dec. 27	*Tosca*
Sat., Jan. 11	*Cavalleria Rusticana*
Sat., Jan. 25	*I Puritani*
Fri., Jan. 31	*Le Nozze Di Figaro*
Sat., Feb. 15	*Le Nozze Di Figaro*
Fri., Feb. 28	*La Boheme*
Fri., Mar. 14	*Billy Budd*
Fri., Apr. 4	*Madama Butterfly*
Sat., Apr. 12	*Faust*

IBEW Meeting

Local 2230, IBEW, will hold its regular monthly meeting on Monday, August 26, at 6 p.m., in the Knights of Columbus Hall, Railroad Avenue, Patchogue. The agenda includes regular business, committee reports and the president's report. There will be a meeting for shift workers at 3 p.m. at the union office.

Last Weekend Outing

The last shuttle service for summer visitors will be provided on Saturday, August 31. That day's destinations will be Port Jefferson Village and the Smith Haven Mall. For more information or to reserve a seat, call Juanita Beatty, Ext. 2535.

All-You-Can-Eat BBQ

On Thursday, August 29, from 11:30 a.m. to 2 p.m., an all-you-can-eat barbecue will be offered by BNL's food service, Flik International, at the Center Club, Brookhaven Center. This end-of-the-summer feast will feature grilled honey chicken, Texas ribs, charbroiled hamburgers and hot dogs, corn on the cob and more. Plus, Flik's clowns will be there to entertain the children

The cost is $6.50 for adults and $4.50 for children under 12. But, if you make and pay for your reservations by Tuesday, August 27, then you will receive a 10 percent discount and be eligible to win a pair of baseball game tickets.

For more information, see the flier mailed to all employees or call Flik International, Ext. 3541.

Bowling

Fall is soon upon us, so it's time to "think bowling" again! All BNL employees and members of their immediate families can join the BERA Bowling League's teams for great evenings of fun.

Applications for the Tuesday night men's league in Port Jefferson and the Thursday night mixed league in Rocky Point are available at the BERA Sales Office, Berkner Hall, weekdays, 9 a.m. to 1:30 p.m.

New teams must register by today, Friday, August 23. A captains' meeting will be held on Wednesday, August 28, at noon in Room A, Berkner Hall. For more information, call Debbie Botts, Ext. 3888, or Mayann Musso, Ext. 2352.

Pool & Gym Schedule

Swimming Pool

The pool will be closed for the Labor Day holiday weekend, Saturday, August 31, through Monday, September 2. When the pool reopens on Tuesday, September 3, the following hours will be in effect:

• **Monday through Friday**
11 a.m. - 1:30 p.m. employees only
1:30 - 2 p.m. speed swimming/ training
5 - 8:30 p.m. employees, families, guests*

• **Saturday & Sunday**
1 - 5 p.m. employees, families, guests*

**Guest ruling:* *One guest per employee is permitted without prior arrangement. Advance arrangements for additional guests, up to five per employee at one time, must be made at the Recreation Office, Personnel Division, Bldg. 185. Guests must be accompanied by the sponsoring employee.*

Gymnasium

The gym will reopen on Saturdays, from 10 a.m. to 5 p.m., for general activities, beginning on Saturday, September 7.

Classified Advertisements

Placement Notices

The Laboratory's placement policy is to select the best-qualified candidate for an available position. Consideration is given to candidates 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, handicap or veteran status.

Each week, the Human Resources Division lists new placement notices. The purpose of these listings is, first, to give employees an opportunity to request consideration for themselves through Human Resources, and second, for general recruiting under 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, or call the JOBLINE, Ext. 7744 (344-7744), for a complete listing of all openings.

Current job openings can also be accessed via the BNL Home Page on the World Wide Web. Outside users should open "http://www.bnl.gov/bnl.html", then select "Scientific Personnel Office " for scientific staff openings or "Employment Opportunities" or "BNL Human Resources Division" for all other vacancies.

SCIENTIFIC RECRUITMENT - Doctorate usually required. Candidates may apply directly to the department representative named.

POSTDOCTORAL RESEARCH ASSOCIATE - Trained in microbiology and biochemistry, to clone and characterize the receptor on human cells that binds adenovirus. Experience with mammalian cell culture and DNA cloning techniques is essential. Contact: Paul Freimuth, Biology Department.

LABORATORY RECRUITMENT - Opportunities for Laboratory employees.

MK/108. HELPER A - (temporary position) Under general supervision performs a variety of tasks in a shop or building trade which require a substantial knowledge of a skill in that trade, although not necessarily possessing the knowledge or skill expected of a journeyperson. Duties will usually include handling minor assignments in the trade, with a minimum of supervision, and assisting one or more journeypersons in more complex assignments. Central Shops Division.

OPEN RECRUITMENT - Opportunities for Laboratory employees and outside candidates.

NS 2219. PHYSICS ASSOCIATE POSITION - Requires a master's degree in physics or equivalent experience, and a strong background in PC-based computers, networking, data-analysis algorithms, data-file structures and electronics. Responsibilities will include interfacing electronics to experiments conducted by the Physics Department at the HFBR using LabView software. Will maintain group web pages, upgrade networks and work with a team developing new instrumentation. Physics Department.