

A Brief Squall

When the rains came Monday morning, 2.83 inches between 9 a.m. and 11 a.m., there was a flurry of activity on site and the fire engines rushed hither and yon. Fortunately, there were no real fires. The down-pour got into some of the systems setting off three fire alarms and the fire department had to check out each one. The traffic lights went out and some buildings were without power for an hour or so.

There were a couple of accidents. One woman slipped on a wet floor and cut her head. The wound required five stitches but she was back at work in the afternoon. A young man was riding his bike when his brakes locked and he was thrown to the ground, cutting his arm. The emergency medical technicians were in attendance at both of these accidents.

The Experimental Area Operations floor of the AGS was awash in water and the electrical cable tray was hit by lightning. In the vacuum lab they had water spouting from the sink "like Vesuvius" and in the technical shop water was coming out of the heating units. The AGS is in one of the lowest spots at the Laboratory and the heavy rains were just too much for the storm drains.

However, all the dislocations were temporary and it wasn't long before everything was, as they say, "right as rain."

Fire Extinguisher Alert

The Safety & Environmental Protection Division has issued the following words of warning:

Caution: The dry chemical fire extinguishers being sold by BERA are of the type where extinguishing agent discharge can be shut off. After a momentary use, the pressure gauge may indicate fully charged. This is deceptive. The dry chemical (powder) will clog the valve and permit the expellant to slowly leak over a period of time resulting in a loss of pressure. Have the extinguisher recharged immediately after any use. A partially used extinguisher is an empty extinguisher. Be certain your extinguisher is always fully charged and ready for use.



The above black and white reproduction of a color thermogram of Building 460 illustrates the value of insulated walls. The wing on the left had an additional two inches of insulation installed during a retrofit. The thermogram shows a 48% improvement in this wing.

Update On Infrared Thermal Survey

This past winter, as part of our Energy Conservation Program, during the nights of January 15, 16 and 17, a specially equipped van took infrared thermograms of all buildings on site. These ground level thermograms together with the aerial thermograms obtained in November provide a valuable data base for our in-house Energy Conservation Program.

One source of energy waste comes from cooling and heating buildings where defective seals around windows and doors and insufficient insulation in attics and walls contribute substantially to unnecessary energy consumption.

If the temperature is known at every point on the surface of a building, the heat



Irving Montanez at the controls with a member of the Nuclear Medicine team demonstrating the position used for a brain scan at the PETT III. In the outer circle of the machine are six banks with eight detectors in each. In the next layer is lead shielding weighing approximately 1500 pounds. The opening in which the patient is placed is about two feet in diameter. On the left is the computer setup and display system. —photo by Rosen

A New PETT At The Laboratory

Accurate three-dimensional pictures of the heart, brain and other body organs are produced by a machine that was constructed at Washington University several years ago.

These machines, known as Positron Emission Transaxial Tomographs (PETT), were developed to provide important diagnostic information. But, in addition to supplying medical information, they are also powerful basic research tools for scientists in the life and physical sciences who study metabolism and function assessment in live bodies. Commercial versions of the machine became available recently.

With these two interests in mind, Dr. Harold Atkins of Medical and Dr. Alfred Wolf of Chemistry obtained approval from ERDA for the purchase of a PETT III (models I and II were prototypes) as part of the Nuclear Medicine Program which includes the Applied Science, Chemistry

and Medical Departments. The machine arrived at BNL on March 7 of this year.

Operation of the PETT III is controlled by a computer. The computer reconstructs an image of a section of the body from the signals it records from the machine. The signals come from a positron emitting substance that is injected into the body. Once injected into the body, the positrons emitted interact with electrons producing an annihilation in which two gamma rays are emitted simultaneously in opposite directions, at roughly 180 degrees. Various areas in the field of view have different concentrations of activity due to differences in metabolic properties of the tissues. The computer reconstructs a picture from this data which gives a good representation of an organ and areas of damage to that organ. Damaged or abnormal areas may be indicated by "blank spots" caused by differences in radioactivity from abnormal tissue.

The PETT III assists physicians by providing them with information that can help them decide if a condition is operable, taking the place of exploratory surgery, or can help determine the proper treatment. This can be done without increased risk to the patient - "non-invasively." By using a positron emitting substance that is known to go to a certain organ, doctors can see a specific area. For instance in a brain scan, blood labelled with ^{11}C carbon monoxide will locate blood pools, and a positron emitting ammonia ($^{13}\text{NH}_3$) gives information about how extracellular fluid is dispersed in the brain tissue. Organic radiopharmaceuticals labelled with positron emitters such as carbon-11, gallium-68 and fluorine-18 show areas of damage caused by stroke or other disorders.

The PETT III is used to study metabolic processes in living systems and thus leads to new diagnostic procedures for metabolic disorders. The positron emitting substance is injected, it goes to a particular tissue, is metabolized there and then clears from the tissue through the blood and is removed through the breath, urine or feces. At each of these steps, researchers ask how does it happen, what enzymes are involved, where does it metabolize, what are the metabolites, etc. Though the chief interests of the scientists lie in "pure research," they often do "applied research" such as trying to produce substances that can immediately be used in medical practice.

Though the basic interests of the two departments differ, they need each other's help. The entire process of a scan is a complex procedure involving approximately twenty persons in two departments, requiring close coordination. In addition to Drs.

Patent Awards

Powell Richards and Terry D. Smith were issued Patent #3,988,429 on October 26, 1976, for "Kit for the Rapid Preparation of $^{99\text{m}}\text{Tc}$ Red Blood Cells." This invention provides a method and kit for the preparation of $^{99\text{m}}\text{Tc}$ labeled red blood cells in a closed sterile system. Labeled red blood cells are useful for imaging the blood pool and for red cell mass determination.

Elliot Lebowitz and Margaret W. Green were issued Patent #3,993,538 on November 23, 1976, for "Production of High Purity Radiothallium." This is a novel method for producing high purity thallium-201 for use as a myocardial scanning agent. The process produces thallium-201 in the clinically useful form of thallos saline solution having a radioisotopic purity of at least 99% by weight.

Richard M. Lambrecht, Samuel Packer, Jerald C. Merrill, Harold L. Atkins, Alfred P. Wolf and Patrick R. Bradley-Moore were issued Patent #4,011,307 on March 8, 1977, for "Production of ^{203}Pb -Tris-Hydroxymethyl Amino Methane." This invention provides a method for producing a radiopharmaceutical useful in the detection and localization of tumors, particularly eye tumors.

Meyer Steinberg, Peter Columbo and Jacob Pruzansky were issued Patent #4,020,003 on April 26, 1977, for "Fixation of Tritium in a Highly Stable Polymer Form." This invention provides for the permanent storage of tritiated water in solid form which is virtually free of leeching when in contact with water. Tritiated water is reacted with calcium carbide to produce calcium hydroxide and acetylene, separating and polymerizing the acetylene. To improve the yield of the process the calcium hydroxide may be calcinated to remove the tritiated water and the water-calcium reaction repeated.

NY Tech Registration

At the orientation session for the New York Institute of Technology Accelerated Degree Program, 250 persons attended. It was an excellent turnout.

A new registration date has been set for September 1, in Berkner Hall, Room B, from noon to 4 p.m. Additional counselors will be available to answer questions. Four courses will be offered. They are all three credit courses. Hours will be 5:15 p.m. to 7:45 p.m. The courses to be offered are:

- Monday - 1005 - Communication Skills for Accelerated Learning
- Tuesday - 3900 - Business Organization and Administration
- Wednesday - 2700 - American Government and Politics
- Thursday - 7011 - Operations Management

The following materials will be available in Renee Flack's office beginning Monday, August 29: catalogues, registration booklets, applications for admission, and CLEP forms (review books are available in any large bookstore) and life experience information.

Those persons who would like their transcripts evaluated, must forward them to the *Commack* office (not the P.O. Box indicated in the booklet).

Life experience inquiries should be addressed to Ms. Christine Langut, Glen Cove, (516) 759-1315.

Books will be available September 8 in Room D at Berkner Hall.

Please return *both* surveys to Renee Flack, Bldg. 460 as soon as possible. They must be in before registration.

Anyone who was unable to attend the orientation session and is interested in the program can contact Renee Flack, Ext. 3316 for information.

PETT III

(Cont'd)

Wolf and Atkins, who are joint heads of the project, the machine itself is under the supervision of Irving Montanez (Medical) and the software aspects are handled by David Christman (Chemistry) with Ralph Fairchild in Medical and Herb Bernstein in Chemistry. The other scientists from Chemistry involved in this work include Joanna Fowler, Bob MacGregor, Chung-wan Wan, Brian Gallagher (a cell physiologist who oversees most of the metabolic aspects), Richard Lambrecht and "Toshi" Hara. In Medical the others mainly involved in this work include Azizullah Ansari, Prantika Som, Johannes Klopper, Don Sacker and Bill Lehman. A great deal of the phantom work carried out this summer was done by a summer student, Deborah Zuckerman, and the programming development has been worked on by Nancy Monastero, a mathematics student at Stony Brook working under Herb Bernstein. The Department of Applied Science's group in Nuclear Medicine, Powell Richards, Lou Stang, Suresh Srivastava, Tommy Ku and George Meinke, also are involved in projects which can utilize the unique capabilities of this equipment.

The PETT III system was put together for roughly half the commercial cost. The prototype machine was bought for \$80,000 from Washington University in St. Louis where the basic design was developed by Dr. M. Ter Pogossian, a physicist and professor of radiology in the medical school. According to Dave Christman, one of the scientists involved in the project, "the \$80,000 is a steal almost - after all it took them a couple of years to build and get the software into running shape." The remaining \$120,000 was spent on two computers and a display system. Currently there are less than ten machines of this type operating in the U.S. Because nuclides used in the PETTs have short half lives, the facilities with PETTs must be located near an accelerator that can produce the substances.

A group from Washington University, was hired as consultants to install the computer software systems. The system was ready to go three weeks after the arrival of the parts. During that third week, the joint Chemistry-Medical team tried a scan of a rabbit, just to be sure everything was running smoothly - it was. So far only one human has been scanned at BNL. (Martha Hill), a nurse in Medical volunteered and was injected with ^{11}C -norepinephrine which goes primarily to the heart and liver. In this case heart images were obtained. All research involving humans follows strict criteria set by federal agencies and the BNL Human Resources Committee.

In addition to the one human scan, 10 animal scans and about 50 scans of phantoms have been done. The phantom scans are used for quantitative calibration and to determine the resolution of the machine.

During the next several weeks the group will be doing scans of dogs using different positron emitting substances, and beginning in mid-September they will begin doing some human brain and heart scans. They hope to do one scan every two weeks. A group of scientists from the University of Pennsylvania will be working with the BNL team doing these scans, looking into changes in metabolic rates when different areas of the brain are stimulated. Collaboration with a group from Long Island Medical Center will be important in working with patients being studied for heart disease.

—Carol Petraitis

Trips To New York City

The Hospitality Committee is planning two group railroad trips to the city. The first one will be Wednesday, September 7, and the second will be Wednesday, September 21. Each of the trips will be limited to 120 people. Departure will be at 8:32 from the Patchogue LIRR Station. The round trip fare is \$2.45, children under six years ride free.

Reserve a ticket by sending your fare through the U.S. mail to P.O. Box 322, Upton, New York 11973, no later than Friday, September 2 for the first trip, and Friday, September 16 for the second trip. Make checks payable to "Brookhaven National Laboratory," and indicate on your check which trip you are taking. If you are planning on taking both trips, please send a check for *each* one. Your tickets will be given to you at the train station. Refunds will be made only if cancellations are received at least two days prior to the trip.



Bob Weiser works on the power plant stack sampling system which will be explained on the tour of the Atmospheric Chemistry Research Group this weekend.

At The Laboratory This Weekend

Visitors to the Laboratory on Saturday, August 27 and Sunday, August 28, will have an opportunity to see some of the sophisticated instrumentation used in air pollution research.

Chemical characterization of air pollution is the main concern of the Atmospheric Chemistry Research Group. This weekend, they will show one aspect of their research, the study of sulfur dioxide and its reaction products, at their headquarters in Bldg. 426.

On the roof of Bldg. 426 are four machines that take samples of the air at Brookhaven around the clock. The filters are removed once a day and analyzed. Visitors to the building will see a sulfur analyzer in operation, and the preparation of filters. Also on view will be instruments that sample

emissions from power plants and other sources, an air sampler similar to that used in the MAP3S aircraft and an instrument that measures microscopic particles by scattering of laser light.

A staff member from the group will be on hand to answer questions. Taking turns as the "answer man" this weekend will be Bob Garber, Stu Levine, Ted D'Ottavio and Roger Tanner.

The free tours begin at 10 a.m. with the last tour leaving around 2:30 p.m. In addition to the air pollution instrumentation, visitors will be given a guided bus tour of the core of the Laboratory site and will be able to explore the Exhibit Center, which houses the former Graphite Research Reactor and many models and exhibits of Brookhaven's research programs.

Mini Tour Schedule

Sat., Aug. 27	DAS - Atmospheric
Sun., Aug. 28	Chemistry
(Holiday weekend)	
Sat., Sept. 10	DAS - Air Pollution Monitors - Exhibit Center
Sat., Sept. 17	Applied Math
Sat., Sept. 24	Chemistry Dept. Glass Blowers
Sat., Oct. 1	High Flux Beam Reactor
Sat., Oct. 8	Solar Energy
Sat., Oct. 15	Biology
Sat., Oct. 22	Safety and Envir. Protec.
Sat., Oct. 29	Physics

Gym Temporary Closing

The gymnasium is scheduled to be closed for painting and other maintenance work during the period September 7 through September 30.

Rambling Around

These are bits and pieces picked up from here and there with occasional observations by the Editor.

• *The Village Crier*, Fermilab's newspaper, devoted a special issue recently to an account of the discovery of Upsilon, a new sub-nuclear particle, by physicists from Fermilab, Columbia University and SUNY at Stony Brook. Leon Lederman, Professor of Physics at Columbia, and a familiar face at BNL for many years, was one of the leading participants in the experiment, and acted as spokesman for the group. At the end of the account of the discovery, the *Crier* ran the following "unauthorized autobiography" by Professor Lederman. We think it's a gem.

"Leon Lederman is one of the oldest, barely active particle physicists seen at Fermilab. He began his career back in 1946 when delivering a telegram to someone in the Pupin Physics building of Columbia University; he got lost in the labyrinth of tunnels and emerged four years later with a Ph.D. He began his research at the Nevis cyclotron and helped invent the first pion beam. He started counting pions in 1951 and when he reached 4,722,938, two of his graduate students hung themselves, and one was committed.

"In 1953 he carried out a brilliantly-conceived pion scattering experiment that missed the N^* resonance. His period of greatest creativity came in 1956 when he heard a lecture by Gell-Mann on the possible existence of neutral K mesons. He made two decisions: First, he hyphenated his name. Then he determined to find the neutral K meson. Working at top speed Lederman and his group constructed an accelerator at Brookhaven and put the cloud chamber in the beam. In 1956 they found the neutral K meson and proved that charge conjugation is conserved in weak decays. Flushed with success Lederman decided to have an END OF RUN PARTY. Unfortunately, due to a typist's confusion, it came out END OF PARITY RUN and led to the widespread, but mistaken, notion that parity had been violated. This also proved that charge conjugation was not conserved in weak decays. Oh well. Lederman was promoted and sent to CERN. There he started the famous g-2 experiment and managed to confuse it so badly that it took 26 physicists nineteen years to finish.

"In 1961 he worked under M. Schwartz and J. Steinberger on Neutrinos. He was in charge of finding neutral currents. Schwartz was in charge in finding Lederman. In 1968 he invented the di-muon experiment and missed the J/Psi particle. In 1969 Lederman invented the high speed digital computer but his ideas were stolen by IBM. Since that time he has resolutely refused to use computers. In 1972 while at CERN to see what was delaying the g-2 experiment, he stumbled on high transverse momentum pions, but missed the J/Psi. In 1974 he gave the main Fermilab dedication address. Fortunately, his words were obscured by an unusual wind. His group then looked for direct leptons and missed the J/Psi. The great success of E-288 owes much to the fact that Lederman was very busy on his memoirs during most of the crucial phases of the Upsilon experiment."

SUNY Registration

Final registration for the Stony Brook/BNL extension courses will be held from 10:00 a.m. to 12:00 noon, Wednesday, August 31, in the Radiation Division Conference Room (Bldg. 318 opposite the bank). Dr. Daniel Dicker, Director of the Stony Brook Postgraduate Extension Program, and Mrs. Esther Weitzman will be present to enroll and counsel students.

Ten courses will be offered at BNL in the fall term. For information on courses, instructor and times, call Anne Mauro, Office of Scientific Personnel, Ext. 3336.

These courses are available to BNL employees, guests, and collaborators, and to a limited number of persons not affiliated with the Laboratory. Persons who did not preregister should call Mrs. Weitzman, 246-5967.

PINY Registration

Final registration for the Polytechnic Institute of New York/BNL extension courses in nuclear engineering will be held from 6:00 to 7:00 p.m. Wednesday, September 7, in the Radiation Division Conference Room (bldg. 318, opposite the Bank). Professor John LaMarsh, Head of the PINY Nuclear Engineering Department, will be present to enroll and counsel students.

Courses to be offered at BNL in the fall term are: NU 601 (Introduction to Nuclear Engineering I), 6-8 pm, Monday, D. Diamond, NU 927 (Energy Policy Issues), 6-8 pm, Wednesday, K. Chung; and NU 705 (Advanced Nuclear Engineering Laboratory), D. Rorer; day and time to be arranged. Class schedules are subject to change upon consensus of class and instructor.

These courses are available to BNL employees, guests and collaborators, and to a limited number of persons not affiliated with the Laboratory. Persons who have not already applied to PINY for admission may enroll as special students.

BROOKHAVEN BULLETIN

Published weekly for the employees of BROOKHAVEN NATIONAL LABORATORY

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Letters To The Editor

To the Editor:

The Bulletin issue of August 5, 1977, carried an article entitled "Pollution Studies in High Gear." In this article many names of BNL personnel deeply involved in the overall endeavor to place the BNL Research Aircraft in operation were not included. I would like to call this to your attention and hope that it may be possible for you, in a subsequent issue of the Bulletin, to note this and give credit to the following:

Wes Ripperger designed the aircraft probes and penetration equipment. I might add that he postponed required surgery so that he could complete the job for us.

Others who should be recognized are R. Lehn (Shops Division Head) and P. Delmonte, E. Jackel, J. Sammis, J. Simkus, W. Powell, N. Keller, S. Katz, A. Campbell, A. Velasco and A. Rafaniello, from the Light Machine Shop. From the Welding and Sheetmetal Shops, A. Rosenka, P. Reany, E. Pluta, H. Stelling. And from the DAS Machine Shop, W. Johnson and J. Jenny.
—Cy Fink

Cafeteria Menu

Week Ending September 2, 1977

Monday, August 29

Tomato bouillon
Franks & beans 1.10
Barbecued fresh ham & 1 veg. 1.35
Hot deli - pastrami

Tuesday, August 30

Cream of chicken soup
Chopped steak & 1 veg. 1.10
Chinese pepper steak on rice 1.30
Hot deli - knockwurst

Wednesday, August 31

Puree of mongol
Ham turnover & 1 veg. 1.30
Hot deli - Italian sausage & peppers

Special

Fried shrimp, fr. fr., cole slaw
Small soda or tea \$1.87 plus tax

Thursday, September 1

Split pea soup
Chicken croquettes & 1 veg. 1.15
American chop suey & 1 veg. 1.20
Hot deli - roast beef

Friday, September 2

Clam & celery soup
Pot roast & 1 veg. 1.30
Broiled sea trout & 1 veg. 1.15
Hot deli - smoked tongue

Cooking Exchange

Come one, come all to the International Cooking Exchange's cooking around the world. We start our gastronomic tour in France, on Wednesday, September 14, from 12:30 to 2:00 p.m. in the Recreation Building. Baby-sitting is available.

Arrivals & Departures

Arrivals

Edwin Casanas.....Applied Math.
Steven Guterman.....Applied Science
Melody D. Howard.....Physics
James L. Jailer.....Applied Science
Elizabeth A. McBreen.....Applied Science
John Nagy.....Applied Science
Stephen R. Stadnicki.....Accelerator
Gary P. Utz.....Adm. Sys. & Data Proc.

Departures

Robert W. Christensen.....Plant Engrg.
Wayne M. Danker.....Applied Science
Joseph A. DiStefano.....Personnel
James E. Glover.....Applied Science
Mary E. Gress.....Chemistry
Jan F. Herbst.....Physics
Everline Saunders.....Applied Science

1977 Tennis Champs



Seated (left to right), Shizue Iwai (women's singles), Mary Jane Stangby and Andy Kevey (mixed doubles), Chris Saitta (women's doubles with Nan Dudek). Standing (left to right), Nan Dudek (women's doubles), Mike Gingold (men's doubles with Kevey) and Al Rosenberg (men's singles).

Film Service Sale

A special holiday offer of pre-mailers will take place at the BERA Sales & Service Office on Thursday, September 1, and Friday, September 2.

	Reg. Price	Sale Price
12 exposure prints	\$3.25	\$2.73
20 exposure prints	4.50	4.06
36 exposure prints	7.95	7.04
20 exposure slides	1.75	1.65
36 exposure slides	2.95	2.75
8mm movie film	1.95	1.80

Rifle & Pistol Club

The last of our summer shoot will be September 13 and September 20. We have our first club meeting on September 14 at 5:15, at the Recreation Hall.

Trophies will be given at our second meeting, October 12 at the Recreation Hall.

The winter league starts September 12, we have two openings. Anyone wishing to join may call the league captain, John Zahra, at Ext. 2332/2333.



THE YOUTH-ON-CAMPUS program completes its 13th summer today. Twenty-eight high school juniors and seniors have spent the last two months here sharpening basic skills, receiving career guidance and being introduced to career opportunities. They were assigned to clerical and technical jobs in various departments. All of the 19 young women and some of the nine men took the bi-weekly office practices classes conducted by Elaine Taylor and Mary Cooper. They were given advice on technical careers by Greg Bagley (Accelerator) and on money matters by Eugene O'Hara (AUI Audit). Lecturers from other institutions counseled them on secretarial and aviation careers and on civil service opportunities. Dolores Seay (Personnel) was coordinator of the program.
—photo by Walton

Trip To Football Game

A bus trip to Yankee Stadium on Saturday, September 17, for the annual Whitney M. Young football game featuring Grambling vs Morgan State is being organized. Kick-off time is 2:00 p.m. with the bus departing from the Lab or Riverhead, whichever location is more convenient, at 12:00 noon. The price of the bus trip only is tentatively \$7.50 per person, round trip. This fare will decrease if we get more than 25 people to go. Anyone taking the bus can purchase his own football ticket separately at Ticketron or pay a total price of \$22.50 (\$7.50 for the bus and \$15.00 for the ticket) and have his ticket purchased for him by the organizers of the trip. The \$15.00 is the actual cost of the best seats and there are no discounts for group sales for this game. There are some cheaper priced seats available at Ticketron.

Please contact Ed Taylor, Ext. 4126 for more information and to make reservations. The deadline for reservations is September 2.

Tennis Tickets

A limited number of tickets were bought by BERA and will be sold at the Sales & Services Office in the Cafeteria starting at 12 noon on Tuesday, August 2. Sale will be on a first-come, first-served basis with a limitation of 2 tickets per employee for the 9/7 and 9/8 games.

Available are:

Date	No. of Tickets	*Price/Ticket
9/6-11:00 am	20	\$8.50
9/6- 7:30 pm	10	\$6.50
9/7-11:00 am	8	\$13.00
9/8-11:00 am	8	\$13.00

*Includes 50¢ BERA service charge.

Softball

Mixed League

TNT 4 - I Don't Know's 2

A triple play with the bases loaded in the bottom of the fifth between Howie/Jeanne/Howie, left both teams speechless.

Oh Kay's 11 - Diamonds 7

Leroy James and Jim Garrison led the Oh Kay's attack. Jackie Larrie and Rosemary Mack displayed speed on the bases.

Balls & Strikes 8 - Trouble 7

It was a hard fought, close game.

Hard Ballers 13 - Turkeys 3

Gail Waite made a stupendous tag on Denny Klein. Larry Schiro's pitching and the women's superb fielding led the Hard Ballers to victory. Home runs were hit by Mike Hahle and Barry Lovett.

Employees' League

Nuke Powers 12 - Power Packers 10

Defense preserved the win for the Nuke Powers and they clinched the second half championship.

Medical 13 - Charlie Browns 4

Medical killed any chances the CBs had for the second half championship with fine defensive play.

Contest Day

Last Friday the children's morning program held its annual "Contest Day."

The contests and happy winners were: Shoe Mix - Billy Gill, Yomiko Okuno, John Carew. Ping-Pong Bounce - Billy Gill, Cathryn Lee, Kumud Narang. Cloth Throw - Eric Landkirk, Sandeep Narang, Neil Cassidy. Paper Clip Race - Ceal LaMaire, Yomiko Okuno, Marcus Geard. Bubble Gum and Cracker - Yoshiko Watanabe, Sandeep Narang, Kristian Nitteberg. Balloon Fan - Sandeep Narang, Kristian Nitteberg. Water Balloon Throw - Marcus Geard and Grim Nitteberg.

This Friday will be the last day of the morning recreation program and will conclude with a parade of monsters in "Monster Day." There will also be a showing of a spectacular film.

Hospitality News

The first morning coffee of the fall season will be held in the Brookhaven Center on Tuesday, September 13, from 9:30 to 11:30 a.m.

A formal program will not be presented so that we may have plenty of time to welcome newcomers to the Laboratory and greet old friends. However, we would enjoy seeing any handcrafts you might want to demonstrate or show us.

Please come and bring the children. Baby-sitting will be provided at no charge.

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.

Each week, the Personnel Office lists new personnel placement requisitions. The purpose of these listings is, first, to provide open placement information on all nonscientific 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, as indicated below. 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. 2874 or 2882.

LABORATORY RECRUITMENT: Opportunity for present Laboratory employees.

298. **TECHNICIAN** - To operate various bindery, printing and photographic equipment. Must be willing to work days or nights. Photography & Graphic Arts Division.

299. **HELPER B** - Supply & Materiel Division.

OPEN RECRUITMENT: Opportunity for present Laboratory employees and outside applicants.

300. **TECHNICAL SPECIALIST** - BS degree or equivalent in biology or chemistry to work in pulmonary toxicology program. Medical Department.

301. **TECHNICIAN** - AAS degree or equivalent in mechanical technology with broad background and high level expertise in the manufacture and assembly of precision components. Knowledge of vacuum systems is essential. H-Group. Accelerator Department.

302. **SR. STATIONARY ENGINEER** - Must be willing to work shifts. Plant Engineering Division.

Autos & Auto Supplies

67 CADILLAC - Sedan deVille, dk green, vinyl top, all power, blk leather interior. \$550. Ext. 4189.

73 BUICK ELECTRA 225 - 4 dr hdtp, vinyl roof, ac, all power, good cond. \$1995. 727-5478.

70 DODGE DART - 4 dr, 6 cyl, automatic, ps, radio, excel running cond, used daily. Asking \$525. 727-7304.

74 KAWASAKI - 175cc, F7, on-off road, very good. \$475. 727-7278.

70 DODGE DART - 2 dr hdtp, 6 cyl, stand trans, runs great, high mi, needs minor work. \$225. 727-7304.

66 OPEL KADETT - Good cond, new starter, generator, regulator, 28 mpg, excel transportation. \$300. Ext. 3535, 744-1942.

75 SUZUKI 550 - \$950; 72 Honda, 450, \$800. Excel cond. Bob, Ext. 3313.

67 PLY FURY WAGON - Excel body, always lived in Calif, eng no problem, ps/pb, radio, roof rack. \$700, negotiable. Ext. 3714/3008.

69 OPEL KADETT - Sta wagon, 4 spd, eng 5 mo old, 6 new tires, trans 3 mo old. Asking \$500. 281-6462 after 6.

67 PLY VALIANT - Good driving cond. M. Suenaga, Ext. 3518, 286-2182.

RADIAL TIRE - HR70-15 steel belted, like new. \$27. Ext. 3688.

IGNITION KIT - Delta electronic, reasonable. Ext. 3688.

71 YAMAHA - 350 cc, good cond, reasonable. Ext. 3688.

70 CHEVELLE - 350, 4 spd, ps/pb, good cond. \$500 firm. 724-8897.

2 RIMS - For 71 El Dorado. \$20. Ext. 3084, 475-4596.

1 TIRE - 8 hole on Ford rim, 750-16.5 LT, 6 ply. \$50. Ext. 3084, 475-4596.

TIRE & RIMS - Repairs, low prices, free installation & testing. Fred Usack, lunch call, Ext. 4597, 475-4935 eves.

74 GREMLIN - 23,000 mi, auto, ps/pb, extras. Dick, 286-8906.

2 MICHELIN - 155 x 13, (4) 650 x 13, \$10 & \$15; 4 HR 78 x 14, steel belted, \$120. Fred Usack, Ext. 4597, 475-4935 eves.

68 BSA 250 cc - Less than 7000 orig mi, must be seen. 473-9180.

68 CHEVY NOVA SS - Body poor, mech fair. \$190. Steve, Ext. 2019, 289-3023.

67 PONTIAC - Conv Bonneville, ac/ps/pb, runs well. \$350. Ext. 3790.

72 HONDA - CB 450, 9600 mi, new rear tire & battery. \$650. C. Nauman, Ext. 3412, 286-3764 eves.

71 FORD MAVERICK - Automatic, 6 cyl, 4 dr, 68,000 mi, new battery & muffler. \$650. C. Nauman, Ext. 3412, 286-3764 eves.

73 CHEVY CAPRICE - Convertible, ps/pb/ac, am/fm stereo, top & interior, excel cond. \$1995. 751-2149.

SPARE TIRE MOUNTING - Inside for Blazer, \$5. 821-1148.

TIRE ON RIM - Brand new L78-15 8 x 15. \$35. Rich, 821-1148.

4 WHEEL COVERS - For Chevy 4 wdr Blazer carryall, rally covers. \$10. 821-1148.

PAIR INDY TIRES - 14" wide on Ford rims. \$75. Lee, Ext. 4279, 286-0436.

TIRES - 6:50 x 16, 8 ply, reg tread, tube type on 6-hole Chevy wheels. Ken, Ext. 4514.

76 DATSUN 210B - 2 dr, am/fm excel cond, 14,000 mi, must see, best offer. Ext. 3503, 924-7338.

65 PONTIAC LEMANS - 2 dr, 6 cyl, Ext. 3846, 924-3158 after 5.

67 CHEVELLE - 2 dr, 6 cyl, automatic, radio, economical, good running cond. Chet Davis, Ext. 4533, 473-1816 after 6.

75 PLY FURY - Sport, silver/maroon, good cond, must sell. \$2300 or best offer. Ext. 3438, 924-0056 after 5.

68 OLDS - Vista cruiser, excel mech cond. Ext. 3006, 821-9223.

70 FORD GALAXIE - 351, V8, ac, high mi. \$350. Rich, Ext. 4608.

72 CAPRICE - Low mi. 475-0364 after 6.

2 RAMBLER RIMS - 14" w/tires, good for spares, \$4 each; 12 V battery. Bill, Ext. 3933.

73 PLY STATION WAGON - Ps/pb/ac, 9 passenger. \$1700. 472-3534.

71 CAPRI - 4 spd, am/fm, new radials, low mi. Kim, 475-6728.

70 FORD - Ps/low mi, 302 cu in. \$770. Ext. 3130/3998.

69 FORD FAIRLANE - 8 cyl, good working cond, best offer. Shaw, Ext. 3415, lunch; 744-6804 eves.

72 MERCURY - Sta wagon, perfect cond, new tires. \$1550. Ralph, Ext. 3649, 751-3639.

69 OLDS - Delta 88, ps/pw, new tires, brakes, muffler. \$700. Mo 9-1874.

2 RIMS - 8 x 15 white rims. \$20. 821-1148.

76 CHEVY PICKUP - 350 V8, automatic, heavy duty suspension & springs, 13,000 mi, excel cond, must sell. \$3800. 728-3364 after 6.

AM RADIO - Good cond for up to '74 Dodge van. \$20. John, Ext. 3292.

76 YAMAHA - New 175 cc, 1100 mi, excel. \$700 firm. J. Haufman, 286-9685 eves.

48 ANGLIA RACE CAR - No motor, no tranny. \$900. Lee, Ext. 4279, 286-0436.

Boats & Marine Supplies

25' OWENS - 1961, Chevy 283, head, dinette, sink, ice box, 15 gal fresh water tank, sleeps 5. \$2100. Tucker, 363-2475.

16' GARVEY - Glassed over wood, excel cond, 40 hp Johnson, elec start, clam rake, will sell together or separate. Bob, Ext. 4400.

15' CENTURY - Wood boat, trailer, 25 hp Elgin motor w/parts & service avail. 928-2803 after 6.

29' COLUMBIA - Twin screw, sport fisherman, sleeps 5, f/b, dual control, outriggers, fighting chair, bimini top, extras. \$4500 firm. Pat, Ext. 2939.

23' LUHRS - 1962, 6 cyl, good cond, extras. Frank, 281-5692.

OUTBOARD - British seagull 2 1/2 hp, long shaft, low hrs, excel cond. \$150. C. Nauman, Ext. 3412, 286-3764 eves.

19' NORTH AMERICAN - 1967, 1200 MC, i/o, trailer, fiberglass, extras. Asking \$3000. 472-2641.

AQUA CAT - Catamaran, make offer. Ext. 2476, 751-2149.

Miscellaneous

2 DBL HUNG WINDOWS - In single frame, 66 x 38, w/s&s, sliding glass dr, 96 x 78. \$25 each. 473-2754.

PARLOR STOVE - Antique upright, elaborate chrome, all pieces in tact, must be seen, \$300; mink stole, never worn, have appraisal, perfect, \$350. Ext. 2893.

YARD SALE - 106 Lyman Rd, E Patchogue, Sat, Aug 27, tools & households, starts 11 a.m.

BICYCLE - Girl's Raleigh, blue w/2 baskets. \$25. Janet, Ext. 2345.

2 FLYER SLEDS - \$20; work table & chair, \$15. Ext. 2030.

Ads left out of this issue because of lack of space need not be re-submitted in order to run in next week's issue.

BICYCLE - Raleigh sports model, 3 spd, like new. \$85. Robert, 286-2265.

RECORDS - Beethoven, 7 lps, \$15; popular music, 10 lps, \$20; motion picture sound tracks, \$10 each. 289-2116 after 6.

MINI BIKE - Cibi, 1973, good cond 66 cc. \$100. 878-0201.

HORSE TRAILER - 2 stall. Martin, Ext. 2547, 281-5328.

COLOR TV KIT - Heath kit 25", model GR295, tube type, pc boards btl, new w/manual less cabinet. \$250. 475-2557.

BABY ITEMS - Changing table, \$10; infant carrier, \$4; Gerber carry bag, \$8; food warmer, \$4; all like new, other items. Theresa, Ext. 3136.

EXTENSION LADDER - Wood, extends to 28' heavy duty, mint cond. \$60. Ext. 2238.

JUVENILE FURNITURE - 8 drawer, bdl dresser w/ infant dressing platform on top, 4-drawer single dresser, good cond. \$45 for both. Dick, Ext. 3860.

PUPPIES - English Springer spaniel, black & white, liver & white, no papers, avail in Sept. 289-8212.

MOTORCYCLE HELMET - Bell super magnum, white, size 7, excel cond. Jack, Ext. 2201, 2253.

BED SPRING - Uncovered, steel coil, twin size, \$8; cot, heat & foot board, spring, \$5. M. Greene, Ext. 3080, 286-0237 after 5:30.

BASE CB - Midland home, 23 channel, asking \$100; Yasica GSN 35 mm fully automatic w/wide angle & telephoto lenses, like new, asking \$125. Frank, 281-4179.

DISHWASHER - Portable, Lady Kenmore, old but good. \$45. Len, Ext. 4484, 473-3305.

WASHER/DRYER - Portable, Kenmore, incl hoses & exhaust, excel cond. \$100. Ext. 3774, 673-0397.

GE FREEZER - No frost, 15 cu ft, excel cond. \$200. 363-2940 after 6.

REFRIGERATOR - Whirlpool, 2 dr, \$30; Sears gas dryer, \$25. 864-7814 after 6.

SOFA & CHAIR - 8' couch, pillow back club chair, both slightly worn, best offer. Ext. 4132, 924-4328.

LIVING RM FURN - Mediterranean couch, 2 chairs, cocktail table, 2 end tables & lamps. \$600. 289-2259.

TABLE - Maple corner, good broadloom rug w/under pad, approx 9' round, excel. 325-1961.

SECTIONAL - 3 piece, \$350, round glass top coffee table, \$50; dining table, 6 chairs, \$150; bar, \$30. Maria, Ext. 2486.

BABY ITEMS - Detecto scale, \$3; pride-a-matic swing, \$6; car bed, \$3, walker, \$3. Carol, 586-3579.

12 QT MASON JARS - \$1, safety gate, \$1.50; camera tripod, \$8. Carol, 586-3579.

DRAPES - 4 pair, green, \$10. Ext. 3655, 281-2002.

GO CART - Needs some work, \$50; mini bike, runs good. \$80. AN5-3731, Ext. 4547.

MINI BIKE - 1973 Cibi, 60 cc, good cond. \$100. 878-0201.

GOLF BALLS - Bruised, 15 for \$1; good, 4 for \$1. Eve, Bldg. 318, Room 42.

10 SPD BIKE - Boy's jr size, good cond. \$45. Richard, Ext. 4608.

POP UP CAMPER - Sleeps 8, stove, sink, gas/elec refrig, dbl dinette, excel cond. \$1100. Ron, Ext. 4597, 924-8644.

DIVING BOARD - 12', 286-8758 after 5.

HOT WATER HEATERS - 2, 286-8758 after 5.

GAS ENGINE - Sm w/integral forward/reverse gear box, needs tuneup. \$25. Ext. 4058, 286-0436.

FISH TANK - 55 gal salt water, w/complete set up. \$300. 289-2259.

WATER FILTER - Attaches to kitchen faucet. \$30. New, never used. Ext. 3655, 281-2002.

CHAIN SAW - Sears gas 16", good cond. \$125. Ray, Ext. 4479.

TOWER - Windmill type, 3 sections, total height 40', like new. \$100, firm. Bill, 589-3372 after 5.

SALAMANDER - W/hose & regulator, for use w/ bottled gas. Ext. 4703, 473-5406 eves.

50' STEEL TOWER - Heavy galvanized const. \$200. 286-3377 after 6.

LADDER - 25' extension, alum. 286-8758 after 5.

DEVELOPING TANK - Sheet film, handles up to 4"x4" as new. \$10. Ext. 4240, 286-0295.

MOVIE CAMERA - Super 8, Argus cosina 738, 8:1 power zoom. Ext. 3998.

MINK STOLE - Dawn pastel, top quality, 10 male skins. Sacrifice, \$300. Ext. 2589, 924-5919.

SPREAD & DRAPES - Winnie the Pooh twin spread & pair of matching drapes, yellow. \$20. 286-3377 after 6.

INTERNATIONAL TRAVEL ALL - W/snow plow, 3 sets of tires, mint cond, 4 wheel drive, am/fm stereo. 286-8758 after 5.

20' MOTOR HOME - Self-cont, shower, oven, 2-way refrig, sleeps 5, 9000 mi, excel cond, \$8500. 281-3992.

TRAVEL TRAILER - 1974 Avenger, Holiday, 18', self-cont, sleeps 4, bath rm, refrig, duct heat, like new. \$3200. Ron, 475-3632.

73 ACE TRAILER - 18 1/2' self-cont, sleeps 6, 6 cu ft elec/gas refrig, shower, many extras, mint cond. Pete, Ext. 3297, 586-3579. \$2590.

COUCH & LOVE SEAT - Brown vinyl, excel cond. 1 yr old, moving, must sell. Asking \$200. Debbie, 732-8216.

TURNTABLE - Garrard 40B w/Pickering cartridge. \$25. 744-4013.

72 STARCRAFT - Pop up hdtp, vinyl covered, sink, stove, ice box, closet, sleeps 6, excel cond. \$1000. 928-4511.

CASTRO TWIN BED - Green velvet cover, never used. Asking \$65. Dennis, 281-6462.

25" COLOR TV - Sylvania, walnut console, perfect cond. \$300. Ext. 2910, 286-0866 after 6.

SCOPE - Heath 0-12, audio generator; Heath IG-72; capacitor analyzer, solar CE; misc electronic parts. Jim Hallock, 878-0222.

TOOLS - Power & hand, lathe, grinder, table saw, vice, etc. Jim Hallock, 878-0222.

PURE SILVER - 100 Troy oz bars, \$5.95/oz. Bob, 234-2695.

PENNY SCALE - Lg antique, use for conversation piece, etc. Sharon, Ext. 3312.

VACUUM CLEANERS - 3 mo Hoover canister & all attachments; Premier upright, \$50 each. Ext. 3336, 475-8456.

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

PATCHOGUE VILLAGE - 3 bedrm ranch, exp attic, fin bsmt, all appl. \$34,000. Ext. 2951, 475-7694.

SHOREHAM - Custom btl colonial, 8 rms, 2 1/2 baths, laundry, full acre. \$58,500. 744-2821.

MASTIC BEACH - 3 bedrm ranch, 1 1/2 baths, 100 x 100 corner lot, near water. \$31,000. 281-7531.

E MORICHES - Colonial cape, 6 bedrm, 3 baths, fp, 3/4 acre, gar, beach & marina. \$69,000. Ext. 3950, 878-1540.

UPSTATE FARM - 160 acres, bldgs, util, sell all or part, reasonable. Ext. 3688, 363-7032.

MEDFORD - 1 bedrm, w/w carp, appl, ac, recreational facilities. \$29,500. 732-5252, 286-0838.

NOB HILL - Hauppauge vic, 2 bedrm condo, w/w, 5 appl, pool, tennis, \$500 cash over, must sell or rent. 981-8541.

BELLPORT VILLAGE - 4 bedrm cape, lg rms, country kitchen, in grd pool. \$49,500. 286-0795.

CLEARWATER BEACH - 100x 150 lot, near priv beach, marina rights. Asking \$13,000. Ext. 3469, 281-4371.

82 ACRES - Southern New Hamp woods, 1/2 mi long w/jeep trail frontage. \$20,000 firm. Ext. 4058, 286-0436.

S SHIRLEY - 3 bedrm, sunporch, bsmt, storms, near water, beaut landscaping. \$29,500. 281-5328.

HOLBROOK - 2 bedrm, lg property, low taxes, garage. \$26,000. 585-4741.

STONY BROOK - Wooded park like, 3 bedrm, colonial, 2 1/2 baths, w/w low 40's. Ext. 4663, 751-5479.

For Rent

BELLPORT - Want man to share 3 bedrm house. Richard, Ext. 4608.

CONDO UPSTAIRS - Lg furn rm & bath, possible kitchen privileges, 6 mi to BNL, \$150/mo. 744-3235. 924-5294.

POCONO VACATION - Chalet in priv commun, all season recreation. \$175/wk. Fran, 289-2159, Bob, Ext. 4551.

BROOKHAVEN - 2 bedrm house, lg kit, den. \$275/mo. Ext. 4088.

PATCHOGUE - 3 bedrm apt, all util, priv home. \$315. 289-9192.

VT CHALET - Furn, fp, hike, canoe, swim, fish, near theater, music, antiques. 757-5599.

WADING RIVER - Bsmt apt, lg 3-rm, fully furn, ac, on beach. \$250/mo, lease. 929-8443.

MILLER PLACE - Charming 2-rm furn studio, all new, in old barn, garden, water view. \$275/mo incl util. Ext. 2008.

Wanted

2 BEDRM APT OR HOUSE - South shore. Kim, 475-6728 or Pat, Ext. 3168.

NEED HONDA CYL - Desperate for CB-160 Honda cylinders, will also buy other eng parts. Walt Parsons, 744-3339.

BABYSITTER - My home, Tues-Fri, 4-6 p.m. 281-0268. Ext. 2926.

CAR TO RENT - 1 mo. Ext. 2030.

HOME - For very friendly part shepherd mix, med size, altered male, 1 yr old, fully house broken. Sue Munro, Ext. 2913.

HOME - For wire hair fox terrier, male, 8 months, good w/children. 286-1877.

HOME - For altered declawed male cat. 3