



During a "Partnership in Education" tour of BNL, David Adler, an AT&T physicist at beam line X15 at the National Synchrotron Light Source, shows a model of a "buckyball," a new form of carbon not yet seen in nature, to representatives from industry and educational institutions. Some current AT&T research at Brookhaven involves buckyballs.

— Photos in this issue by Roger Stoutenburgh

Forming New Partnerships To Strengthen Science Education

Executives and educators came to BNL on Monday, July 8, as part of the U.S. Department of Energy's "Partnerships in Education" program. The program seeks to join the expertise of national laboratories, industry and educational institutions to foster science and math education in the U.S.

On hand for tours and an initial discussion of how to meet national educational goals were representatives from: Aarque Management Corporation; Allied Signal Corporation; Aristech Chemical Corporation; Crown Cork and Seal Company, Inc.; EG&G Energy Measurements; General Electric Foundation; New Jersey

Department of Education; Pfizer, Inc.; Texas Instruments, Inc.; Trinity College, Vermont; Warner-Lambert Company; Woodrow Wilson High School, Washington, D.C.; and Young and Rubicam.

Peggy Dufour, Special Assistant to the U.S. Secretary of Energy, acted as moderator for an hour-long conference in which representatives from BNL, industry and academia shared ideas on how to cooperate in achieving national educational goals. BNL's Office of Educational Programs and the Public Affairs Office helped DOE organize the two-day program at Brookhaven.

EPA Levies Fines Against BNL

As the result of an inspection of the BNL site in early March, the U.S. Environmental Protection Agency (EPA) has proposed fines against Associated Universities, Inc., (AUI), which manages BNL for the U.S. Department of Energy (DOE). The fines total more than \$750,000, for alleged violations of RCRA, the Resource Conservation & Recovery Act, and TSCA, the Toxic Substances Control Act. The lion's share of the fines — \$671,400 — is for two similar alleged violations, each assessed at \$335,700 and related to the Lab's Aquifer Restoration Project.

The 18 fines were formally announced by EPA on Tuesday. DOE and BNL are now reviewing EPA's Complaints and Notices of Noncompliance to determine their response.

Said Jane Monhart, Acting Manager of DOE's Brookhaven Area Office, "DOE's policy is to comply with all applicable laws and regulations."

Since BNL is on the EPA's so-called Superfund list, DOE has negotiated an Interagency Agreement with EPA and New York State (NYS) to outline specifically the roles of the agencies involved and the plan for resolving environmental concerns. Currently under review at the headquarters level of the respective agencies, the agreement will ensure that the cleanup will meet all applicable state and federal environmental standards.

"DOE is committed to addressing the issues surrounding the Aquifer Restoration Project," said Monhart. "In fact, that project is included in the next study area to be addressed under the Interagency Agreement. Even though the agreement has not yet been signed by the three parties, we are operating in good faith and want to resolve these issues."

BNL initiated the Aquifer Restoration Project (ARP) in 1986 to remediate the presence of the toxic solvent trichloroethane, or TCA, in the groundwater near the Hazardous Waste Management (HWM) area. The plume is moving towards the site boundary in concentrations up to 40 times the NYS drinking water standard.

Until the early 1980s, TCA was commonly used throughout Suffolk County as a degreaser. But after the discovery that compounds similar to TCA might be carcinogenic, federal and state authorities began regulating the substance, and BNL complied with regulations.

By that time, however, TCA had already leached into the groundwater. By 1986, the plume had traveled over 2,000 feet to the southeast, but had not affected the site's drinking water supply wells and had not reached its boundary.

With the air-stripping technique employed to remove TCA from the groundwater and to halt the plume, water pumped from the ground is sprayed into the air. The chemicals are released into the air, where they are diluted far more easily, and the cleansed water is returned to the ground.

According to Robert Casey, who heads BNL's Safety & Environmental Protection Division, "The project was initiated with the full knowledge of the New York State Department of Environmental Conservation and the EPA. The status of ongoing operations was reported yearly to the

(continued on page 2)

BNL Hosts U.S.-U.S.S.R. Workshop Focusing on Neutron Scattering

The U.S. and the U.S.S.R. updated each other on their respective neutron scattering facilities and exchanged ideas for future collaborations during the U.S.-U.S.S.R. Workshop on Neutron Scattering, held at BNL, on June 18-20.

The workshop drew eight Soviet physicists from the three major neutron-scattering facilities in the U.S.S.R.: the Joint Institute for Nuclear Research (JINR) in Dubna, the Leningrad Nuclear Physics Institute (LNPI), and the Kurchatov Institute of Atomic Energy (KIAE) in Moscow. The workshop was sponsored by U.S. labs with the principal American neutron-scattering facilities: Argonne National Laboratory (ANL), BNL, Los Alamos National Laboratory (LANL), National Institute of Standards & Technology (NIST), and Oak Ridge National Laboratory (ORNL). Exxon Research & Engineering Company (ERRC) was an additional sponsor.

According to John Axe, BNL's Associate Director for Basic Energy Sciences, the Soviets do not have neutron-scattering facilities and instruments that compare to those in the U.S. Nonetheless, the Soviet scientists not only had ideas for sound scientific experiments, but they also informed the Americans of a good supply of specialized isotopes and of good preparation facilities for making the samples needed for neutron scattering.

For experiments, the Soviets had novel ideas for high-resolution neutron

radiography to detect internal structural defects, and for new techniques to produce and use polarized neutron beams to study low-frequency magnetic excitations. So, in the spirit of "from each according to his abilities," informal agreements were discussed in which the Soviets offered what they have in exchange for shared beam time at U.S. neutron-scattering facilities, to carry out experiments not feasible at their own facilities.

In addition BNL and JINR agreed to intercalibrate an instrument called a neutron powder diffractometer, when each lab completes its new version.

Pictured below are: (top row, from left) Alexander Sergeevich Ivanov, KIAE; Laurence Passell, BNL; Roger Pynn, LANL; James Richardson, ANL; Anatoli Mikhailovich Balagurov, JINR; Victor Alexandrovich Somenkov, KIAE; Chun Loong, ANL; Ireneusz Natkaniec, JINR; John Copley, NIST; Benno Schoenborn, BNL; Harold Smith, ORNL; (bottom row, from left) Ralph Moon, ORNL; Sunil Sinha, ERRC; Stephen Shapiro, BNL; John Axe, BNL; U.S.S.R. delegation leader Victor Lazarevich Aksenov, JINR; Alexej Ivanovich, LNPI; Sergei Vladimirovich Malayev, LNPI; and Yurii Mechislavovich Ostanevich, JINR.



Inside Info

John Denes, Computing & Communications Division (CCD), will retire from BNL on July 31, after over thirty years at the Lab.

Denes will be succeeded as Manager of ADP Acquisition by Kurt Fuchel, who is now Head of the User Support Section of CCD. Replacing Fuchel will be Harold Berry, who has been serving as Fuchel's deputy.

ADP stands for Automatic Data Processing. Denes became Manager of ADP Acquisition in 1985, when the position was born in CCD in response

to the burgeoning number and variety of ADP purchases being made at BNL. He became the Lab's primary contact with the U.S. Department of Energy relative to acquiring computing, telecommunications and some publishing equipment.

Dennis E. Joyce joined the Staff Services Division (SSD) in June, as Assistant Manager. In SSD, he oversees the Housing, Travel and Transportation Offices, and support services for conferences and meetings.

Joyce comes to BNL from Los

(continued on page 2)

Round Life Number: 20000 Karen Cordaro, Veterinary Services Assistant

This is another in an occasional series of articles welcoming new employees who have been issued nice round BNL life numbers divisible by 100.

In starting work at the Lab on June 3, Karen Cordaro became something of a minor celebrity — because her BNL life number is 20000.

"Everyone who's seen my life number has made some comment to me about it — but I didn't realize that it was such a big deal when I got it," says Cordaro.

Since Brookhaven began operations in 1947, every new employee has been issued an identification number by the Personnel Records Group in the Personnel Division. Since the first BNL life number was 100, Karen Cordaro is the 19,900th person to be hired by the Lab.

As the most recently hired Veterinary Services Assistant, Cordaro works for Veterinary Services in BNL's Medical Department, taking care of mice, rats, rabbits, dogs, pigs and baboons within the Laboratory Animal Facility. It is headed by Antone Chituk Jr., and is staffed by Oscar Gonzalez, Thomas Kelly and Maryann Kershaw, in addition to Cordaro.

"We have a nice variety of animals, so my work caring for them is interesting," reports Cordaro. "From my experience thus far, I think that the animals here are treated as humanely as possible. I have no problem with using animals in properly conducted research. Right now, there is no substitute for them that will provide the same biological information, which is medically useful to other animals and humans alike."

A native of Shirley and a 1986 graduate of William Floyd High School who now resides in North Shirley with her two cats, Cordaro says she "always wanted to be a veterinarian as a kid. But in high school when I worked summers for vets, I realized that they don't get as close to the animals as do technicians. So my interest changed to doing primary animal care."

From the State University of New York at Farmingdale, Cordaro earned an A.A.S. in veterinary science in 1989 and was a member of the Phi Theta Kappa national honor society. For her major, she completed internships at the Farmingville Animal Hospital, and in the research and pathology division of the Nassau County Medical Center.

Before coming to BNL, Cordaro worked at the Shirley Veterinary Hospital where she was kennel manager and veterinary assistant, and at the Floyd Harbor Animal Hospital where she was head technician. She continues



Karen Cordaro

to work weekends at the Animal Emergency Service of Coram.

Cordaro has been a New York State-licensed veterinary technician since 1989. At present, she is studying to take the written and practical examination to become certified by the American Association of Laboratory Animal Science. In addition, Cordaro is an Advanced Emergency Medical Technician, a certification she puts to use after work as one of the dedicated volunteers of the Shirley Community Ambulance Corps.

"Before, I was working exclusively with companion animals, but I wanted to get involved working with research animals so I could learn more about animals and participate in research — so this job is perfect," says Cordaro. To learn more about the science behind the research, she will take advantage of the Lab's Tuition Refund Program to study microbiology, genetics and other subjects relevant to her work.

A marathon runner, Cordaro says, "I'd like to join the BNL Roadrunners so maybe the next time my name is in the Bulletin, it will be when the race results are published!"

— Marsha Belford

Patent Awarded

Michiko Miura, Medical Department, and her collaborator Detlef Gabel of Bremen, Germany, have been awarded U.S. Patent No. 4,959,356 for synthesizing new boronated porphyrins. These compounds will be used in treating brain tumors by boron neutron capture therapy (BNCT).

BNCT has been proven to have some success in treating forms of cancer, such as glioblastoma multiforme, which do not respond to surgery, radiation therapy or chemotherapy. The patient is injected with a boron-carrying compound that will concentrate in the brain tumor. Boron is prevented from entering the bloodstream by the normal action of the blood-brain barrier. A section of the patient's head is then irradiated with a beam of thermal neutrons, which are captured by the boron in the tumor.

The irradiated boron emits cell-killing alpha and lithium particles that can travel only about the distance of one cell. Thus, only the cancerous cells are destroyed. Healthy cells that contain boron remain essentially unaffected as long as they are not exposed to neutron irradiation.

In treating brain tumors by BNCT, it is vital that the boron-containing drug accumulate at levels higher than 30 micrograms of boron per gram in the tumor, but not in the blood and normal brain tissue. In addition, the drug should have minimal chemical toxicity.

Porphyrins and hydroporphyrins are naturally occurring molecules found in plants and animals. They have an affinity for various types of cancers and are retained in tumors for a period extending from days to months. By inventing a way to combine them with boron, the researchers bring these advantages to BNCT.

Tests of the new boronated porphyrins on animal tumors started in 1988.

At a certain optimized dose, one of these compounds in particular has delivered between 40 to 60 micrograms of boron per gram to subcutaneous tumors, which are just below the skin, while leaving the boron concentration in the normal brain tissue at a negligible level. Also, the compound delivered four times more boron to the tumor than to the blood, a significant improvement over the 1:1 tumor to blood ratio achieved by the compound currently being used in Japan.

Toxicity studies showed that this optimized dose caused some initial effects on blood components and liver enzymes, but most of these appeared to subside after six days. Work is continuing on this promising compound, and therapeutic experiments have been initiated.

EPA

(cont'd)

EPA through the Site Environmental Report.

"The project was operated for four years," continued Casey, "until pumping was suspended in March 1990 at the request of New York State, pending additional analysis to confirm that the project was fully containing the plume and to determine if air permits were necessary. Since the project began operating, the concentrations of TCA in the groundwater have been considerably reduced, and the progress of the plume toward the site boundary had been curtailed. The process has been working to remediate the problem. Because EPA had knowledge of this project, the proposed fines were reduced 40 percent for 'good faith' on BNL's part."

Both ARP-related fines are associated with the pumping of the contaminated groundwater and eventual discharge to a recharge basin at the beginning of the plume, near the HWM area.

EPA asserts in one count that a RCRA permit was necessary for this activity. In the second count, the issue involves whether groundwater could be discharged back to the soil after it was pumped up without spraying. This was the practice in the winter to avoid freezing the water in the piping system.

The balance of the fines, ranging from \$250 to \$18,000, primarily relates to issues involving labeling, storage, record keeping and inspection of polychlorinated biphenyls (PCBs) or other hazardous wastes. BNL has been instituting procedures to address these issues over the last several years.

The Laboratory and DOE will make separate responses to the EPA complaints. It is also expected that meetings with EPA will be requested for further discussion of the issue.

Inside Info

(cont'd)

Alamos National Laboratory, where he was Manager of Travel Services. Prior to his employment at Los Alamos, Joyce worked from 1977-85 for the Air Transport Association of America, as Manager, Military and Government Passenger Services.

Irving Montanez, an assistant specialist in the Alternating Gradient Synchrotron Department, this month began a two-year term as chair of SIGForth, the 600-member Special Interest Group on the Forth programming language of the international organization, the Association for Computing Machinery. SIGForth focuses on the development and refinement of concepts, methods and techniques needed by Forth users.

Reports Available

The following reports are available to Laboratory staff and affiliates of DOE, AUI and NRC. Others may purchase the reports from the National Technical Information Service, U.S. Department of Commerce, 5285 Port Royal Road, Springfield, VA 22161. Staff members should call the designated contact.

BNL-52274

Contact: J. Sillas, Ext. 2345. Brookhaven Highlights 1990. Edited by: M. Rowe

NUREG/CR-5637

BNL-NUREG-52260

Contact: A. Fort, Ext. 2114. Generic Risk Insights for Westinghouse and Combustion Engineering Pressurized Water Reactors. R. Travis, J. Taylor, A. Fresco and J. Chung

BNL-52264

Contact: B. Cox, Ext. 4207. Brookhaven National Laboratory Site Environmental Report for Calendar Year 1989. R.P. Miltenberger, B.A. Royce, S.S. Chalasani, D. Morganelli and J.R. Naidu

P-Cad User Group

The next P-CAD User Group meeting will be held on Thursday, July 25, at 9:30 a.m., in the seminar room of Bldg. 515, Computing and Communications Division.

Henry Diaz of the Physics Department will give a presentation on writing keyboard macro files. Other topics will include an update on release 5.0, information on maintenance discounts, and news about security keys.

Coffee will be served, and all are invited to attend. For more information, call Pam Mansfield, Ext. 7286.

Catch a glimpse of

GLANCE

playing in Berkner Hall
weekdays, 11:30 a.m. to 1:30 p.m.
Show changes every Tuesday.

Speakers Bureau

The following speakers have given talks on behalf of the Laboratory:

Joseph Indusi, DNE: Rotary Club, Ossining, NY, "Nuclear Power," January 9.

Raymond Mayo, PE; **William Sells**, S&EP; **Lawrence Toler**, Phys.: Career Day at Brookhaven Learning Center, "Careers at BNL," January 16.

Rosario Enriquez-Leder, AGS: Susan B. Anthony Day at Glen Cove Middle School, "Careers for Women in Science," February 15.

Meyer Steinberg, DAS: Great Neck Chamber of Commerce, "Who Needs Their Oil, We Have Coal!" February 21.

Rudy Damm, AGS: Career Day at Mattituck High School, "Careers in Physics and Engineering at BNL," March 8.

Donald Gardner, Phys.: Harborfields High School, Careers Awareness Program, "Careers in Engineering," Mar. 13.

R. Christian Anderson, Ret.: C. W. Post College Foreign Student Exchange,

"The Promise and Peril of Nuclear Energy," March 25.

Conrad Foerster, NSLS: Commack H.S. Careers & Technology Workshop, "Careers in Science at BNL," Mar. 25.

Janet Tempel, DO: NY Association for Pupil Transportation — Suffolk County School Bus Safety Poster Contest, Judge, April 5.

Scott Willenbrock, Phys.: East Hampton High School 9th Grade Regents Students, "The Origin of Matter," April 11.

Scott Willenbrock, Phys.: Packer Collegiate Institute, Brooklyn, NY, "The Origin of Matter," April 17.

Kathleen McIntyre, S&EP; **Susan Pepper**, DNE; **Carol Salata**, Chem.: Career Day at Whitestone Junior High School, "Careers in Science for Women," April 26.

Raymond LoPresti, Reactor: Career Day at Central Islip High School, "Careers in Science at BNL," May 16.

Michael Creutz, Phys.: Nassau County Science Explorations, "From Boats to Antimatter," May 21.

Special Invitation To Summer Visitors

Students and other summer visitors are invited to enjoy a trip to Six Flag's Great Adventure, in New Jersey, on Saturday, August 3. The modest cost of \$25 includes bus transportation on a luxury air-conditioned coach; on-board breakfast; admission; and six hours of fun at the amusement park and the safari.

Sponsored by the Office of Educational Programs, the bus will leave from the Brookhaven Center promptly at 7 a.m. Seats are limited and will be allotted on a first-come, first-served basis. To reserve your seat, first call Ext. 3316 and then bring your \$25 — cash only — to Renée Flack, Bldg. 490, no later than Wednesday, July 24.

Golf Tournaments

The BGA will hold its fourth golf tournament of 1991 at the Swan Lake Golf Course on Tuesday, July 30, with a noon start. Contact tournament starter Bob Lofaro, Ext. 7191, to schedule a tee-off time. Greens fee are \$23; riding carts are available for \$25.

Seventy-one BNL golfers teed up at the Bethpage outing on June 28. Winners from each group were:

Flight	Low Gross	Low Net
A	John Usher	John Dioguardo
B	Joe Mayeski	Don Gates
C	See-Meng Wong Dennis Hall	Jae Jo
D	Bill Cahill	Tom Dilgen
E	Ernie Tucker	

Closest to the Pin Awards were won by Joe DePace and Bob Lofaro, and Mike Buckley won the Longest Drive Award — twice!

In the Four-Person Scramble at the Timber Point golf course on July 1, 17 teams teed off. Winners from the "A" and "B" flights were:

Flight	First Place	Runners-Up
A	Bob Mills Steve Heald Ron Weider Frank Zafonte	Mike Losquadro Joe DePace Don Gates Bob Schuman
B	Ron Webster Jay Adams Barry Karlin Bob Sabatini	Bryan Calwick John Dabrowski Wes Buxton Howard Vetter

In Memoriam

Niels Koudal Jr., a technical specialist at the National Synchrotron Light Source (NSLS), died in his sleep on July 10. He was 62. Following a memorial service and cremation, Koudal's remains were interred at the Calverton National Cemetery on July 15.

Koudal started at the Lab in June 1978 as a technician in the Alternating Gradient Synchrotron Department. After being promoted to a principal technician in October 1979, he transferred to the NSLS in October 1983 and was named to his last position. Within the NSLS Controls & Diagnostics Group, he worked on diagnosing problems within the electron rings.

A resident of Port Jefferson Station, Koudal is survived by his daughter Karen Colgan of Groton, Connecticut, and her mother Evelyn Koudal, as well as his son-in-law Stephen Colgan, and two grandsons, Christopher and Patrick Colgan.

BROOKHAVEN BULLETIN

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Scoop of the Week

During the summer, if you wish to enter the fourth annual Scoop of the Week contest, rush your news and feature scoops to the Bulletin, Bldg. 134, or call Ext. 5053.

If you scoop the Bulletin's informed sources and a story based on your idea is published, you'll win an official certificate for a scoop of your favorite cold dessert, compliments of Service America Corporation and redeemable at the Cafeteria or ice cream truck.



Service Awards

The following employees celebrated BNL service anniversaries during the month of June 1991:

Forty Years

Seymour J. Lindenbaum.....Physics
Elinor F. Norton.....Chemistry
Alfred P. Wolf.....Chemistry

Thirty-Five Years

Anthony J. Romano.....Nuc. Energy
Richard Skelton.....AGS
Eugene V. Weinstock.....Nuc. Energy

Thirty Years

Karl L. Abrams.....Comp. & Comm.
Carl S. Avent.....Accel. Dev.
Michael H. Brooks.....Reactor
Leonard N. Chimienti.....AGS
Katherine S. Conkling.....Medical
John J. Dabrowski.....NSLS
Ernest Heppner.....AGS
Fred Hohmann.....Fiscal
Jadwiga Kycia.....Biology
Anthony Natoli Jr.....Comp. & Comm.
Pat Taylor.....App. Science

Twenty-Five Years

Richard J. Becker.....Chemistry
George W. Cornish Jr.....Accel. Dev.
Laurie T. Pollard.....Cen. Shops
John S. Read.....Plant Eng.
Stanley L. Ulc.....Physics
Rudolf Zantopp.....Saf. & Env. Prot.

Twenty Years

John P. McNeil.....Accel. Dev.
Daniel N. Slatkin.....Medical

Ten Years

William H. Adams.....Medical
Pauline M. Gagnon.....Plant Eng.
Andrew W. Moran.....Sfgrds. & Sec.
Theresa J. Diaz.....Sup. & Mat.

Equipment Demo

Phoenix Contact, a manufacturer of rail and printed-circuit terminal blocks, will be featured at an "Infomobile" in the Berkner Hall parking lot on Monday, July 22, from noon to 3 p.m. All are invited to stop by to become familiar with Phoenix's interconnect technology.

IBEW Meeting

Local 2230, IBEW, will hold its regular monthly meeting on Monday, July 22, at 6 p.m., in the Knights of Columbus Hall, Railroad Avenue, Patchogue. There will also be an afternoon meeting at 2 p.m. for shift workers, in the Union office at 31 Oak Street, Patchogue. On the agenda will be regular business, committee reports, the president's report, and the report of the Negotiation Committee.

Arrivals & Departures

Arrivals

Michael V. Cohen.....Plant Eng.
Alejandro V. Levy.....Chemistry
Frank J. Redding.....Con. & Proc.
Thomas Roser.....AGS

Departures

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

Robert D. Cunningham.....Cent. Shops
Daniel A. Fischer.....Light Source
Octavian Iancea.....Cent. Shops
Eugene A. Kern.....Cent. Shops
Albert L. Velasco.....Cent. Shops

Suggestion of Savings

Who among us has not made an extra copy, "just in case," or copied both sides of a two-sided document — on two single sheets of paper?

Susan Pepper, a research engineer in the Department of Nuclear Energy, recognized that each of these acts is a small loss — in terms of both Laboratory costs and the environment. As someone who has "always been interested in the environment," she also recognized that all the small losses that occur each day can add up.

To cut down on these losses, Pepper suggested placing labels on copiers to remind users to "Make only required number of copies!" and "Copy on BOTH sides when practical!" If people follow these two suggestions, the amount of paper used in BNL copiers will be reduced, saving Laboratory funds and some precious trees. So, for her idea, Pepper was awarded \$25 by the Employee Suggestion Program.

Despite these savings, employees are reminded that the most economical means of obtaining multiple copies remains the Quick Copy Service of the Photography & Graphic Arts Division.



Get in the Swimarathon '91 For the American Cancer Society

On Saturday, August 10, see how far you can swim in the Lab pool and how much money you can raise for the American Cancer Society (ACS), during the second annual BNL Swimarathon sponsored by the Brookhaven Employees Recreation Association (BERA).

From 9 a.m. to 9 p.m. that day, swimmers may put in as many laps as they can — and take breaks between sets of laps. Since Swimarathon '91 is not a race or an endurance test, all participants may go a good distance to raise money for a worthy cause by swimming discontinuously as much as they wish over those 12 hours.

The BNL Swimarathon is open to BERA members 18 years of age and older, both individual and team swimmers. If enough swimmers from one department, division or group wish to sign up as a team, they may do so.

In turn, each swimmer or team will be asked to sign up sponsors who will pledge money per lap. The total donation that each sponsor makes based on the number of laps swum will be a tax-deductible contribution to the ACS. Flat donations are also welcome and tax deductible.

In addition to swimmers and sponsors, Swimarathon '91 needs volunteers to check in swimmers, count laps, serve the free food and refreshments, and keep the music playing.

For their in-the-water or on-land efforts, all participants will be awarded commemorative T-shirts, donated by the ACS.

To sign up to swim or to help during the BNL Swimarathon, use the coupon below or the forms available at the pool, Bldg. 478; the BERA Sales Office, Berkner Hall; or the Recreation Office, Bldg. 185. Send completed registrations to M. Kay Dellimore, Recreation Supervisor, Bldg. 185. Sponsor sheets will then be sent to each registered swimmer.



BNL Swimarathon '91

Sponsored by the Brookhaven Employees Recreation Association to benefit the American Cancer Society

Name _____ Life No. _____

Department/Division _____ Bldg. _____

Ext. _____ Fax _____ Home tel. (optional) _____

T-shirt size (circle one): small medium large extra large

Swimmers — I am signing up to swim laps as a(n)

[] individual [] team member _____ name of team

Helpers — I volunteer to help with

[] check-in [] lap counting [] refreshments/entertainment

Return form to: M. Kay Dellimore, Recreation Supervisor, Bldg. 185.

Cafeteria Menu

Monday, July 22
 Soup: Cream of spinach .75/.95
 Entree: Chicken chow mein w/1 veg. 3.10
 Entree: Fried flounder plate 3.10
 Fitness: Pasta primavera 3.10
 Carvery: Hot pastrami sandwich 2.85
 Grill: Tuna melt w/cole slaw & pickle 2.85

Tuesday, July 23
 Soup: Three bean .75/.95
 Entree: Beef goulash w/1 veg. 3.10
 Entree: Chef's choice 3.10
 Fitness: Quiche Lorraine 3.10
 Carvery: Hot roast beef sandwich 2.85
 Grill: 3-D burger w/cole slaw & pickle 2.85

Wednesday, July 24
 Soup: Star-spangled tomato .75/.95
 Entree: Southern-fried chicken 3.10
 Entree: Western BBQ ribs 3.25
 Carvery: Virginia ham sandwich 2.85
 Grill: Philly cheesesteak w/fries & cole slaw 3.10

Thursday, July 25
 Soup: Vegetable .75/.95
 Entree: Personal pizza 3.10
 Entree: Beef fajitas w/1 veg. 3.10
 Fitness: Chicken cacciatore w/1 veg. 3.10
 Carvery: Hot corned beef sandwich 2.85
 Grill: Reuben w/cole slaw & pickle 2.85

Friday, July 26
 Soup: New England clam chowder .75/.95
 Entree: Broiled steak dinner w/1 veg. 3.65
 Entree: Spaghetti w/meatballs 3.10
 Fitness: Baked fish w/herbs & 1 veg. 3.10
 Carvery: Hot turkey sandwich 2.85
 Grill: 2 chili dogs w/cole slaw & pickle 2.85

Breakfast w/coffee, 7:30 - 10:30 a.m. 2.65
Mon.: 2 eggs, bacon, one pancake, home fries
Tue.: Western omelet, home fries, toast
Wed.: Spanish omelet, home fries, toast
Thu.: 2 eggs, bacon, cheese on croissant, fries
Fri.: French toast, 2 eggs, bacon, home fries

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 Personnel Division lists new placement notices. The purpose of these listings is, first, to give employees an opportunity to request consideration for themselves through Personnel, 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 (282-7744), for a complete listing of all openings.

The vacancies listed below have been exempted by the Director's Office from the current freeze on open requisitions.

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

MECHANICAL ENGINEER - Part-time position for a Ph.D. level mechanical engineer with a minimum of five years' experience in multi-phase explosion phenomena. Specific knowledge and experience in experimental/analytical research dealing with severe accident issues in nuclear reactor safety is required. Knowledge of the gas dynamic, combustion-related phenomena/mechanisms associated with the direct heating of reactor containments would be an asset. Apply to: J. Boccio or W.T. Pratt, Department of Nuclear Energy.

LABORATORY RECRUITMENT - Opportunities for Laboratory employees only.

DD 5522. ADMINISTRATIVE/ACCOUNTING POSITION - Requires a BA degree in business administration or equivalent work experience and familiarity with Laboratory accounting, as well as IPAP, JCARS, Travel and JV systems. Will independently handle all functions associated with recharges for Labwide computer-related services, maintain and reconcile commitment data, and assist in budget/expense control activities. Must be willing to become familiar with computer database applications and the use of personal computers in administrative processing. Computing & Communications Division.

OPEN RECRUITMENT - Opportunities for Laboratory employees and outside applicants.

NS 0637. TECHNICAL POSITION - Requires three to five years' experience in mechanical and/or instrument maintenance, excellent communication skills and familiarity with computers. Responsibilities include preplanning and coordinating maintenance and modification activities, including procedure development and preparation of work packages. Must be able to obtain and maintain a security clearance. Reactor Division.

NS 0634. PLANNING/ESTIMATING POSITION - Requires BS in engineering or extensive experience (seven to ten years) in facility maintenance. Will plan, schedule and coordinate preventive and corrective maintenance, implement facility modifications and develop procedures. Requires excellent communication skills and familiarity with computers. Must be able to obtain and maintain a security clearance. Reactor Division.

LL 3189. ENGINEERING POSITION - Requires MSME degree or equivalent. Must have a back-

ground in combustion, heat transfer, fluid dynamics, emissions analysis and HVAC technology. Proven track record in technical writing, reports and technical papers is required. Presentation skills and public speaking ability are also desired. Department of Applied Science.

LL 8814. PROGRAM/ANALYST POSITION - Requires a bachelor's degree in computer science or equivalent with a minimum of five years' experience in the development of relational databases on DEC VAX and PC. Must possess excellent communication skills, as well as hands-on programming experience with FORTRAN and BASIC. Working knowledge of VAX DCL, PC Netware, MS/DOS, DBase IV, WordPerfect, Lotus 1-2-3, and RBase is necessary. Must be familiar with IBM AT, PS/2 and HP Laserjet printer. Will be required to maintain, document and develop database applications on the VAX, as well as provide extensive user support on PC software, hardware, and network installation and troubleshooting. Medical Department.

Motor Vehicles & Supplies

90 ESCORT LX - 5-spd., white, blue int., 38 mpg, excel. cond., \$7,500. Ext. 4806 or 567-8063 after 5 p.m.

88 HONDA ACCORD DX - 4-dr., 5-spd., white, new tires, excel. cond., 48k mi., ext. warr., \$8,400. Ext. 3428 or 878-6007.

87 TOYOTA COROLLA GTS - twin cam, new brakes, exhaust, am/fm cass., 5-spd., ac, p/b, p/s, excel. cond., \$5,600. Marie, Ext. 2907 or 399-3401.

86 JEEP CHEROKEE PIONEER 4x4 - 5-spd., ac, am/fm cass., 130k hwy. mi., excel. cond., \$4,750. Henry, Ext. 4547 or 727-7227.

86 CHRYSLER NEW YORKER - 4-cyl., turbo, 4-dr., white, leather int., voice alarms, digital dash, more, mint, \$6,000. Jim, Ext. 4040 or 289-0876.

85 TRANS AM - T-top, loaded, new tires & brakes, burgundy, very reliable, must see, mint cond., \$6,000 neg. Sharon, 698-2798.

84 NISSAN KING CAB PICKUP - 5-spd., diesel, cap, p/b, p/s, ac, 100k mi., \$4,000. Richard, 929-3997.

84 SUBARU GL - 4-dr., some rear damage, 62k mi., 30 mpg hwy., make offer. Ext. 3784 or 582-3163 after 7 p.m.

84 BUICK REGAL - 40k mi. on new Goodwrench engine, new trans. & exhaust, ac, all power, \$2,000. Frank, Ext. 4284 or 698-1176.

83 NISSAN SENTRA - 4-dr., 5-spd., 89k mi., 35 mpg, v.g. cond., ask, \$1,400. Ext. 7505 or 689-8605.

82 GMC SIERRA - diesel, 2.5k mi., V-8, 6.2 litre, new tires, \$2,800 neg. Ken, Ext. 5110.

82 YAMAHA XS400HS MOTORCYCLE - 6k mi., many accessories, classy, \$800 neg. 878-2702 after 6 p.m.

82 PONTIAC J2000 - high mi., 4-cyl., a/t, 4-dr., excel. body & int., runs OK, \$500 or best offer. John, Ext. 3302 or 924-0651.

81 FORD ESCORT WAGON - a/t, low mi., clean, runs well, \$800. Bill, Ext. 3531 or 473-3171.

80 CHEVY VAN - rebuilt 3.8, V-6, good working van, \$950. Ext., 4672 or 929-4753.

80 MERCURY MARQUIS - 2-dr., V-8, red/gray, a/t, p/s, p/b, p/w, good cond., \$1,500. Ext. 2949 or 427-2435.

80 CHEVY MALIBU - 2-dr., V-6, runs well, \$700. Rich, 744-8910 after 6 p.m.

77 VW RABBIT - a/t, am/fm, sunroof, 120k mi., gas, runs well, \$300. Bruce, Ext. 4332 or 286-2114.

74 CHEVY TRUCK - 29k orig. mi., good rubber. Ira Still, 475-8073.

73 CHEVY MALIBU - 2-dr., a/t, p/s, p/b, am/fm cass., 70k mi., reliable, needs muffler, asking \$500 or best offer. Bawa, Ext. 3499 or 331-8128.

73 FORD MUSTANG MACH 1 - 351 Cleveland, many new parts, must see. Ron, Ext. 3713.

70 & 69 VW KARMAN GHAS - complete w/engines, good for restoration or parts, good glass, you pick up, any reas. offer. Henry, Ext. 5110.

69 CHEVY RALLY SPORT - classic car, racing cam, Holly 4-carb., \$3,400. Jim, Ext. 3372 or 821-0250.

66 PONTIAC GTO - conv., red w/black top, 389 ci., 4-spd., eng. rebuilt 8/90, asking \$4,500. Charlie, 286-2892.

TIRES - Roadhandlers by Sears, blackwalls, 185-80SR13, set of 4, \$80. Ken, Ext. 5110.

CAR RADIO - fm, good cond., \$15. Susan, Ext. 7716.

Boats & Marine Supplies

20' CLAMBOAT - w/cabin, self-bailing, teleflex steering, fiberglass over wood, excel. cond., \$750. 563-6680.

19' BAYLINER BOWRIDER - 1987, 125-h.p. Force, full canvas, low hrs., excel. cond., \$6,000. Ext. 2642.

18 1/2' GLASTON BOWRIDER - fiberglass, full canvas, trailer, 75-h.p. Evinrude ob., excel. cond., \$2,800. 369-0432.

18' HOBIE CAT - 1990, w/1990 trailer, used only 4 times, \$4,500 firm. 473-1456.

18' CATAMARAN SLOOP SCL-CAT - trailer, beach wheels, extras, \$1,200. Steve, Ext. 4008 or 821-0686.

17' CHRIS CRAFT - 60-h.p. Evinrude, CB radio, Gator tilt trailer, v.g. cond., asking \$1,700. Bill, Ext. 3859.

16' BOWRIDER - fiberglass, 65-h.p. Evinrude, tilt trailer, p/winch, \$1,800. Jim, Ext. 3372 or 821-0250.

14' HOBIE CATAMARAN - jib, sails & boat all in excel. cond., \$1,000. 878-1178.

14' HOBIE CATAMARAN - roller reefing jib, trailer, v.g. cond., \$1,400 or best offer; kayak, Klepper double, f/g, \$500. Ext. 7657 or 298-9560.

MARINE BATTERIES - two, 12-volt, \$15 ea. Ext. 7222.

WINDSURFER - Vinta beginner's board, 6.0m & junior rigs, two booms and masts, \$375. 878-0898.

Furnishings & Appliances
 AIR CONDITIONER - GE, 6,000 Btu, brand-new, 20" wide, \$225. Ext. 2267 or 395-6520.

AIR CONDITIONERS - four, 5,000, 6,000, 14,000 and 21,000 Btus, all excel. cond. Frank, Ext. 3120.

ANTIQUÉ DRESSER - \$395; chest of drawers, \$40; shower door, 30", \$40; Bunn commercial coffee maker, \$50. Henry, Ext. 4547 or 727-7227.

ANTIQUÉ HEADBOARD - brass, queen size; pine end tables; brass-look hanging lamp; china, service for eight. Roberta, 736-0416.

BASE CABINET - w/sink & faucet, excel. cond. Tony, 698-9274.

CHEST OF DRAWERS - \$30. 928-6930.

LAWN CHAIRS - classic metal, blue, brand-new, never used, set of 4, \$70. Ext. 2267 or 395-6520.

DINING ROOM - table, hutch, 6 chairs, \$800 or best offer; microwave, 1.25 cu. ft., w/cart, light oak, \$500 or best offer. Ext. 5265 or 736-1525.

CRIB - brown, spindle-type, converts to child's bed, w/mattress, hardly used, \$150. 929-0745.

KITCHEN SET - Formica, oak table, 2 benches, 2 swivels, vinyl seats & backs, extra cushions, excel. cond., \$425. Paul, Ext. 3308.

PORCH CHAIRS - 2, rattan w/new cushions, excel. cond. Pat, Ext. 2452.

REFRIGERATOR - GE, white, like new, 1 yr. old, must see, \$150. Andy, Ext. 2907 or 289-1755.

SOFA BED - 1 yr. old, multicolor neutrals, orig. \$800, asking \$500. Maryellen, Ext. 2979.

TV CART - white, \$18; two 12" box fans, \$8/ea.; two-head track-lighting assembly, white, \$15. Patricia, Ext. 2907.

Tools, House & Garden

PICNIC TABLE - 60" round, 2 bench chairs, umbrella w/base, \$75/all. Carl, Ext. 5270.

WINDOW - vinyl, double hung, full screen, 32"x37 1/2". Tony, 698-9274.

Sports, Hobbies & Pets

BICYCLE - girl's, 14", \$25. Peter, 5634.

BICYCLE - woman's, 26", 10-spd., blue, \$60; Jolly Jumper double stroller, \$60. Henry, Ext. 4547 or 727-7227.

FINCHES - many varieties, common and select, pairs or singles, also cages, almost new, must see. Kelly, 744-3069.

FISHING ROD - 7 1/2', custom-made, lamiglass, \$25. 689-9234.

JACK LALANNE MEMBERSHIP - for Bally's, lifetime gold card, must sell, \$600. Jim, 878-2425 days.

PAINT BALL - equipment & supplies. Joe, Ext. 5010 or 732-6190 after 4:30 p.m.

Audio, Video & Computer

COMPUTER - IBM compat., w/80287 co-processor, 30 meg hard drive, 2 floppies, DOS 3.3, \$425. 751-8240 eves.

HOME THEATER - complete, w/projection TV, Dolby surround speakers, \$980; Amstrand Laptor 640DD w/2 drives, 2,400 moderm. 929-6646.

MONITOR - Princeton MAX-12 TIL, amber, w/card, \$50. Chris, Ext. 2326.

MOVIE CAMERA - Canon 1014 Super 8mm electronic, 111.4 7-70mm macro zoom lens, lap dissolve, remote control, soft case. 286-1253.

Miscellaneous

BABY'S CHANGING TABLE - Little Tykes, portable, \$20. 563-6680.

FOX JACKET - woman's, size medium, \$125. Carl, Ext. 5270.

FUR COATS - raccoon, 3/4 length jacket, w/hood, size 8, \$200; Spanish reversed lamb, coat, size 8-10, \$100. Karen, 286-2114.

LIGHT TABLE - Bishop Graphics model #3201, self-standing, 25 1/2" x 37 1/2" surface area, \$100. Bob McCarthy, Ext. 5265.

MOVING SALE - cherrywood curio; teak bookcase; brass fireplace set; portable gas grill; fine china, more. Lisa, Ext. 5867 or 757-5962.

TIGER PAINTING - framed, \$10; car jack, \$10; weed wacker, \$30; twig basket, \$20; sleeping bag, \$10; desk lamp, \$7. Kathy, 744-2203.

VACATION CERTIFICATE - round-trip cruise for 2, Ft. Lauderdale to Freeport, Bahamas, 4 nights, hotel accomm., unscheduled. Denise, 724-5298.

Free

KITTENS - long-haired, gray, white & black, cute & adorable. 732-1648.

WINDOWS - aluminum storm & screens, used; dehumidifer, old, works well. Dan, Ext. 4798.

Yard Sale

CENTER MORICHES - July 20-21, 9 a.m.-5 p.m., 8 Howell Place.

SELDEN - July 21, 10 a.m.-7 p.m., many amazingly good buys will be found here, 112 South Evergreen Drive. Joe Nubile, Ext. 5010.

PATCHOGUE - July 20-21, 10 a.m.-4 p.m., something for everyone, 23 Thorburn Ave., off Park St., off S. Ocean.

Lost & Found

FOUND - #3 wood blue cover for golf club. Tom, Ext. 4563.

Real Estate

Real Estate advertised for sale or rent is available without regard for the race, color, creed, sex or national origin of the applicant.

For Rent

BROOKHAVEN - room w/full use of house, large l/r, den, kitchen w/d, d/r, w/d, \$350/mo. Sidney, 286-4028.

BROOKHAVEN HAMLET - 3-bdrm. house, country lane, 2 baths, lg. kit., avail. immed., \$900/mo. + util. & sec. Jeb, Ext. 7607, page 0830, 286-0204.

EAST PATCHOGUE - 3-4 bdrm., furn., gas heat, fp, piano, garden, good neighborhood, fenced, 1 acre, walk to Bellport Village, 20 min. to Lab, avail. 9/1 for 1 yr., \$850/mo. Vera, 286-3903.

HAMPTON BAYS - 2-bdrm. apt., fully furn., color TV, cable, microwave, l/r, dinette, kitchen, sleeps 4, use of igp, priv. ent., from 7/22-9/2, \$1,200/mo. incl. util. Ann or Charles, 728-1931.

MATTITUCK - 2-bdrm. ranch, fam. rm., l/r, d/r, deck, full bsmt., garage, w/d, \$850/mo. + util. & sec. Dave, Ext. 5460.

PATCHOGUE VILLAGE - large 1-bdrm. apt., sep. ent., ground level, use of yard, bath, full kitchen, walk to town, avail. 7/1, Ext. 4087 or 289-7902.

PORT JEFFERSON - spacious 4-bdrm. ranch, eik, l/r, d/r, fam. rm. w/tp, all appl., fin. bsmt., 2-car gar., avail. Sept., no pets, \$1,100/mo. + util. Ext. 2920 or 473-5092 after 5 p.m.

WADING RIVER - 1-bdrm. apt., 10 min. to Lab., all new, walk to priv. beach, parking, \$595/mo. + 1 mo. sec. includes all. 929-4342.

PALM HARBOR, FL - 3-bdrm. townhouse, 1 1/2 baths, carpeted, 5 appl., cac, screened patio, lake view, gar., pool use, no pets, lease. Ext. 3558.

SPRING HILL, FL - large 2-bdrm. house on Lake Theresa, 2 baths, \$650/mo.; smaller 2 bdrm., 1-bath house avail., \$350/mo., Deltona community near attractions. Ext. 4530 or 261-2719.

VERO BEACH, FL - furn. condo, adult community, golf course & lake views, near pool & recreation facilities, close to ocean beaches, avail. Nov., Dec., Jan., 2-mo. min. 473-1578.

KITTY HAWK, NC - 2 bdrm. furn. condo, sleeps 6, walk to guarded beach, golf, fishing, VCR, cable, \$500/wk. Jeanne, Ext. 7742 or 281-7568.

CLAREMONT, NH - 2-bdrm. condo, located between VT and NH factory outlets, 10 min. to Lake Sunapee, 1 hr. to Lake Winnepesaukee, \$300/wk, \$225/wkend. Frank, Ext. 7749.

HILTON HEAD, SC - 2-bdrm. condo, sleeps 6, fully furn., 2 baths, pool, beach, golf nearby, May-Sept., \$450/wk. Guy, Ext. 3147 or 689-5378.

HILTON HEAD, SC - Beachwalk Villa, 2-bdrm. townhouse, 2 1/2 baths, pool, short walk to beach, golf, tennis nearby, furn., sleeps 6, \$575/wk thru Aug. Bill, Ext. 2385 or 331-1203.

For Sale

CENTER MORICHES - 3,300 sq. ft. bldg., Main St., 3 rental units, good cond., parking, nice location. 878-1178.

EAST MARION - beautiful 1 acre bldg. lot, adjacent to Greenbelt, walk to Sound. 325-0447.

HAMPTON BAYS - 3-bdrm. M/D ranch, deck, 1/2 acre, wooded, fp, oak floors, igp, wood deck, close to ocean, bay, schools, town & more, \$165,000. Ann or Charles, 728-1931.

MEDFORD - Blue Ridge, 3-bdrm. condo, l/r, d/r, galley kit., util. rm., 1 1/2 baths, rec., in/out pool, tennis, golf, price neg. Ext. 4853 or 698-4372.

N. SHOREHAM - 3-bdrm. L-shaped ranch, d/r, sunken l/r, eik, oak floors, fin. bsmt., workrm., 2-car gar., park-like 1/2 acre, igs, \$179,000. Mike, Ext. 5972 or 744-4579.

RIDGE - 3-bdrm. townhouse, 1 1/2 baths, cac, w/w, all appl., encl. redwood patio, storage rm., attic, low monthly maint., 5 min. to BNL, \$80's. Mary, 924-4328.

RIDGE - 4-bdrm. high ranch, 2 yrs. old, 2 baths, extra-large master bdrm., skylights, ceramic tile, deck, possible mother/daughter, 1 acre, 5 min. from Lab., \$168,000. 924-9049.

SHOREHAM - 3-bdrm. ranch, 1/2 acre, SWR SD, low taxes, large eik, d/r-l/r, den, 2 baths, lg. storage, cent. ac & gas heat, all appl., prof. landscaping, \$145,000. Ext. 2833 or 744-7172.

SHOREHAM - N25A, SWR SD, low taxes, 4-bdrm. Col., 2 1/2 baths, 2-car gar., energy eff., encl. porch, fenced yard, close to schools, shopping, 10-min. to Lab., \$165,000. Rich, 744-0960.

SHOREHAM - 3-bdrm. brick Cape, eik, den, playroom, gar., full bsmt., 1 1/2 baths, remodeled, conven. loc., SWR SD, \$135,000. Carol, Ext. 3315 or 744-7493; or Janet, Ext. 2345 or 929-3910.

SHOREHAM - 3-bdrm. ranch, eik, den, gar., full bsmt., 1 bath, 1/3 acre, oak floors, ceiling & attic fans, igs, all appl., convenient location, SWR SC, \$127,000. Ext. 5097 or 744-9022.

SHOREHAM - N25A, 4 bdrm., large living area, 2 baths, bsmt., gar., porch, 10 min. to lab., beach access, for sale or rent. Hans, Ext. 3737.

SPEONK/WESTHAMPTON - 2-bdrm. mobile home, 14'x60', fam. park, w/d, shed, bay window in l/r, \$38,500. Dave, Ext. 5460.

PORT ST. LUCIE, FL - 2-bdrm. double-wide mobile home, adult park, 2 baths, shed, off U.S. #1, lot rent, \$209, includes all facil., pool, golf, lawn maint., \$25,000. 281-3515.

Wanted