

## AGS Spins Into New Era

Friday, July 13 was an auspicious day at the Alternating Gradient Synchrotron (AGS), marking the official beginning of experiments with protons that are polarized — mostly spinning in the same direction. When the world's highest energy polarized proton beam left the AGS ring for the first time, it had an energy of 16.5 GeV/c, an intensity of  $5 \times 10^{11}$  (five trillion) protons per pulse and more than 30% polarization.

This achievement capped more than four years of intensive effort by Accelerator Department personnel, as well as that of collaborators from Argonne National Laboratory, the University of Michigan, Rice University and Yale University. Michigan professor Alan Krisch was in charge of commissioning the polarized beam, while AGS senior engineer Henry Halama was responsible for the project's construction. Remarking on this accomplishment, Krisch said, "I am very pleased, and perhaps a bit amazed, that a project of this complexity and sophistication actually works. The delicate control of the AGS polarized beam during the acceleration cycle is unprecedented. The many technicians, scientists and engineers who worked on this project should be very proud of their accomplishment."

Pride was evident in the AGS Daily Report prepared for Monday, July 16, by Peter Ingrassia, AGS control room operations coordinator:

*At 1530 on Friday, a new era began at the AGS as polarized protons were made available for the first high energy physics experiments at 16.5 GeV/c. The Exp. 785 (high energy) polarimeter measured 36% polarization at the above energy. Both Exp. 785 and 782 are already taking data.*

*The AGS had a fine weekend in its own right, providing beam for 90% of the scheduled time.*

*On a number of occasions this weekend, members of the Michigan group worked to maximize the internal polarization, and this effort amounted to about six hours of beam that was not useful for HEP. Only once during the weekend was polarization lost, when a fuse deteriorated in a vertical nu shifting quad string.*

*Average extracted beam intensity was  $5 \times 10^{11}$  per pulse.*

When everything came together at 3:30 p.m. on July 13, polarized protons were sent down two beamlines.

At the end of beamline D1, the polarized proton beam collides with the polarized proton target of Experiment 782, led by Krisch. In 1977, using the 12 GeV polarized proton beam at Argonne National Laboratory's ZGS, Krisch and his colleagues found that when a polarized beam hits a polarized proton target — a two-spin situation — violent collisions hardly ever occur unless both protons spin in the same direction. This unexpected result is almost impossible to reconcile with QCD, the most popular theory of how strong interactions behave. Exp. 782's goal is to see if these strange two-spin effects continue to grow at AGS energies, up to 30 GeV. Exp. 782 is a Michigan/BNL/Maryland/Miami/Notre Dame/Rice/Texas A&M/ETH Zurich collaboration.

At the end of beamline C1, Exp. 785, a BNL/Minnesota/SE Mass collaboration, collides the polarized beam with an unpolarized hydrogen target. The spin of the protons in the beam alternates between up and down, with

(Continued on page 2)

## Schoenborn to Head New Center for Structural Biology

Benno P. Schoenborn has been appointed head of a newly-created Center for Structural Biology. The Center is under the Biology Department, and Schoenborn holds the new title of Associate Chairman for Structural Biology.

The Center will assume responsibility for the department's Scanning Transmission Electron Microscope (STEM) and for the structural biology instruments at the High Flux Beam Reactor (HFBR) and the National Synchrotron Light Source (NSLS).

The HFBR has three biology stations:

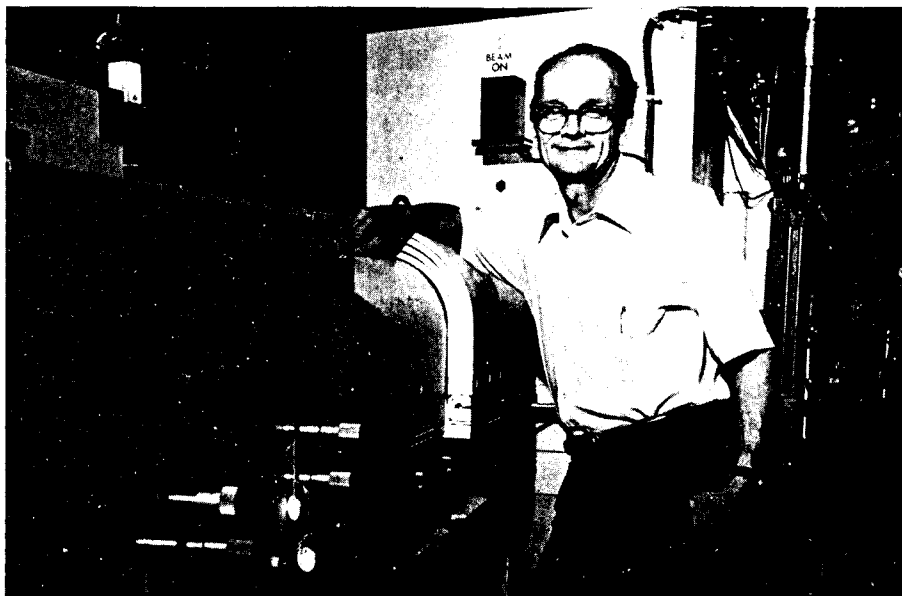
- Small angle scattering and diffraction. Also used for polymer chemistry and materials science studies.
- Membrane structure. Latest studies have been on retinal rods, acetyl choline receptors and Na-K ATPase, which controls sodium and potassium concentrations.
- Protein crystallography. Research on the structure of proteins and protein complexes.

At the NSLS are these biology lines:

- Ultraviolet spectroscopy, Ultraviolet ring.
- Small angle scattering and diffraction, X-ray ring. Studies of time-dependent phenomena in structural changes of biological materials (for example, muscle contractions).
- Protein crystallography, X-ray ring.

The HFBR, NSLS and STEM are major user facilities with active research programs in structural biology. On average, non-BNL users total 47 a year at the reactor, 30 at STEM and eight at the Light Source, a number which will increase markedly when the X-ray ring starts.

Brookhaven has long been this country's center for neutron protein crystallography, due to Schoenborn's pioneering efforts in this field. With STEM and the NSLS complementing



Benno Schoenborn at the small angle beam line, one of three stations at the High Flux Beam Reactor where structural biology work is done.

the neutron work at the HFBR, structural biology research, which aims at relating structure to function, can be done with a variety of techniques, ranging from microscopy to diffraction experiments at atomic resolution.

A biophysicist, Schoenborn joined the Biology Department in 1967, and within a few years, developed neutron scattering and diffraction techniques for the analysis of macromolecular structure and biological function. He was recognized for this innovative work in 1980, when he received the E.O. Lawrence Memorial Award.

Schoenborn occupies an office in Building 421, which has been enlarged to accommodate the Center's people and computers. He said in a recent interview, "A good fraction of our work is developing and running the machines. Right now, we are making plans for an addition to the reactor, called a guide hall, which will bring neutrons out to a new experimental

area built to house additional instruments. The proposed guide hall, serving materials science, nuclear physics and biology, would double the volume of experiments that can be done and also make possible dynamic measurements of biological structure. Inelastic scattering experiments will allow the study of molecular vibration, a phenomenon that is little understood, but which may be very important to function."

He also talked about detectors. The ones now in use, called position sensitive detectors, are quite sophisticated, however, the new protein crystallography line at the NSLS X-ray ring will require new detectors that can handle the high beam flux produced by the Light Source. Schoenborn credited the Instrumentation Division for their fine work on position sensitive detectors and said they will also develop the ones needed at the Light Source.

## Salt Water Watch

Marine scientists at the Department of Applied Science are conducting a research study dealing with oxygen depletion of salt water along the mid-Atlantic coast, from North Carolina to Maine.

They would like to receive first-hand reports from shore residents, fishermen and others who are familiar enough with a body of salt water to recognize some of the unusual or abnormal things that occur as a result of oxygen depletion. The study deals with salt water only, in coastal areas or in estuaries, not with fresh water.

The scientists are interested in information on the following things, particularly if they have occurred since 1970; fish kills, red tides, algal blooms or scums, unusual smells (especially sulfurous bottom mud), the disappearance of "regular" marine life (fish, plants or birds), and the appearance of "new" fish, plants, etc.

The results of the study will be important to people who live in coastal areas because oxygen depletion can be destructive to marine resources, particularly fish and shellfish. Sometimes it occurs naturally. In other cases, it is artificially caused by things like waste disposal and agricultural runoff.

Employees, or members of their families, who can contribute information on examples of oxygen depletion should contact Terry Whitlege, Ocean Sciences Division, Bldg. 318, Ext. 2945.



**BENEATH THE DOME** of the new Astronomical Observatory, Richard Jackimowicz (Accelerator) admires the centerpiece of the new facility: an equatorially mounted telescope of 8-inch aperture. On July 12, over 90 people attended an open house, sponsored by the BERA Astronomy Club, to celebrate the observatory's dedication. (See story page 3.)

—photo by Reben

## Inside Info

**Victor P. Bond**, Associate Director for Life Sciences, has been granted the Senior U.S. Scientist Award by the Alexander von Humboldt Foundation. He leaves for West Germany next month to begin a year of study at the medical department of Kernforschungsanlage (KFA), in Jülich. While there, Bond will be continuing and extending previous experimental and theoretical work on the effects of "low-level radiation" exposure.

The Humboldt Awards were begun in 1972, to honor American scientists who have gained an international reputation in their fields. Since then, more than 800 Americans have received the award. Bond is the seventh scientist from BNL to be so honored. At the end of his year in West Ger-

many, he will return to full-time research at Brookhaven.

The Laboratory is in the final stages of choosing a new Associate Director for Life Sciences. Until that appointment is made, Bond's principal duties have been reassigned. Richard Setlow, as Acting Associate Director for Biomedical Sciences, will take overview responsibilities for the Departments of Biology and Medicine, and for biomedical activities in the Departments of Chemistry and Applied Sciences, and the Divisions of Safety and Environmental Protection and Instrumentation. Herbert Kouts, Acting Associate Director for Applied Research, will oversee all the non-programmatic functions in S&EP, all functions in Safeguards and Emergency Services Division, as well as reactor and criticality safety and occupational medicine.

## AGS (Continued)

each pulse of the AGS. The target is centered in a spectrometer with a movable arm, so the angles of the collisions can be varied. This is called an inclusive experiment because the researchers are only looking at single particles, and not at the other debris, produced in the hardest collisions. For example, with a 15 degree angle at an energy of 10 GeV, they might measure 1000 pions when the spin direction of the beam is up, but 800 pions when the beam is down. It's that difference the researchers are sensitive to. They want to know what effect the direction of spin has on this particle production.

These first experiments with polarized protons will continue collecting data until July 31, when the AGS will shut down to prepare new beam lines and experimental areas for three large, new AGS experiments.

— Anita Cohen

## Winner's Circle

**Ronald Ondrovik**, senior contracts specialist in the Division of Contracts and Procurement, suggested that the functional use of BNL word processors be increased by utilizing supplemental software programs. A demonstration was held to show how this could be accomplished. As a result, users were made aware of the additional programs that are available to increase the efficiency of the word processing systems currently in use on site. Ondrovik received \$25 for his suggestion.

**Rosemary Taylor**, office services assistant from Central Shops Division, received \$50 for her suggestion that an employee survey be conducted concerning Suffolk County Community College courses offered on site. This survey resulted in an improvement in the selection procedure as well as in offering employees more relevant courses and a wider range of choices.



Alex Reben

**BREAKING GROUND** for the Lab's new \$1.8 million fire station last Wednesday were, from left: Fire & Rescue group supervisor John Deitz, BNL Associate Director Vincent O'Leary, and Safeguards & Emergency Services Division Manager Len Emma. The ceremony was held at the site of the new station, at the corner of Brookhaven and Upton Avenues, and was attended by about 75 people. The contractor, I.D. Equipment Corp. in Huntington, plans to begin work on the concrete and steel, 12,000-square-foot facility this summer, and completion is targeted for next spring. The new station will replace the outdated wood-frame firehouse on Railroad Avenue, which was built in 1940, modified and expanded in 1955 and 1968, and cannot be further enlarged. The new station will ease overcrowded conditions, provide centralization and improve the efficiency of fire department operations. The department's latest addition is a new rescue truck (below), shown by Firefighter Randy Phillips and Sgt. Russ Dunn. The lime-yellow vehicle replaces its outdated predecessor, a 1963 Ford, and is equipped with essential modern rescue tools and devices that the old model didn't have. The truck's uses include attending to industrial accidents, auto accidents and removal of the injured, with tools such as a hydraulic lifter, a built-in generator and a water vacuum.



Mort Rosen

## Speaking Out

**Maurice A. DuBois, Reporter**  
**Alex Reben, Photographer**

**Do you think a presidential candidate's chances would be helped or hurt by having a woman as a running mate?**

**Pranab Samanta (DNE)** — I don't think it should make any difference at all, because the vice presidential candidate should be chosen because of his quality and ability to lead the country in case the president is not there. If the nominee feels comfortable with his running mate, it shouldn't make any difference.



**Pat Nisely (Personnel)** — That's a difficult question. I think both. First, he's really making a breakthrough, as far as asking a woman to run for him, and he's losing votes and gaining votes in different areas. It remains to be seen what happens.



**Frank Short (NSLS)** — I think it's going to help a lot, I really do. In fact, I didn't think Mondale had a chance until he got Ferraro. Not just because she's a woman. She's a very dynamic person. Now I really think he'll have an effect.



**Pat Aud (DAS)** — I hope that our society is ready to accept a woman as being equal to a man and just as capable for the position. I think that some women might feel threatened by it, but a lot of women are going to feel positively about it. I think the more secure men will feel okay with it.



**Shih-yung Hsieh (DNE)** — Yes. I think this is the first opening up for women. With at least 50% of the population as women in the country, I think they're entitled to run for office. This is a first, and, I think, a big plus.



**Stacey Paul (DAS)** — I think it is a good thing. It's open-minded. And I think that's what this country needs — a lot more open-mindedness. We need to stop looking at things that make us different, like sex, age, creed and color, and start looking at similarities, because in the political world, the similarities are more important.



**Alex Richardson (MIS)** — I think his chances are probably increased considerably because if he can rally the women behind him, he can get more votes. I don't think she will be a scapegoat if they should lose, either. She's a help, not a hindrance. I also think it opens the doors for groups other than those traditionally considered.



**Rita Straub (Medical)** — From what I've been hearing I'm afraid it hurts. I hate to say that, but that is the impression that I am getting. I'm afraid that there are more people that aren't prepared to accept it than there could be.



## Reports Available

The following reports are now available to the Laboratory staff and to affiliates of the DOE, AUI and NRC. Others may purchase the reports from the National Technical Information Service, U.S. Dept. of Commerce, 5285 Port Royal Rd., Springfield, VA 22161. Staff members should call Ext. 5068.

**BNL-50448**  
Vol. III  
Accelerator Produced Nuclides for Use in Biology and Medicine. A Bibliography July 1976 - Dec. 1980. K.I. Karlstrom, D.R. Christman, Editors

**NUREG/CR-2815**  
**BNL-NUREG-51559**  
Probabilistic Safety Analysis Procedures Guide. I.A. Papazoglou.

**NUREG/CR-2721**  
**BNL-NUREG-51593**  
Scoping Study of the Alternatives for Managing Waste Containing Chelating Decontamination Chemicals. E.T. Premuzic, H.K. Manaktala.

**BNL-NCS-51694**  
IAEA Advisory Group Meeting on Basic and Applied Problems of Nuclear Level Densities. Held at BNL Apr. 11-15, 1983. M.R. Bhat, Editor.

**BNL-51705**  
Zinc Electrode Morphology in Acid Electrolytes. Annual Report Mar. 15, 1982 - Mar. 15, 1983. J. McBreen, E. Gannon.

**NUREG/CR-3496**  
**BNL-NUREG-51712**  
Review of a Test Program for Qualifying the Solidification of Epicor-II Resins with Cement. R.E. Barletta, R.E. David.

**BNL-51715**  
A Reassessment of the OHZ Process for the Thermochemical Decomposition of Water. Final Report. E. Findl, F. Kulesa, G. Strickland.

**BNL-51719**  
Semiannual Report for the Period Oct. 1, 1982 to Mar. 31, 1983 of Work on:  
1) Superconducting Power Transmission System Development; 2) Cable Insulation Development. Div. of Advanced Technology Applications.

**NUREG/CR-3530**  
**BNL-NUREG-51722**  
Review of the Davis-Besse Unit No. 1 Auxiliary Feedwater System Reliability Analysis. R.W. Youngblood, I.A. Papazoglou.

**NUREG/CR-3531**  
**BNL-NUREG-51723**  
Review of the Seabrook Units 1 and 2 Auxiliary Feedwater System Reliability Analysis. A. Fresco, R.W. Youngblood, I.A. Papazoglou.

**BNL-51727**  
Heat/Mass Flow Enhancement Design for a Metal Hydride Assembly. Phase II Final Report. T.A. Albright, Southern California Gas Co.

**NUREG/CR-3614**  
**BNL-NUREG-51736**  
Constant Extension Rate Testing of SA302 Grade B Material in Natural and Chloride Solutions. C.J. Czajkowski.

**BNL-51734**  
Tune Shifts for Coasting Beams Crossing at Small Angles. G. Parzen.

## Arrivals & Departures

### Arrivals

**Benjamin C. Craft, III** ..... NSLS  
**Kevin D. Hester** ..... Ph. & Gr. Arts  
**Peter J. Kroon** ..... Physics  
**David K. Liu** ..... Chemistry  
**Johnnie Turner, Jr.** ..... Pl. Eng.

### Departures

This list includes all employees who have terminated from the Laboratory, including retirees:  
**Robert D. Clark** ..... Biology  
**Wai Yee Keung** ..... Physics  
**Gary L. McFelia** ..... App. Math.  
**Robert M. Saltzman** ..... DAS  
**Susumu Terada** ..... Physics

## CREF Values

June	67.12	July	65.43
August	66.13	September	67.02
October	65.95	November	67.06
December	66.84	January	66.50
February	64.21	March	65.37
April	65.34	May	60.81
<b>June \$61.71</b>			

# BROOKHAVEN BULLETIN

Published weekly for the employees of BROOKHAVEN NATIONAL LABORATORY

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## Last Chance For T-Shirts

The first order was sold out, so for those of you who didn't get one, here's your last chance. Unisex T-shirts are available to all employees, students and guests. They are 50/50 cotton and polyester (minimal shrinkage), in white with blue print. The cost is \$5 (tax included), and they come in unisex adult sizes, small, medium, large and extra large, and in unisex child sizes, small, medium and large.

Only cash or money orders will be accepted. Make them payable to "Renee Flack — T-shirts '84." Send or bring your order to Renee Flack, Building 460, on or before Friday, August 3. Please allow two weeks for delivery.

## IBEW Meeting

Local 2230, IBEW, will hold its regular monthly meeting on July 26, at 6 p.m., in the Knights of Columbus Hall, Railroad Avenue, Patchogue. There will also be an afternoon meeting at 2 p.m. for shift workers in the Union office at 31 Oak Street, Patchogue. On the agenda will be regular business, committee reports and the President's report.

## PC User Meeting

The next meeting of the PC/Workstations User Group will be on Tuesday, July 24, at 10:30 a.m. in the Applied Math Seminar Room. Ted Daniels will demonstrate CAD/CAM on the IBM PC.

## Cafeteria Menu

Week Ending July 27

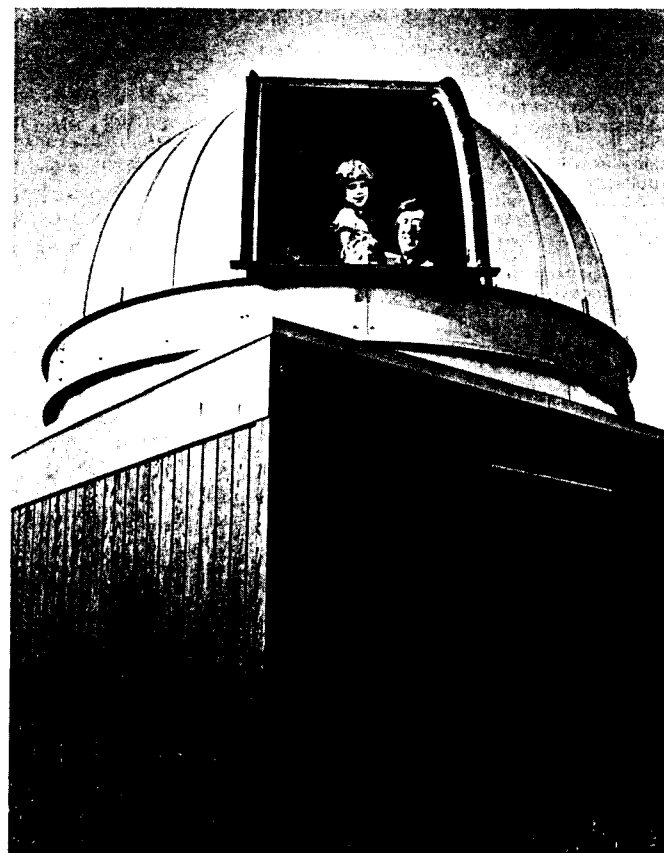
<b>Monday, July 23</b>	
Cream of mushroom	(cup) .65
	(bowl) .85
Veal rosemary over noodles	1.95
Batter dipped fish fillet w/ lemon & 1 veg.	1.80
Hot Deli: Chicken pattie club	(bread) 2.15
	(roll) 2.30
<b>Tuesday, July 24</b>	
Beef barley	(cup) .65
	(bowl) .85
Swedish meatballs over egg noodles	1.85
Baked French bread pizza & 1 veg.	2.00
Hot Deli: Grilled ham & avocado	1.90
<b>Wednesday, July 25</b>	
Canadian cheese chowder	(cup) .65
	(bowl) .85
Braised liver & onion w/1 veg.	1.80
Turkey vegetable Oriental over rice pilaf	1.90
Hot Deli: Sandwich steak w/pepper & onion on croissant or pita bread	2.15
<b>Thursday, July 26</b>	
Minestrone	(cup) .65
	(bowl) .85
Barbecued spare ribs & 1 veg.	1.95
Beef & broccoli stir fry over rice	2.00
Hot Deli: Reuben	1.90
Top your own baked potato, served w/chili & cheese sauce plus two toppings of your choice.	.75
ea. extra topping	.25
<b>Friday, July 27</b>	
Seafood chowder	(cup) .65
	(bowl) .85
Top round of beef w/ choice of two sauces & 1 veg.	2.05
Fresh broiled scrod & 1 veg.	1.90
Hot Deli: Seafood cheddar melt	(bread) 1.85
	(roll) 2.00

# BERA News



Astronomy Club President Cesar Sastre (DNE) leans on the sign unveiled at the observatory's dedication. The observatory's 8-inch telescope was built by Grumman employees. The Grumman Corporation and the Vanderbilt Planetarium contributed funding for the dome.

—photos by Reben



Through the observation window, some guests of the Astronomy Club look out on the dedication celebration. The dome, assembled by club members, sits atop a small structure built under the general supervision of Walt Milian (Plant Engineering).

## New Window to the Stars

The story of how the new Astronomical Observatory came to be sponsored jointly by the BERA Astronomy Club, the Vanderbilt Planetarium and the Grumman Corporation was recounted by Mark Levine, Director of the Vanderbilt Planetarium, at the dedication of the observatory at BNL on July 12.

It all began, he said, during the days of the moon program, when a Grumman astronomy group constructed an 8-inch telescope. After the club disbanded, the telescope was mothballed, until about six years ago when its guardian had to move and called Levine, asking for help in disposing of it.

As it happened, BNL's Garman Harbottle (Chemistry) was on the Vanderbilt's Board of Trustees. He realized that BNL, with its dark sky, good security and eager core of potential users, could be the ideal location for the telescope. In early 1981, Harbottle used the Bulletin to see if there was

interest in reorganizing the dormant BERA Astronomy Club around the telescope.

In the three years since then, the club has grown to about 50 members, and the telescope has found a home in the new observatory on the east end of the Lab's property. Membership in the Astronomy Club is open to all BERA members. Dues of \$15 per year entitle each member to unlimited observing privileges. Periodically, the club holds observation nights when all are welcome and club members are on hand to assist. One such observation night is scheduled for tonight, at sundown. For more information, call Cesar Sastre, Ext. 4077.

## Afro-American Club

Looking for something to do on August 18? Members of the Afro-American Culture Club invite you to attend their 4th Annual Picnic and Jazz Show for a day of fun and relaxation. Watch for further details.

## Microcomputer Club

On Thursday, July 26, at noon, in the Biology Department library, the TAVA PC computer will be demonstrated. This is a popular IBM work-alike that sells at a lower price. So far, all IBM PC programs tried work identically on the TAVA. For further information, contact Jim Hainfeld, Ext. 3372.

### Note to Commodore users:

On Tuesday, July 24, Commodore users will be having an on-line demonstration of Chemical Bank's "PRONTO" home banking and information system. A representative from Chemical Bank will demonstrate how PRONTO works and answer questions about using your own computer/modem with the system. The demonstration will be at noon in the Biology Department library.

## Mountain Club

The Mountain and Canoe Club invites all interested to come see two films about canoe safety and white water sport. Showing will be at noon on Monday, July 23, Room B at Berkner Hall. Bring your lunch. The films take 5 minutes each.

## Tennis

Tennis players are reminded that during the weekends of July 21 and July 28, the courts will be unavailable for regular play, while the annual BNL Tennis Tournament is in progress.

## Children's Program

A penny fetch was the featured event during the first Friday Special held at the swimming pool last week. Over 75 children were on hand to dive for the glittering coins on the bottom of the pool.

Winning contestants were:

- 4 & 5 year olds
  - 1st Mikki Bebon
  - 2nd Kristine Losquardo
  - 3rd Ilberg Leron
- 6 & 7 year olds
  - 1st Adam Huhn
  - 2nd Heidi Abrams

- 3rd Karen Bebon
- 8 & 9 year olds
  - 1st Keith Chan
  - 2nd Cristy Bebon
  - 3rd Anita Kraszewska
- 10-plus year olds
  - 1st Kisa Clifford
  - 2nd Karen Mills
  - 3rd Helma Shapir

### Coming Events

Today, July 20 — Kickboard Races  
Next Week, July 27 — Relay Races  
(All Friday Pool Specials begin at 3:15)

## Softball

### First Half Standings

<b>League I</b>			
	Won	Lost	Rain outs
Blue Jays*	6	1	
Ravens*	6	1	
Six Pax	5	2	
Phoubars	4	3	
Moles	2	5	
Ice Pops	2	5	
Big Sticks	2	5	
Renames	1	6	
* Playoff game to be scheduled.			
<b>League II</b>			
Dirty Sox#	7	0	
Magnuts	6	1	
Medical	4	3	
Faze II	3	3	1†
Titans	3	3	1†
Lights Out	2	5	
Scram	2	5	
Random Errors	0	7	
# Winners - first half			
† Game unnecessary			
<b>League III</b>			
Survivors#	6	0	1†
Farm Team	5	2	
No Names	3	3	1†
Source	3	4	
Nads	2	5	
E-Z Riders	1	6	
# Winners - first half			
† Game unnecessary			

<b>League IV</b>			
TNT	5	1	1*
Mole-Esters	5	2	
Turkeys	4	2	1*
Septembers	3	4	
Kidz-R-Us	2	5	
Underalls	1	6	
* Game scheduled for July 30			
<b>League V</b>			
No Feedback*	5	2	
Who Cares*	5	2	
Mudville Sluggers	4	3	
Foul-Ups	4	3	
Space Kadets	2	5	
Erasers	1	6	
* Playoff game scheduled for 7/17			

### Games for week of July 9

<b>League I</b>	
Blue Jays 9 — Moles 2	
Six Pax 6 — Ice Pops 4	
<b>League II</b>	
Scram 7 — Medical 4	
Random Errors 19 — Faze II 15	
<b>League III</b>	
No Names 8 — Nads 1	
<b>League IV</b>	
Mole-Esters 9 — Underalls 7	
Turkeys 8 — Kidz-R-Us 0	
<b>League V</b>	
Space Kadets 7 — Foul-Ups 4	
Who Cares 21 — Erasers 4	
Mudville Sluggers 8 — No Feedback 5	
Makeup game:	
Space Kadets 10 — Mudville Sluggers 8	



## 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, 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 Personnel Placement Supervisor, Ext. 2882.

**LABORATORY RECRUITMENT** - Opportunities for Laboratory employees only.

2083 MATERIAL HANDLER - (temporary) Supply and Material Division.

2084. CLERICAL POSITION - Duties include typing, data entry, records maintenance and filing in the Property Management Section. Typing skills required and knowledge of terminal use helpful. Supply & Materiel Division.

2085. SECRETARIAL POSITION - Requires excellent typing and communication skills. Will provide clerical and word processing support to various areas within the Engineering and Risk Assessment Division. Department of Nuclear Energy.

**OPEN RECRUITMENT** - Opportunities for Laboratory employees and outside applicants.

2086. CHEMISTRY ASSOCIATE - Requires a BS in chemistry and a minimum of two years environmental analytical experience or an advanced degree in environmental chemistry. Individual will develop and evaluate methodology for the analysis of reactor coolant waters for an NRC grant. Primary responsibilities will be to access existing methodology and coordinate a round-robin testing program involving several nuclear facilities. (Appointment will be to June 30, 1985.) Safety and Environmental Protection Division.

### Autos & Auto Supplies

GERMAN AUTO PARTS - wholesale prices for VW, Porsche, BMW, Audi, and Mercedes. Augie, 821-0379.

78 CORVETTE - loaded, black w/white int., \$10,000; pop-up trailer, sleeps 6, best offer, 757-1380.

68 DATSUN SPL3LL ROADSTER - convertible, all restored, must see, \$3,500. Chris, 929-6543 after 6 p.m.

64 CHEVY IMPALA - 2 dr., 6 cyl., lots of new parts, \$400. Mark, 286-4150.

71 STARCRAFT POP-UP CAMPER - sleeps 6 or 7, good cond., \$900. 924-6068.

76 HONDA - 550 cc, 7,000 mi., custom seat, lugg. rack, excel. cond., \$800. 654-5285.

69 CHEVELLE - good reliable running cond., \$400. Ext. 4219.

68 CHEVY IMPALA - 4 dr. sedan, 6 cyl., auto., good cond., not much rust, \$250. Ext. 5283 or 281-7302.

AIR CONDITIONER - for Scirocco or Rabbit, small, used, \$250. Gar, Ext. 4387.

75 HONDA MOTORCYCLE - CB200T, excel. cond., hardly used, great gas, \$400. Ext. 2705 or 286-2964.

83 CHEVROLET CAVALIER - 2-tone, a/c, p/b, p/s, sunroof, 9,800 mi. Lois, 751-0023.

TIRES - (2), 12", almost new, on Toyota rims, \$30. Hank, Ext. 3848 or 472-0553.

75 BUICK - 4 dr., 350 eng., auto., p/s, p/b, new tires, reliable transp., good cond., \$1,000. Walter, 878-8967.

80 BUICK CENTURY LTD - 4 dr., white, loaded, 59,000 mi., excel. cond., \$5,900. Ext. 3392 or 475-8330.

77 OLDS CUTLASS SUPREME - V8, a/c, 2 dr., 64,000 mi., \$2,650. Jack, Ext. 7942.

SHOP MANUAL - VW, Type 17 Rabbit, Type 53 Scirocco, free; Michelin tires, 1555R13, with rims for VW/Rabbit, \$25/ea. Bruce, Ext. 5091.

82 OMNI DELUXE - 2-tone, 4 dr., auto., excel. cond., low mi., Dodge guarantee, \$4,400 neg. George, 331-9572.

73 CHEVY NOVA - hatchback, good cond., runs well, \$500. 563-2847 eves.

77 TRANS AM - orig. owner, 44,000 mi., brown/-saddle, T-top, excel. cond., \$5,000. Ext. 3319 or 924-7677.

71 BUICK - 4 dr., good cond., just tuned, good tires, \$850. 654-8854 after 5:30 p.m.

71 R.V. SUPERIOR - 22 ft., 8 mpg, great shape, asking \$7,500. Ext. 4597.

75 GOLDWING - fairing, louvers, large trunk, f/bds., fog lights, custom seat, excel. cond., \$1,500. Mike, Ext. 2976 or 732-2309.

73 VW CAMPER - pop top, rebuilt eng., excel. cond., \$1,900. 286-0497.

76 FORD GRANADA - auto., 6 cyl., no rust, excel. cond., \$1,600. Shiao, Ext. 4996.

69 PLYMOUTH VALIANT - 6 cyl., auto., p/s, 4 dr., excel. running cond., body fair, \$350. 924-8224.

79 FIAT 124 SPYDER 2000 - convertible, 5 spd., am/fm stereo, good cond., asking \$3,850. Ext. 5182 or 924-5513.

73 MAVERICK - 8 cyl., good cond., brought from California, \$1,000 or best offer. Ext. 4603 or 3032.

73 PLYMOUTH FURY - 4 dr., needs minor work, orig. owner, \$450. Ext. 4262 or 654-5411.

77 ACCORD RADIATOR - new, \$75. Gordon, Ext. 4095.

77 TOYOTA COROLLA - 4 spd., man. trans., nice looking dependable car, one bad rust spot, \$900. 744-8609.

72 VW BUG - am/fm cassette, 2 new tires, \$850. Russ, 3059 or 744-7242 after 6 p.m.

69 APACHE CAMPER - stove, sink, ice-box, fair cond., new tires, \$495; motorcycle tire, 125 cc, dirt bike, brand new, \$20. 924-3082.

76 BUICK REGAL COUPE - a/c, am/fm, tilt wheel, 60/40 bucket seats, \$1,500. 821-9659.

67 VW - convertible, red, excel. cond., runs well, \$1,500. 286-0939.

78 MUSTANG - 4 spd., 65K mi., very good cond., \$2,700 or best offer. Boyce, Ext. 3734 or 744-7849.

80 HONDA MOTORCYCLE - CB750F, 8K mi., fairing, oil cooler, many extras, must see, \$1,500. 288-9086.

71 PONTIAC GRANDVILLE - V8, a/t, p/s, p/b, good running cond., must sell, \$450 or best offer. 282-3855.

66 MUSTANG - 6 cyl., 200, auto., body good, new parts, runs well, asking \$800. 286-2964 eves.

78 CADILLAC - 4 dr. sedan, D'Elegance model, 66,000 mi., excel. cond., full power, cruise control. Ext. 3319 or 744-9802.

69 FAN TRAVEL TRAILER - bunkhouse, sleeps 6, shower, extra storage, needs some work, \$1,700. Mike, Ext. 2976 or 732-2309.

67 CADDY - 100K mi., mech. good, body fair, needs muffler, \$200. Ext. 3828 or 751-7250.

76 CHEVY MAZDA - 4 cyl., 4 spd., mech. excel., body fair, \$750. Rich, Ext. 4482 or 277-1129.

HONDA DIRT BIKE - XR80, excel. cond., \$400. Neal, 286-2435.

67 CHEVY CAMARO - 28,000 orig. mi., fantastic cond. Marj, 924-4502, eves.

81 PONTIAC FIREBIRD - auto., a/c, p/s, p/b, am/fm stereo, 39,000 mi., excel. cond. \$5,700 or best offer. 691-0493.

71 FORD TORINO - 81K mi., \$550 or best offer. Ext. 2341 or 3108.

69 FORD WAGON - auto., fair cond., \$325. 281-5565 after 5 p.m.

CRAGER RIMS - (4) w/Good Year A-T tracker tires, (15"), \$250; cap for 6x8 bed pickup, \$150. Ben, Ext. 2901.

78 HONDA MOTORCYCLE - CB550, excel. cond., many extras, \$975. George, Ext. 7654.

76 HONDA - CB200T, good cond. Marj, Ext. 3396.

DUNE BUGGY GO-KART - 5 HP Briggs, disc brake, trike tires, 475-1388, eves.

80 KAWASAKI - 440 LTD, runs well, booster, fairing, stereo, new tire, sprockets, chain, \$700. 399-0168.

81 KAWASAKI - 440 LTD, black, low mi., must sell, \$1,100. Greg, 289-6519.

70 VW KARMAN GHIA - rebuilt engine, \$775 or best offer. Ed, Ext. 7943 or 589-3992.

73 CHEVY IMPALA - runs good, new exhaust, body not so good, \$200. Joe, Ext. 4661.

78 HONDA MOTORCYCLE - 750K, plexifairing, travel trunk, backrest, case guards, excel. cond., \$1,250. 360-3808.

78 PUCH MOPED - Maxi Class B, 90 mpg., \$325. 363-6845.

### Boats & Marine Supplies

7' DINGHY - fiberglass with oars and oarlocks, good cond., \$125. 286-3791.

20' CHRIS CRAFT - Supersport, 1966, rebuilt V8, loads of extras, \$2,500 neg. 587-5197.

CLAM RAKE - 18 tooth, 20 ft. adjustable length handle, \$30. Bill, Ext. 2807 or 281-0557.

21' VENTURE SAILBOAT - 1981, swing keel, 7.5 HP Mercury, trailer, double life lines, compass, sleeps 4. Ext. 2765.

EVINRUDE - 40 HP, long shaft, will tank test, good cond., \$425. 289-0413.

18' STARCRAFT - 1979, Mariner, 40 HP Mercury, Tee-Nee galvanized tilt trailer, all like new. LT, 589-4363 after 6 p.m.

15' FIBERGLASS BOAT - 25 HP Johnson, very good cond., \$950. Ext. 3604 or 878-0516 after 5:30 p.m.

SUNFLOWER SAILBOAT - styrofoam, \$150. Randy, Ext. 3809 or 744-8609.

16' WINNER BOWRIDER - I/O, hull only, excel. cond., \$450; antique outboard motors, Evinrudes, Mercurys, Elgin, 6 over 40 yrs. old. 924-3082.

27' BRISTOL SLOOP - in water, Sag Harbor mooring, full keel, 4 sails, excel. cond., \$14,500. Bill, Ext. 2108.

18' WOOD BOAT - and trailer, \$250. 472-0499 after 5 p.m.

9' JON BOAT - fiberglass, \$200. 751-6418.

### Miscellaneous

FARBERWARE - convection oven, good cond., \$90. 929-8443.

MINK COAT - full length, white & fawn, size 11-12, appraised at \$2,250 must sell, \$600. Chris, 929-6543.

GARAGE SHELF UNIT - with sliding doors on bottom, \$50; wood cabinet for garage use, 4 cabinets, \$50; fully ADJ book shelf, all wood, excel. cond., \$50. 924-8224.

RIDING MOWER - 8 HP, 32" cut, good cond., needs battery, \$200; 16" bicycle with training wheels, good cond., \$35. 286-3791.

PATCHWORK QUILTS - handmade, twin size, \$75. 744-6409.

COLEMAN CAMPING STOVE - 2 burner, \$15; Gerry baby backpack, \$8; baby bassinette with pad, \$10. Tom, Ext. 4662.

TRIVIAL PURSUIT GAME - new and unopened. 878-4498.

DEHYDRATOR - for fruit and vegetables, used once, \$40 (paid \$72). 282-3131.

G. E. REFRIGERATOR/FREEZER - excel. cond., 9 yrs. old, 30"x66", best offer. Lois, 751-0023.

SEARS UPRIGHT FREEZER - good cond., new door gasket and paint, \$200. Walter, 878-8967.

SCHWINN BICYCLE - women's 26", \$15. Marla, 473-2334.

GAS STOVE/OVEN - Caloric, avocado, very good cond., \$100. Hank, Ext. 3848 or 472-0553.

MAGNAVOX STEREO CONSOLE - remote speaker, nice cabinet, good working cond., \$40. Joe, Ext. 2575 or 281-2767 eves.

FEDDER'S AIR CONDITIONER - 7,000 BTU, 4 yrs. old, excel. working cond., \$85; Coldspot elec. freezer, 15 yrs. old, but works fine, \$40. 475-6938.

POOL - 15'x30", all alum. (minus liner), incl. access., \$395. Walt, Ext. 2907 or 698-0576 eves.

TANDBERG HI-FI CASSETTE TAPE DECK - TDC-330, \$250; also reel-to-reel deck, 6000x, \$250. 282-3131.

REFRIGERATOR/FREEZER - side-by-side, 22 cu. ft., copper, Westinghouse, very good cond., \$375. 249-8223 after 5 p.m.

G. E. PORTABLE DISHWASHER - oldie but goodie, \$30; kiln and accessories. 821-9659.

ZENITH COLOR TV - 25" console, excel. cond. 325-0447 after 6 p.m.

EXTENSION LADDER - wood, 22 ft., \$35; hand truck with hydraulic lift, \$75. 261-7825.

BICYCLES - men's 3 spd., \$30; boy's, \$20. Ext. 3032 or 4603.

MARATHON POOL - 18x4 ft., w/filter, motor, ladder, vacuum, leaf bagger, etc., asking \$500. 878-0516.

WOMEN'S ROSS BICYCLE - coaster bike, like new, \$50, orig. \$125. 924-3082.

PHOTO DRYER - stainless steel drum, \$35; kitchen fixture, 2 fluorescent bulbs incl., new, \$30. Susan, Ext. 4267.

ROSS ROOTFEEDER - ideal for fertilizing and watering trees/shrubs, new, unused, \$12. Nancy, Ext. 5274 or 281-2767.

HONEY - unfiltered, unheated, will deliver to BNL. George, 744-3289.

KENMORE WASHER/DRYER - heavy duty, \$100 ea.; Kroehler sleep lounge, \$75; reclining chair, \$65. Diana, Ext. 2108.

ANTIQUE PIANO - 57 key, walnut, refinished, with stool, \$175; fold-up bed, \$35. 298-4398.

COLONIAL STYLE SOFA - 7 ft., like new. Dave, Ext. 4254.

GEOLOGIST'S PICK - hammer, \$15; complete set children's encyclopedia, \$15; Belgian billiard balls, \$10. Marian, Ext. 3552.

BMX DIRT BIKE - \$65; cycle helmet, \$15; antique oak ped table, \$550; mod. kit. hutch, \$70. Ron, Ext. 7696 or 289-1003.

DINETTE - 5 pieces, walnut formica, \$50; living room chairs; Toro 5 HP rototiller, \$250; oil drums, 325-1961.

WALNUT BEDROOM - headboard with lights & storage, triple dresser with mirror, man's dresser \$250; Beckett oil burner, \$100. Ext. 4483.

KENMORE WATER SOFTENER - 3 yrs., \$100; Mark 10 glass lined tank, \$25; Sears pump, \$25. Anna, 281-4202.

GERMAN COURSE BERLITZ BRIEFCASE - with 6 cassettes, unused, cost \$125, asking \$75. Alan, Ext. 2928.

BOXSPRING & MATTRESS - for full size bed, \$40. Lloyd Davis, Ext. 3952/4803 or 325-0389.

ELECTRIC TYPEWRITER - Smith Corona, script letters, like new, \$175; ITT touch tone trim line phone, brown, \$40; Petite Curie phone, ivory, \$30. 751-6418.

TAPE RECORDER - Tandberg, Model 64, open reel deck, \$200. Ext. 3828 or 751-7250.

DIAMOND RING - beautiful marquise, two bagettes, total 1.0 pt., appraised \$3,125, asking \$2,400. Mary Ann, 286-2435.

TRUNDLE BED - \$75; couch, \$10; girl's twin bedspread, \$15. Carole, Ext. 3341.

REFRIGERATOR - 10 cu. ft., white, excel. cond., \$130. 924-0813.

OLD WHEEL HORSE TRACTOR - with 36" steel plow blade, engine needs work, \$100; riding mower 26", 8 HP, B.S. engine, good running cond., \$200. 924-3581.

TRUMPET & CASE - for beginner, good cond. Ken, 281-5565 after 5 p.m.

WOOD - seasoned hardwood, 2' rounds, \$110 cord; GE clothes dryer, excel. cond., must sell, \$130. Tom, Ext. 3128 or 928-7344, eves.

CHANGING TABLE - stroller and high chair, best offer. Ext. 4169 or 981-5696.

ANTIQUE PARLOR STOVE - \$100; hi-riser, \$100; Mediterranean-style end tables, \$90/pair. 289-5607.

COLONIAL LOVE SEATS - (2), chair, like new, asking \$300; colonial sofa, chair and ottoman, \$250. 475-1388, eves.

FISH TANK - 20 gal., octagonal w th wood stand and all accessories, filter, light, etc., best offer. Bea, Ext. 3571.

CARD READER - HP41CV, \$145. Philip, Ext. 4273, leave message or Ext. 2516, eves., Rm. S6.

MEN'S BIKE - 10 spd., good cond., \$40; girl's 3 spd., touring bike, 24" wheels, \$40. Ernie, Ext. 2957.

WINDOW TREATMENTS - miniblinds, vertical blinds, wovenwood shades, custom colors and sizes. Jim, 281-2849.

CONN THEATRE ORGAN - two 44 note manuals, 47 tabs spk., main & Leslie-Rhythm selections, \$1,200. 744-5855 after 6 p.m.

### Yard Sales

PORT JEFF. VILLAGE - porch sale, July 21&22, 401 E. Main St., books, records, kitchen stuff, odds & ends, 9 a.m.-5 p.m.

PORT JEFF. - yard sale, 3-family, July 21&22, 836 High St., 10 a.m.-5 p.m. Tom, Ext. 3128.

### Free

KITTENS - adorable, some black, some black & white, 6 wks. old. 549-2794.

### Real Estate

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

### For Sale

SOUTH WOODSTOCK, CONN. - lake front cottage, 2 bdms., \$24,000, may hold mort. 757-1380.

MILLER PLACE - 4 bdrm. colonial, formal l/r, d/r, country kitchen, family rm., w/brick fireplace, .9 acre. \$158,000. 331-1718.

SHOREHAM - waterfront in a woodsy garden setting, 5 room house, big porch overlooking the sound. 744-9749 or Box 609 Shoreham.

NORTHPORE/FT. SALONGA - 4 bdrm. ranch on wooded acre, in-ground swimming pool, closed-in porch, play room, fireplace, many extras, asking \$190,000. 261-7825.

MEDFORD - partially wooded prof. landscaped 2/3 acre lot on cul-de-sac, 4 yr. old ranch, 3 bdrm., family room, lg. country kitchen, mint cond., PM schools, asking \$76,000; \$37,500 assum. FHA 13%. Ext. 5508 or 475-0137.

BROOKHAVEN HAMLET - large cape, formal d/r & l/r w/fireplace, beamed ceiling, country kitchen, 4 bdrm., 2 bath, screened brick patio, garage, landscaped, extras, mint cond., principals, \$115,000. 286-1082.

### For Rent

SHIRLEY - 3 rm. furnished apt., 5 min. from Lab, private entrance, 1 month rent & one month security, all util. incl. 281-0109.

S. JAMESPORT - cozy house in country setting, 3 bdms., l/r, kitchen, d/r, utility rm., walk to beach, 20 mi. from Lab. avail. Sept. 1, \$400/mo. + util. (no pets). Walt, Ext. 2907 or 698-0576 eves.

MASTIC BEACH - 3 bdrm. ranch house, quiet, well furnished, all appl., 500/mo. + util., avail. Sept. 1, 281-0943.

VT. CHALET - 4 bdms., stone f/p, beautifully decorated, on large pond, woodland trails, swimming, canoes, fishing, nearby antiquing, theaters, music, festivals, avail. Aug. 5-12. 757-5599.

RIDGE - 2 bdrm. townhouse, 1-1/2 baths, washer/dryer, dishwasher, no pets, preferably no children, avail. Aug., \$550/mo. + util. Betsy, Ext. 5182 or 924-5513.

PORT JEFF - single family cedar shingle farm ranch, 3 bdms., 2 baths, f/p in den, 2 car garage, basement, washer/dryer, dishwasher, carpeting, drapes, avail. Sept. 1, \$1,000. Solem, Ext. 3985 or 928-7879.

WADING RIVER - 1 bdrm. furnished apt., walk to beach, single working person, \$450 per month pays all. Ext. 7782.

MIDDLE ISLAND - 2-3 bdrm. house, d/r, l/r, kitchen, on quite river, fishing, boating, swimming, 5 min. from Lab, security, references. 924-3755.