BROOKHAVEN BULLETIN
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BROOKHAVEN NATIONAL LABORATORY

At BNL: Rare Opportunities to Learn About Accelerators, Nuclear Chemistry

Nuclear Chemistry Classes Now in Session

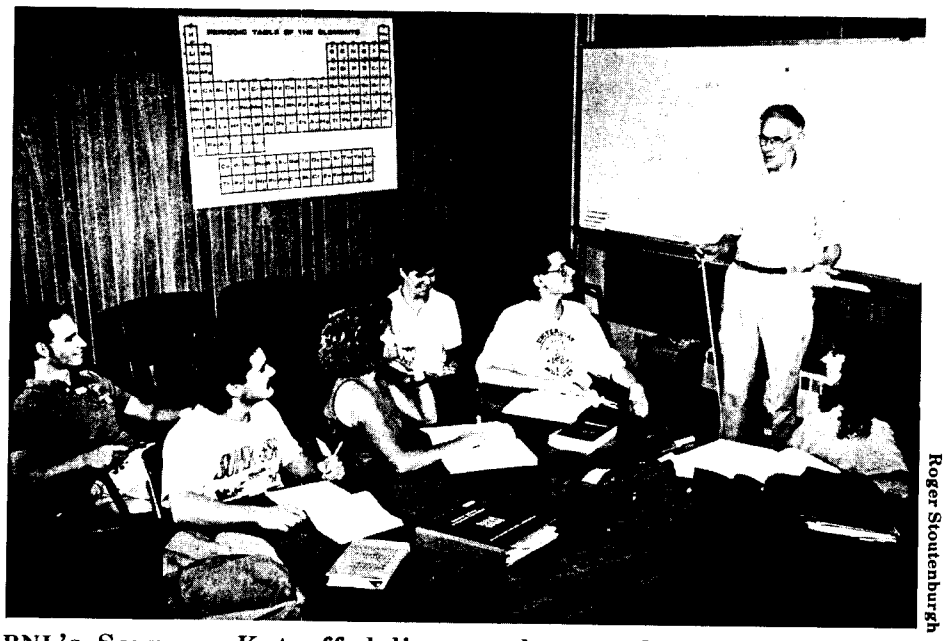
Nuclear chemistry applies chemical expertise to the study of atomic nuclei and their reactions, such as fission and fusion. Although nuclear chemistry and radioactivity have many important scientific, medical and industrial applications, nuclear chemistry is not offered to most undergraduates at U.S. universities and colleges.

As the use of radioactive materials in our technological society has grown, so too has the need for chemists trained in nuclear techniques. But this need is unmet — and growing.

To encourage college chemistry majors to consider careers in nuclear chemistry, BNL's Chemistry Department and the Office of Educational Programs are conducting a new program — a six-week, intensive Nuclear Chemistry Summer School for 11 juniors and seniors from across the nation. The program is sponsored by the American Chemical Society's Division of Nuclear Science & Technology (NS&T) and funded by the U.S. Department of Energy (DOE).

"Science education is important for the future development of this country — so I thought that, by organizing the summer school in nuclear chemistry at Brookhaven, we could play a part in training the next generation of nuclear chemists," explains Seymour Katcoff, a nuclear chemist in BNL's Chemistry Department since 1948 and the summer school's coordinator. "Their skills will be needed by government laboratories, nuclear medicine facilities, and the pharmaceutical and nuclear industries."

From June 25 through August 4, Katcoff is co-teaching the course along with John Alexander, a professor from the State University of New York (SUNY) at Stony Brook; and Ivor Preiss, a professor from Rensselaer Polytechnic Institute (RPI). In addition, Daeg Brenner, a professor from Clark University who performs research at BNL's High Flux Beam Reactor, is lecturing on nuclear structure and models.



Roger Stoutenburgh

BNL's Seymour Katcoff delivers a lecture during the Nuclear Chemistry Summer School. Seated are (from left) teaching assistant James Keenan, Renssalaer Polytechnic Institute, and students David Bracken, San Diego State University; Elizabeth Lantz, University of California, San Diego; Janet Jacobsen, University of Southern California; Patrick Bier, Gannon University, Pennsylvania; and Victoria Degler, University of Illinois.

This is the second summer school of its kind that is under NS&T sponsorship and DOE funding. The first was begun in 1984 by nuclear chemist Patricia Baisden of Lawrence Livermore National Laboratory and has been held every summer since then at San Jose State University, California. This school has been so successful that it was decided to establish an East Coast counterpart — at BNL.

Selected from 75 applicants by an NS&T education and training committee that includes BNL Senior Chemist Joanna Fowler, the 11 chemistry students come from as far as California.

Upon successful completion of the course, the 11 students will be granted six undergraduate credits — three for lecture class and three for laboratory work — by the State University of New York at Stony Brook.

The course deals with the properties of radioactive substances, nuclear stability and structure, nuclear reactions, radioactive decay, interactions of radiation with matter, and applications to medicine, the environment and industry.

(Continued on page 3)

Roger Stoutenburgh

Ivor Preiss (seated, center), Renssalaer Polytechnic Institute (RPI) explains a beta-ray spectrum taken with a multichannel analyzer. On hand are BNL's Yung Yee Chu (standing, foreground) and (standing, back, left) Eena-Mae Franz, who supervise the labs for the Nuclear Chemistry Summer School; (standing, from left) students Michael Kay, Cornell University; Deborah Watson, Mills College, California; and teaching assistant Karen Stevenson, RPI; (seated) students Brant Hacker (foreground), North Park College, Illinois; (back, from left) Lyman Smith, State University of New York at Stony Brook; Craig Brown, St. Norbert College, Wisconsin; and Rajesh Vaid, Pace University.

Don't Pass Up Accelerator School

Everything you always wanted to know about accelerators but weren't taught in graduate school will the subject of the seventh U.S. Particle Accelerator School (PAS), to be held at BNL on Monday, July 24, through Friday, August 4.

Sponsored by the U.S. Department of Energy and the National Science Foundation, PAS is a two-week symposium on a dozen accelerator-related topics — from basic design principles to the building of the proposed national Superconducting Super Collider (SSC).

BNL's accelerator physicists — and those who use accelerators to do their science — are invited to register and attend any or all of the scheduled talks.

"The Accelerator School is a unique and important opportunity for BNL staff — especially since so many Laboratory projects depend upon the technology of particle accelerators," notes Alessandro Ruggiero, the acting chairman of BNL's Accelerator Development Department.

This year, topics will include, among others: radio frequency, free electron lasers, accelerators at BNL, synchrotron radiation sources, accelerator technology, electron colliders and superconducting magnets.

As William Weng, manager of the Booster project being built at the Alternating Gradient Synchrotron (AGS), explains, "I'm encouraging those I work with to register and participate as much as possible in the two weeks of Accelerator School — their only obligation is to apply whatever they have learned to the Booster project."

(Continued on page 3)

bnl Lecture:

Compact Light Sources For Super-Dense Chips

Ten years ago, the U.S. manufactured 80 percent of the world's computer chips — the miniature electronic circuits containing tens of thousands of transistors, diodes and other components. These integrated microcircuits perform significant numbers of functions and constitute the subsystems that make up computers.

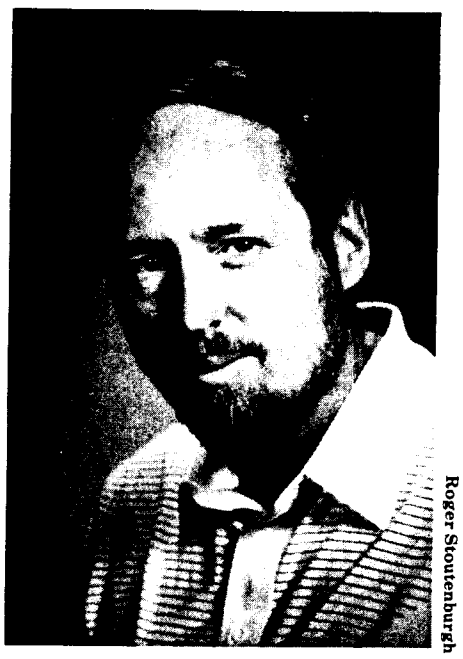
Over the past ten years, however, the U.S. share of the world chip market has fallen — and today Japan holds the 80-percent share. This reversal in the marketplace — which has resulted in U.S. dependence on foreign chip manufacturers and threatens U.S. national security — has provoked an international trade war. So, as a national resource, BNL's National Synchrotron Light Source (NSLS) called its synchrotron strategists into play.

In 1986, the NSLS began a national initiative to develop the compact source of x-rays that U.S. industry needs to make microchips of the future, ones densely packed with one billion bits of memory. And, in 1988, it received its first outside funding towards the building of that compact synchrotron by 1992.

In the 253rd Brookhaven Lecture, Senior Physicist Richard Heese, NSLS, will explain BNL's role in helping the U.S. computer chip industry regain ground in the world market. His talk, "Compact Light Sources for Super-Dense Chips," will begin at 4 p.m. on Wednesday, July 19, in Berkner Hall. Heese will be introduced by NSLS Deputy Chairman Samuel Krinsky.

Heese will begin by describing a

(Continued on page 2)



Roger Stoutenburgh

Richard Heese

Weather Takes the Lab by Storm

A severe thunderstorm swept through BNL Monday night at about 7 p.m., toppling trees, damaging buildings, and leaving parts of the Lab looking like a disaster area.

Hardest hit by the storm was Brookhaven Avenue, where hurricane-force winds toppled two trees and knocked down about four large limbs. Miraculously, the damage to buildings was minor.

The greatest building damage occurred at the National Synchrotron Light Source, Bldg. 725, where one of the white panels on the front of the building was found hanging precariously.

"When the storm came through, it peeled back the panel," said Bruce Medaris, Deputy Manager, Plant Engineering (PE) Division. "As far as we know, there was no structural damage."

The panel was removed by PE Carpenters Richard Geib and Peter Stolz, under the guidance of Carpentry Supervisor Peter Fennelly and Mike Cardarelli, General Supervisor of Building Maintenance.

The winds also damaged the roof of the Firehouse and knocked down a utility pole near Waste Management's Bldg. 445.

In front of the Research Library, Bldg. 477, a tree was uprooted and fell against the building. Another tree fell at the intersection of Brookhaven and Railroad Avenues, blocking the road. A large branch also fell against the Personnel Building, Bldg. 185.

On Mitchell Lane, in front of the Guest House, Bldg. 257, a large tree fell across the road, barely missing a shiny red BMW that was parked there.

But the greatest sentimental loss was the blue spruce "Christmas" tree near the main gate at Princeton Avenue and Upton Road, which was destroyed.

The security force was quick to respond to the devastation. At the Safeguards & Security Division, on-duty Lieutenants Michael Delph and George Misson, with the help of Sergeant Worth Austin Jr., got the wheels in motion to fix the problems.

To assure that fire trucks could get through, if necessary, road crews were quickly dispatched by PE's Roy McWilliams, Site Superintendent. Using front-end loaders, PE's Heavy Equipment Mechanic Operators Jim Durham and Edward Miezianka moved the debris under the supervision of Warren Hulse, Supervisor of Roads and Grounds.

By 9:30 p.m., all of the roads were clear. But the entire site was left strewn with twigs and leaves tossed by the storm, and the task of cleaning it all up was left for Tuesday morning.

The skies over BNL had looked ominous since about 4 p.m. Monday. When the storm finally hit at 7 p.m., it broke suddenly into a hard, driving rain accompanied by strong gusts of wind and frequent, crackling lightning strokes.

According to Meteorology Associate Marty Leach, Department of Applied Science, the weather tower at the west end of Brookhaven Avenue recorded gusts of wind up to 95 mph. Nearly half an inch of rain fell during the storm, and Leach estimated that half of that fell during the first 15 minutes.

"The storm was certainly unusual for Long Island," said Leach. "I've been here 10 years and this is the first one I've seen like this."

But was it a tornado?

That's a difficult question, considering the fact that nobody on site reported a funnel cloud.

"There's no evidence that there was a funnel cloud," said Leach. "My opinion is that it was not a tornado but was more likely a microburst."

Microbursts, famous for causing airplane crashes, happen when a pool of cold air descends rapidly. Leach believes Monday's damage was caused by that cold air slamming into the ground.

"It's almost like you took a bucket of water and turned it upside down," Leach said. — Kevin Eber

Roger Stoutenburgh

Bob Callister Jr. (left) and Wayne Cummings, of Plant Engineering's Site Maintenance Group, clear the limbs of a tree at the corner of Brookhaven Avenue and Upton Road that was damaged in Monday's storm.

At Least It Wasn't St. Swithun's

Many Lab employees may be bemoaning Monday night's foul weather and the damage it caused, but it could have been worse.

It could have been Saint Swithun's day.

One thousand and eighteen years ago on July 15, the body of an obscure anglican Bishop was moved to a grave in the restored church of Winchester, England. Legend has it that miracles occurred, causing word to spread of the bishop, Saint Swithun, and his day, July 15. Of the legends surviving from that time, most well-known is this weather myth:

Saint Swithun's day if thou dost rain
For forty days it will remain;
Saint Swithun's day if thou be fair
For forty days 'twill rain na mair.

BNL Lecture (cont'd)

synchrotron, the device for confining and accelerating electrons in a closed orbit by using magnetic fields.

As well, he will define synchrotron radiation — the electromagnetic waves generated by these charged, relativistic particles as they are accelerated around a synchrotron. It was first observed in 1947 coming from electrons circulating within the second synchrotron ever built. The observers included BNL retiree John Blewett, who was working at General Electric Laboratory in Schenectady at the time.

Briefly, Heese will outline the evolution of electron synchrotrons, including the National Synchrotron Light Source. As he will observe, the first-generation electron storage rings, like GE's device, were originally built to accelerate particles — not to emit synchrotron radiation, which was at first considered a nuisance by-product.

With the realization that synchrotron radiation is bright light in a continuous spectrum — an ideal probe for many materials science, chemistry and biology experiments — the synchrotron's value as a "light source" has appreciated. So, as Heese will mention, second-generation light sources, such as the NSLS' x-ray and vacuum ultraviolet (VUV) rings, have been developed and dedicated to the production of synchrotron light.

One of the first experiments to utilize the NSLS' VUV light, as Heese will point out, has revolutionized the U.S. semiconductor industry's approach to making computer chips: In 1982, IBM established the first x-ray lithography station at a U.S. synchrotron, one of the first in the world.

In addition to being a printing process, lithography is a technique used to fabricate integrated circuits. First, a silicon single wafer is coated with a radiation-sensitive film called the resist and then covered with a template of a circuit pattern called a mask. The masked wafer is then exposed to light, such as x-rays — and the most promising light source being explored for printed-circuit lithography is a synchrotron producing low-energy x-rays.

Last year at the NSLS, IBM made the first computer chips in the world ever to be made solely using x-ray lithography. With 0.5 microns between each component, these chips were two to three times denser than microchips mass-produced today.

Not just any synchrotron will do for the mass production of chips using x-ray lithography: Though used to prove the principle, the 51-meter-around VUV storage ring, which uses conventional magnets to accelerate electrons, is just too big and too delicate for industrial use.

As Heese will explain, chip makers want a compact synchrotron that can be brought in as a unit, set down on the semiconductor factory floor and be ready to go with the push of a button.

So, U.S. chip makers have called upon the NSLS to come up with a compact synchrotron — one using high-field superconducting magnets — and the Department of Defense has come up with the funding both to develop the technology and transfer the know-how to industry.

Richard Heese is project manager of the NSLS' X-Ray Lithography Source (XLS) initiative: He is in charge of coordinating source development within the NSLS and transferring the technology to the XLS' industrial partners, Grumman Corporation and General Dynamics. Heese received his Ph.D. in physics in 1973.

After the lecture, those attending are invited to join the speaker for discussion and hors d'oeuvres. In addition, anyone interested in joining the lecturer for dinner at a restaurant off site should call Marty Woodle, Ext. 2521, beeper 0183.

Two Laureates, Two Lectures

All are welcome to attend the following lectures by Nobel laureates Sheldon Glashow and Jerome Karle, which have been scheduled as part of the student activities run by the Office of Educational Programs. Both talks will be held in the Physics Department's large seminar room, in Bldg. 510.

- **Sheldon Glashow,** Harvard University, will speak this afternoon, July 14, at 2 p.m. Glashow, who won the 1979 Nobel Prize in physics will discuss "What the World Is Made Of."
- **Jerome Karle,** Naval Research Laboratory, will present his lecture on Monday, July 17, at 7:30 p.m. The 1985 Nobel Prize winner in chemistry, Karle will talk about the "Structure of Molecules."

Inside Info

Robert Palmer, Special Assistant to the Director and co-head of BNL's Center for Accelerator Physics, has been named a member of a distinguished scientific policy committee for the Superconducting Super Collider (SSC), the proposed national accelerator to be built in Texas. Palmer is one of 16 members of an international group of distinguished scientists assembled by Roy Schwitters, Director of the SSC Laboratory, to provide insight on major issues and to help define Laboratory policies.

One of the committee's first concerns will be the initiation of the experimental program: how experimental areas should be configured, how experiments should be selected, how detector construction and operation should be managed, and how best to organize international participation in the SSC.

The committee will meet for the first time in August, prior to the symposium on SSC physics and experiments to be held in Dallas, October 1-4.

Accelerator (cont'd)

During 13 sessions, 60 experts in the field of accelerator physics, including 11 BNL'ers, will present hour-long lectures, with questions invited afterwards. The lecture titles include "Basic Accelerator Design Principles," "Pulsed Power for Accelerators," "The AGS — Performance and Potential," "Positrons for Colliders," "The NSLS — Performance and Potential," and "Next Generation Linear Colliders." The full lecture schedule will be published in BNL's Weekly Calendar.

"Accelerator physics is taught at very few places in the world, so this is an equivalent to a Berlitz course in accelerator physics — a summer school not to be missed," says AGS Chairman Derek Lowenstein. "I hope that the people at the AGS — especially the younger ones new to the field — can fit the Accelerator School into their busy schedules and take the time to learn from the old masters."

The school grew from a recommendation made by a 1979-80 subpanel of the High Energy Physics Advisory Panel charged with evaluating accelerator research and development. The panel had concluded that not only is there a shortage of accelerator physicists, but there also exists a lack of education and training opportunities in the field.

Thus, the Accelerator School has two basic purposes — to help train apprentices and update experts in the field; and to encourage U.S. universities and laboratories to offer programs in accelerator physics by developing texts, contacts and training for faculty.

"As graduate students, physicists are taught at the university how to build detectors or portions of large detectors — but, until recently, their only opportunity to learn how to build an accelerator or any of its parts has been as postdoctoral apprentices at accelerator laboratories," explains BNL Physicist Melvin Month. "In fact, the school is trying to change that situation — so that younger, would-be scientists are exposed to the rich field of accelerator physics at the universities."

Month founded PAS in 1979 and serves as its director. He was appointed by the school's steering committee, which determines its policy and is chaired by Burton Richter, Director of the Stanford Linear Accelerator Center (SLAC). Steering committee members include BNL Deputy Director Martin Blume; Helen Edwards, head of SSC accelerator physics; Herman Grunder, Director of the Continuous Electron Beam Accelerator Facility; and Boyce McDaniel, former head of the Cornell Laboratory for Nuclear Studies.

In addition, the Accelerator School exists to encourage interaction between those who build accelerators and those who use them — so, for example, users of BNL's AGS, National Synchrotron Light Source (NSLS) and those who plan to use BNL's proposed Relativistic Heavy Ion Collider (RHIC) are also invited to attend.

"In the case of colliders such as RHIC and the SSC, the design of an experiment is intricately coupled to the properties of the accelerator. So it is very important that young scientists have a good general understanding of how these machines work in order to realize their potential for new discoveries in the future," comments RHIC Task Force Head Thomas Ludlam, Physics Department.

First held at Fermi National Accelerator Laboratory in July 1981, PAS was last held at BNL in July 1983.

"The NSLS strongly supports the Accelerator School, so we encourage our staff and our users to take advantage of the fact that it is being held locally this year," adds Samuel Krinsky, Deputy NSLS Chairman.

In 1987, the annual two-week symposium began meeting every other year, so that, in addition, two-week crash courses in accelerator physics could be offered every year at different universities, all under the auspices of the U.S. Particle Accelerator School. This June, for example, 138 students each completed one of five courses offered at the University of California, Berkeley, including "Principles of Acceleration," taught by BNL's Robert Palmer.

As Month explains, "The university style allows the courses to be presented in greater depth, promotes student interaction and feedback, and encourages younger students to attend, as university credit is earned for courses that are successfully completed."

In 1985, PAS began awarding its Prize for Achievement in Accelerator Physics and Technology. At the Accelerator School's banquet on Thursday, August 3, this year's winners, Daniel Birx of SLAC and Karl Brown of Lawrence Berkeley Laboratory, will each receive a check for $2,000 and a citation for their contributions to the field.

For a schedule of the lectures and registration information, contact Pat Tuttle, Ext. 3845, or your department chairman or division manager.

— Marsha Belford

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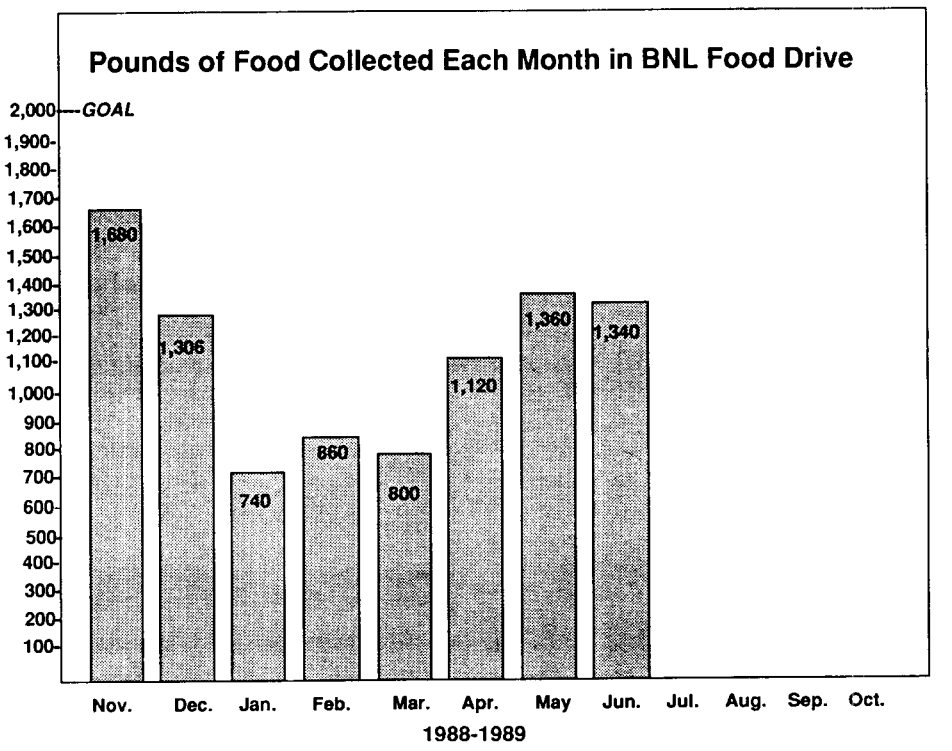
Donations Decline, But Need's Still There



After two months of hefty increases, donations to BNL's Food Drive decreased slightly in June, dipping 20 pounds to 1,340.

As generous and as helpful as those 1,340 pounds are for those in need in Brookhaven Town, more is always needed. As you do your weekly shopping or rummage through your pantry this weekend, think of the July Food Drive, which will begin on Monday and run the entire week. If everyone brings in just a little more, the July total will surely rise and, perhaps, be the first monthly total to reach the goal of 2,000 pounds.

If you cannot shop yourself but would like to contribute, you may send a donation to Food Drive Chair Carole Kerr, Bldg. 460, Ext. 7100. When your shopping is done, you'll get a receipt.

Chemistry (cont'd)

The textbook is *Nuclear and Radiochemistry*, published in 1981 by Wiley, the principal author of which is BNL's Gerhardt Friedlander. The laboratory manual was developed by Preiss.

"The experiments are intended to familiarize the students with the properties of radioisotopes and with the measurement of their radiations using various detectors and their associated electronics," explains Katcoff. Major lab topics include gamma-ray spectroscopy, parent-daughter relationships, nuclear reactions, x-ray fluorescence and radiochemical techniques.

Overseen by Preiss, the laboratory experiments are conducted in chemistry labs and counting rooms located in the Chemistry Department. Yung Yee Chu, Chemistry, and Eena-Mai Franz, Department of Nuclear Energy, instruct and supervise the students during their labs.

James Keenen and Karen Stevenson, both chemistry graduate students of Preiss at RPI, help as teaching assistants. Electronic equipment used by the students is on loan from Canberra Industries, various Brookhaven departments and the radiochemistry laboratories at RPI.

In addition to four mornings a week of lectures followed by afternoons of laboratory, the students are to write two exams and a term paper, and present an oral report of that paper. Also on the schedule are tours of nuclear facilities at Brookhaven, Stony Brook, and the Millstone nuclear power plant in Connecticut, and two special lectures, including one by BNL's Maurice Goldhaber.

Two day-long symposia were also arranged for the students. On Wednesday, July 19, a symposium on radiochemistry in the nuclear industry will be held, and BNL's Gregory Van Tuyle, Department of Nuclear Energy, is one of the invited speakers. Then on Wednesday, July 26, BNL's Joanna Fowler and Alfred Wolf, both of the Chemistry Department, will be among the speakers at a symposium on radiochemistry applied to nuclear medicine.

At 11 a.m. during the latter symposium, Nobel laureate Rosalyn Yalow will discuss "Radiation and Society" in a talk that is open to the Laboratory community. A senior medical investigator for the Veterans Administration Medical Center in the Bronx, Yalow received the 1977 Nobel Prize in physiology or medicine for the development of radioimmunoassay methodology and its application to biomedical investigation.

As Katcoff concludes, "We are trying to provide the undergraduates with an intensive sampling of what goes on in nuclear chemistry — with the hope that they will like what they have experienced and go on in the field."

— Marsha Belford

Summer on Long Island

Taking Stock of Summer Stock

Within easy distance of BNL, employees and summer visitors have opportunities to experience quality theater this summer.

BELLPORT - Gateway Playhouse, 215 South Country Road. Performances Tue.-Fri. at 8:30 p.m., tickets $15 & $17; Sat. & Sun. 5 p.m. & 9 p.m., $18 & $20. Box office, 286-1133.

- Through July 23 - ***Big River***, family musical featuring the adventures of Mark Twain's immortal Huckleberry Finn.
- July 25-August 18 - ***Broadway Bound***, third play in Neil Simon's trilogy, which includes ***Biloxi Blues*** and ***Brighton Beach Memoirs***.
- August 20-September 3 - ***Beehive***, a musical review of the 60's.

PORT JEFFERSON - Theater Three, 423 Main Street. Performances on the Main Stage on Fri. & Sat., 8 p.m. Tickets, $14 & $16 Fri., $16 & $18 Sat. Some Sun. & Thu. evening shows and Wed. & Sat. matinees, tickets $12, $10. Box office, 928-9100.

- Through Aug. 12 - ***Singing in the Rain***, Fred Astaire-Ginger Rogers musical about the transition from silent films to talking motion pictures.
- Aug. 19-23 Sep. - ***Fifth of July***.

Downstairs at Theater Three, a Second Stage Production, Wed. & Sun. at 8 p.m., and matinee Sun., Aug. 20, 3 p.m. Tickets $12.

- July 23-Aug. 30 - ***Twelfth Night***, Shakespeare's comedy, blending farce and romance.

Children's shows at Theater Three, Thu., Fri. & Sat., 11 a.m. Tickets $5.

- Through July 15 - ***Rapunzel***, Grimm's fairy-tale favorite.
- July 27-Aug. 5 - ***Winnie-the-Pooh***, written for A.A. Milne's son Christopher Robin.

STONY BROOK - Norstar Bank International Theatre Festival, Staller Center for the Arts, State University of New York at Stony Brook, Nichols Road/Route 97. Performances on the Main Stage at 8 p.m., except as noted. Ticket prices: Tue.-Thu. $13, Fri. & Sat. $15. Box office, 632-7233.

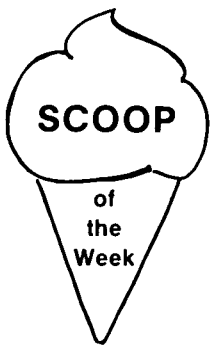
- Through July 15, ***Waited Long Enough***, a play starring internationally acclaimed comic Jozef Van Den Berg of the Netherlands.
- July 18 - 22, The Pickle Family Circus, vaudeville, comedy and feats by San Francisco's leading circus troupe. Added Sat. matinee, July 22, at 2 p.m.
- July 23 & 24 - Kutiyattam Dance, a special from India.

Look! A Limerick!

There once were some men quite renowned
Who built a machine that was round.
For their idea so radiant
They used alternate gradient,
So today their machine's still around.

— Ed Meier
National Synchrotron Light Source

Scoop of the Week



For scooping the Bulletin staff with the late-breaking news, "Weather Takes the Lab by Storm," Kevin Eber, who is the summer student with the Brookhaven Bulletin and a graduate student in journalism at the University of Colorado, is hereby awarded the Scoop of the Week.

During the summer, the Bulletin is trading scoops for hot tips on Lab news and features. To enter the Scoop of the Week contest, phone or send your ideas to the Brookhaven Bulletin, Ext. 5053 or Bldg. 134. If you scoop the Bulletin's informed sources and a story based on your idea is published, you'll win an official certificate for soft-serve, frozen yogurt, redeemable anytime at the Cafeteria.

Atlantic City Trip: Sign Up Now!

If you decide to take one of the remaining available seats on the BERA bus to Atlantic City on Saturday, August 5, you'll leave from the Lab at 11:30 a.m. and return to BNL after the evening shows, arriving on site at about 1 a.m. (not later, as implied in the last issue of the Bulletin). You'll also:

- pay $20 per person, but get back $15 in coin and a $5 deferred voucher from the Trump Castle on the Marina.
- get picked up at the Park & Ride at LIE Exit 63, if you so request.

Paid reservations are now being taken on a first-come, first-served basis at the BERA Sales Office in Berkner Hall, from 9 a.m. to 2 p.m.

Bowling

Female bowlers are needed this September for the Pink League on Tuesday nights in Port Jefferson. If you are interested in joining this handicap league, please contact Donna Cunningham on Ext. 4599.

Night Clerk Coming To Housing Office

Incoming guests who arrive at the Laboratory during the normal work day — 8:30 a.m. to 5 p.m., Monday through Friday, except holidays — go to the Housing Office in Bldg. 179B to check in and get their keys.

Beginning Sunday, July 23, late-arriving guests will be able to pick up their keys the same way. As of that date, a night clerk will be on duty in the Housing Office at 2 Center Street, at the following times:

- Monday through Friday, except holidays — 5 p.m. to midnight.
- Sunday — 4 p.m. to midnight.

When the night clerk is not on duty, room keys will continue to be issued at Police Headquarters, Bldg. 50, 24 Upton Road.

Physical Review Has Job Opening

The American Physical Society (APS) has an opening on *The Physical Review* for an editorial assistant. This position requires: B.A. or B.S. in physics or mathematical sciences, good command of English grammar, communications skills and concern for detail needed to perform varied duties for editorial processing of manuscripts for physics journals.

APS is an equal opportunity employer and offers a competitive salary and excellent benefits package. Send resume to Personnel Department, APS, 1 Research Road, Box 1000, Ridge, NY 11961.

Software Demo

"Apple Macintosh Connectivity" is the subject of a one-hour presentation by Mario Cavallaro, BNL's on-site representative from Custom Computer Specialists, to be held on Wednesday, July 19, at 2 p.m., in the Computing & Communications Division seminar room, Bldg. 515. He will discuss the connectivity of the Macintosh to other Macintosh systems, to IBM systems and to DEC systems, as well as Macintosh Novell networking and Macintosh Token Ring networking. Reservations are not necessary.

Additionally, Cavallaro is available in the Macintosh Center, Room 121, Bldg. 515, on Tuesdays, Wednesdays and Fridays.

Outdoor Volleyball

The second mixed-league, outdoor volleyball tournament will be held on Wednesday, July 19, from 5:15 p.m. to about 8 p.m. Participation will be limited to 36 players on a first-come, first-served basis. Entry fee is $2.

To register for the tournament, contact Carrie Grimshaw, Ext. 2073, or Kathi Barkigia, Ext. 7661, by Monday, July 17. In the event of bad weather, the tournament will be moved to the gym.

Tennis Return

The Tennis Committee regrets that it was unable to sell enough tickets to order a second bus for the U.S. Open on September 5. Those individuals who prepaid may pick up their refunds at the BERA Sales Office.

Arrivals & Departures

Arrivals

Glenn Boyle ..... AGS
David S. Coburn ..... Physics
Gary P. Danowski ..... AGS
Patricia A. Ennis ..... SMD
Thomas P. Hayes ..... Accel. Dev.
Tadeusz J. Kycia ..... Biology
Monica A. Mazurek ..... DAS
Anthony Nicoletti ..... AGS
Eldred A. Ribeiro ..... Biology
John F. Schill ..... Instrum.
Jesse D. Schmalzle ..... Accel. Dev.
Erkki L. Soininen ..... Physics
Anthony Spiteri ..... DNE
Cara Wilson ..... DAS
Ronald E. Zalewski ..... Plant Eng.
Xun Zhang ..... Chemistry

Departures

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

Timothy D. Comstock ..... Plant Eng.
Michael T. Dwyer ..... Plant Eng.
Ludwik Kowalski ..... Chemistry
George O.K. Stenby III ..... AGS

Cafeteria Menu

Monday, July 17

Soup: Turkey noodle	(cup)	.75
	(bowl)	.95
Beef roulade w/pot. or veg.		3.10
Fried chicken w/pot. or veg.		3.10
Lite-line: Roast beef au jus w/pot. or veg.		3.10
Hot deli: Open turkey sandwich		2.85

Tuesday, July 18

Soup: Swiss cauliflower cream chowder	(cup)	.75
	(bowl)	.95
Salisbury steak w/pot. or veg.		3.10
Tuna à la king		3.10
Lite-line: Pear-in-gelatin platter		2.85
Hot deli: Hero by-the-inch w/salad	(inch)	1.20

Wednesday July 19

Soup: Bavarian lentil	(cup)	.75
	(bowl)	.95
Hungarian goulash		3.10
Spinach pizza		3.10
Lite-line: Salmon salad		3.10
Hot deli: Pastrami		2.85

Thursday, July 20

Soup: Sausage pizza	(cup)	.75
	(bowl)	.95
Baked ziti w/garlic bread		3.10
Chicken coq au vin w/pot. or veg.		3.10
Lite-line: Heavenly hash fruit platter		3.10
Hot deli: Philly cheese steak		2.85

Friday, July 21

Soup: Seafood gumbo	(cup)	.75
	(bowl)	.95
Eggplant Parmesan w/garlic bread		3.10
Stuffed whitefish w/pot. or veg.		3.10
Lite-line: Broiled whitefish w/pot. or veg.		3.10
Hot deli: Grilled Californian Reuben		2.85

Classified Advertisements

Placement Notices

The Laboratory's placement policy is to select the best-qualified candidate for an available position, with consideration given to candidates in the following order of priority: (1) present employees within the department and/or appropriate bargaining unit, with preference to those within the immediate work group; (2) present employees within the Laboratory as a whole; and (3) outside applicants. In keeping with the Affirmative Action plan, selection decisions are made without regard to age, race, color, religion, national origin, sex, handicap or veteran status.

Each week, the Personnel Office lists new personnel placement requisitions. The purpose of these listings is, first, to provide open placement information on all non-scientific staff positions; second, to give employees an opportunity to request consideration for themselves through Personnel; and, finally, for general recruiting purposes. Because of the priority preference policy stated above, each listing does not necessarily represent an opportunity for all candidates. As a guide to readers, the listings are grouped according to the anticipated area of recruitment.

Except when operational needs require otherwise, positions will remain open for one week following publication date.

For further information regarding a placement listing, contact the Employment Manager, Ext. 2882.

SCIENTIFIC RECRUITMENT - Candidates may apply directly to the department representative named, or through the Office of Scientific Personnel, Ext. 7813.

ASSISTANT SCIENTIST - Experimental physicist to develop monochromators, other x-ray optic instrumentation and data acquisition system for a monochromatic computed tomography system, which will be developed on the X-17 superconducting-wiggler beam line at the National Synchrotron Light Source. Contact: A. Dilmanian, Medical Department.

POSTDOCTORAL RESEARCH ASSOCIATE - in Radionuclide and Radiopharmaceutical Research Group, position for recent Ph.D. trained in nuclear or radiochemistry. Experience with cross-section measurements and radiochemical separations of accelerator or reactor-produced radionuclides is desirable. Contact: L.F. Mausner, Medical Department.

OPEN RECRUITMENT - Opportunities for Laboratory employees and outside applicants.

4079. TECHNICAL POSITIONS - Require an AAS in electronic technology or equivalent, and previous experience in the fabrication and testing of integrated and discrete semiconductor circuits. The ability to work from electronic schematics, verbal instuctions and rough sketches necessary. Light mechanical skills as well as design skills (CAD) desired. Accelerator Development Department.

4080. PROGRAMMING POSITION - Requires BS in computer science, or appropriate field, and a minimum of 3 years' working experience with real-time programming using the VAX/VMS operating system. FORTRAN, CAMAC and data-acquisition software experience also required; experience in "C" helpful. Will maintain files and data bases, write new application software, verify operation of electronic interfaces and prepare documentation. Physics Department.

4081. ENGINEERING POSITION - Requires BSME with experience in machine design as related to machine control and servomotor control systems. Strong background in precision mechanism design and fabrication techniques required. Working knowledge of AUTOCAD necessary. Will design spectrometers used at the NSLS and HFBR for structural biology research. Biology Department.

4082. ENGINEERING POSITION - Requires BS degree in nuclear engineering or the equivalent experience and a minimum of 5 years' working background in reactor accident analysis. Will assist in the evaluation of a variety of reactor safety issues related to a research reactor. Ability to obtain DOE "Q" clearance necessary. Reactor Division.

4083. ENGINEERING POSITION - Requires MS in health physics, nuclear engineering, or physics, and training in either nuclear power or nuclear navy reactor health physics. ABHP certification is highly desirable. Will lead and supervise the Safety and Environmental Protection Division's support to the High Flux Beam Reactor. Responsibilities include program audit and oversight, radiation exposure control practice, radiation monitoring, industrial hygiene monitoring and safety. Possession of or ability to obtain and maintain a Department of Energy (DOE) clearance is necessary. Safety and Environmental Protection Division.

4084. ENGINEERING POSITION - Requires a B.S. in health-related sciences or equivalent. Will write and review procedures and organize the Building Safety Services Procedures Manual. Good writing skills and background in health physics training are necessary. Computer knowledge is desirable. Safety and Environmental Protection Division.

Motor Vehicles & Supplies

88 MITSUBISHI PRECIS - am/fm cass., 16k mi., excel. cond., $4,700. Norbert, Ext. 4832 or 632-8120.

87 HONDA HELIX - w/full face helmet, black, low mi., 100 mpg, liquid crystal display, mint cond., $2,000 neg. Ernie, Ext. 4986.

87 VOLKSWAGEN GTI - red, 45k mi., a/c, 5-spd., excel. cond., $7,000. 472-1735.

87 TOYOTA PICKUP - long bed, extra cab, p/s, p/b, a/t, low mi., excel. cond. Joe, Ext. 5213.

87 HYUNDAI EXCEL GLS - w/extended 7-yr. warranty, gray, 3-dr. hatch, $4,500. 289-7607.

87 VAN - custom, V-8, low mi., immaculate cond., asking $14,500. 475-8657.

86 SENTRA - 5-spd., a/c, am/fm cass., new tires, fwd, $3,225. Park, Ext. 2788 or 331-1784.

86 YAMAHA RIVA 125Z SCOOTER - black, 1500 mi., excel. cond., $1,200. Peter, Ext. 3977.

85 HONDA MAGNA MOTORCYCLE - V-65, low mi., shaft, water cooled, excel. cond., asking $2,000. Bruce, 288-5294.

84 RENAULT ENCORE - red, 4-dr., 48k mi., new brakes, clutch, muffler, trans. needs work, asking $995. Chen, Ext. 4213 or 281-1877 eves.

84 EAGLE WAGON - 4x4, 4-dr., a/t, p/s, a/c, am/fm cass., 40k mi., roof rack, good body & engine, $5,400. 473-2473.

84 FORD F150 PICKUP - 6-cyl., o/d, p/s, p/b, stereo, bedliner, like new, $6,500. 473-3349.

83 DODGE ARIES - 59k mi., new tires, muffler, battery, excel. cond.; '83 Olds Cutlass Supreme, 69k mi., mint cond., 444-2208 or 924-3678 eves.

83 NISSAN STANZA - h/b, 4-dr., a/t, p/s, p/b, a/c, am/fm, clean in & out, excel. cond., $3,400. Jim, Ext. 4606 or 654-5049.

83 VW RABBIT - 4-dr., 5-spd., good cond., $1,800. 765-1302.

82 MAZDA B2000 PICKUP - long bed, best offer over $1,250. Joe, pager 0925 or 728-1859 eves.

82 CHEVETTE - diesel, 100k mi., needs brakes & clutch, will be reliable transportation, good body, $500. Roy, Ext. 3085.

82 NISSAN STANZA - h/b, 4-dr., a/t, sunroof, high mi., one dent, otherwise clean, runs well, $900, priced to go. Lenny, Ext. 4467.

82 TC3 HORIZON - 4-spd., excel. cond., $1,400. R. Meier, Ext. 4629 or 929-4258 after 6 p.m.

82 TOYOTA COROLLA WAGON - 5-spd.; '79 Toyota Corolla sedan, 4-dr., 5-spd., a/c, runs well, 4 new Michelins. Al, Ext. 2043.

81 CHEVETTE - 4-spd., new water pump & timing belt, runs well, reliable, $400 neg. Bill, Ext. 2906.

81 FORD ESCORT - high mi., 4-spd., 2-dr., runs well, $200. Al, Ext. 2795 or 734-7099.

81 ESCORT WAGON - stick shift, runs well, $300. Bob, Ext. 4044.

80 VOLVO DL WAGON - a/c, sunroof, good cond., $3,150. 286-1214 after 5:30 p.m.

80 DATSUN - runs well, $980. Ext. 3206.

81 CADILLAC - white, 53k mi., fully loaded, excel. cond. 799-5060.

81 BUICK SKYLARK - 80k mi., 4-dr., loaded, looks good, runs well, $1,900. Ramesh, Ext. 4410/7684 or 924-0443.

81 DODGE RAM VAN - custom int., am/fm, a/c, captain chairs, 70k mi., asking $3,400 neg. Mike, 821-9709.

80 PONTIAC FIREBIRD - engine rebuilt, V-6, a/t, gray, red int., $2,500. Patty, 732-6311.

79 DATSUN 280 ZX - needs some work, $1,300. 281-0055.

79 PONTIAC BONNEVILLE - 2-dr., a/c, a/t, am/fm, body good cond., sunroof, p/w, p/s, full power, $1,500. Scotty, Ext. 3457.

79 FORD PICKUP - custom wood bed, runs well, best offer. Ext. 4561 or 751-8873.

78 MERCURY VOYAGE STATION WAGON - 62k mi., new brakes & battery, excel. running cond., $1,600. Christian, 751-4459.

78 CHEVY MALIBU - sta. wagon, a/t, a/c, p/b, p/s, p/w, 120k mi., $1,000 neg. Ext. 3076 eves.

78 FORD FUTURA COUPE - rebuilt, 4-cyl., a/t, looks good, runs well, $1,200. Joe, Ext. 4786 or 281-7683.

78 FORD FUTURA - p/s, p/b, am/fm cass., 6-cyl., 2-dr., body good, tuned, orig. owner, runs well, $600. Bob, Ext. 4084.

78 CHRYSLER CORDOBA - not running, good for parts, $65; '75 Cadillac Coupe De Ville, running cond., $150. Lou, Ext. 2050 or Mitch, 928-4013.

77 PONTIAC GRAND PRIX - 400 eng. & trans., T-top, p/w, p/l, p/s, a/c, Pioneer stereo, good cond., orig. owner. 395-4153.

77 PLYMOUTH VOLARE WAGON - 6-cyl., 4-spd., am/fm, runs well, orig. owner, service records, $250. Allan, Ext. 2229/5626 or 331-9735.

76 CHEVY MALIBU - 114k mi., a/t, p/s, p/b, new parts, runs well, $600. Charlie or Ken, 588-2350.

76 FORD VAN - CB, good tires, set up for towing, p/s, p/b, a/t, 38k mi. on new motor, $1,500. 475-4856.

76 BUICK SKYLARK - 231 V-6, 2-dr., engine runs well, needs trans. work, best offer. Ext. 3084.

75 DODGE DART - 4-dr., clean int., runs well, needs some body work, $300 neg. Lou, Ext. 3174.

75 CHEVY NOVA - 4-dr. sedan, 6-cyl., a/t, runs well, $650 or best offer. 654-4661 eves. & wknds.

74 PUCH MOPED - $100. John, Ext. 3675 or 924-3528.

73 VW BEETLE CONVERTIBLE - 4-spd., good cond., rebuilt engine, needs floor work, $1,250. Mike, Ext. 3434.

73 TRAILSTAR POP-UP CAMPER - sleeps 6, excel. cond. & layout, many extras included, $1,100 firm. 821-0354 after 6 p.m.

73 POSTAL JEEP - L.H.D., 6-cyl., a/t, runs well, best offer. John, Ext. 2172 or 744-4386.

72 VOLVO URBAN WARRIOR - 150k mi., 4-dr., 4-spd., 4wdb, efi, am/fm, new tires, batt., runs well, some rust, asking $400. Paul, 212-864-5755 eves.

72 JEEP WAGONEER - 4-dr., V-8, a/t, 4wd, runs well, $700 or best offer. 758-0835.

See Supplement for more classified ads.

Classified Ads (cont'd)

72 MERCURY MARQUIS - 60k orig. mi., a/c, p/s, p/b, am/fm, p/w, new tires & exhaust, $450. Chris, Ext. 4185.

70 CHEVELLE - 6-cyl., new battery, runs well, $200., 289-9883 eves.

69 CLASSIC VOLVO 1800S - dual carb., red w/black int., good cond., $2,500. 924-6619 after 5 p.m.

68 CHEVY C-10 PICKUP - running, body good, $475; '82 Honda Express mini-bike, low mi., $175; '78 Dodge Omni, 89k mi., s/t, $475. 878-2577.

56 CHEVY BELAIR - 2-dr., hard-top, black/crocus yellow, excel. cond. $4,500 neg. 698-3101.

FORD F150 - 4x4, 4-spd., 302, red, XLS package, new rims & tires, $4,500. Dick, Ext. 3457 or 589-9103.

CAR-TOP CARRIER - canvas, like new, $25. Vinnie, Ext. 2483.

UTILITY TRAILER - 6'x12' wench w/tilt, $700. Ext. 7686 or 878-0897.

AIR-FLOW BOX - Nissan, brand-new; orig. Datsun 280 trim ring Z tires (4); black bucket seats (2), make offer. Janet, Ext. 2345 or 929-3910.

WHEELS - Honda, 13", new, $10/pr. 924-3082.

TIRE - new, Firestone 721, 235/75R15, Eldo rim, $50. Ernie, 588-4987.

TAILGATE NETS - Pro Net, for full-size & compact trucks, red, blue, black, white, $140. Augie, Ext. 4023.

ENGINE - Ford 351, Cleveland, out of car, runs well, $100. Ken, 395-6235.

SHOP MANUALS - 4 vol. for '82 Ford Escort/Lynx, EXP/LN7; Motorcraft oil filters, best reasonable offer. Jerry, Ext. 4487.

PARTS - '80 Trans Am, minus motor, clean front nose, glass and more. Frank, 395-4974.

TRAVA CAP - '87, silver, fiberglass, 6' small truck, tinted, screened, sliding windows, $475. 878-8880.

Boats & Marine Supplies

27½' BAYLINER - 1978, 280 Volvo I/O, 225 h.p., sleeps 6, galley, shower, head, water heater, more, mint cond., $12,500. Frances, Ext. 2901.

25' WELLCRAFT - Nova 250, w/twin 188 engines, outdrive rebuilt 1987, many new parts, best offer. Bill, 265-7089.

23' COLUMBIA SAILBOAT - 1976, 1986 Yamaha 6 h.p., very clean, must see. 924-2016 after 6 p.m.

22' TYLERCRAFT SAILBOAT - centerboard, w/2 suits of sails plus furling jib, 6 h.p. Evinrude, in water, $2,500 neg. Pete, 281-7035.

22' CATALINA SAILBOAT - 3 sails, trailer, motor, good cond., asking $4,800. 929-8912 or 329-1743.

19' BOWRIDER CRUISER - 1972, w/1976 115 h.p. Johnson, Coast Guard pkg., trailer w/elecric winch, $3,500. Frank, Ext. 2314 or 567-5131.

15' CORONADA DAY SAILER - ready for the water, w/trailer, $1,600. Steve, 874-3729 after 6 p.m.

14' HOBIECAT - turbo, roller reefing jib, trailer, $1,600. Ext. 7657.

12' SHELL LAKE SCAMP SAILBOAT - fiberglass, drop centerboard, Dacron sails, life jackets, paddles, capacity 2x150 lb. adults. Al, Ext. 2043.

8' DINGHY - 1989, blue & white, fiberglass. Dawn, 758-3830.

OUTBOARD MOTOR - Honda, 10 h.p. w/alternator, like new, used only 10 hrs., stand & tank inc., $1,000. Fred, Ext. 5032.

SUNFISH - A.M.F., sail, booms, mast, rudder & dagger board, used 1 season. 286-1097.

SAILING RIG FOR CANOE - sail, mast, boom, gaff, rudder, lee boards, hardware, etc., Old Town, $350. Bob, Ext. 4044.

ANCHOR - Navy style, 20 lb., $20. Ext. 4309.

Furnishings & Appliances

AIR CONDITIONER - Whirlpool, 6500 Btu, good cond., $125. 475-7257.

AIR CONDITIONER - Fedders, 5000 Btu, excel. cond., $90. 924-3082.

AIR CONDITIONER - Whirlpool, 6000 Btu, good cond., $60. Carol, Ext. 2673 or 744-8632.

FURNISHINGS - solid maple hutch & table w/chair; oak étagère; sofa sleeper, 6 mos. new, & recliner. Ext. 4628 or 758-0393 after 6 p.m.

FURNITURE - Colonial living room, sofa, loveseat, rockers, tables, $450; Lane modern oak/cedar bdrm., $450; more. Theresa, 472-1193.

ROCKING CHAIR - Bentwood, w/cushion, good cond., $10. Noreen, 878-6921.

FILE CABINET - 4-drawer, letter, 25"dx15"w x52"h, Pendaflex frames & 180 as-new files, $65 for all. Art, Ext. 4115.

MIRROR - beveled, 77"x44", excel. cond. Ext. 2109 or 472-9199.

BEDROOM SET - 8 piece, like new, must sell, $700. 281-0055.

FURNITURE - antique, oak table, sofas, pine headboards, stereo speakers, dining room chairs. Ext. 7225 or 929-6748.

RECLINER - beige, $100. 286-0466.

HANGING LAMPS - 5, globe, Colonial, $20; walnut chair, $20; 36" glass shelves w/brass brackets, $5; tennis balls. Kathy, 744-2203.

MIXER - Kitchen Aid, heavy duty, 4½ qt., solid state w/accessories, never used, $175. 654-4661 eves & wknds.

FREEZER - upright, Gibson; ladder-back chairs; couch, all in good cond., reasonable. 363-7032.

WOOD STOVE - Vermont casting, Defiant, make offer; vanity desk & dresser; clam rake, 24", short handle, $25. Ron, Ext. 4715 or 289-1003.

COLOR TV - Sony, 19", very good cond. Ext. 3076 eves.

LARGE MAHOGANY DESK - used, leather top, 3'x6'. 363-8936.

KITCHEN TABLE - w/4 chairs; twin bed w/drawer chest, avocado, early American. Jerry, Ext. 7607 or 874-3475.

BOX SPRING - & mattress, twin size, $25/ea.; wood picnic table w/2 benches, $20; fireplace screen, $10.Grace Shiue, Ext. 3372.

AIR CONDITIONER - window type, $60; moving boxes, small 50¢, large $1. Gene, Ext. 5614.

FOLDING BED - w/mattress, $20; hand-painted tray, $20; Crockpot, $15; antique tools, $15; dishwasher, $50. Tim, 744-2203.

TELEVISION - Zenith Chromacolor II, 25", w/remote, floor model, $200. Rich, Ext. 7519 or 696-2258.

Tools, House & Garden

LAWN MOWER - Sears, 22", self-propelled, rear bagger, 4.0 reserved power, excel. working cond., $225. Ann, 744-8386 eves.

WATER PUMP - three-stage jet, Flint & Walling make, new GE 1½-h.p. motor, w/pressure tank, used 3 years. 821-3925.

WROUGHT IRON RAILING - 20', w/gate, 3' high, asking $100. Bill, Ext. 2214.

MEDICINE CABINET - 3 doors, mirrored, w/matching light, brand-new, best offer. Carol, Ext. 3315.

SEWING MACHINE - Singer, in cabinet, $25; large shop vacuum, $12; hand-push lawn mower, $8; lawn sweeper, $9. 878-6637.

LAWN MOWERS - Lawn Boy, 21" cut, self-drive, $150; Toro lawnmower, 21" cut, w/bag, $85. Dan, Ext. 4987 or 698-7322 eves.

SUN PERFORMANCE CENTER - large oscilliscope, w/4 meters, advance timing light, stand, adapters, will deliver. $900 neg. 758-0835.

CHILDREN'S PICNIC TABLE - redwood, $25. Pat, 265-7089.

GAS GRILL - two-burner Embermatic, w/tank & cover, good cond., $80. 924-3082.

KEROSENE HEATER - Corona, 2,300 Btu, round, convection radiant heat, w/5 gallon can, $35. Lou, 928-4013 eves.

GENERATOR - 4,000 watts, new, on wheels, $400. 475-7092.

POOL HEATER - for pools up to 20'x40', $100. Ext. 7130 or 929-8323.

Sports, Hobbies & Pets

BICYCLES - woman's 10-speed, Schwinn, excel. cond.; woman's vintage coaster-brake, needs tires, good cond. 472-2394 after 5 p.m.

BICYCLE - woman's 10-speed, Columbia, good cond., $50; bicycle basket, 21"L x 14½"W x 9"D, $10. 727-3608.

BICYCLE - boy's, ¾, 10 speed, $45. G. Williams, 286-3863 eves.

BICYCLE - 20" BMX, Saint Tropez, jelly seat, front & rear hand brakes, coaster brake, excel. cond. Ext. 5286.

BICYCLE - girl's, Huffy, 20", pink, removable training wheels, $10. Ext. 3192.

BICYCLE - girl's 10-speed, 26", speedometer, two years old, hardly been used, $25. Leslie, 878-0375 after 6 p.m.

BICYCLE - Schwinn Caliente, 10 speed, good cond., $50; 29-gal. aquarium, salt water set-up, pumps, $55. Lou, Ext. 2050 or 924-4013 eves.

LIFETIME MEMBERSHIP - Jack LaLanne, Olympic Gold card, $1,200 value, make offer. 929-4787.

BUNNIES - dwarf & regular, $6. John, Ext. 3675 or 924-3528.

R/C SPEEDBOAT - 26", o/b eng., TRI & RC parts, $250; R/C Boomerang 4wd car, w/radio unit, spare parts, $150. George, Ext. 4547 or 878-1178.

PIANO - Schubert console, 1936, excel. sound, mint cond., delivered, $575. Darcy, Ext. 3362.

BICYCLE - 1987 Centurian LeMans, 10-spd., very low mileage, like new. Dick, Ext. 3752 or 744-9699.

BICYCLE - Ross Eurosport, man's 10-spd., good cond., $25. 473-6546.

SKIS - 2 pair, boots, poles. Ext. 7225 or 929-6748.

Audio, Video & Computers

COMPUTER - XT clone, 640K RAM, 2-360K floppies, 5 mB hard disk, Hercules video, software, ask. $600. Alan, Ext. 2928 or 821-1389.

Miscellaneous

STROLLER - Gerry, double, umbrella, w/canopy, $90. Mark, Ext. 5350 or 369-0793.

INFANT'S CAR SEAT - Evenflow, w/cushion, $20; Maximite baby carrier seat, $7; Century baby walker, $15, all like new. Barbara, 698-1322.

TABLECLOTH - new, oval, 66"x86", w/liner, $7; exercise mat, new, $7. Susan, Ext. 7716.

BABY ITEMS - folding carriage, rocking carrier, umbrella stroller, food grinder and many more, all well kept & clean. 821-3925.

STRAWBERRY JAM - homemade, 12 oz. Ball jar, $3.25. Ernie, Ext. 3357.

Yard & Garage Sales

BROOKHAVEN HAMELT - toys, clothes, boat equipment, knick-knacks, July 14 & 15, 10-4 p.m., 18 Highview Blvd. 369-1517.

Lost & Found

FOUND - wedding band, probably female, found in weight room of gym, yours for proper identification. Frank, Ext. 7200.

FOUND - raincoat, Botany 500, gray, lined, 46L, hat and umbrella, 179A conference room. Pat, Ext. 2452.

Free

KITTENS - 3 females, beautiful Calico, 7 weeks old, to loving homes. Ext. 3506 or 281-2002.

KITTEN - orange & white tiger-striped, female, very cute, 17 weeks old, good temperament. Ext. 2267 or 395-6520.

REFRIGERATOR - freezer, 2-door, side-by-side, works, take away. 369-8683.

Car Pools

BOHEMIA-OAKDALE-SAYVILLE - need 2 more drivers for car pool, also can meet at Exit 59 LI Expressway. Frank, Ext. 2314.

PATCHOGUE - van pool seat open, leave name and number. Ext. 4669.

COMMACK - would like to join car pool from Commack region. Steve, Ext. 2282.

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

BELLPORT VILLAGE S. - 3 bdrm., 2 baths, furnished, Sept.-June occupancy, no smoking, no pets, $800/mo. + util. 286-9389 or 286-0466.

HOLBROOK - Timberidge, 3-bdrm. ranch, 1 bath, eik, den, gar., all appliances, fenced-in yard, underground utilities, sewers, 15 min. from Lab., $950/mo. Ext. 2679 or 472-0392 after 5:30 p.m.

MASTIC BEACH - 1-rm. studio cottage, new stove, just renovated, all utilities paid, $450/mo. Tom, 360-3803.

PORT JEFFERSON VILLAGE - cozy, 2-bdrm. house, very desirable area, quiet and within walking distance to harbor, gas, heat, all appl., avail. end Aug. or Sept 1. 751-6575 eves.

RIDGE - 3-bdrm. ranch, country kitchen, all appliances, new carpeting, 1½ baths, fenced-in yard, 5 min. from Lab, family neighborhood, $900/mo. Carol, Ext. 2673 or 744-8632 after 6 p.m.

SHIRLEY - 3-bdrm. ranch, 10 min. from Lab, fenced-in yard, walk to beach or Fire Island, no pets, avail. Aug/Sept. $925 +. 399-6390.

SHIRLEY - 3-bdrm. hi-ranch, furnished, clean. 473-6432.

WESTHAMPTON BEACH/SPEONK - 2-bdrm., 1½ baths, 5 appl., 1 yr. old, immed. occupancy, $850/mo. Rich, Ext. 4834 or 588-0507.

CATSKILLS - 3-bdrm. chalet w/sleeping loft, fully furnished, great for hiking, fishing, rafting, near Catskill Game Farm & Hunter Music Festivals. Kay, Ext. 4501 or Bea, Ext. 3642.

HILTON HEAD, SC - 2-bdrm. condo, sleeps 6, 2 baths, tennis, golf, beach, pool, $425/wk., Sept. openings. Guy, Ext. 3147 or 585-9149.

For Sale

AQUEBOGUE - split ranch, 3 bdrm., 2 baths, eik, din. area, l/r, deck, 0.6 acre, landscaped, ig sprinkler, fence, garage, OHW, a/c, cable, city water, $169,900. Beth, Ext. 3354 or 722-4750.

BELLPORT VILLAGE - 2-bdrm. ranch, attached garage, large living area, eik, 12'x20' screened patio, fenced rear yard, goldfish pond, many extras, $150,000 neg. 286-0795.

CENTER MORICHES - 3-bdrm. ranch, 1½ baths, garage, large storage shed, full bsmt., ⅓ acre on cul-de-sac, walk to water, schools, stores, etc. 878-0175.

CORAM - 9-rm. Colonial, cul-de-sac, 4 bdrms., 2½ baths, fam. rm., f/p, eik, d/r, l/r, mud rm., i/g pool & lawn sprinkler, 2-car garage, ca/c, extras, $195,000. Ext. 2303 or 732-3902 after 5 p.m.

HOLBROOK - 3-bdrm. townhouse/condo, 5 appl., w/w, 1½ baths, tennis courts, swimming pool, clubhouse, balcony & fenced-in patio, 15-20 min. to BNL, $129,000. Ext. 2873 or 472-3236.

MASTIC - 3-bdrm. ranch, ¼ acre, 1½ baths, den, fin. bsmt., deck, appl., house fan, 3 ceiling fans, shed, fence, near school, shopping, 15 min. to Lab, asking $115,000. 265-2366 after 6 p.m.

MASTIC BEACH - 3-bdrm. ranch, 80'x100', garage, Florida rm. w/fp, low taxes, alum. siding, city water, full financing avail. Sue, 395-3529.

MIDDLE ISLAND - Coventry Manor, 3-bdrm. townhouse, 2 full baths, kitch., l/r, d/r, laundry rm., 5 appl., ca/c, pool, tennis, asking $106,000. Rosalie, Ext. 3160 or 289-5704 after 5:30 p.m.

MIDDLE ISLAND - Lake Pointe, 5 min. to BNL, 2 bdrm., l/r, d/r, w/w, w/d, ca/c, gas heat, wood deck, pool, tennis, asking $81,000. Bob, 924-7316.

MIDDLE ISLAND - 3-bdrm. ranch, 18'x24' great rm., l/r w/fp, d/r, eik, 1½ baths, skylights, i/g pool, sprinklers, deck, more, 5 min. to Lab., $166,900. 924-8426 eves.

N. PATCHOGUE - 3-bdrm. ranch, f/p, large kitchen, bsmt., low maintenance & taxes, appliances, landscaping, ig sprinkler, louvered porch, $132,900. Arnie, Ext. 2040 or 289-1870 eves.

PORT JEFFERSON - 4-bdrm. Colonial, full bsmt., 2-car gar., 2 baths, ca/c, all oak floors, walk to harbor, village, mint cond., priced to sell. 474-1482 eves.

PORT JEFFERSON STATION - N. 347, 4-bdrm., 3 baths, 2 eiks, large fam. rm. w/fp, ⅓ + acre, fenced, circ. drive, fully landscaped, excel. M/D, Frank, 904-686-9258 or 474-2149.

PORT JEFFERSON STATION - large Colonial, 3 bdrms., 2 baths, 2 gar., l/r, d/r, eik, fam. rm. w/fp, ¼ acre, large back yard, deck, above-ground pool, best offer. Ext. 2528.

ROCKY POINT - 3-bdrm. ranch, 100'x100' lot, eik w/skylight, Andersen windows, half bsmt., large fenced yard, SCWA water, under 5 yrs. old., mint cond., all appl., beach rights, $138,000. 821-3925.

ROSLYN - 1-bdrm. co-op, corner, sunny, fully renovated, w/w, Roslyn SD. Ext. 3924 or 462-8205 eves. and 484-3897 weekends.

SHOREHAM - N of 25A, 4-bdrm. Colonial, 2-car garage, ig pool, excel. school district, quiet street, or will rent. 744-7642.

SHOREHAM - 4-bdrm., 2½-bath Colonial, fenced, ⅓ acre, great neighborhood, 2-car gar., bsmt, energy efficient, low taxes, SWR, 15 min. to Lab., $175,000. 744-0960.

SHOREHAM - Soundview Acres, contemporary ranch, 3 bdrm., 2 baths, l/r w/fp, bsmt., 2-car gar., deck, sprinkler system, steps to priv. beach, $199,000. 744-9746 eves.

STONY BROOK - north 25A, near beach & univ., custom-built, 4 bdrms., finished bsmt, 3½ baths, d/r, l/r, den, eik, priced to sell, Ext. 4635 or 751-2860.

STONY BROOK - 3-bdrm. ranch, expanded Buckingham in S-section, l/r, d/r, den w/fp, eik, 2 baths, all appl., wooded lot, screened-in porch, asking $179,900. Ext. 7949 or 689-7282.

WADING RIVER - 3-bdrm. ranch, beach rights, 10 miles from Lab, solar, skylight, possible rent w/option to buy. Kathy or Roy, Ext. 7105.

WESTHAMPTON BEACH/SPEONK - Hampton Villas, 2-bdrm. townhouse, 1½ baths, ca/c, swimming pool, 5 appliances, $149.500 neg. Rich, Ext. 4834 or 588-0507.

STUART, FL - 1-bdrm. condo, 1½ baths, fully furn., can sleep 6, jalousied porch, near clubhouse & pool, walk to shopping & fishing, asking $42,000. Ken Brunini, 482-2643 or 212-354-1372.

Wanted

HOUSE - Lab employee seeks unfurnished 2 or 3-bdrm. house to rent this fall, present lease requires 60 days notice. Chris, 395-6112.

HOUSEMATE - to share new 3-bdrm. house in Mastic Beach, w/w, cable, 10 min to Lab, $390 incl. all. Jonathan, 395-5221.

RENTAL - in Key West area, Florida. Walter, Ext. 3499.

HOUSE - 1 or 2-bdrm. house or apt., needed October to June, prefer furnished. Mirek, Ext. 3861.

ALUMINUM BOAT - Duranautic, 13' or 14'. Joe, pager 0925 or 728-1859 eves.

WET SAW - for cutting bricks, rent or buy. Tony, 698-9274.

PING-PONG TABLE - good cond. Joe, Ext. 2836 or 289-1831.

LAWNMOWERS - old, any cond., also weed-wackers, chainsaws, etc. Dan, Ext. 4987 or 698-7322 eves.

TOYOTA CAR - inexpensive, s/t, clean, 1980 & up. Ellen, 744-0354 eves.

AMERICAN FAMILY - for 17-yr.-old French girl, to live with during August. Ext. 2852 or 744-5613 eves.

MOTORCYCLES - bent or broken, any age or cond. Kevin, 281-8031.

TUTOR - for acoustic guitar lessons, beginner. Pat, Ext. 2880 or 399-1679.

RIDING LAWN MOWER - good cond., reasonable. 727-0661 eves.

13' DURANAUTIC ALUMINUM BOAT - Coastal or 14' Offshore, 1980 or newer. Joe, pager 0925 or 728-1859 eves.

Services

*Services are listed in the first **Bulletin** of every month as a courtesy to BNL employees. They are neither screened nor recommended by the Bulletin. Services forms are available in the Bulletin lobby, Bldg. 134.*

BABYSITTING - fenced yard, playmates, year round, full or half day, reasonable rates. Noreen, 878-6921.

CHILD CARE - mature woman, my home, playmates, Shirley area, reasonable rates, references. 399-6120.

SHEETROCKING & SPACKLING - free estimate. Kevin, 563-9855.

PLUMBING & HEATING - excel. work, reasonable prices. 878-8646.

LAWN MOWER REPAIRS & SERVICE - & small engine repairs, reasonable rates, also sales of used mowers. Dan, 698-7322 eves.

LAWN MOWING - very low prices, excel. work, any area between Ronkonkoma & Ridge. Darren, 331-0482.

BRICKWORK - patios, walks, swimming pools, retaining walls, landscaping ties, Belgian blocks, 20 years exper., Lab discount. Tony, 698-9274.

AIR-CONDITIONING INSTALLATIONS - & service, low rates, central & wall units, licensed & insured. Mark, 345-5365.

AUTOMATIC LAWN SPRINKLERS - installation & repairs, spring start-up & fall winterizing services available, free estimates. Lou, 928-7042.

ROTOTILLING - Troybuilt lawns & gardens, no job too small, free estimates. Jim, 654-5049.

LAND CLEARING - using excel. rake on JD 450 track loader, $60/hour w/operator. Tom, 878-1060.

HOUSE CLEANING - very reasonable. Carrie, 727-2058.

RUG STEAM & SHAMPOOING - very reasonable. Al, 727-6155.

MARINE MECHANIC - OMC & Mercury outdrives, all inboards, also boat, car & truck waxing. Ted, 928-1445.

TUTORING - first through eighth grade, all subjects, mature, certified, caring teacher w/extensive experience. Dee, 878-1060.

COMPUTER CONSULTING - on IBM or compat. hardware, will do enhancement or new install. of PC hardware or software. John, 286-1348.

PROFESSIONAL WORD PROCESSING - manuscript, documents, papers, etc. 821-2314.

STRINGING TENNIS RACKETS - experienced and inexpensive, on site. Bill, Ext. 2516.

ROTOTILLING - custom work, lawn and garden. Bob, 732-9517.

CARPET & UPHOLSTERY CLEANERS - Four Shore, dry foam extraction, dries in 2-3 hours, Lab discount, Von Schrader System. 471-3846.

PARTY TENTS - for rent, we set up & take down. Fred Kuehl, 588-2268.

Classified Ad Policy Deadline is 4:30 p.m. Friday for publication Friday of the next week.