BROOKHAVEN BULLETIN

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BROOKHAVEN NATIONAL LABORATORY

McAlary Named Business Manager

Bernard McAlary, who has been BNL's Fiscal Officer since 1966, will become the Laboratory's Business Manager on July 1. He replaces James Desmond, who is leaving BNL to become Associate Director for Administration at the National Radio Astronomy Observatory, which is also operated by Associated Unversities, Inc. (AUI).

In announcing McAlary's new appointment, Henry Grahn, Associate Director for Administration, noted, "Barney brings to the position considerable depth and understanding of the Laboratory's policies, procedures and practices.... I am confident that he will continue to use his good judgment and expertise in carrying out the repsonsibilities of the position of Business Manager in the same outstanding manner he has demonstrated in the past."

As Business Manager, McAlary will be responsible for two divisions — Staff Services and Supply & Materiel — with which he has had much interaction as Fiscal Officer. In addition, the Fiscal Division will report to him over a transition period of perhaps three to six months. He will also continue to serve as Fiscal Officer until the search for his replacement is completed.

Mort Rosen

Bernard McAlary

"Work for Others" will be another major area of responsibility for McAlary. This involves the submission, negotiation and monitoring of all grants and research agreements with organizations other than the Department of Energy and the Nuclear Regulatory Commission. These groups include federal agencies such as the National Institutes of Health and the National Science Foundation, as well as state and local governments, commercial organizations and nonprofit entities. Work-for-Others funding comes to about $40 million per year.

This aspect of the job will bring McAlary closer to the Lab's research. "As Business Manager," he said, "I'll be involved more at the beginning of things. Every proposal is a write-up of the scope of the work, which you would not normally be aware of in Fiscal."

Other areas handled by the Business Manager's Office include overseeing the Lab's annual United Way campaign and negotiating with such on-site operations as the bank and the service station.

Bernard McAlary earned his B.S. degree in accounting from New York University in 1957. He became a Certified Public Accountant in New York State in 1961, and attended Long Island University from 1969 to 1971, receiving an M.S. degree in taxation.

From 1957 to 1963, McAlary was an Audit Supervisor for Coopers and Lybrand, New York City, a major public accounting firm. He came to the BNL site as an AUI Auditor in October 1963. On July 1, 1966, exactly 21 years before the change he makes next week, he transferred to the BNL staff as Fiscal Officer, with a nice round life number — 10,000.

McAlary, who lives in Wading River with his wife Jean, is in the midst of a five-year term on the Little Flower Board of Education.

Omega-Minus Makes Tracks; Processor at AGS Reconstructs Them — 100,000 Times Faster

You are a detective at the scene of a collision at the Alternating Gradient Synchrotron (AGS). Some proton beam smashed into a liquid hydrogen target. Smithereens. Whatever came out of the crash made tracks through the detector of Experiment E766. In all directions and three dimensions.

It's your job to track 'em down. ID all likely suspects and get their modus operandi — before another investigator gets to them first. To tail 'em, you have to know which way they went. If you can reconstruct the aftermath of the collision 100,000 times faster than anyone else, you'd get your detective's badge gold plated.

To reconstruct the tracks of the many particles arising from the many collisions of beam and target particles 100,000 times faster than usual, E766 investigators have built what is called a parallel pipeline processor.

100,000 Events Per Second

Usually, more than one second is needed to reconstruct the tracks of the dozen or so particles that come out of an event, the collision of one beam and one target particle. Complicated events can use up to one minute of computer time. The E766 processor can reconstruct 100,000 such events per second.

"For this particular problem, this processor is by far the fastest computer in the world," explains Bruce Knapp, of Nevis Labs of Columbia University, one of three spokesmen for E766. This AGS experiment is a collaboration of Columbia, the University of Massachusetts, University of Mexico, Fermi National Accelerator Laboratory and Texas A&M University.

One in a Million

E766 is looking for the Omega-minus particle, which was discovered in 1964 at the AGS in an experiment led by Nicholas Samios, using the new 80-inch bubble chamber, designed by Ralph Shutt, as the detector. Little has been learned about the Omega-minus since its discovery because its production is complicated and rare — an Omega-minus is produced only about once every million collisions at the AGS.

E766 collaborators came to the AGS to look at high energy proton-proton and neutron-proton collisions. "There are two classes of complicated interactions that interest us," says Knapp, "one of which is the Omega-minus. But we'd also like to see if there is anything else. The processor allows us to study closely an enormous number of collisions.

Connect the Dots

The E766 detector is made up of six drift chambers, each having four planes of 500 parallel wires strung across a volume of argon/isobutane gas in an electric field. As a charged particle, like an AGS proton, travels through the detector, it collides with the gas, knocking electrons off and ionizing the gas.

Under the influence of the electric field, these electrons drift towards the nearest wire. When they reach it, the wire sends out a signal, giving one point during the particle's track through the detector. As there are 12,000 wires and millions of particles per second travel through the detector, connecting the dots to reconstruct each particle's track in three dimensions is a tedious, time-consuming job — a perfect task for a specialized computer like the processor.

Specialized Computer

E766's processor essentially is a specialized computer capable of one task. Instead of interpreting and executing a computer program to reconstruct the tracks like a conventional computer would, the processor's 40 types of circuit boards, 380 in total, were designed and connected in such a way as to do only track reconstruction.

Usually, the 100 to 1,000 events per second that are selected by a detector are recorded on magnetic tape. Later, a computer reads the magnetic tape, and a computer program reconstructs the tracks of the particles that emerged from each event.

The E766 processor, however, reconstructs the tracks immediately after the events occured — without having first to write the events to magnetic tape.

Explains Knapp, "This processor is so fast that there are very few detectors around that can deliver data to it fast enough." With the processor in mind, the designers of the E766 detector devised it to select almost one mil-

(Continued on page 2)

Mort Rosen

In two racks, 380 circuit boards, connected by ribbons of cables, make up the E766 parallel pipeline processor. Examining one of the 40 types of circuit boards are (standing) Jorge Uribe, physics graduate student from the University of Massachusetts, and Lawrence Wiencke, Columbia University physics graduate student, two of the half dozen collaborators who were involved in testing, connecting and debugging the processor.

Honorary Degree for Cronkite

At an academic ceremony to be held at the University of Ulm in West Germany, Eugene Cronkite, Senior Scientist and former Medical Department Chairman, will receive an Honorary Doctor of Medicine degree. The ceremony will take place next Friday, July 3, on the occasion of the University's 20th anniversary.

Cronkite learned of this honor last January, in a letter from Charles Pilgrim, the University's Dean of the Faculty of Theoretical Medicine. Pilgrim wrote, "I have the distinct honour and pleasure to communicate to you the following resolution of the Faculty Council: On account of your outstanding scientific achievement and in grateful recognition of your function as an advisor in the planning and development of this university, the Council has voted unanimously to confer upon you the title of an Honorary Doctor of Medicine."

Today, about 5,000 pursue studies in medicine and in the natural sciences at the University of Ulm, and a school of engineering is in the planning stages. The University's President, Theodor Fliedner, has been associated with BNL since 1957. While a Visiting Professor of Medicine at the University of Freiburg, West Germany, Cronkite was invited to join Fliedner and others as a founding member of the new University. He was on the planning committee from 1966-1967, when the University of Ulm opened its doors.

Mort Rosen

Eugene Cronkite

Cronkite completed his medical residency at Stanford University in 1942. While in the Navy, from 1942 to 1954, he collaborated on the development of platelet and granulocyte transfusions. Though developed to combat radiation effects, both techniques are widely used today to treat ailments such as leukemia. Before leaving the Navy, as Medical Corps Commander, he directed the study and care of Marshall Islanders accidentally exposed to fallout radiation.

Cronkite came to BNL in 1954 and

(Continued on page 2)

Cronkite (Cont'd)

was Chairman of the Medical Department from 1967 to 1979. In the early 1960's, he developed a clinical application of a technique for irradiating blood extracorporeally — outside the living body — to explore the function of lymphocytes. Previously, in the late 1950's, Cronkite and BNL Senior Scientist Victor Bond initiated the use of tritiated thymidine, a radioactive precursor of DNA developed at BNL, in studying human diseases such as leukemia and multiple melanoma. This made possible Cronkite's ongoing research into hematopoietic cellular proliferation, the subject of a conference held at BNL in his honor in October 1983.

Another area of his continuing study is hematopoietic molecular regulation on radiation injury of the bone marrow. This interest led to Cronkite's being one of the organizers of a 1986 conference held at BNL on "Short-Term Health Effects of Reactor Accidents: Chernobyl."

Processor (Cont'd)

lion events per second — more than even their processor can handle.

Told It Couldn't Be Done

"We originally proposed building this processor in 1979, but we were told it couldn't be done," reports Knapp. "It is not easy because the calculation is complicated and must be implemented flawlessly with a large number of simple steps. Many feared that our approach would either lack the flexibility to handle the last-minute modifications in calculation that real problems usually require, or that keeping 30,000 integrated circuits working perfectly would be too difficult."

The E766 detector was removed from the AGS last July, before the completion of the processor. During the two preceding running periods of the detector, several hundred million collisions were recorded on about 4,000 data tapes. Reconstruction of these events with the now operational processor is nearly completed. "With this setup, we are limited by the tape speed," reports Knapp. The very high-speed tape drives used by E766 can deliver only about 1,000 events per second.

After track reconstruction by the processor, data from events with enough energy and their particles are transferred to another computer for further study. The remaining analysis will continue for several months.

— Marsha Belford

AA Meetings

Alcoholics Anonymous (AA) meetings are being held at the Lab every Tuesday at 5:30 p.m. All employees, others with current BNL identification cards and their spouses are invited to participate. To find out the location of the meetings, call the Employee Assistance Program, Ext. 2733. As participation in AA is confidential, you will not be asked to identify yourself when making the inquiry.

Hospitality News: Afternoon Tea

The Hospitality Committee will hold an afternoon tea on the patio of the Brookhaven Center on Tuesday, June 30, from 3:30 to 5:30 p.m.

This informal get-together will give Committee members an opportunity to get acquainted with the people who live in the apartment area on site and to welcome new people and summer visitors to the Lab. Spouses of Laboratory employees and visitors are welcome. Tea, coffee and homemade cookies, cakes and breads will be served.

Alex Reben

Anyone for a Hot Dog?

What can you get for $3 nowadays? Come to the BNL 40th Anniversary Picnic on September 19 and find out! You can enjoy hot dogs galore, as well as chicken, hamburgers, corn, salads, soda, beer, watermelon, ices and cotton candy. All sorts of games are planned for kids — and the Fun Olympics, with races like the egg and spoon or water hat, will be for adult kids.

For anyone who likes dancing, there's an all-afternoon competition. Among the other activities, children can jump in the moon bounce or have their faces made up like clowns. The band will play, and two strolling musicians will wander around, playing any tune that's requested.

Some people will want to race about on the ball field, others will laze contentedly on the grass, watching events from a distance. It's your day — you choose!

Tickets will be on sale beginning Monday, July 6, at $3 each. Employees and retirees can buy them for themselves and their families at the BERA Sales Office from 9 a.m. to 2 p.m., or from the following people:

	Bldg.	Ext.
Renee Flack	185A	3316
Blanche Laskee	185	2873
Liz Mogavero	510A	3940
Betty Pergan	179A	2937
Rosalie Piccione	355	3160

BNL's Fabulous Forty

This is one in a series of interviews with employees who observe their 40th service anniversaries during 1987, BNL's 40th anniversary year.

In 1946, Gerald (Jerry) Strickland worked with the late BNL Deputy Director Warren Winsche, at Oak Ridge National Laboratory. After leaving to head the Pile Engineering Division at the fledgling BNL, Winsche called upon his former colleague to help him with the design and construction of a hot laboratory for handling radioactive chemicals for medical uses and other peacetime applications.

"It took two phone calls for him to convince me, but I knew the emphasis was going to be on the peaceful uses of atomic energy, and that's what interested me," said Strickland, now a Chemical Engineer in the Department of Applied Science (DAS).

Strickland's first visit to BNL, in June 1947, began with a plane flight to LaGuardia. From there, he took a train to Patchogue, where a Lab driver picked him up. William Floyd Parkway did not yet exist; there was narrow and bumpy Upton Road. Strickland remembers thinking, "Boy! Where is this place?"

Nevertheless, Strickland was impressed during his interview. "I decided then and there that this was the future for me," he said. He was assigned life number 1,232 when he arrived at BNL on August 15, 1947, as an Associate Chemical Engineer in the Reactor Science and Engineering Department.

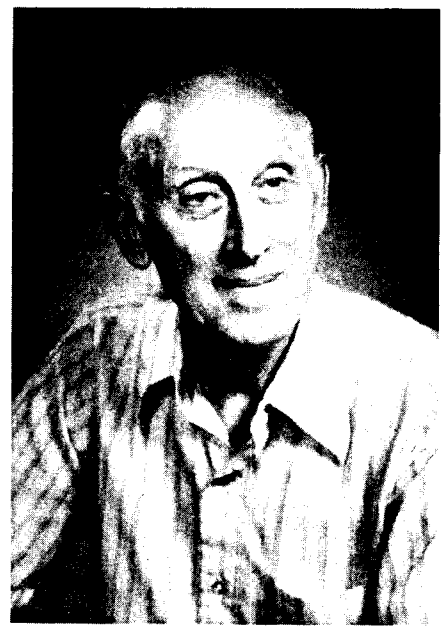
Strickland took up residence in the wing of Bldg. 475 that had formerly housed Camp Upton's bachelor officers quarters. Within two months his wife Ruth and son Larry joined him at BNL — just in time for her family to visit that Christmas — for a two-foot snowstorm.

Strickland settled in to his work at BNL. Once the Hot Lab, Bldg. 801 on Rutherford Drive, was constructed, the team began to design special equipment for it.

"The hot cells were very innovative," said Strickland. "Each had steel doors that rolled open to reveal the entire front face, which was surrounded by a watertight inflatable seal. So it was easy to spray-wash the cell. There were also two periscopes that could travel the height of a cell and scan left and right at any elevation."

The Hot Lab opened in 1951. Today it is still in use by groups from DAS, the Medical Department and the Safety & Environmental Protection Division.

Strickland then worked with others on a series of efforts related to reactor fuels: separating simulated fission products from dissolved uranium, using a non-aqueous solution; converting radioactive waste to a disposable form, using phosphate glass as a storage medium; and heat transfer studies involving liquid sodium and potassium as reactor coolants. In 1959, his department changed to Nuclear Engineering, which later evolved into DAS.



Mort Rosen

Jerry Strickland

In the early 1970's, Strickland began working with James Reilly and others on applications of metal hydrides. These hydrogen compounds were explored as alternative energy-storage media.

In 1974, the group working on metal hydrides built a ten-pound hydrogen reservoir for use in demonstrating an electric energy storage concept. The idea was to use an electrolyzer to separate water into hydrogen and oxygen, using off-peak electric energy. Then the hydrogen would be reacted with the iron-titanium-manganese alloy contained in the reservoir, forming an iron-titanium-manganese hydride. When energy was subsequently needed during peak demand hours, the hydride would be heated to release the hydrogen, which would be reacted with air in a fuel cell to regenerate electric energy.

The reservoir was used by a New Jersey utility company, but, said Strickland, "The overall efficiency was only about 40%, being limited by the fuel cells." That reservoir is now used at BNL for storage of a hydrogen-deuterium mixture used for leak detection in a situation where the helium background is high. A commercially built, 50-pound hydrogen reservoir was later tested and is presently awaiting use in new applications — or with a future high-efficiency fuel cell.

According to Strickland, metal-hydride systems have been successfully used in automobiles and heat pumps, and in separating, purifying and compressing hydrogen. "I still look forward to the time when a large-scale hydrogen storage system can be commercialized," he said.

In subsequent work, Stickland provided engineering assistance on developing coating techniques for fuel cell electrodes.

His career at BNL took its latest turn two years ago, when, he said, "I was considering retirement when [DAS Chairman] Bernie Manowitz approached me about working full time on safety and quality assurance. I said I would like to try it for one year. Now it's stretched into two, but I will be retiring at the end of December."

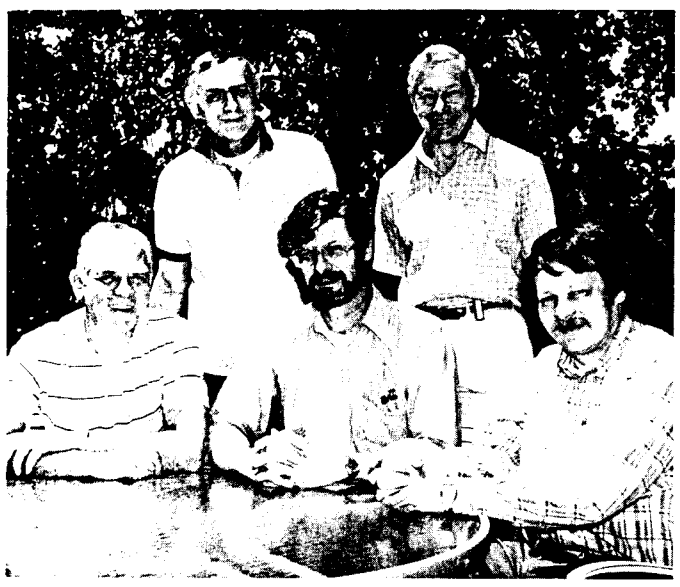
A lot has changed in forty years, but Strickland has a small souvenir from his first days here. "One of the first acts I did at BNL," he recalled, "was to go to where the reactor stack is now. Then, there was a ranger tower there, about 40-feet tall, and I climbed it. You could see a lot — mostly pine trees, barracks and a lot of open space. When I climbed down, I saved a rock from the ground below the tower."

— Anita Cohen

Notice

The Laboratory will be closed on Thursday and Friday, July 2 and 3, for the Independence Day holiday. For that reason, the Bulletin will not be published next week. The deadline for acceptance of ads for the issue of July 10 is Wednesday, July 1, at 4:30 p.m.

Four of a Kind: (from left) Ed Meier, Sharon Moore and Bob Jones. Mary-Grace Meier is missing from the photo.



At left — Sandbaggers: (from left) Charlie Bohnenblusch, Ed Meier, Ken Asselta, Bob Jones and Dennis Klein. Ken Riker is missing from the photo.

Bowling Champs

When the Bowling League completed its most recent season, the four champion teams were: Pink League — Survivors; Red & Green League — Sandbaggers; White League — Four of a Kind; and Purple League — Purrhaps. The Purrhaps were unable to get together for a photo, but congratulations to Ben Belligan, Marjorie Belligan, Lorraine Petro and Jim Petro.

—photos by Rosen

Survivors: (seated, from left) Donnaree McCambridge and Maryann Reynolds, (standing, from left) Kathy Walker and Sandy Asselta.

Tick Talk

"Lyme Disease" will be the subject of a Health Promotion talk by Marc Golightly, Head of Clinical Immunology at University Hospital and an Assistant Professor of Pathology at the School of Medicine, State University of New York at Stony Brook. The talk will take place on Tuesday, July 7, from noon to 1 p.m. in Berkner Hall.

Service Awards

The following employees received service awards during the month of June:

Forty Years

Andrew Cendrowski .... App. Science
Joseph A. Perry Jr...... Sup. & Mat'l

Thirty-Five Years

Jerome Hudis ..... AUI
Charles H. Waide ..... Nuc. Energy

Thirty Years

Robert E. Chrien..... Physics
David W. Potter..... Instrum.

Twenty-Five Years

Martin Blume ..... Dir. Off.
David P. Dayton ..... AGS
Russell N. Dietz..... App. Science
John J. Gabusi ..... AGS
John H. Guthy ..... Physics
Lewis A. Jacobson..... Plant Eng.
Stephen A. Kochis ..... AGS
Richard L. Lane..... AGS
Roy Marlow..... Plant Eng.
Donald W. Marrs..... Cent. Shops

Twenty Years

John E. Barry..... Chemistry
Charles I. Goldstein ..... App. Math
Grace E. Kyhl..... App. Math
Phillip Thomason..... Plant Eng.

Ten Years

John L. Boccio ..... Nuc. Energy
Joan A. Congemi ..... App. Science
William S. Guthrie ..... Plant Eng.
Donald J. Jesaitis ..... Plant Eng.
Richard W. Leigh ..... App. Science
Edward T. Lessard ..... S&EP
James McBreen..... App. Science
Claudio Rebbi..... Physics
Marie-Christine Saitta ..... P&GA
Jonathan B. Sanborn.... Nuc. Energy
Thomas C. Stuart..... Instrum.
Ronald G. Wittlock..... App. Math

All film badges will be changed tomorrow. Please place your badge in its assigned rack space before leaving work today.

Golf

The third BGA tournament of the 1987 season took place at the Swan Lake Golf Course in Manorville. The tournament highlight was Ron Webster's hole-in-one with a four iron on the seventh hole, winning closest-to-the-flagstick.

Doug Sweely and John Usher tied for low gross in Flight A with an 84. Artie Dick won low net in Flight A with 70. Ron Webster, BGA President, won low gross in Flight B with an 88, while Bob Brown won low net with 66. In Flight C, Walt Reams took low gross with a 95, and Chang Park and Frank Thomsen tied for low net at 71. Flight D winners were Ed Desmond, gross 92, and Bryan Culwick, net 67. In Flight E, Bill Schoenig grossed 100, while Al Falango netted 68.

Bob Brown won the second closest-to-the-flagstick honors on the 13th hole. Senior BGA members Les Lawrence and Peter Bond took long-drive honors on the 6th and 11th, respectively.

Reminder: Entry deadline for the Two-Person Scramble is Monday, June 29. Contact John Usher at Ext. 2096 with partner's name and second team.

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Summer Schedule At Swimming Pool

The pool will be closed Thursday, Friday, Saturday and Sunday, July 2 through 5. The following hours are effective Monday, July 6:

Monday through Friday

11 a.m. - 1:30 p.m.	employees only
1:30 p.m. - 2 p.m.	reserved for speed swimming and training
2 p.m. - 3:30 p.m.	children's lessons
3:30 p.m. - 9:30 p.m.	employees, families, guests*

Saturday & Sunday

1 p.m. - 6 p.m.	employees, families, guests*

Daily Admissions

employee or family member	$1.50
guest	$2.00

Season Tickets (fees not prorated)

Individual Membership	$30.00
Family Membership	$40.00

***Guest Ruling:** One guest per employee is permitted. Advance arrangements for additional guests (up to a maximum of five at any one time) must be made at the Recreation Office in Personnel.

Arrivals & Departures

Arrivals

Thomas F. Kelly ..... Medical
Brian J. Rappoli ..... Chemistry
Clinton R. Sampson Jr..... Cent. Shops

Departures

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

Donald P. Price ..... Staff Serv.

Children's Program

The 1987 Children's Summer Program will get under way on Monday, July 6. Applications are still being accepted for swimming lessons. Information sheets and application forms are available at the Recreation Office in Personnel, at the swimming pool and at the BERA Sales Office in Berkner Hall.

Aerobic Dance

The Aerobic Dance Club has announced a summer program of Monday afternoon stretch classes and/or modified aerobic dance classes on Tuesday afternoons.

Instructor Pat Campbell explained that her modified aerobics program is designed to maintain muscle tone and cardiovascular fitness, but at a slightly less strenuous level to compensate for the summer's heat. As throughout the rest of the year, stretch classes will concentrate on stretching and strengthening various muscle groups.

All classes run from 5:15 to 6:15 p.m. A mat is suggested for floor exercises in both kinds of classes.

The fee for each ten-week session is $30, payable at registration, which will precede the first classes. These classes will be held at the Brookhaven Center, as follows:

- Stretch — Monday, July 6
- Aerobic Dance — Tuesday, July 7.

For more information, call Bill Leonhardt, Ext. 2378, or Elinor Norton, Ext. 4355.

Softball

Week of June 15

League I

Sudden Impact 13 - Magnuts 9
Ravens 10 - BNL Bandits 9
Blue Jays 25 - Six Pax 7
Kool 'n Gang vs. SMF - no score reported

League II

Cutting Edge 26 - Binary Bombers 8
Scrambled Legs 6 - Dirty Sox 5
Medical 7 - Lights Out 5
Scram 12 - AMD 5

League III

Foul-Ups 16 - Mole-Esters 8
Snakebites 22 - Septembers 7

League IV

Sandboxers 21 - Mudville Sluggers 7
No Feedback 17 - Turkeys 15
Spacekadets 23 - Who Cares 8

Note to Diners

The Cafeteria will be open for snack bar service only, from 9 a.m. until 2 p.m., on Thursday and Friday, July 2 and 3, due to the Independence Day holiday.

The vended food service in Building 912 will be in operation continuously.

Cafeteria Menu

Week of June 29

Monday, June 29

Cream of mushroom soup	(cup)	.75
	(bowl)	.95
Baked quarter chicken w/1 veg.		2.85
Baked quarter skinless chicken w/1 veg. (lite-weight)		2.85
Veal scallopini w/1 veg.		2.75
Hot deli: Roast beef	(bread)	2.45
	(roll)	2.55
	(hero)	2.60

Tuesday, June 30

Beef barley soup	(cup)	.75
	(bowl)	.95
Pizza		1.00/slice
Salisbury steak w/1 veg.		2.75
Hot vegetable plate (lite-weight)		2.20
Hot deli: 6-foot hero		1.15/inch

Wednesday, July 1

Split pea soup	(cup)	.75
	(bowl)	.95
All-you-can-eat special (no take-outs): Spaghetti w/sauce & hot French bread		2.95
Beef pot roast w/potato pancake		2.95
Hot deli: Corned beef	(bread)	2.45
	(roll)	2.55
	(hero)	2.60

Thursday, July 2
Friday, July 3

Snack bar service
9 a.m. - 2 p.m.

Classified Advertisements

Placement Notices

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

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

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

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

LABORATORY RECRUITMENT - Opportunities for Laboratory employees only.

2624. SPECIAL SERVICES ATTENDANT - Performs various service duties in connection with conferences, meetings and special events. Requires valid New York State driver's license. Staff Services Division.

OPEN RECRUITMENT - Opportunities for Laboratory employees and outside applicants.

2625. ENGINEERING POSITION - Requires BSEE, or advanced degree, and a minimum of three years' design experience in one or more of the following: logic design (CMOS, TTL, NMOS, PLA); microprocessor-based equipment design (hardware and software) and local area networks. Experience in analog circuit control systems or computer workstations highly desirable. Alternating Gradient Synchrotron Department.

Autos & Auto Supplies

86 BUICK REGAL LTD - V8, fully loaded, mint cond., many extras, 8k mi. Carol, Ext. 7215 or 472-3332 after 6 p.m.

80 CITATION - 4 dr., hatchback, p/s, p/b, new tires, radiator, good cond., asking $1,200. Tom, 475-0084.

82 YAMAHA 550-SECCA - café fairing, helmets, kryptonite lock w/carrier, tools, 57k mi., orig. owner, $750. 929-4358.

76 BUICK LESABRE - excel. mechanical cond., some body rust, $850. Joe Bush, Ext. 4638.

68 CHEVY CAMARO - 327, a/t, p/s, p/b, am/fm cass., excel. cond., $5,500. Ext. 4661 or 654-2106 eves.

FORD TRUCK TIRES - 10.5 lt/15, mounted on 15x7" 5-lug, white spoke rims. Ext. 2075 or 473-4937 after 6 p.m.

72 PLYMOUTH - full-size station wagon, runs well. Ext. 2022 or 744-8386.

77 CAMARO - V8, a/t, well-maintained, excel. in/out. 744-0725.

81 JAWA MOPED - class "C", no license required, $250. Bob, Ext. 4002 or 924-7658.

81 YAMAHA 850 - full dress, excel. $1,750. Helen, Ext. 7791 or 669-8880.

77 YAMAHA 750 - needs some work, best offer. Ext. 3328.

76 PONTIAC - station wagon, runs well, $600. Ext. 7901 or Ext. 3201 eves.

65 DODGE DART - best offer. Frank, Ext. 2314 or 567-5131.

81 MERCURY CAPRI - 5 spd. w/over-drive, sunroof, 90k mi., $2,200. George, Ext. 4100.

76 PINTO WAGON - a/t, good cond., new motor, tires, $750. Tom, 472-4228.

72 OLDS DELTA 88 ROYALE - excel. running cond., 2 dr., p/s, p/b. 941-4328.

24' TRAVEL TRAILER - sleeps 6, fully self-contained, stereo, new refrig., powered by battery, prop., or elec., $3,950. 744-5069.

86 GMC PICKUP - loaded, 16k mi., hi-rise cap, running boards, must sell, $11,000. Bert, Ext. 2050.

79 FORD FIESTA - 83k mi., good cond., $1,075. 744-9416.

78 PINTO WAGON - 4 cyl., 4 spd., 78k mi., factory custom "youth wagon," asking $600. Walter, Ext. 3499 or 757-6392.

RIMS - (2) 16" 5-hole, $10/pair. Henry, Ext. 2668 or 928-0615

68 MUSTANG - 289 cu. in., 8 cyl., auto., good cond. Ext. 4932 or 928-8993.

81 PONTIAC GRAN LEMANS - Safari station wagon, 40k mi., needs work, $1,700. Ed, Ext. 7786.

77 FORD MUSTANG - 58k, standard, new cluch, brakes, w/p, timing belt, $1,700. 758-5592 after 6 p.m.

77 BUICK WAGON - body good, new engine parts, runs but still needs work, offers. 929-3620.

77 OLDS OMEGA - brown, hatchback, 6 cyl., $850. 589-6803 after 6 p.m.

77 TOYOTA CORONA WAGON - 5 spd., p/s, reliable, good body, clean interior, 25 mpg, $895. Dave, 588-2916.

78 CHEVY MONZA - sunroof, am/fm stereo cass., p/s, rebuilt a/t, new tires, muffler, more; reliable, $750 neg. Kris, Ext. 2215 days or 3126 eves.

78 CONCORD - a/t, p/s, 4 dr., am/fm/cass., dependable, 68k mi., $1,275. Ext. 2621 or 281-0360 after 6 p.m.

78 CHEVETTE - 4 dr., a/t, new radiator, exhaust system, no rust, runs well, 97k mi., $495. Ext. 4335 or 286-9458.

79 FIREBIRD - a/c, p/l, am/fm/cass., good cond., black, $2,000. Jerry, Ext. 7427 or 475-5591 after 5 p.m.

72 FIAT 124 SPIDER - convertible, 56k mi., orig. owner, excel., $3,500. Ext. 3866 or 744-2373.

71 PLYMOUTH DUSTER - reliable, new tires, battery, exhaust, asking $300. 654-0407 eves.

72 PINTO - runs well, best offer. Sharon, 727-0661 after 4 p.m.

73 PONTIAC LEMANS - 2 dr., a/t, p/s, p/b, am/fm cass., $400. Fred, Ext. 3259 or 473-8622.

75 WAGONEER - 4 WD, new starter, alt., radiator, good tires, good cond., $1,200. 874-3796.

76 PONTIAC STATION WAGON - runs well, $600. Ext. 4973 or 7901.

79 FIAT BRAVA - runs well, good tires, make an offer. Ext. 4184 or 929-3347 after 6 p.m.

79 CHEVY CHEVETTE - 4 dr., blue, new tires, am/fm/cass., runs, good cond. Skip, 727-6369 after 5:30 p.m.

80 CHEVY CITATION - standard, good body, tires, clutch, doesn't run, make offer. 286-2565 after 5 p.m.

80 MONTE CARLO - white, V6, asking $3,100. 475-1836.

80 CHEVY CITATION - a/t, p/b, p/s, a/c, am/fm. Akos, Ext. 4973 or 3170.

81 PONTIAC PHOENIX - 4 dr., V6, a/t, p/s, a/c, am/fm/cass., $1,850. Ext. 3180.

81 CHEVETTE - 4 dr., sunroof, orig. owner. 242-9386 after 7 p.m.

84 HONDA ACCORD LX HATCH - fully loaded, 55k, must sell, $6,800. Denise, Ext. 3630 or 783-1370 eves./wknds.

81 CITATION - a/t, p/s, p/b, a/c, 49k mi., excel. cond., $2,300. Ext. 3103 or 4940.

86 HONDA ACCORD LX - burgundy, 4 dr., loaded, 13k mi., automatic, mint cond. Angela, Ext. 2456.

79 PLYMOUTH VOLARE - 71k, p/s, p/b, a/t, $800. neg.; 73 Datsun, white, good driving cond.,30 mpg, asking $300. Ext. 2229 or 282-3220 after 5 p.m.

75 CHEVROLET SPORTVAN - C-10, 6 cyl., standard, good cond., $1,000. John, Ext. 2269 or 281-2623 after 6 p.m.

CARBURETOR - Delco/Rochester dual jet 210 from 79 Monte Carlo, 8 cyl., $25. Victor, Ext. 2395.

80 SUZUKI GS1000S - limited edition, must sell, best offer, asking $1,200. Ext. 4843 or 325-1287 ater 6 p.m.

SUZUKI MOTORCYCLE 425L - 3,600 mi., garaged, orig. owner, extras, sissy bar, bags, mint, $800. John, Ext. 3536.

HONDA ATC - 125cc, runs well, $450. Dave, Ext. 2760 or 929-3620.

APACHE FOLD—UP - sleeps 6, stove, dinette, sink, icebox, many extras, solid state camper, not canvas. 475-3553.

TRAVEL TRAILER - 17 ft., awning, refrig., range, oven, sleeps 6, good cond., $1,000 firm. Arnold, Ext. 4289.

BUCKET SEAT COVERS - terrycloth, eliminates wear, keeps leather/vinyl comfortable, custom-made, reasonable. Renee, Ext. 3316 or 698-1362.

75 CAMARO - new radials, recently painted, air shocks, spoiler, Z-28 hood, needs motor, $600. Chris, 472-0706.

CHROME WEST COAST MIRRORS - & frames, off Ford truck. Ext. 2075 or 473-4937 after 6 p.m.

73 DUSTER - slant 6, a/c, runs well. Jone, 475-5197.

66 CHEVY IMPALA - 283, V8, excel. cond., $1,500. Pat, Ext. 4052 or 744-7017 after 6 p.m.

72 VOLVO WAGON - needs minor work, runs well, best offer. 289-8212.

80 VW RABBIT - 5 dr., fuel inj., air, excel. cond., $1,500. Kale, Ext. 4960.

79 HONDA CIVIC - 2 dr., hatchback, 4 spd., 80k mi., runs well, must sell, $800. Ext. 3890.

HITCH - Reese single lever equalizer, $50. Ext. 4846 or 363-6940 after 5 p.m.

77 TOYOTA COROLLA - good mechanical cond., completely new brakes, reliable, $250. 744-5096.

84 DODGE DAYTONA TURBO - a/c, p/w, automatic, low mi., excel cond., $7,000 neg. 689-1582 or 588-6417.

70-72 DUSTER DEMON DOORS - $20/each; 70-76 windshield, $20; 65 Ford Mustang, 6 cyl., 200 cu. in. short block, needs rebuilding, $50. 727-3608.

75 FORD GRANADA - reliable, must sell, $450. Aharon, Ext. 7979 or 3015.

83 MERCEDES-BENZ - 300 Turbo diesel, loaded, lapis blue, excel. cond., asking $16,900. 584-5540.

75 DODGE DART - 2 dr. sedan, yellow, 96k mi., runs well, $500. Ext. 2181 or 3076 after 5 p.m.

85 NISSAN SENTRA - 5 spd., 4 cyl., am/fm/cass., 18k mi., mint cond. $5,000 firm. Ext. 4120.

72 SAAB 96 - running strong, needs brake work, $250. 281-7844 eves.

70 VW BUS CAMPER POP-TOP - rebuilt engine, has 35k mi., new clutch, $850, Ted Erickson, Ext. 2243.

85 CHEVY CHEVETTE - 27k mi., mint cond., $5,000. Frank, 281-5321.

84 DODGE AIRES - 4 dr., p/s, a/t, a/c, am/fm, 40k, runs well, reliable, $3,900 or best offer. 981-7715.

Boats & Marine Supplies

21' SUNRUNNER - 1984, 140 Merc cruiser, cuddy, full canvas, power winch, 84 E-Z load trailer, asking $11,000 or best offer. Frank, 399-6729.

18' RENKEN - 1983, 120 h.p., OMC, w/trailer & full cover, excel. cond., $4,500 or best offer. Ady, Ext. 4531 or 331-3785.

WATER SKIS - $25. John, Ext. 5152.

21' GLASTRON - 1978, cuddy cabin , 150 h.p., Johnson outboard, fully equipped, w/trailer, $8,000. 369-1906.

27' BRISTOL WEEKENDER - new diesel aux., 5 good sails, new rigging, teak trim, $13,500. 941-9423.

14' SAILBOAT - 1984, Hobie Cat Turbo, trailer, $2,000; kayak, 2 person, $500; 14' Bluejay sailboat, trailer, 2 h.p. motor, $600.Ext. 7657 or 924-2933.

26' F/G SLOOP - Polaris, W. Tripp design, shoal draft keel/cb, 25 h.p. inboard, 7 sails, $4,500. Ext. 4368 or 928-3371 eves.

Miscellaneous

POOL LADDER - over-the-wall, safety section, white, aluminum, $10. Charlie, Ext. 4758.

MAN'S BICYCLE - 26" 3-speed, used twice, $75. Ext. 3354.

SONY RECEIVER - $100; Sony turntable, $50; Akai cassette deck, $150; Genesis speakers, $150. Ext. 3328.

RIFLE CABINET - 12 slot, fruit wood, glass sliding doors, locks, $60. Helen, Ext. 7791 or 669-8880.

DINING ROOM HUTCH - Danish, $125. 744-5069.

SOFA - w/(2) armchairs, any reasonable offer. 395-1635.

VIDEO CAMERA - Toshiba, color, for portable VCR, $450; Sony 8 mm Camcorder, 6-1 zoom, auto focus, plays on any T.V., $900. Paul, 727-4859.

HARROWS POOL - 12'x3', complete w/filter, ladder, etc., 2 yrs. old, very good cond., $100. 281-4541.

SEARS MICROWAVE - Recipe-300, auto defrost, delayed start, time/temp cooking, 4-stage cooking, like new, $325. 435-6243.

SEARS DISHWASHER - portable, hardly used, paid $300, sell for $150. neg. Wendy, Ext. 4585.

BICYCLES - 20" Mongoose BMX frame, $70; 20" Huffy BMX, $20; 20" girl's bike, $20. Ext. 7915.

BATHROOM FIXTURES - (2) tubs, toilets, round sinks, countertop, very reasonable, you take away. Ext. 4238 or 286-3509.

MATTRESS - full-size, very good cond., $25. Carol, 878-0885.

BED FRAME - w/headboard, footboards, full-size, $15; brown beanbag chair, $5. Ext. 2361 or 928-6341.

ROASTING OVEN - Westinghouse, countertop, excel. $20. Ext. 4341 or 425-4005.

DINING ROOM SET - Colonial custom banquet, solid honey maple, chandelier, couch, chairs, sewing machine and more. 273-5574.

GO-CART - 10 h.p. Yamaha; fiberglass tub, bone, $20; floor waxer, $5; Shop-Vac, $25; large rabbit hutch, $10; (2) small speakers, $5. Ron, 289-1003.

PENTAX PROGRAM PLUS - like new, $95. 928-0281.

SOFA - two section, good cond., $15; bed frame, headboard, excel. cond., $15; coal stove, good cond., $125. 878-2482.

COLOR TV - 19' RCA, excel. cond., $100; dining room table, (4) chairs, very good cond., $125. 281-8943.

ATTIC FAN - 2-ways, 3-speed, good working cond., $10. Ext. 7505.

PIANO - maple spinet, $850; love seat, black & gold heritage eagle, $30; educational toys. 821-0250.

AIR CONDITIONER - 110 volts, 20,000 Btu, Fedders, excel. cond., in-window or built-in, $100. Ext. 4081 or 874-3844.

CASSETTE DECKS - (3) models, $5/each; (2) cameras, $5/each; maple kitchen table, $10; standing gas grill, large tank, $10. Jim, Ext. 2432.

BEDROOM SET - full-size, walnut, bookcase headboard, (2) end tables, chest, dresser w/mirror, $600. Lou, Ext. 3499 or 473-3283 after 7 p.m.

MOVING TODAY - many items for sale. Alan, Ext. 4561 or 395-4910 after 5 p.m.

MOVING - air conditioners, excel. cond., $150 ea.; bedrm. furn., Medit. dresser w/mirror, chest of drawers, etc., $299. Ext. 3855 or 689-9718.

MOVING - 86" maple dining table, 4 chairs; full & twin beds; dresser w/mirror; desks; oak headboard; den sofa & more. Ext. 4960

STRAWBERRIES - U-pick, Meadows Farm, Old Stump Rd., Brookhaven, 7 days, 9 a.m.-5p.m. No chemicals used.

CONCERT TICKETS - Tom Petty at M.S.G., July 8, excel. seats, $55/pr. Ext. 5257.

PENTAX - Program Plus, body only, used one trip, $90. 928-0281.

BABY STROLLER - $15; TV, 16" B&W, $25. Akos, Ext. 4973 or 3170, 10 a.m.-5 p.m.

BABY CARRIAGE - large, green color, very good cond., $30. 924-1151.

COMMODORE 64 COMPUTER - disk drive, monitor, loads of software. Ext. 3392.

THOMAS ORGAN - full-size, $500; Roth violin, $200. Frank Rumph, Ext. 5105 or 981-2529.

PIANO - beautiful maple spinet, $850; black & gold eagle loveseat, $30; educational toys & games. 821-0250.

PIANO - Sohmer spinet; hi-riser; 2 casual chairs. 286-0612.

KITCHEN APPLIANCES - electric stove., wall oven & dishwasher, all G.E., old but work well. Ext. 2959 or 751-4629 after 6 p.m.

REFRIGERATOR - side-by-side, 22 cu. ft., $150; hi-riser, $20. Ext. 7655 or 584-7206.

MICROWAVE - Litton Generation II, like new, top of the line, $200. Charlie, Ext. 3950.

WATERBED - double-size; misc. furn., king-size headboard, Colonial loveseat, matching chair; more. Annamarie, Ext. 2352 or 473-9016.

KITCHEN DINETTE - octagonal, formica top w/cast iron pedestal base, 4 chairs, $65; maple desk & chair, $50. 929-4529.

FIRESIDE CHAIRS - 2 w/caning, French Provincial. 286-0355 after 4 p.m.

STORM/SCREEN DOOR - 30" wide, best offer over $15. Ext. 4341 or 475-4005.

ROTISSERIE - Farberware open hearth, stainless steel, like new, $25. Ext. 2366.

FILTER CAN - stainless steel, use for up to 24' diam. pool, $10; 140' of 1" pipe, top rail for chain link fence, used, $20. Charlie, Ext. 4758.

WOODBURNING STOVE - Noble, good cond., $100. 878-9239.

STILTS - children's, adjustable, metal, $15. Ext. 4846.

BEDROOM SET - all wood, Colonial, incl. full-size bed, very good cond., $450; coffee table, $20; exercise bicycle, $40. Judy, Ext. 2590 or 924-7077.

ORIENTAL RUG - red, 6'x9½', $50; fruitwood writing desk w/2 drawers, $50. 286-0466.

MATTRESS - full-size, very good cond., $25. Carol, 878-0885.

QUEEN WATERBED FRAME - includes heater & velvet siderails, must sell. Denise, Ext. 3630 or 783-1370 eves./wknds.

COLONIAL DINING ROOM SET - 6 chairs, large hutch, neg.; bedroom set, white Provincial, single bed. 475-8473.

STORM WINDOWS - aluminum, double-hung storm/screen, 52"x33"x28", $20 ea. Ext. 2543.

WATER PUMP - F&W CP series, ¾ h.p., excel. cond., best offer. Pete, Ext. 7627 or 929-3847.

SOFFIT - white, aluminum, ½ price. Ext. 5400 or 874-3447.

STORM WINDOWS - & screens, aluminum, 3 sets, 31"x24", $2 ea. Ext. 2906.

LAWN MOWER - A-1 cond., 3 h.p., Briggs & Stratton, 21" cut, $50. Dan, Ext. 4987 eves. or 698-7322 days.

CHILD'S BICYCLE - $10. Ext. 4973 or 7901.

SHAMPOO POLISHER - Hoover F9143, brand-new, $50. Ext. 4727.

Yard Sales

RIDGE - 1C Saratoga Ct., Rt. 25 to Smith Rd., south to Strathmore Condos, June 27, 10 a.m.-4:30 p.m., June 28, 1:00 p.m.-4:30 p.m., 2-family.

Free

KITCHEN STOVE - Westinghouse, electric. Ext. 5286.

Car Pools

OAKDALE/BOHEMIA - would like to form car pool. Frank, Ext. 2314.

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

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

HILTON HEAD, SC - 2 bdrm. condo, sleeps 6, beach, pool, tennis, golf, many extras, some summer openings; taking fall rentals, $400/wk. 585-9149.

MORICHES - waterfront, room for rent, in shared house, $330/mo. + util. 874-3729.

CATSKILLS CHALET - 3 bdrms., sleeping loft, fully furn., near Hunter Mt., music festivals, golfing, fishing, hiking, will rent by day, week, or month. Judy or Kay, Ext. 3595 or Bea, Ext. 3642.

BOHEMIA - 1 bdrm. apt., living rm./kit. combo, w/w carpet, full bath, priv. entry, suitable for 1 person, $475 all. 567-5131.

ROCKY POINT - furn. efficiency apt., full kit., bath, priv. entrance, clean, suitable for 1 person, non-smoker, $425 incl. util. & cable. 744-8659.

RIDGE - 2 bdrm. townhouse in Strathmore Ridge, 1½ baths, 5 appli., w/w throughout, lease required, $650/mo. + util. Ext. 4904 or 4525.

SHOREHAM - 4 bdrm. Colonial, 2½ bath, double garage, rent July 1987 - January 1988, $750 + util. Bak, 282-3798 or 744-6148.

SOUTHAMPTON - waterfront, 2 bdrm. house, newly renovated, all appli., wood stove, spectacular view, adjacent wildlife preserve, avail. Sept., $950/mo. + sec. Ext. 2666 or 283-5376.

For Sale

RIVERHEAD - 12'x55' mobile home, 2 bdrm., 1½ bath, l/r, eik, new shed, dbl. drive, corner lot in adult/55 park on Peconic River. Jeff, Ext. 2907 or 727-5915 after 6 p.m.

ROCKY POINT TIDES - Hi-Ranch, 3 bdrms., 2 baths, country kitchen, f/p, sunrm., 2 car garage, laundry room, 32'x16' in-ground pool, reduced price, $156,990. 821-3709 after 5:30 p.m.

MASTIC - cozy 3 bdrm. Cape, l/r, d/r, cabinet-lined kit., 1 bath, on treed 100x140 fenced corner plot, low taxes, 12 mins. to Lab, reduced, $89,500. 281-9079.

MIDDLE ISLAND - immaculate 3 bdrm. Colonial, eik, hugh den, formal d/r, a/c, 2-car garage, pool, sprinklers, fenced, $149,900. 924-4323.

HILTON HEAD, SC - 3 bdrm. condo, l/r, d/r, full kit., 8 appli., 2 baths, golf course, ocean beach, 6 tennis cts., 3 pools, asking $89,000 assumable mtg., also for rent at reas. rates. 929-8912.

PORT JEFFERSON VILLAGE - Harbor Hills, 3+ bdrm. ranch, l/r, d/r, eik, 2 baths, den, 2 f/p, basement, 2-car garage, deck, winter waterview, gas heat & hot water, 5 appli., city water, ⅓ acre. 928-3371 after 6 p.m.

ROCKY POINT - 4 bdrm. ranch, large kit., fenced yard, priv. beach, gas heat, f/p, cent. a/c, excel. area, $149,900. Ext. 3123 or 821-1039.

SOUND BEACH - 3 bdrm. ranch, great rm. w/cedar cath. ceiling, coal stove, 2-car garage, 8' basement, beach rights, $155,000. 744-8332.

Wanted

APARTMENT TO RENT - furnished, from Sept. 1, family of 3. John, Ext. 2710 or 331-5993 eves.

CHILDREN'S SWING SET - good cond., reasonable. Sharon, 727-0661 eves.

PLUMBER - to install basement pump-up toilet. 821-6499.

TRUMPET - at reasonable price for student. Paul, 727-4859.

POOL FILTER - reasonably priced & in working cond. Ext. 2456.

FOREIGN COINS - from small or unique countries. Jim, Ext. 2432.

TRAINS - Lionel, American flyer, accessories, any cond. brings good price. Carole, Ext. 3362 or 924-4097 eves.

MUSICIANS - to join traditional folk music band. Alan, Ext. 2928 or 821-1389.

APPLE IIc's - for Southdown School, Huntington, donate to PTA for our kids. Pariser, 271-5774.

Ads left out of this issue due to lack of space need not be re-submitted to appear in the next issue.