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BROOKHAVEN NATIONAL LABORATORY

BNL Researcher Using NSLS to Catch Brain Enzyme in the Act

Nerve impulses are difficult to keep up with. They come and go in a flash — requiring as little as a millisecond for transmission across a synapse from one nerve cell to another for further conduction, processing or storage.

In synapses where impulses are transmitted by the neurotransmitter acetylcholine, impulse transmission stops when that compound is broken down through hydrolysis by the enzyme acetylcholinesterase (AChE).

If AChE fails to function correctly or quickly enough, we may suffer disorders of the brain or the nervous system, which could even be fatal.

AChE breaks down acetylcholine at the rate of 20,000 molecules per second, and, until now, it worked too quickly for researchers to gain a full understanding of how it functions.

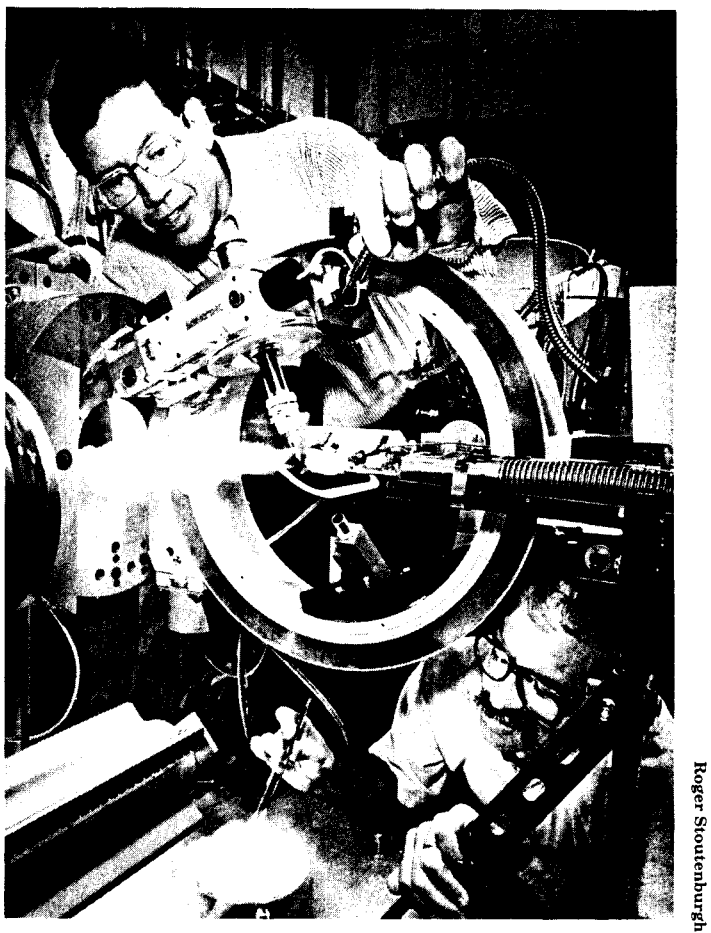
This week, Joel Sussman, Head of BNL's Protein Data Bank, started using the National Synchrotron Light Source (NSLS) to solve this mystery by producing images of the enzyme in action — binding substrate molecules, breaking them down and releasing the products.

Ribbon diagram of the structure of acetylcholinesterase (AChE) in the vicinity of the enzyme's active site. A model of the neurotransmitter acetylcholine is shown (as balls and sticks) sitting in the active site of the enzyme after entering it through a deep and narrow gorge.

"The synchrotron will allow us to do certain experiments that are just not possible to do in many other laboratories," Sussman said. "We will actually be able to see the enzyme catalyzing the reaction and obtain images of the products being released."

The NSLS generates high-powered x-ray beams that will be used to bombard crystals of the enzyme to produce a diffraction pattern characteristic of the AChE molecule's structure. Sussman will then use computers to analyze the coded images and produce a series of three-dimensional images of the enzyme *in action*. He will be using the X26, X12C and X25 x-ray beam lines for his experiments.

This information is important for understanding normal brain function and diseases associated with a breakdown in the nerve-impulse transmission cycle. Some of the symptoms of Alzheimer's disease, for example, are believed to be caused by a deficiency in acetylcholine, which may be alleviated by designing agents to inhibit AChE, the enzyme that breaks it down.



Roger Stoutenburgh

At the National Synchrotron Light Source, Joel Sussman (top) and Robert Sweet (bottom) prepare to mount a crystal for cryogenic x-ray diffraction studies.

Sussman came to BNL in January on sabbatical from the Weizmann Institute of Science in Israel to continue work on AChE and to head the Protein Data Bank, an international storehouse of biomolecule structural information. He holds a joint appointment in the Chemistry and Biology Departments.

He is testing the Weizmann group's hypothesis that acetylcholine enters the active site of AChE through one opening, while the cleavage products, choline and acetate, are released through a second opening.

"Using the synchrotron, it's possible to collect an entire set of x-ray data in a millisecond or less," Sussman said. "So, if we can slow the reaction and the release of the products down by cooling the molecules, we should be able to see where the products come off."

Through x-ray diffraction studies of AChE done in Israel, the Weizmann group has already identified two key features of the enzyme that led them to hypothesize two openings in the enzyme: the structure of the active site and the presence of a strong electrostatic field around the enzyme.

"Acetylcholinesterase is a really unusual enzyme," Sussman said. "The substrate, acetylcholine, enters through a deep and narrow gorge leading to the active site that is just barely wide enough for the substrate to fit into so as to be cleaved."

He speculates that this tight fit may require the products to leave the enzyme from a second opening in the bottom.

The top part of the AChE molecule is mostly negatively charged and the bottom positively charged, giving rise to electric field vectors around the molecule, he said.

"You can think of the enzyme a bit like a giant vacuum cleaner that sucks in positive charges," Sussman said. "The substrate is positively charged acetylcholine, so the enzyme can suck it in, but there's still the question of how the products then get out of the enzyme."

The enzyme's impressive speed could be explained by a model in which the electrostatic field quickly draws in positively charged substrate molecules, which are broken down and quickly shuttled out of a second opening in the bottom of the enzyme, he said.

This model will be tested by using substrate molecules that are similar in structure to acetylcholine, and bind to the active site of the enzyme, but are not broken down. The products will be released by photoactivating the complex with a laser, and images of the products' release will be captured by

(continued on page 3)

Light Source Hosts World's Synchrotron Device Developers

The rise of synchrotron light as a research tool has spawned a variety of new instruments — and some of the most innovative ideas for those instruments were discussed last week at the International Conference on Synchrotron Radiation Instrumentation, hosted by BNL's National Synchrotron Light Source (NSLS).

More than 550 scientists from 25 synchrotron facilities around the world — including North America, Asia and Europe — attended the five-day conference, which is held every three years on one of those three continents. A day of workshops also took place, bringing the total number of participants to near 600.

NSLS Chairman Denis McWhan presided over the conference, much of which was held at the State University of New York (SUNY) at Stony Brook. The NSLS's Jerome Hastings and Gwyn Williams served as program chair and local committee chair, respectively.

"It was very successful, with a lot of interaction," McWhan said. "A lot of new facilities are coming on line, and this is an opportunity for all synchrotron researchers to get together and compare notes."

Among the speakers who welcomed the international assembly of scientists were BNL Director Nicholas Samios, SUNY Stony Brook President John Marburger, and U.S. Representative George Hochbrueckner, whom McWhan called a longtime supporter of the NSLS.

Discussions of materials characterization and biology took up the first day. Later in the week, other topics included developments in light sources, optics and detectors. All signs reinforced the conference organizers' assertion that research now drives synchrotron instrumentation, rather than vice versa.

Roger Stoutenburgh

At the Stony Brook student union between sessions of the Synchrotron Radiation Instrumentation conference, (foreground, from right) IBM's Jean Jordan-Sweet, Chair of the Users' Executive Committee at BNL's National Synchrotron Light Source (NSLS), peruses the conference program with local conference committee chair Gwyn Williams, NSLS; Light Source user Stephan Brauer, IBM; and Lonny Berman, NSLS.

Attendees also got a chance to tour the NSLS, discussing instrumentation with BNL scientists and engineers at the many beam lines that have made the Light Source a magnet for 2,600 visiting scientists annually.

McWhan, who invited the instrumentation conference to BNL, said the gathering has a broad impact on the future of synchrotron science.

"The research and development that has been done in the field has assured the success of the third generation of facilities being built now, such as those at Argonne National Laboratory and in France and Japan," he explained. "We have had to solve our problems and, in doing so, have made progress for the third generation."

When the next conference on synchrotron radiation instrumentation convenes in Japan in three years, the products of cooperations begun at BNL last week may be well on their way.

— Kara Villamil

Leaving the Lab — After 35 Years or More

The Bulletin salutes employees who are retiring with 35 or more years of service to the Laboratory. The following employees will retire July 31.

Charles (Charley) Flood,
Safety & Environmental Protection Division

When Charley Flood joined the Lab 40 years ago, he never anticipated he'd be doing things such as starring as the bad guy in a training film, grabbing a rope and swinging from a dinghy onto a Canadian ship in choppy Pacific seas and, with his wife, also a BNLer, earning the nickname "the legends."

Now, retiring as a Health Physicist in the Safety & Environmental Protection (SEP) Division, Flood came to BNL June 1954, as a technician trainee in the Health Physics Division after a four-year stint in the U.S. Air Force.

He joined the group responsible for safety at the Cosmotron, BNL's first proton accelerator and the highest energy accelerator of its time.

In 1955, Flood began attending Adelphi University at night, earning a bachelor's degree in physics in 1963. He was also certified by the American Board of Health Physics in 1966. At BNL, he was promoted to the scientific staff as Associate Health Physicist in 1967, and later to Health Physicist.

"Two of my proudest moments were when I graduated from college and when I was certified," Flood said, adding with a smile, "besides my wedding of course."

In 1954, he married the former Anne Samek — now Anne Flood of the Relativistic Heavy Ion Collider (RHIC) Project, who came to work at BNL July 1963 as a secretary in the Physics Department.

In a Medical Department training film made during the late 1960s, Charley Flood played the role of a hospital emergency-room physician who would not accept a patient exposed to radiation.

"It was a film about how to handle a patient who was exposed to high levels of radiation," Flood said. "None of the doctors wanted to play that part, so they asked me to do it. The point was to demonstrate how to handle such patients and to convince doctors that there was very small risk to them or the hospital staff, therefore the patient should be admitted."

In 1976, he became a U.S. Department of Energy-trained accident investigator, and, in October 1980, was promoted to Group Leader of the Building Safety Services Group, "the first and primary contacts for safety in SEP," Flood said.

In November 1977, his work took him on a Pacific Ocean adventure. He supplied the health-physics coverage needed to retrieve a 55-gallon drum of radioactive waste disposed of in the Pacific Ocean by the University of California in 1953. The drum was being retrieved for testing at BNL, as part of a radioactive waste-disposal site survey conducted by the U.S. Environmental Protection Agency.

The drum was retrieved by a submersible from a Canadian ship, but loaded onto a research vessel owned by the University of Southern California (USC).

"The Canadians wouldn't allow us to bring radioactive materials onto their vessel, so we had to put the drum on USC's vessel," Flood said. "We had to go between the boats in a dinghy and had to grab a rope lowered down from the Canadian vessel and swing into it. It was really scary in rough seas because if you didn't time your swing right, then the boat could fall away from you. We also had to do this in the dark."

BNL investigators found out later that the drum was empty, its contents apparently having leaked out, he said.

In 1984, Charley Flood became head of the Lab's Hostage Negotiation Team, which was created in response to the increased emphasis on emergency planning at federal facilities, a position he held until April 1994.

Flood was also active in the Brookhaven Employees Recreation Association (BERA), as a member of the Special Events Committee, which organized dinner theaters and several Lab picnics, and as an original member of the Awards Committee.

He served on the BERA board from 1972 to 1977, and was its president from 1973 to 1976.

Roger Stoutenburgh

Charley Flood

A member of the BERA Golf Association, Flood won its 1967 golf tournament and, with Richard Hildenbrand in 1982, won the team league championship. He was also part of the first BNL team to compete in the National Industrial Golf Championship Tournament held at Purdue University. In 1993 with Bill Pemberton, he won the team league championship for the second time.

Anne Flood was also active in BERA, and served as secretary under three presidents. "Everybody calls us 'the legends' because we grew up here, We've been involved in many Lab activities, and we're a happy couple after all these years. If you see us walking, we're walking hand-in-hand. We love working at the Lab, and it shows."

She describes her time as a secretary in the Physics Department, 1963-1971, as the "good ole' days of physics."

"Maybe it was just that I was young and everything was exciting and new to me, but it was during the time when the Bubble Chamber Group discovered the Omega-minus particle and that was an exciting time," she said. The subatomic Omega-minus particle was discovered in 1964 by a group led by now Laboratory Director Nicholas Samios.

Anne Flood moved through the secretarial field, becoming Executive Secretary and Senior Executive Secretary. In 1971, she moved to the Alternating Gradient Synchrotron (AGS) Department, and shortly after was assigned to the ISABELLE Project as an administrative assistant.

In October 1986, she joined the Accelerator Development Department. She was later promoted to Senior Administrative Assistant and is currently an administrator for RHIC.

"I've left my mark on the Lab because I invented the famous orange 'Private' envelopes," she said, laughing. Since her idea was accepted by the Employee Suggestion Program, Flood said, "so many people have called me since then to say how much they appreciate it."

The Floods are retiring at the same time and moving to Pinehurst, North Carolina, where they are building their dream house on a golf course. They are going to spend their time decorating and "enjoying the good life," Anne Flood said. And of course, Charley Flood will play golf. — Georgia Moore

Lee Rogers,
Instrumentation Division

Lee Rogers, a member of the Instrumentation Division for almost 38 years, jokes that the instrument he helped build to detect solar neutrinos — subatomic, massless particles that are very difficult to capture — was "such a dismal failure that they buried it in a hole one mile deep beneath the earth in South Dakota."

The truth is, however, that that instrument was meant to be buried in the Homestake Gold Mine in order to cut down on background radiation, and it became a milestone in astrophysical and elementary particle physics research.

"The interesting thing was that there were significant differences in the results we obtained and those predicted by theory," Rogers said. "The initial number of neutrinos detected was a factor of 10 lower than predicted." The latest results of the ongoing experiment show numbers of neutrinos detected are one third of that predicted.

The results of this long-term experiment, known as the Brookhaven Solar Neutrino Experiment, led by Raymond Davis, rocked the astrophysics world because they indicated that either ideas about the sun's history and composition were wrong or understanding of neutrino properties were incomplete.

"I designed the electronics used for that experiment," Rogers said. "It was a tough experiment and there was so much interest in this measurement that I felt a lot of pressure to do my part right. It was an enormous responsibility so early in my career."

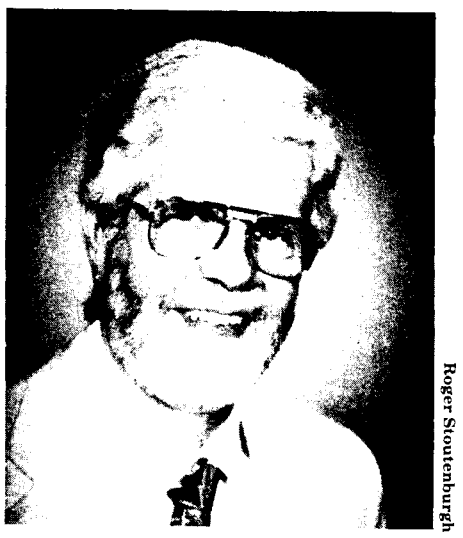
Before coming to BNL, Rogers had earned an associate's degree in electrical technology from the State University of New York at Farmingdale in 1951. He then enlisted in the army during the Korean War and served five years.

He came to BNL in October 1956 as a technician in the Instrumentation Division, where he has spent his entire career doing electronics.

"It's been very exciting and interesting being in the same division for all these years," he said. "I've known three division heads and, without exception, they're all wonderful people."

"I started off working with vacuum tubes and electromechanical relays, and then silicon solid-state devices came along," Rogers continued. "There have been dramatic changes in the tools available to us, and it's been a challenging and exciting time."

In 1969, he was named an electronics associate. Early in his career, he developed a reputation for quantitative analysis of exceptionally streamlined and clean designs, and innovative high precision measurement techniques in complex systems, according to the July 1994 issue of the newsletter *Instrumentation Division Pulse*. In 1980, he was promoted to Research Engineer.



Roger Stoutenburgh

Lee Rogers

"Lee will certainly be most difficult to replace," said Veljko Radeka, Head of the Instrumentation Division. "His skills are most unusual. He has bridged various departments in the Lab — physics, chemistry, biology, medical and also other institutions in the country and abroad, where devices he developed have been used and applied," Radeka said. "He is well respected by scientists in different fields."

One of Rogers's last projects for BNL concerns the design of signal-processing electronics for liquid-argon calorimetry, for use in high-energy physics experiments.

"I've been fortunate because, for the last 15 or 20 years, schools have focused to a large degree on digital electronics, as opposed to analog electronics, and I'm in analog electronics," he said.

Analog electronics are often situated between some sort of radiation detector that yields a tiny electrical signal which requires amplification and processing prior to being digitized by an analog-to-digital converter. Once digitized, further analysis is easily accomplished using computers.

"I stayed in the analog world, and it has worked out for me because a lot of people are not doing the work I've specialized in," he said.

In 1989, he published a paper about one of his inventions, titled "A High Precision Peak Sensing Circuit for Measuring the Integral Linearity of Nuclear Pulse Amplifiers," in the journal *Nuclear Instruments and Methods in Physics Research*.

"I jokingly call it the Rogers Resolver," he said. "It was a thrill to be published."

Rogers's circuit overcame many of the problems associated with accurately determining linearity of nuclear pulse amplifiers, he said. It provides easier, quicker and more accurate measurements. His instrument is being used at BNL and at CERN, the European particle physics research facility.

His contributions to the development of electronics for neutron detectors in use at the High Flux Beam Reactor (HFBR), and for x-ray detectors in use at the National Synchrotron Light Source (NSLS), have helped them become world-class facilities for neutron and x-ray scattering studies, Radeka said. Rogers is now designing read-out electronics for neutron detectors to be used at the HFBR.

After leaving the Lab, he plans to spend six to seven weeks traveling cross-country in an RV with his wife Nina. Starting in November, they will spend six months at a rented home on Lake Sunapee in New Hampshire.

He also plans to spend time with his extended family, including three daughters, Diane, Debbe and Eileen, and one son, Greg. He also has three grandchildren, Katie, Stephanie and Rachelle. — Georgia Moore

Inside Info

Robert Bari, a senior physicist and, since 1988, Deputy Chairman of the Department of Advanced Technology, formerly the Department of Nuclear Energy, has been elected to the American Nuclear Society's (ANS) board of directors.

Elected in June, Bari is now serving a three-year term on the 30-member board. Board members manage the society's business affairs, and establish and implement policies.

The ANS is an international, not-for-profit organization of more than 16,000 members. Its primary objectives are the understanding and advancement of nuclear science and technology and of the allied sciences and arts, and protection of the environment.

In his candidate's statement, Bari listed two goals: First, to increase the number and diversity of ANS members, and to increase the range of programs, services and activities offered by the society. The second is to ensure that the important role of nuclear energy is appreciated both nationally and internationally, and that ANS contributes to the solution of problems involving nuclear energy.

Bari, who came to BNL in 1971, has been involved with the ANS for 20 years in many capacities, including as an ANS fellow since1990, serving as Chair of the Nuclear Reactor Safety Division and the society's planning committees from 1991-92, organizing the 1994 ANS workshop addressing the safety of Soviet-designed nuclear power plants, and, currently, serving on the public policy and finance committees.

Equipment Demo

On Wednesday, August 3, from 10:30 a.m. to 1:30 p.m. in Berkner Hall, Omnifax, the company that introduced the first thermal fax machine in 1979, will demonstrate its latest MFP 420 and G5 multifunctional facsimile units, and supply literature and answer questions. The MFP 420 is a plain-paper fax that serves as a copier and a fax modem, plus offers PC file transfer, printing and scanning. Battery-operated, the G5 has multifunction capabilities.

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Film Badge Exchange August 5: Will Yours Be Replaced?

If you have a permanent film badge assigned to you, but have not renewed your radiation-protection training qualifications since November 1, 1993, then you will not find a new film badge on the board after the August 5th film-badge exchange.

While the Safety & Environmental Protection (SEP) Division has offered both General Employee Radiological Safety Training (GERT), Radiation Worker I training and challenge exams three times a week since January 1994, some employees with film badges have yet to attend one of these classes and/or pass the required exam.

Since the grace period for this training ends on August 4, all those who have not been retrained will not be issued a film badge and, thus, not be permitted to enter radiation areas without an escort. To regain film badge service, the appropriate training will have to be completed.

Therefore, SEP urges all those who have not been retrained since November 1, 1993, to attend one of the following classes or exams scheduled during the first week of August:

• **GERT**	August 1	3-4 p.m.	Berkner Hall
• **Rad Worker I**	August 2	9 a.m-3 p.m.	Berkner Hall
• **Challenge exams**	August 1, 3, 5	9-10:30 a.m.	Rms. C,D, Berkner Hall

For other dates and times, see your department or division's training coordinator.

UNIX Training

The next round of UNIX training to be offered by the Computing & Communications Division (CCD) includes:

• **X Window System/Motif Programming** — Five full days, September 19-23, limited to 12 experienced "C" programmers. Upon completion of this course, students will be able to write GUI applications using X Window System and Motif toolkit libraries. The fee is $500.

• **Introduction to UNIX** — Five mornings, September 26-30; the fee is $250.

• **Perl Programming** — Five afternoons, September 26-30; the fee is $250.

All three classes will be held in the CCD seminar room, Bldg. 515. Call Maria Gatz, Ext. 5196, to reserve a place.

Brain Enzyme (cont'd)

x-ray diffraction.

"We will take a series of pictures of the products being released, like taking pictures with a high-speed strobe," Sussman said. He is collaborating with Scientist Robert Sweet and Assistant Scientist Paul Singer of BNL's Biology Department to do these "time-resolved" experiments.

Pharmaceutical companies have already designed several AChE inhibitors, one of which, tacrine, is currently being used to treat symptoms of Alzheimer's disease.

"We can study the actual binding of these inhibitors in the active site of the enzyme, and this should help the pharmacologists in drug companies to see how they bind and maybe develop more efficacious drugs," Sussman said.

He is also working with Helen Kycia, a biology associate in Biology, to crystallize the human AChE enzyme, which no one has yet done. Sussman is currently using the enzyme from the electric ray, *Torpedo californica,* a marine animal found off the California coast. The enzyme is about 55 percent identical in sequence to the human enzyme.

Israel Silman, a professor from the Neurobiology Department at the Weizmann Institute and a long time collaborator with Sussman on the AChE project, will be visiting BNL for the next three months, to work closely with Sussman on both the "time-resolved" experiments and on attempts to crystallize the human AChE.

"We've built our models of the human enzyme based on the *Torpedo* enzyme, but they're models and we're anxious to really see the human enzyme," Sussman said.

"We're going to succeed in crystallizing the human enzyme," he stated matter-of-factly, with a confident smile. — Georgia Moore

Arrivals & Departures

Arrivals

Di-Jing Huang ..... Physics

Departures

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

Irving Brown ..... Director's Off.
Emil J. Caiazza ..... Photo. & Gr. Arts
Paul Chu ..... RHIC
Judith Colman ..... RHIC
Bernard B. Culwick ..... AGS
Thelma M. Dawson .... Saf. & Env. Prot.
Frank De Vito ..... Comp. & Comm.
Alexander J. Elia ..... Instrumentation
Nancy J. Fallon ..... Saf. & Env. Prot.
Thomas E. Fleming ..... RHIC
Edward F. Gaudet Jr. ..... NSLS
Lee O. Grimes ..... Plant Eng.
William Lee ..... Plant Eng.
Ivan A. Ludwig ..... Plant Eng.
Joseph T. Mayeski ..... AGS
Ralph N. McDowall ..... Plant Eng.
Ralph Perry ..... Instrumentation
Carole J. Saurino ..... Comp. & Comm.
Eldon Schmidt ..... Adv. Tech.
Robert C. Stauber ..... Plant Eng.
Elizabeth Symonds .... Comp. & Comm.
Thomas D. Turnbull ..... Plant Eng.
Daniel Van Rooyen ..... Adv. Tech.
William H. Van Zwienen ..... AGS

Coming Up

Thomas Roser, a physicist with the Alternating Gradient Synchrotron Department, will deliver the 1994 Sambamurti Memorial Lecture in the auditorium of the Science Education Center, Bldg. 438, on Tuesday, August 9, at 11 a.m. The lecture is titled "Spinning Protons and Siberian Snakes."

Hospitality Committee

The next Hospitality Committee get-together will be Tuesday, August 2, at 9:30 a.m., at the playground in the apartment area. If it is raining, the group will meet in an apartment on site, and a note stating which apartment to go to will be taped to the playground picnic table.

This may be a good time for newcomers to the apartment area to meet their neighbors. Spouses and children of Lab employees and guests are welcome. Lemonade and iced tea will be provided.

Service Awards

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

40 Years

Eleanor Grist ..... Biology
Carol S. Redvanly ..... Chemistry

35 Years

Charles Geonie Jr. ..... Plant Eng.
Albert G. Prodell ..... RHIC

30 Years

Robert M. DiLello ..... Sup. & Mat'l.
Veljko Radeka ..... Instrumentation

25 Years

John D. Axe Jr. ..... Dir. Off.
Thomas Crews ..... Plant Eng.
Frank G. Heimberger ..... AGS
Dorothy Marelli ..... Personnel
Irving Montanez ..... AGS
Masaki Suenaga ..... App. Science

20 Years

Alfred S. Campbell ..... Central Shops
Charles L. Dunford ..... Adv. Tech.
Cora T. Feliciano ..... Physics
Cynthia M. Morgan ..... Plant Eng.
Janet G. Sillas ..... Dir. Off.
David R. Stampf ..... Chemistry

10 Years

Tsong-Lun Chu ..... Adv. Tech.
Jeffrey A. Coderre ..... Medical
Robert W. Hackenburg ..... Physics
Peter J. Kroon ..... Physics
Frank Pomaro ..... Plant Eng.
Johnnie Turner Jr. ..... Plant Eng.

Addled Addresses

- Brook Raven National Conservatory
- Richard Brookhaven
- Ms. Brooke H. Labratory
- Broolchaven Labro Jor

In Memoriam

Robert C. Aldridge, who ended his 13-year Laboratory career with the Alternating Gradient Synchrotron (AGS) Department as a technical specialist in May 1981, died on July 8, following a long battle with cancer. He was 76 years old.

Aldridge came to BNL on July 5, 1967, as a technician III and was promoted to a technician IV in January 1968. He was named principal technician in October 1979, and then promoted to his final title in October 1980. After his retirement Aldridge returned as a guest to share his expertise three times: in July 1982, March 1983 and October 1985.

Tennis Awards Night and Dance Party

Who's invited? Everyone (*not for tennis buffs only!*); casual attire.

When? Friday, August 26, 1994

Where? North Ballroom, Brookhaven Center

What time? 5 to 6:30 p.m. — Cold Buffet
6:30 to 9 p.m. — DJ Dance with music and live vocal entertainment by Frank Kito & Company
9 to 9:30 p.m. — Awards Presentation
9:30 p.m. to midnight — Dance, Dance, Dance, to everything from ballroom to disco to country-western.
Cash bar available all evening.

How much? With cold buffet, $15 each; without buffet, $5 each.
Buy tickets in advance from:

Rudy Alforque, Ext 4733 — Rita Kito, Ext. 3320
Joe Carbonaro, Ext 5139 — Ken Perkins, Ext. 2147
Jack Guthy, Ext. 4411 — Om Singh, Ext. 5332

Note to Employees:

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

North, South or West — When's It Open?

Each of the Laboratory's three gates is open to traffic under a different schedule, as follows:

- **Main (West) Gate** — Always open to both incoming and outgoing traffic.
- **South Gate** — Open for outgoing traffic Monday through Friday, 4:30 to 5:30 p.m., except holidays; never open for incoming traffic, says BNL Police Inspector Leonard Butera, because this would interfere with safety at an intersection that is already very busy and confusing, as well as with safety at the access road to the Long Island Expressway.
- **North Gate** — Officially open for incoming traffic Monday though Friday, except holidays, 7:45 to 9 a.m., although it may open a bit earlier (check the gate sign on William Floyd Parkway before trying to enter — if it is red, the gate is closed); open for outgoing traffic Monday through Friday, 4:30 to 5:30 p.m.

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.

LABORATORY RECRUITMENT - Opportunities for Laboratory employees.

MK 2891. FIREFIGHTER - Previous substantial firefighter experience is required. Completion of New York State EMT course and possession of training certificate is highly desirable; if not, completion of course within one year is required. Must be willing to work shifts at the completion of a 13-week training period. Safety & Environmental Protection Division.

DD 2392. SECRETARIAL POSITION - (part-time position) Requires an AAS in secretarial science or equivalent experience, demonstrated organization skills and excellent communication skills. Stenography skills desired. Will provide varied secretarial support including report and correspondence preparation using WordPerfect, IPAP/JCARS, arranging travel, filing and telephones. Department of Applied Science.

OPEN RECRUITMENT - Opportunities for Laboratory employees and outside candidates.

LS 0798. MEDICAL ASSOCIATE POSITION - (term appointment) Requires a BS in a medical-related field with experience in gamma camera scintigraphy and nuclear-medicine computer operation, including data acquisition, processing and quality-assurance routines. Experience in wet-lab techniques, including gamma and beta counting, is necessary. Certification in nuclear medicine technology (CNMT or NMRT) is preferred. Medical Department.

Motor Vehicles & Supplies

92 BUICK LESABRE LIMITED - burgundy, V-6, ABS, full power, climate control, 29k mi., $16,000. Richard, Ext. 3804 or 286-3471.

91 FORD EXPLORER XLT - p/w, p/l, ac, ABS, luggage rack, 235R15 tires, 4wd, 5-spd., $15,500 neg. Tom, Ext. 4866.

89 NISSAN SENTRA XE - coupe, blue, 2-drs., 5-spd., m/t, ac, am/fm cass. stereo, 79k mi., excel. cond., $4,500. Emilio, Ext. 3734 or 928-0541.

89 HYUNDAI GL - 59k hwy. mi., 5-spd., ac, am/fm cass., runs well, good body, $1,200 neg. 929-4358.

88 DELTA 88 - loaded, 89k mi., like new, $4,900 neg.; '86 Ford Bronco, red, 6-cyl., a/t, ac, am/fm cass., $4,900 neg. Al Campbell, Ext 2047 or 727-7115.

87 MITSUBISHI STARION ESI-R - black/black leather, turbo, 5-spd., alarm, ac, cruise, am/fm stereo cass., 101k mi., excel. cond., $3,500. Ext. 5151 or 874-4812.

87 CADILLAC SEDAN DE VILLE - high mi., best offer. John, Ext. 2788.

87 TOYOTA SUPRA - loaded, 75k mi., mint cond., $7,000. Ext. 3695, leave message.

86 NISSAN SENTRA - m/t, 5-spd., 100k mi., red, excel. cond., $1,100 or best offer. Julian, 924-0960.

86 LINCOLN CONTINENTAL - loaded, leather int., well maint., blue int./ext., 118k mi., $2,700. Joe, Ext. 5131.

86 TOYOTA COROLLA LE LTD - 4-dr., p/s, p/b, ac, cruise, p/w, p/l, good cond., 130k hwy. mi., Don, 499-4855 after 6 p.m.

84 OLDS DELTA 88 ROYALE - 4-dr., V-8, a/t, p/s, p/b, a/c, cruise, new exhaust & tires, good cond., asking $1,700. Chen, Ext. 4331.

84 TOYOTA TERCEL - 2-dr. h/b, 119k mi., 4-spd., am/fm cass., one owner, excel. cond. 286-9725 eves.

82 HONDA CIVIC - a/t, 4-dr., runs well, 140k mi., $750. Vinny, Ext. 2642.

81 LINCOLN MARK VI - Bill Blass edition, digital dash, new exhaust system, all available options, good cond., asking $1,900. Ben, Ext. 7732 or 698-0057.

81 FORD FAIRMONT - 4-dr., 6-cyl., runs well. Phil, Ext. 2760 or 821-1839.

81 NISSAN MAXIMA - 4-dr., a/t, runs well, $395. Marty, Ext. 2214.

78 OLDSMOBILE - a/c, p/s, p/b, am/fm cass., runs very well, needs minor body work, $400. 341-1020.

78 CHEVROLET - 4wd carryall, parts only; 350 Chevy engine, runs well, $250. Mike, 722-5340.

INSTANT GARAGE - Cover It, 22' x 24' x 10', tan, three-zipper door, clear top panel, hardly used, orig. $2,000, asking $800. Wayne, Ext. 7238.

TIRES - P225x75R14, 2, excel. cond., $40/ea. Tony, 698-9274.

CAP - tall, for full-size pickup truck, great for carrying large equipment, $125. Joe, 929-8321.

TIRES - 195/75/14, 235/60/15, 4 ea., excel. cond. Brian, Ext. 4028.

Boats & Marine Supplies

23' AQUASPORT - center console, 1990 200-h.p. Mercury ob, Loran, color DF, VHF, am/fm cass., outriggers, live baitwell, trailer T/A. Ext. 2238.

17' STARCRAFT - fg, w/trailer, no motor, $99. Zal, Ext. 7598 or 395-4220.

16' STARCRAFT - 35-h.p., Evinrude, Cox galvanized trailer. 325-0447 after 6 p.m.

14' SEA NYMPH - aluminum, w/galv. trailer, 15-h.p. Evinrude, good cond., $1,100. Roger, Ext. 7518 or 878-8847.

14' BOAT - Sears, aluminum, v.g. cond., $300. Ext. 7918 or 821-1271.

12' BOAT - aluminum, for 3 people. 718-721-4271 weekdays or 821-6698 wknds.

MARINE BATTERIES - 12V, in plastic cases, both super crank heavy-duty 600 A, $90 for both. Marty, Ext. 2214.

OUTBOARD MOTOR - 7½-h.p., Sears, only 36 hrs., excel. cond., $100. 475-8658.

Furnishings & Appliances

AIR CONDITIONER - Amana, 7,000 Btu, excel. cond., $75; vacuum cleaner, upright Regina, brand-new, $45. 751-8240.

AIR CONDITIONER - Carrier, 7,500 Btu, good cond., $65. Carol, Ext. 2474 or 475-7454 evenings.

AIR CONDITIONER - G.E., 5,950 Btu, $40; bicycle, Raleigh, UK made, 10-spd., $50. Jan, Ext. 4263.

BEDS - 2, twin, no frames, $10/ea.; dining table, oval, $10; ironing board, $5; 3-drawer chest, $5. 924-5181.

BEDROOM SET - dark Colonial pine dresser, chest, headboard, night table, coffee table w/2 end tables, v.g. cond., $500. 924-4193.

CHAIR-AND-A-HALF - Castro convertible, opens to twin-size bed, v.g. cond., $80. 473-8426.

CHANDELIER - very large, chrome & glass, cost $650, now $50. 475-8658.

COMPUTER DESK - $65; exec. leather chair, $85; queen-size bed w/bookshelf headboard, $300; night stand, $25; vac., $50. Hong, Ext. 3389 or 924-9435.

COUCH - & love seat, brown & gold stripes w/oak trim, $150; matching oak coffee table & 2 end tables, $50. 744-6962.

COUNTERTOP RANGE - w/grill, $150; vinyl-clad casement bow window, 2 yrs. old, $250; Winthrop desk, $25; student desk. Joe, 399-4169.

DINING ROOM - Colonial, 8-pieces, like new; bedroom set, 3-pieces, good cond. Tom, Ext. 2823.

DINING ROOM - circa 1920s, seats 6, china closet, buffet, excel. cond., $550. 363-9527.

DRYER - Maytag, apt.-size, $50; Sears, apt.-size washer & dryer, like new, $400. Mauro, 265-6542.

LAMP - like new $10; iron, $5. 924-5181.

LOVE SEAT - Jennifer conv., single pull-out bed, pillows, like new, $125; Ethan Allen, 2, like new, $100 ea. Marty, Ext. 2214 or 286-2964 after 6 p.m.

MICROWAVE CART - solid pine, $50; floor lamp, $15; coffee table, $20; 2 end tables, $10 ea.; 2 papasan chairs, $75. Ext. 3243.

RANGE - elec. self-clean, good cond., $85. Jim, 744-2095 after 6 p.m.

RANGE/OVEN - G.E., 30" electric, harvest gold, 15-yrs.-old, excel., $75; Nutone range, 2-spd., exhaust hood w/light, $10. Mike, Ext. 7941.

REFRIGERATOR - 17 cu. ft., White Westinghouse frost-free, top freezer, coppertone, $125, excel. cond. John, Ext. 7456.

TABLE - dining room, white Formica w/drop-in leaf, 6 swivel armchairs, $200 neg. Don, Ext. 7237 or 744-2921 after 5:30 p.m.

WASHER - Sanyo, apt.-size, 3 water levels, $100. Tom, 474-3080.

WASHER - Sanyo, apt.-size, $50. Ramesh, Ext. 4805 or 924-8113.

Tools, House & Garden

BARBECUE TANKS - new, w/20 lbs. of gas, $20/ea. Joe, Beeper 0562, leave name and number.

ELECTRIC GRILL - outdoor, Charbroil w/cover, lava rocks, like new, $100; gardenia plant, large, bush-type in clay pot, $100. Claire, 325-8116 eves.

LAWN TRACTOR - 25" cut, 8-h.p. eng., excel. cond. w/Dozier blade for grading & snow removal. Al, Ext. 2043 or 727-7115.

MOWER DECK - Graveley, 30" for 2 wheel; Gibson upright freezer, best offer. 363-7032.

PUMP - ¾-h.p. well pump, $25. Chris, Ext. 2326.

The Brookhaven Bulletin is printed on paper containing at least 50 percent recycled materials, with 10 percent post-consumer waste.

RIDING MOWER - 30", Sears Craftman, 10-h.p., 4-yrs. old, new grass catcher & chute, $790. Bert, 475-1292 or 289-9538.

TRACTOR - '92 Sears, 38" cut, grass bagger, v.g. cond., best offer. Barry, Ext. 4309.

WIRE FENCE - heavy-gauge, green, 5'x50' & galv. 5'x100' long, 50¢ a foot, take all. 924-0960.

Sports, Hobbies & Pets

ASTRONOMICAL TAPES - Astronomical Society of the Pacific, tapes of the night skies, stargazers get to know the sky seasons quickly, $20. 732-9118.

BICYCLE - mountain bike, Nashbar 5000, 20½" frame, mostly Shimano equipment, $170. Trevor, Ext. 4374.

CAMERA - Yashica FX-70 SLR, 42-75mm lens, CS-201 auto flash, $125. 732-9118.

DALMATION PUPS - 7 wks. old, fine lineage, good markings, playful, shots, fine bill of health. 924-8558 after 5 p.m.

EXERCISE BIKE - Voit CX200 ergometer, figures distance, calories, time, etc., excel. cond., $50. Kathy, 821-1252.

GERMAN SHEPHERD PUPS - AKC, m/f, white, raised w/children, excel. temperaments, 6 wks. old. Joe, Ext. 2314 or 924-6324.

GOLF CLUBS - 3-PW Wilson Pro staff, cavity back, orig. $450, sell for $150. 467-1343.

HOUSE - for cat or small animal, insulated, w/w carpet, Colonial style, fg shingles, etc., excel. cond., 1 yr. old, $50. Dan, 698-7322.

ORGAN - Esty, bench, books, mint, needs tuning, $250 neg. 475-8658.

SKIS - Olin, 180cm, w/Salomon, 444 bindings, run-away straps, great for beginner, $20 neg. Don, Ext. 7237 or 744-2921 after 5:30 p.m.

STAIR CLIMBER - Bruce Jenner Plus, like new, w/video tape, $40. 325-8116 eves.

TRUMPET - student trumpet, fair cond., $200 or best offer. James, Ext. 5318.

Audio, Video & Computers

SEGA GENESIS - w/Spiderman, Wheel of Fortune, used 2 times, $150; tabletop copier, $125. Joe, Ext. 4639.

VIDEO GAMES - Nintendo, w/2 controllers, $20; 4 games, $5/ea.; Disney's classic "Robin Hood" videotape, $8. 924-5181.

Miscellaneous

BABY ITEMS - swing, high chair, playpen, walker, misc., infant toys, all like new. Bonnie, Ext. 2875.

CAR SEAT - Kolcraft $30; Graco swing, $30; stroller, orig. $200, sell for $90; walker, v.g. cond., $15. 341-1020.

CAR SEAT/CARRIER - Century 590, infant, like new, $25; Fisher Price Porta-swing, good cond., needs no batteries, $20. Tom, 5046.

DOCUMENT CASE - women's, all leather, new, $25. Judy, 924-7077.

EXERCISE BIKE - $55; bed cover, cotton knitted, $5; baby's playpen, $40; 2-yr.-old's rocking horse, $5; 2-yr.-old's car, $5. Mardor, Ext. 4830/1037.

PLAYPEN - 36"x36", like new, $25; child's safety gate, $5. Antoinette, Ext. 2517 or 874-2340 eves.

SAFETY GATE - child's, Fisher Price, good cond., asking $10. Ramesh, Ext. 4805 or 924-8113.

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 - 1-bdrm. apt., full bath, single person, non-smoker, near amenities, $625/mo. incl. util., & cable. Jim, 744-2095.

BLUE POINT - studio, sep. ent., kitchen, bath, w/w, $450/mo. includes util., & cable, single female, non-smoker, no pets, avail. 9/1. Kathy, 363-5170.

CALVERTON - 3 bdrms., 1½ baths, patio, upper balcony, 5 appliances, w/d, dishwasher, cac, w/w, avail. immed., 15 min. to Lab. Pat, 874-2730.

CENTER MORICHES - 2-bdrm. apt., main floor, 15 min. to Lab, eik, use of yard, bsmt., near transportation/stores, nonsmokers, avail. 9/15, $600/mo. plus util., 2 mos. sec. Lois, Ext. 3315 or 929-4753.

CENTER MORICHES - 1-bdrm. apt., older home, 2 priv. ent., 2 large sunny rooms, kitchenette, full bath, w/d privileges, $650/mo. incl. all util., avail. immed. 878-6760.

MANORVILLE - 2-bdrm. luxury townhouse, 1½ baths w/garden tub, gar., fp, w/d, skylights, cathedral ceilings, cac, pond view, $975/mo. + util. Eric, Ext. 5875.

MASTIC - house to share, large priv. room, w/w, cable, priv. phone, fenced yard, 10 min. to Lab, avail. immed., $100/incl. all, sec. & ref. Sue, 399-3087.

MASTIC BEACH - 3-bdrm. ranch, eik, l/r, 1 bath, fenced back yard, shed, mint cond., in quiet neighborhood, close to BNL & beach, $850/mo., plus util., sec., refs. Tony, 281-2513.

MIDDLE ISLAND - 1 bdrm. upper unit coop. apt., terrace, l/r, kit., dining area, 1 bath, w/w, d/w, cac, pool, tennis, $675/mo. incl. heat, 2 mo. sec. Marge, 473-0868.

MIDDLE ISLAND - 1-bdrm. apt., large l/r, den or another bdrm., tennis court, swimming pool, 5 min. to Lab, avail. 8/1, $685/mo. Zhongwei, Ext. 4331 or 924-5181.

PATCHOGUE - large 2-bdrm. apt., eik, d/r, l/r, swimming pools, steambath, gym, large terrace, 15 min. to Lab, avail. Nov. 15. Greg, Ext. 7960.

RIDGE - lg. 1-bdrm. apt., l/r w/fp, eik, 5 min. from Lab, $750/mo. incl. util. & cable. 924-0693, leave message.

ROCKY POINT - 2-bdrm. house, large master bdrm., eik, l/r, $775/mo. + util. Bill, Ext. 4821 or 929-4663.

ROCKY POINT - master bdrm., guest bdrm., office, l/r, d/r, eik, deck, gar., walk to beach, no pets, $850 + util. (718) 721-4271 days or 821-6698 wknds.

SHIRLEY - 2 rooms, nonsmoker, walk to Smith Point beach, $370/mo. incl. all. Carlos, 399-6390.

SHOREHAM - ground floor 2-bdrm. apt., huge l/r, full bath, eik, laundry rm., sep. ent., priv. beach, tennis, 24-hour security, non-smoker preferred, cable, $700/mo. incl. all. TJ, Ext. 3007 or 744-3308.

YAPHANK - 2-bdrm. townhouse, gar., fp, fin. bsmt., pool, tennis, 5 min. to Lab, $950/mo. + util. Ann, Ext. 7611 or 924-1604.

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

For Sale

BAY SHORE - 3-bdrm. ranch, corner plot, 120'x85', carport, patio, full bsmt., oak floors, city water, l/r cathedral ceiling, 5 appl., gas heat & water, many extras, $97,000. Ed, 231-7446.

BELLPORT VILLAGE - house, ⅔ acre, s. of S. Country Rd., 2 bdrms., 2 baths, French doors, decks, $199,000; Sue. Ext. 2888 or 286-1474 eves.

BROOKHAVEN HAMLET - restored 1738 cottage, fp, 2 bdrms., 2 baths, $185,000. Sue, Ext. 2888 or 286-1474 eves.

CENTER MORICHES - 4-bdrm. Cape, 2 acres, 2 baths, l/r, d/r, eik w/view, full bsmt., gar., igp, w/cabana. 878-1529.

CORAM - 3-bdrm. house, 1½ baths, full bsmt., cac, attached gar., 7 yrs. old, move-in cond., asking $119,000. George, 654-2984 after 3 p.m.

CUTCHOGUE - Nassau Point, 3-bdrm. ranch, 2 full baths, full bsmt., 16 yrs. old, 2-car gar., eik, screened patio, terrace, Thermopane windows, 1+ acre, $4,100 taxes, $255,000. 734-7933.

E. PATCHOGUE - 1 bdrm., 1 bath, eik, l/r, util. rm., detach. gar., $70,000. Ext. 4823 or 475-7241.

GREENPORT - cozy 2-bdrm. house, deck, walk to beach, village, quiet corner, $90,000. Ed, Ext. 5360 or 477-2880.

HOLBROOK - M/D, upstairs: 3 bdrms., 1 bath, l/r, d/r, kitchen, deck, oak floors; downstairs: 3 bdrms., 1 bath, l/r, d/r, kitchen, priv. ent.; all appl., gar., fenced yard, must sell, $125,000 firm. Ext. 3562 or 821-1271.

MASTIC - 120'x100' cleared building lot, all variances & permits, asking $30,000. Patti, Ext. 3145.

NORTH SHIRLEY - 3-bdrm. ranch, l/r, d/r, new kitchen & appl., gar., bsmt., alarm, fenced yard, dead-end street, near Southhaven Park, assum. mortgage, $110,000. Jim C., Ext. 4150 or 281-0489.

NORTH SHIRLEY - 9-room custom-built Col., ½ acre, city water, country kitchen w/sliding door to 10'x12' deck, $125,900. 924-0960.

SAYVILLE W. - 3-bdrm. Col., 1½ baths, fenced yard, screened Florida rm., walk to golf, 10½ yrs. old, ½ acre, $149,000 neg. 563-2889.

SHOREHAM - 4-bdrm. Cape Cod, near LI sound, deeded beach rights, oak floors, fp, 2 new baths, SWRSD, 12 min. to Lab, asking $170,000. 821-1726.

WADING RIVER - 3-bdrm. Col., 2½ baths, 2-car gar., custom kit., Jennair, gazebo, shed, igs. igp, deck, steam bath, satellite dish, SWRSD, 1.1 acre, $229,000. 929-8323.

SINGER ISLAND, FL - 2-bdrm. condo on ocean, 2 baths, furn., pool, near West Palm Beach airport, $120,000. 289-5770 after 6 p.m.

PORT CHARLOTTE, FL - ¼-acre bldg. lot, in developed community, ready to build, $10,900. 929-8323.

NORTH MYRTLE BEACH, SC - 1-bdrm. condo, sleeps 4, near golf, beach, fully furn., cac, pictures avail., asking $53,000. Joann, 472-6742.

Free

ANTENNA - Channel Master, steerable TV antenna, w/controls, 15' mast, you pick up. H. Hildebrand, Ext. 3172 or 929-4446.

23' THUNDERBIRD BOAT - f/g hull, cuddy cabin, no motor, no trailer, excel. cond., you haul away. 281-1832 eves.

LAYING HENS - 1 doz., to a good home. Jack, 754-8855.

STOVE - antique, Chambers, white, enamel/cast iron, has gas hookup, you pick up. Anna, 878-6760.

Yard & Garage Sales

ROCKY POINT - 7/30-31, antiques, furniture, knick-knacks, tools, 8 Magnolia Dr., off Locust Dr. 744-3569.

Lost & Found

FOUND - watch, near TFCU, Mon., July 25. Wei, Ext. 3421.

Wanted

BASEBALL CARD SETS - 1970s Topps. (718) 721-4271 days or 821-6698 wknds.

CAP - for full-size pickup, good cond. Joe, 929-8321.

CAR RADIO - am/fm cassette in working cond., under $50. Thomas, Ext. 2225.

CAT SITTER - a nice person to take care of our cat for 3 weeks starting 8/10. Csaba, Ext. 5535.

GUITARS - acoustic & electric. 467-1343.

HOUSE/APT TO RENT - Blue Pt./Bayport/Oakdale/Smithtown, 2 bdrm., w/d, for 2 resp. prof. w/ref., nonsmokers, no pets, needed now. Sue, Ext. 4931.

HOUSE TO SIT - free, experienced, caring, any duration, after 7/22. J. Allentuck, Ext. 2412.

MOTORCYCLES - mini-bikes, any year, foreign bikes. Bill, 467-1343.

OUTBOARD MOTOR - 7.5 - 9.9-h.p., long-shaft, good cond. Chris, Ext. 2022 or 395-6112.

ROOMMATE - female, Lake Pointe Village apt., Rt. 25, opposite K-Mart, 6 mi. from Lab, $300 + ½ elec., avail. after 9/1. Hong, Ext. 3370 or 924-9435.

RUG SHAMPOOER - reasonable. 363-7032.

SAXOPHONE - Bundy II, good cond. 727-6289.

TEACHER'S AIDE - for Upton Nursery School, Mon., Tues. & Thurs. mornings. send resume to P.O. Box 324, Upton, NY. Jane, 929-8513.

TRAILER - 14'-16', for boat, in good cond. Ed, Ext. 5529.

Car Pools

PLAINVIEW - LIE exit 43, 4th driver needed. Elliott, Ext. 2495 or Barbara, Ext. 5175.

HUNTINGTON - driver needed, on time. Jim, Ext. 7513.

LIE EXIT 36 - 4th member needed. John, Ext. 5181.

In Appreciation

Thanks for all the experiences, good & bad, during my ten years at the Lab. — Harvey Rarback

Thanks to all of my friends at OER/DAS for their support during my time of mourning. — Bob Ramiriz

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