

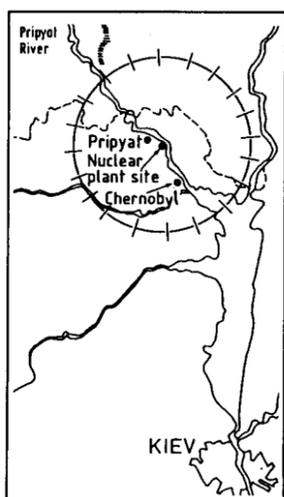
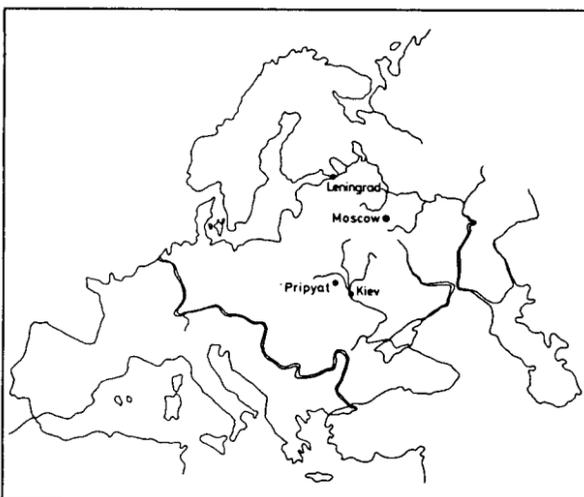
## Looking Back at Chernobyl Part II: Emergency Responses and Health Effects

Last week in Part I, the Bulletin reviewed the Department of Nuclear Energy's role in analyzing the accident at the Chernobyl-4 nuclear power plant in the U.S.S.R., just over one year ago. This week, this two-part report concludes with a look at the parts played by the Medical Department, Safety & Environmental Protection Division and Department of Applied Science in dealing with emergency responses to Chernobyl and studying health effects of the accident.

The Soviet Union's Chernobyl-4 reactor in the Ukraine was destroyed at 1:23:45 a.m. on Saturday, April 26, 1986. A tremendous pressure surge had burst the fuel channels, pushed up the reactor's 1,000-ton cover and ejected some of the reactor's contents through the roof of the building, which had no containment above the reactor.

Along with hot fuel and graphite, the Chernobyl reactor spewed out radionuclides. These included iodine-131, a major fission product, which has a short half-life but is taken up by the thyroid, as well as the longer-lived and potentially more dangerous cesium-137.

Up to half of the fission products that escaped were most likely deposited within a 30-kilometer radius of the plant. The rest were carried by the northwest wind out of the Soviet Union, first into northeastern Poland on April 26, next to southern Scandinavia on April 27, then into Central Europe on April 29 and 30. Minute levels of airborne radioactivity from Chernobyl reached the U.S. on May 7.



(left) Western U.S.S.R. and Europe. (right) Area within a thirty-kilometer radius around the Chernobyl-4 nuclear power plant.

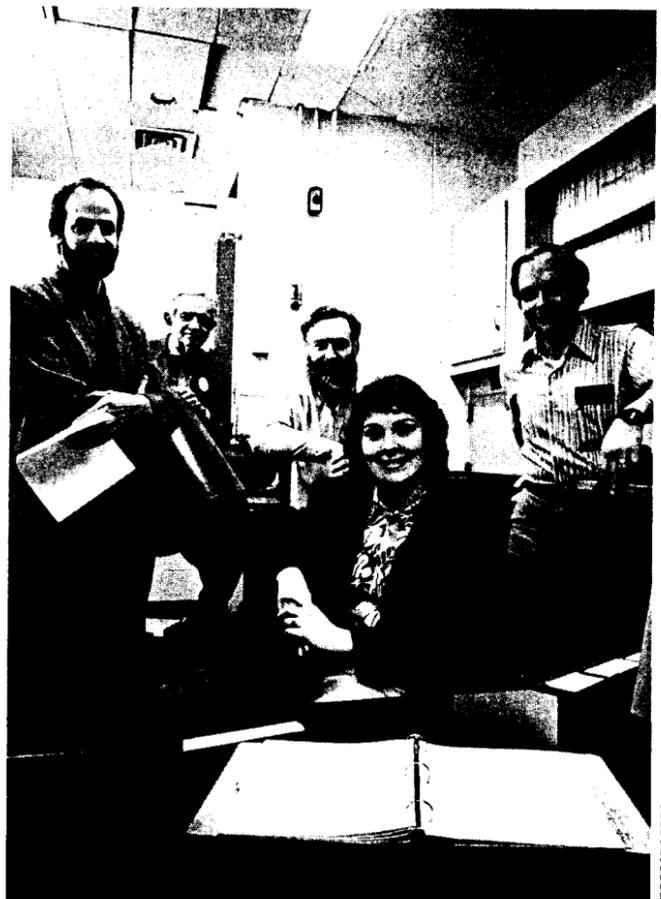
### Radiological Assistance

To assess the deposition of radioactive material and the doses people were receiving, on the Tuesday following the accident, the Department of Energy (DOE) asked the DOE-BNL Radiological Assistance Program (RAP) team to stand by, ready to go to the Soviet Union if the U.S. State Department's offer of assistance were accepted.

Though the RAP team did not go to the Ukraine, they went to the airport anyway — to screen Americans returning from Kiev and other cities in the Soviet Union near Chernobyl. On Wednesday, April 30, U.S. Senator Alfonse D'Amato of New York called on the RAP team to screen students and other tourists returning to John F. Kennedy International Airport.

From May 1 through 6, RAP team members made five responses, surveying 132 returning passengers and their carry-on luggage for contamination, using pancake geiger counters. Utilizing sodium iodide crystals, RAP team members also measured iodine-131 levels in the thyroid.

Twenty-one members of the Radiological Assistance Program (RAP) team participated in five contamination surveys of American tourists who returned to John F. Kennedy International Airport from cities near Chernobyl in the Soviet Union. Pictured are five of the RAP team captains who led the effort: (from left, standing) Stephen Musolino, Andrew Hull, Alan Kuehner, Robert Miltenberger and (seated) Kathleen McIntyre. Hull is holding part of a sodium iodide radiation detector.



Mort Rosen

Contamination was found mostly on the bottoms of some travelers' shoes. Some of the travelers had iodine-131 detected in their thyroids. However, the radiation doses they had received did not pose a health problem.

To further reassure 35 travelers who had tested positive and 20 others who later were referred to BNL by the State Health Department through August, RAP Team Captain and S&EP Supervisor for Environmental Monitoring Robert Miltenberger performed whole-body counting at the Lab. Again, any radioactivity that was detected was medically insignificant. Says RAP Team Captain and S&EP Technical Support Section Head Alan Kuehner, "Most of the people we surveyed received more radiation flying to and from the Soviet Union and Eastern

Europe than they did from Chernobyl."

### Dose Assessment

Since Senior Health Physicist Andrew Hull, S&EP, had been part of the Three Mile Island accident environmental dose assessment team, on May 5, he was called to the emergency operations center at DOE headquarters to help interpret the radiological data from Chernobyl. Using reports from Europe of the radiation levels in air, soil, water, milk and fresh food and of external radioactivity measurements, Hull worked backwards with the environmental data to estimate what was released and what the population doses most likely were.

"At the time, it looked like the fuel might have melted, and that threw me a little bit," says Hull. "However, subsequent calculations indicate that the preliminary, back-of-the-envelope dose assessments were in the ballpark."

According to Hull, three to five percent of the solid material in the reactor's core was released, as well as 30 to 60% of the volatile radionuclides and essentially all of the noble gases. About one-fourth of the radioactivity was released on the first day of the accident, and the remaining three-quarters was liberated over the ten days following.

Thirty-one Chernobyl workers and emergency personnel died: two immediately from physical trauma, and the rest over the next two months from radiation effects complicated by thermal and radiation burns. Two hundred people at the site had excessive exposures to radiation and had to be hospitalized. Because of the high radiation levels, 135,000 Soviet citizens were evacuated from Pripjat, Chernobyl and other towns within a 30-kilometer radius around the reactor.

Globally, Hull and others estimate that the 50-year collective absorbed dose commitment is about 10% of the dose from natural background radiation over the same period. About 40% of this additional dose is expected to be received by people within the USSR.

(Continued on page 2)

## An Annual Event for AGS Users

Each year, about 700 users representing some 90 institutions are involved in research at the Alternating Gradient Synchrotron (AGS). In 1963, a Users Group was formed to help AGS users stay up-to-date on programs and improvements at the accelerator, as well as developments in the field of accelerator physics.

Discussing the proceedings during a break at the Users Group's annual meeting, held last Thursday and Friday in the Physics Bldg. are three BNL physicists: (from right) Derek Lowenstein, Chairman of the AGS Department, who gave the group an "AGS Status Report"; Neil Baggett, Secretary of the Users Group; and Thomas Ludlam, Physics, who spoke about "RHIC Detectors — Present Ideas and Future Studies." Ludlam's talk was part of an information meeting on the proposed RHIC accelerator, which would use the AGS as an injector. This special meeting began Friday afternoon with a talk by BNL Director Nicholas Samios on "The Relativistic Heavy Ion Collider."

Other talks at the AGS Users Group meeting centered on research, including results from two AGS neutrino oscillation experiments, E816 and E776, and the first results from heavy ion research at the AGS.

In addition, meeting attendees received an overview of the national physics program, through talks by Stanley Wojcicki of the Central Design Group for the Superconducting Super Collider (SSC), who spoke on "SSC — Status and Outlook"; Harlan Watson, Energy Coordinator, House Committee on Science, Space and Technology, who offered "U.S. Science — A View From the Hill"; Robert Woods, Division of High Energy Physics, Department of Energy (DOE), who addressed "The DOE Program in High Energy

Physics," and David Hendrie, Director of the Division of Nuclear Physics, DOE, who discussed "The DOE Program in Heavy Ion Physics."



Mort Rosen

## Chernobyl (Cont'd.)

In the Northern Hemisphere, explains Hull, the number of cancer deaths caused by Chernobyl could range from zero to 39,000 — a 0.007% increase over the expectation of about 600 million cancer deaths normally. Statistically linking cancer deaths with Chernobyl will be difficult because the increase is so small and the spontaneous cancer rates are so variable. Excess cancer fatalities may be observed within the more heavily irradiated populations in the USSR, particularly among those evacuated.

### Food and Water Guidelines

In addition to DOE and the International Atomic Energy Agency, agencies such as the World Health Organization (WHO) collected radiological data resulting from Chernobyl so it could be interpreted by computer and the results used in case of future radiological accidents. As WHO Focal Point on health and environmental effects of energy systems, Leonard Hamilton, Head of the Biomedical Environmental Assessment Division, Department of Applied Science, and Director of the WHO Collaborating Centre at BNL, went to WHO headquarters in Geneva last June to discuss, among other issues, the use of existing data to establish WHO guidelines for food and water.

"At the time of Chernobyl, WHO had no guidelines and therefore could not advise its member nations about levels of fallout and the passage of radiation through the food chain to human beings," explains Hamilton. "Unfortunately, in Europe, there was terrible confusion about whether or not the people should eat fresh food and drink water and milk. To avoid this chaos in the future, we hope to use existing data to develop such guidelines by the end of 1987."

## Reports Available On Chernobyl

• "Preliminary Dose Assessment of the Chernobyl Accident," by Andrew Hull, March 1987; request BNL-38550 from Carrie Sauter, Ext. 4207, S&EP, Bldg. 535A.

• "Short-Term Health Effects of Reactor Accidents: Chernobyl," proceedings of the workshop held August 8-9, 1986, at the Medical Department, edited by Victor Bond and Eugene Cronkite; request BNL-52030 from Bernice Armstrong, Ext. 3361, Medical Department, Bldg. 490.

This April in Geneva, Hamilton was a member of the working group preparing a draft of guideline values for derived intervention levels, to be adopted at the WHO general meeting this September.

### Across National Boundaries

Thirteen of Chernobyl's radiation victims received bone marrow transplants, some performed by Robert Gale, a surgeon from the School of Medicine at the University of California, Los Angeles, who went to Chernobyl seven days after the accident.

He reported on the transplant results at the international conference "Short-Term Health Effects of Reactor Accidents: Chernobyl," held in the Medical Department on August 8 and 9. It was organized by BNL Senior Scientists Eugene Cronkite and Victor Bond, former director and deputy director, respectively, of the BNL medical team that delivered the initial medical care to Marshall Islanders who had been accidentally exposed to fallout from U.S. tests of nuclear devices in 1954.

"The conference brought home how difficult it is to treat whole-body irradiated patients with severe thermal and radiation burns to the skin, especially with less than adequate facilities," comments Bond. "We always knew that there was a narrow window

for bone marrow transplants: The patient's radiation dose had to be high enough to destroy his own immunity, but it could not be so high that the individual would die from its complications. Chernobyl underlined how narrow that opening is."

"The Chernobyl experience underscored the need for additional research into treating people exposed to radiation," commented Gale, during an AUI Distinguished Lecture to the Laboratory community on October 7. "As the medical consequences of nuclear power plant accidents can be felt beyond national borders, the medical response to such an emergency must be international as well."

"Chernobyl has also led to an international effort to improve reactor safety in all countries," adds Department of Nuclear Energy Chairman Herbert Kouts. "Before the accident, the Soviets did not direct much attention to nuclear safety — they were more interested in nuclear power production. They paid a high price for building their reactors too cheaply and putting production — rather than safety — first and foremost in their reactor operators' minds. New safety measures are now costing them in reduced electrical output — but it is a comparatively small price worth paying.

"They are now interested in joining the rest of the world in the quest for a safer nuclear future," he concludes. "As interest in nuclear power plant safety now crosses national boundaries, we welcome their efforts."

— Marsha Belford

## Not for Women Only — Penny Wise Budoff To Speak on Women's Health

As a physician who has been a pioneer in women's health care, and as the author of two best-selling health care books for women, Penny Wise Budoff is distinctly qualified to speak on "New Trends in Women's Health Care." Hear her address this topic at a joint Women-in-Science and Health Promotion Seminar on Thursday, May 14, at 5:15 p.m., in Berkner Hall.



Penny Wise Budoff

In her talk, Budoff will discuss such topics as estrogen replacement therapy, breast cancer treatments and premenstrual syndrome. The lecture

will be followed by a question and answer period.

Penny Wise Budoff pioneered the use of drugs known as prostaglandin inhibitors to relieve menstrual cramps. She is the author of two best-selling books: *No More Menstrual Cramps and Other Good News*, a health handbook for all women, and *No More Hot Flashes and Other Good News*, a health guide for the mature woman age 35 and over. Further, she has been a highly acclaimed speaker at medical symposia around the world, as well as a guest on national television and radio shows discussing women's health issues.

Budoff received her medical degree from the State University of New York (SUNY) at Syracuse and did her internship at St. Luke's Hospital in Utica. She is licensed to practice medicine in the State of New York and is certified by the Diplomate American Board of Family Practice. She is also Clinical Associate Professor of Family Medicine, SUNY at Stony Brook.

In 1985, after nearly two decades of private practice in Woodbury, New York, Budoff founded the Penny Wise Budoff, M.D., Women's Medical Center. Located in Bethpage, the Center is a comprehensive health care facility for women, staffed by women physicians of many specialties.

## BNL's Fabulous Forty

On a Friday evening, exactly 19 years ago, the curtain went up on the BERA Theater Group's fourth performance of "Brookhaven/Facade." In all, five performances of this original musical revue graced the stage of the BNL Theater (Bldg. 424, now a warehouse for the Alternating Gradient Synchrotron Department) in early May of 1968.

The play was written and composed by former employees Jere Austin and Ann Leonard, and Sheila Buck, wife of former employee Brian Buck, with Martha Denes, wife of John Denes, Applied Mathematics Department (AMD), and Ron Peierls, who now heads AMD. In a parody of the full title of the then-popular Broadway play "Marat/Sade," "Facade" was described in the souvenir program as "... an examination and historication of BROOKHAVEN as performed by the inmates of the site at Upton under the marquee of the Director's FACADE..."

"Facade" was produced by Charles Meinhold, now head of the Safety & Environmental Protection Division, and the stage manager was Gerhardt Friedlander, now a consultant to the Chemistry Department. The play was directed by Ron Peierls, who wrote in the program, "While it is certainly not a literal history of BNL, it is, we hope, expressive of the spirit of Brookhaven. There is a quality of life at BNL which is essentially zany, no matter how serious the goals are."

To tell the story of BNL, the revue focuses on significant eras in world history, beginning with "Prehistory" in "... Stoenhank, a remote part of the world/Where banners of science early unfurled." There, Druids gathered for "A project fitting man's wit and guile/Construction of a great new Pile./This philosopher Druid, as you will see,/Is respectfully addressed as P.H.D.":

**Druid:** Oh, great P.H.D., whatever possessed us to pick this forsaken place to build our great new Pile? Why couldn't we have picked a site closer to civilization?

**P.H.D.:** ... We had to have a site that was equidistant from all nine of our associated Temples of Wizardry. Unfortunately, it is inaccessible, but it is equally inaccessible to all Temples.

**Druid:** The land is so barren. It's either sandy or swampy. All that will grow here

are some scrubby little oak and pine trees.

**P.H.D.:** That's why it makes a perfect place for our gigantic new Pile. No one else could possibly want it, and therefore, no one will object to our being here.

The next scene takes place on that "Great glorious river/River known as Nile." In the "Gift of the Nile," Architect/Engineer Ratatat tries to explain his new project — "A revolutionary, absolutely original, first-time ever reactor!" — to Pharaoh and Moses.

When Ratatat's statement that "a reactor — reacts" fails to amuse the Pharaoh, he explains that "a reactor is something which produces neutrons." After Moses observes, "We don't know what to do with the oldtrons yet," Ratatat says, "But you don't have to understand how it works. I have to know how it works. All you care about is — do they have one in the East?"

Next stop is "Ancient Greece," where several wives of scientists lament their husbands' total immersion in science. This prompts a suggestion by one wife, Lysistrata:

**Lysistrata:** Then I propose we inaugurate a theatre club, art societies, and organize sports for all the family ... instead of excluding us and being so dull and getting fat and out-of-shape, our men will become fit and strong and interesting and cultured — and spend all their time entertaining us. We can call it ... the Olympic Games ... and furthermore, we shall constitute a committee to run it all ... we'll call it BERA.

BERA, it turns out, stands for Boring Evenings Relief Association.

The scene shifts to the "Director's Office of the Baths of Northern Lombardy" in "Ancient Rome." There, Brutus and Marcus Aurelius discuss the budgetary outlook for their proposal for improving the baths, including a "14-foot Bubble Bath":

**M.A.:** ... Some of our proposals should create quite a splash.

**Brutus:** I hope so, but I'm afraid they may not have enough practical applications to satisfy some of the Senators.

**M.A.:** Practical applications? These people don't seem to appreciate the crucial importance of the baths to the whole intellectual life of the Empire ...

**Brutus:** Yes, that's true; the highway program has no problem getting support ... Why, we could run for a year on the amount that it takes to build a few measly miles of satellite roads. As if it were so

darned important to be able to put a man in Northern Gaul in two weeks.

**M.A.:** Anyway, I don't think we do so badly in the applied line. I seem to remember that Caesar was rather pleased with that Emperor's Tandem Vanity Bath ...

Caesar, of course, was, Augustus E. Caesar, or "A.E.C."

During "The Dark Ages" the scientist knight, Sir Basil Metabolism persuades the monk-scribe Brother Otto Graffo to break tradition and teach Basil's fiancée, Maid Millie, how to write, "... so you can be my secretary, of course, and keep records of my experiments, and write up papers for distribution to all the other scientists — twelve of them, I think there are — so I get credit for the work I've done."

In "The Middle Ages," two professors reviewing that new invention, the printing press, decide to build a "really big" version of the machine. To solve budget problems, they propose getting "cheap labor" by putting summer students to "useful work" sorting letter type, leading to the "Batcher of Parts" degree. Graduate students will also work, sorting symbols and signs. After two years they will earn the "Master of Signs" degree, if they write "a thesis of at least ten thousand words, of which one thousand must be brand new ... With all those new words, we'll have to have new books. And the process will become a chain reaction — it will get bigger and bigger." Equally creative ideas for Ph.D.s and professors assure the proposed printing press will be put to good use.

Intermission — End of Act One  
(Continued next week)

## Wanted: Life and Half-Life

"Brookhaven/Facade" is not the first original play to be written about and performed at BNL. In January 1949, audiences were treated to "Life and Half-Life" by Saul Harris and John Karas, "a travesty of life at Brookhaven in three acts." So far, all of the Bulletin's efforts to obtain a copy of the play have been fruitless. If anyone has a copy, it would be most welcome at the Brookhaven Bulletin, Bldg. 134, BNL, Upton, NY 11973.

## Coming Up

Alan Bridle, Staff Scientist with the National Radio Astronomy Observatory (NRAO), in Charlottesville, Virginia, will give the next Brookhaven Lecture on Wednesday, May 20, at 4:30 p.m., in Berkner Hall. The NRAO, like BNL, is operated by Associated Universities, Inc. Bridle's topic will be "Relativistic Jets and the Most Powerful Radio Sources in the Universe."

## Information Desk: SUNY at Stony Brook

Representatives from the State University of New York at Stony Brook will be in Berkner Hall on Tuesday, May 12, from 11:30 a.m. to 2 p.m. to answer employees' questions about Stony Brook's educational programs. At the information desk will be the Assistant to the Dean for the Center for Continuing Education, the Assistant Vice Provost for Undergraduate Studies, the Dean of the College for Policy Analysis and Public Management, and the Assistant Director of Admissions.

## NYC Train Trips

Group trips to New York City aboard the Long Island Railroad (LIRR) are sponsored by BNL and organized by Adrienne Usher. Trips are scheduled for the first and third Wednesdays of every month, as well as the fifth Wednesday, if there is one. Saturday trips are scheduled on the last Saturday of every month, with an additional trip in December.

Round-trip fares are: Wednesday — \$5.25 per person; Saturday — \$6.75. Children under five ride free. Reserve a ticket by sending a check or money order (no cash, please), payable to BNL or Cash, through the U.S. mail to BNL, P.O. Box 322, Upton, NY 11973. Send a separate check for each trip. For the Wednesday trip, this must be received by the Friday preceding the trip; for Saturday trips, by the Thursday preceding. Put your telephone number and the date of the trip on the back of the check. Reservations are made when checks are received; for confirmation, send a stamped, self-addressed envelope along with the check.

Departure is from the Patchogue LIRR station: Wednesdays, 7:55 a.m.; Saturdays, 8:41 a.m. Be at the train station 15 minutes before departure. Return-trip tickets are given out on the train. You may return on any train the same day, including the train at midnight.

Trips for the remainder of 1987 are:

<b>Wednesdays</b>	<b>Saturdays</b>
May 20	May 30
June 3, 17	June 27
July 1, 15, 29	July 25
August 5, 19	August 29
September 2, 16, 30	September 26
October 7, 21	October 31
November 4, 18	November 28
December 2, 16, 30	December 12, 19

# BROOKHAVEN BULLETIN

Published weekly for the employees of BROOKHAVEN NATIONAL LABORATORY

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## Runners Corner

In a time of 2 hours 31 minutes, Peter Boni, Physics, captured third place out of 1,033 marathoners in the Newsday Long Island Marathon on Sunday, May 3. After running a 5:07 first mile, Boni completed the 26-mile, 385-yard course at a 5:45 pace.

Details of Boni's showing and the race results for the approximately 25 other BNL Road Runners in the half and full marathon will be published in upcoming issues of the Bulletin.

## Cooking Exchange

The theme of the International Cooking Exchange meeting scheduled for Wednesday, May 13, will be "International Health Foods," such as breads, tofu, soup and healthy desserts.

All are welcome to participate from 12:30 to 2 p.m. at the Recreation Bldg. For \$1.50, those present are entitled to food samples and copies of the recipes prepared. Babysitting is available at 50¢ for each child.

For more information, call Noemi Katz, Ext. 3073.

## Swim Club

The Swim Club will hold practice as usual on Thursday, May 14, at 5:15 p.m. at the pool. For more information, call Marsha Belford, Ext. 5053.

## Volleyball

The Volleyball Awards Dinner will be held at the Rock Hill Country Club in Manorville on Friday, May 15, at 6 p.m. Tickets are \$7 for league members, \$11 for guests. This includes hot and cold buffet, free beer and dancing to a dee-jay. A cash bar will be available for mixed drinks.

Tickets may be purchased from Barry Karlin, Ext. 5624, Bldg. 725A, or Walt Reams, Ext. 3408, Bldg. 526.

## A Look at the Quastler Collection



Mort Rosen

Weekday visitors look over selected pieces from the collection of some 130 artworks by the late Gertrude Quastler, which have been donated to BNL by Johanna Zimmerman, sister of Gertrude Quastler's late husband, Henry. The display was organized by the BERA Art Committee, which Gertrude Quastler was instrumental in founding in 1959. Included in the exhibit were oil paintings, watercolors, silk screen prints and the woodprints for which the artist is best known. The show opened with a reception Friday evening and concluded yesterday. Attending the opening reception were Lynn and Joan Zimmerman, daughters of the donor.

## Bowling

### Red/Green League

K. Asselta had games of 238/235/219 for a 692 scratch series, J. Connelly 215/214/600 scratch, A. Warkentien 210/204/601 scratch, E. Carter 204, L. Schairer 202, T. Holmquist 201, L. Jacobson 201.

### Pink League

Maryann Reynolds rolled a 211, Renie Rosati 189/178, Pam Spencer 181, Fern Coyle 169/161, Donna McCambridge 169, Ellie Kristiansen 168/167.

### Purple League

Marge Belligan rolled a 177, Linda Wasson 196, Jeannette Thiede 193, Karen Jacobs 190, Mary Addressi 178, John Connelly 214.

## Nursery School

The Upton Nursery School is now accepting applications from Lab employees to enroll their three- and four-year-old children for the 1987-88 school year. For more information, call Marietta Veligdan, 874-3447, or Dottie Alessi, 924-5984.

## Help Wanted At Cafeteria

Saga Foods, which runs the Cafeteria, needs several new employees, particularly utility workers and cooks. Saga Foods is an equal opportunity employer. Anyone interested may apply in person at the Cafeteria.

## Note to Diners

The Cafeteria will be closed on Saturday, May 9. On that day, snack bar service will be available from 9 a.m. to 2 p.m. at the Brookhaven Center.

## Cafeteria Menu

Week of May 11

### Monday, May 11

French onion soup	(cup) .75
	(bowl) .95
London broil w/ 1 veg.	2.95
Veal Parmesan w/1 veg.	2.85
Hot Deli: Fresh ham	(bread) 2.45
	(roll) 2.55
	(hero) 2.65

### Tuesday, May 12

Turkey noodle soup	(cup) .75
	(bowl) .95
Carved pork loin w/stuffing & 1 veg.	2.85
Beef & broccoli stir-fry over rice	2.75
Hot Deli: Turkey	(bread) 2.45
	(roll) 2.55
	(hero) 2.65

### Wednesday, May 13

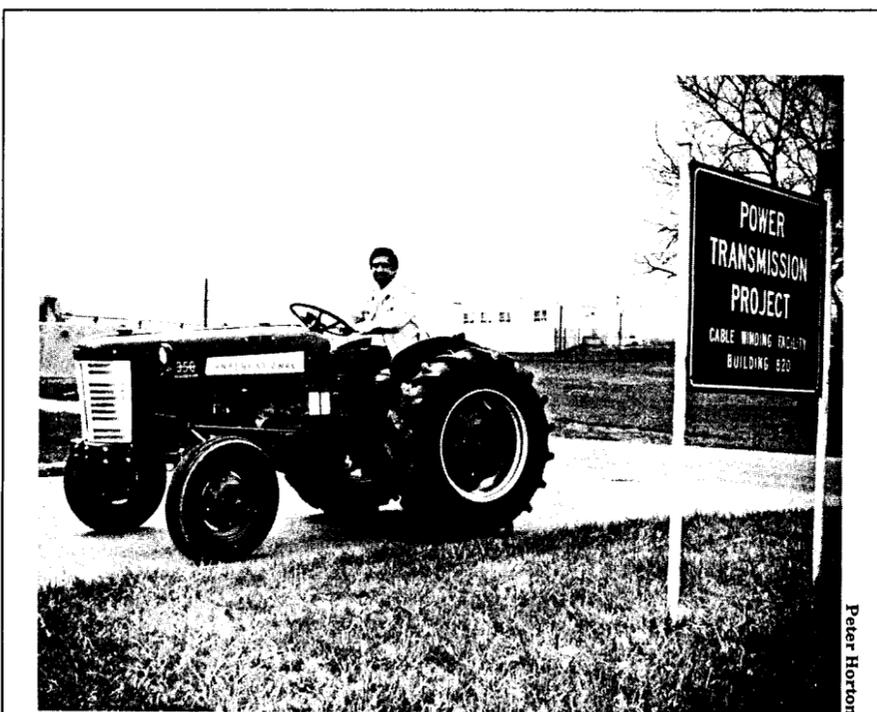
Cream of broccoli soup	(cup) .75
	(bowl) .95
Fried clam plate w/1 veg.	2.85
Beef stew w/biscuit	2.85
Hot Deli: Grilled Rueben	2.45

### Thursday, May 14

Tomato beef vegetable soup	(cup) .75
	(bowl) .95
Super sausage pizza	(slice) .95
Beef Stroganoff over noodles	2.85
Hot Deli: Roast beef	(bread) 2.45
	(roll) 2.55
	(hero) 2.65

### Friday, May 15

Manhattan clam chowder	(cup) .75
	(bowl) .95
Broiled fish w/1 veg.	2.95
Meat loaf w/mushroom gravy & 1 veg.	2.75
Hot Deli: Corned beef	(bread) 2.45
	(roll) 2.55
	(hero) 2.65



Peter Horton

## New Life for an Old Tractor

Tom Muller is one farmer who was more than happy to ride to work on his tractor — and is possibly the first BNL employee to commute to the Lab on such a farm vehicle. Recently, at the top speed of 15 miles per hour, he rolled into the Lab on his latest show vehicle: a restored, red, 1957 International Harvester 350 Utility. His co-workers and friends ogled it as teenagers would in looking over a flashy sports car.

Muller, a Project Engineer in the Power Transmission Project of the Accelerator Development Department, lives on a 6½ acre Christmas tree plantation in Manorville, which he farms in his spare time. To clear the land for tree planting, he purchased the two-ton tractor for \$300 in 1978 from its original owner, a potato farmer in Riverhead.

Muller dreamed of restoring the farm vehicle to its original glory, and last winter, on evenings and weekends with the help of his two oldest sons, he fulfilled his dreams. Overhauled with \$2,000 worth of new parts, the 30-year-old tractor should last Muller for his lifetime; a new replacement would cost \$14,000. This is not the first vehicle to which Muller has given new life: He has engineered and customized cars as well.

The red International, which gleams as brightly as Rudolf's nose, is now presentable enough to pull Muller's next project: a sled on wheels, to be used to give rides around his farm at Christmas.

# Arrivals & Departures

## Arrivals

Zeng-Xie Chen ..... Biology  
Eugene Marichal ..... Medical  
Catalin Vintilescu ..... AGS

## Departures

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

David D. Hansen ..... DAS  
Edward I. Hololob ..... Plant Eng.  
Mary Kish ..... Plant Eng.  
David J. Knoernschild ..... AGS  
Carolyn G. Miles ..... DAS  
JoAnn H. Mugavero ..... Biology  
Donald R. Tuttle ..... Physics

## 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.

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

2602. SR. STATIONARY ENGINEER - Requires demonstrated experience in the maintenance, repair and operation of high pressure boilers firing #6 fuel oil. Current stationary or marine engineer's license highly desirable. Plant Engineering Division.

2603. PLUMBERS (temporary - 7/13-10/2/87) - Requires completion of 4-year apprenticeship and/or substantial commercial/industrial experience. Will layout, construct, install, repair and maintain water, sewage and gas systems, related facilities and auxiliary equipment. Plant Engineering Division.

2604. TECHNICAL POSITION - Requires AAS in electronics technology or equivalent, plus experience with solid state electronic devices. Must be able to work from sketches and verbal instructions based on direct interaction with scientists and engineers. Work involves a broad variety of tasks from sophisticated instrumentation development to simple wiring chores. National Synchrotron Light Source Department.

2605. ELECTRICIAN A - Under minimum supervision lays out, constructs, installs, maintains, repairs and operates systems, equipment, controls and related devices. Requires minimum of five years' industrial electrician experience. Plant Engineering Division.

### Autos & Auto Supplies

84 CHEVY MONTE CARLO - a/t, a/c, 45k mi., \$6,000. Ext. 5125 or 286-3906, eves.

80 RABBIT - 4 dr., blue, gas, stand., 108k mi., runs, \$500. George, 924-5533, Ext. 227

72 FORD LTD - new trans., \$300. Ext. 3867 or 3525 or 399-1249.

81 GRAND PRIX - 6 cyl., a/t, p/s, p/b, 56k mi., new parts, am/fm stereo, excel. cond., \$4,000. 732-6569.

71 CHEVY MALIBU - 2 dr., 307 eng., a/t, p/s, orig. owner, \$425. Gordon, Ext. 3216.

80 PONTIAC PHOENIX - 69k mi., good tires, std. trans., \$450. Ext. 7283 or 744-1898.

78 AMC CONCORD - a/t, p/s, am/fm cass., 66k mi., recent brakes, batt. & exhaust, asking \$1,500. Beeper 266 or 281-0360 after 6 p.m.

65 MUSTANG - hardtop, a/t, excel. in & out, many extra parts, \$5,000. 929-4701.

81 CHEVETTE - am/fm cass., steel radials, new starter, timing belt & clutch, \$1,300. 878-8177.

81 MUSTANG - 4 spd., 64k mi., \$1,600; 79 Camaro Z28, 350, 4 spd., asking \$3,700. 744-3068, eves.

81 MERCURY CAPRI - 4 cyl., 5 spd., overdrive, sunroof, louvres, am/fm cass., recl. seats. George, Ext. 4100.

80 DATSUN - htchbk, a/t, 4 dr., good engine, \$700. 928-8522 after 6 p.m.

73 FORD BRONCO - 4x4, a/t, p/s, p/b, 302 V8, am/fm cass. w/booster, low miles, \$1,000 w/ or \$800 w/o plow. 360-0841.

KAWASAKI 110 ATV - low mileage, new windshield, excel. cond., \$800. 727-0364.

68 FORD FALCON - wagon, running, extra block, make offer. Ext. 3275.

60 VW - in parts, 6-volt system. Ext. 3275.

84 CHEVETTE - 42k mi., a/t, good cond., must sell, asking \$3,000, neg. Tom, Ext. 5010.

76 SEVILLE - fully loaded, runs well, asking \$1,500. 475-3262.

73 MERCEDES MENZ 280 - Ext. 4099 or 689-9214.

MIRRORS - & frames, off Ford truck; tires, 10.5/15 on 15"x7", 5-lug, spoke rims; truck rims, 15"x7", spoke, 5-lug. Ext. 2075 or 473-4937 after 6 p.m.

78 MALIBU - wagon, a/t, p/s, V6, \$650. Ext. 2627.

73 CHEVY IMPALA - 350, p/s, p/b, a/t, \$250 firm. Ext. 4024 or 265-0117 after 6 p.m.

79 FIAT X1/9 - 5 spd., black, hardtop convertible, new Blaupunkt stereo, new exhaust, 61k mi. 981-0838.

77 ASPEN - station wagon, very reliable, \$1,200. David, Ext. 3406 or 744-7131.

86 MAZDA PICKUP - gold w/white cap, \$4,500. 698-3321.

83 NISSAN SENTRA DLX - p/s, p/b, low mileage, very good cond., clean in/out, \$3,500 neg. Ext. 4536.

79 MUSTANG II - 4 spd., good tires & body, new exhaust, eng. OK, asking \$590; 81 Suzuki GS250T, low mi., excel. cond., extras, \$490. 929-8287.

WILDERNESS CAMPER - 18', fully self-contained, excel. 874-3796.

KAWASAKI 110 - ATV, low mileage, excel. cond., new windshield, \$800. 727-0364.

84 HONDA - XR350, dirt bike, asking \$1,500; 84 Suzuki RM250, \$1,100, both excel., extras. 878-6074.

79 FORD FAIRMONT - wagon, orig. owner, a/t, p/s, p/b, cass., player, 92k mi., \$1,100. Anne K., Ext. 3293 or 751-7430.

76 CADDY - Coupe de Ville, excel. cond., runs well, 70k mi., new parts, \$2,000. Max, Ext. 5094 or 928-6041.

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

77. ELDORADO - new tires & exhaust system, am/fm stereo w/tape, good cond., must sell. Ext. 7732.

78 TOYOTA CORONA - wagon, average mileage, eng. very good, clean interior, \$795. Dave, 588-2916.

76 SUZUKI GT500 - super clean, 13k mi., runs well, \$250. Dave, 588-2916.

72 PLYMOUTH SATELLITE - suburban wagon, dependable transp., needs tires, \$400. 289-3916, leave message on machine.

79 CHRYSLER LeBARON - 318 cu. in. V8 eng., r/h, a/t, a/c, p/s, p/b, 4 dr., 81k mi., good cond., \$1,850. 277-4091.

84 DODGE 600ES - orig. owner, 40k mi., 4 dr., p/w, fully loaded, immaculate, asking \$5,200, orig. cost \$13,000. 924-3236.

62 STUDEBAKER - Gran Turismo Hawk, 289 V8, p/s, p/b, a/t, good cond., \$2,200. 281-8031.

80 HONDA PRELUDE - 5 spd., sunroof, Blaupunkt stereo, good cond; wire wheel covers - (4) fit 15" tires, like new. 325-0447 after 6 p.m.

77 GRAND MARQUIS - no rust, very clean inside, 2 dr., new tires, needs engine work, \$450. Ext. 3589.

77 CAMARO - V8, a/t, black; 73 Capri, stand., decor group, many new parts; 79 Pontiac Sunbird, must sell. 744-0725, eves.

77 VW RABBIT - 4 dr., excel. cond., \$1,000. Ext. 3789 or 751-5389.

74 DATSUN - 4 dr., whole or parts, mag rims, steel radials, battery, \$75. 878-8177.

81 VOLVO DL - 2 dr., yellow, good cond., 6 new tires, cruissamatic, a/c, 67k mi., asking \$5,975. Linda, Ext. 7745 or 878-2844.

75 BUICK CENTURY - p/s, p/b, a/t, 6 cyl., new tires, exhaust, good brakes & battery, runs very well, best offer. 698-6103 after 7 p.m.

85 HI-POINT TRAILER - for motorcycles, all fiberglass, rear ramp, side door, like new, \$2,300. Lois, Ext. 4904.

74 CHEVY NOVA - good cond., 6 cyl., new tires, 2 dr. sedan. Gina, Ext. 4904 or 929-4753.

81 MUSTANG - metallic blue, 4 cyl., 4 spd., 3 dr. htchbk., am/fm cass., new tires, 99k mi., good cond., orig. owner, \$1,500. Bill, Ext. 3173.

79 CORVETTE - good cond., \$8,000 neg. Chris, 661-3398 or 661-2400.

79 T-BIRD - a/t, 2 dr., black, good cond., \$2,000; 86 Hyundai, 4 spd., 12k mi., silver, am/fm 8-track, 33 mpg. Jerry, Ext. 7427 or 475-4491 after 5 p.m.

85 FORD RANGER - truck w/cap, approx. 3k mi., like new, \$7,000. 924-6430 after 5 p.m.

77 TOYOTA COROLLA - deluxe, good cond., runs well, \$1,200. Ext. 2839.

70 CAMPER/TRAILER - Tagalong, fully self-contained, excel. cond., extras, \$1,400. Pete, 399-2813 after 5:30 p.m.

CHEVY - cylinder head, early power pack, \$50. Dan, Ext. 4987 or 698-7322.

74 VW BUG - good for parts, rebuilt engine, 40k mi., new battery, front axle, \$200. 924-3522.

77 VIKING POP-UP - asking \$1,000. Dan, Ext. 4987 or 698-7322.

84 GMC S-15 - Sierra, 4WD, low mileage, V6, lift kit, mint cond., lots of extras, \$7,300. 281-2257 after 5 p.m.

77 CORDOBA - a/c, runs well, \$800. 789-8195.

79 MAZDA RX7 - silver, 4 spd., am/fm cass., excel. cond., \$3,500. Ext. 2949 or 427-2435.

80 MUSTANG - 4 spd., 2.3 engine, am/fm cass., very good cond., \$1,500. Tom, 281-6745.

67 CHRYSLER - convertible, 383 V8, a/t, p/w, p/s, p/b, new top; tires, (2) LR78-15, \$25 ea. Tony, Ext. 2050 or 698-9274.

83 YAMAHA VIRAGO - 750, black, garage kept, mint cond., \$2,000 neg. Charles, Ext. 7749.

74 DODGE DART - slant-6 eng., blue, for parts, \$25. Monika, 821-3243.

80 PONTIAC PHOENIX - 4 dr., htchbk., a/t, excel. cond., \$1,200. 929-3924.

79 OMNI - blue, 4 spd., \$550. Pete, Ext. 4819 or 289-7218.

78 FORD F-250 - 4x4, good cond., p/s, p/b, a/c, camper special, many extras, \$5,000. Terry, 924-3902.

77 CHRYSLER - New Yorker, \$700. 929-3419.

86 JEEP CHEROKEE - 4 cyl., 5 spd., a/c, stereo, Laredo pkg., 4k mi., \$14,500. 475-4792 after 5 p.m.

### Boats & Marine Supplies

16' GLASTRON - good hull, no motor, many extras, usable trailer, \$250 or best offer. 928-0474.

36' CLAM BOAT - completely rebuilt eng. & trans., shaft & prop. refastened, in water. Marty, Ext. 4289 or 758-2388.

14' A.M.F SUPER SAILFISH - good cond., w/ Shoreline trailer, \$650. 265-1308 after 7 p.m.

16' ALUMICRAFT - fishing boat, needs work, reasonable. Ken, 289-8212, eves.

14' BLUEJAY SAILBOAT - trailer, 2 h.p. outboard. Peter, Ext. 7657.

82 EVINRUDE - 35 h.p. outboard, rarely used, like new, \$1,000. Bob, Ext. 3355.

18' RENKEN - 1983, I/O 120 h.p. OMC, w/trailer & full cover, excel. cond., \$5,000. 744-9474.

20' GLASTRON - good fiberglass, needs 70 h.p. motor, full canvas, \$990. Jim Klein, 298-8805.

16' GARVEY - fiberglass, over mahogany plywood, fish well, 1981 25 h.p. Evinrude, hunter netting, trailer, \$1,800. 567-3729.

14' STAR CRAFT - aluminum boat, 5 1/2 Evinrude motor & trailer, \$450 firm. Bob, 283-4741.

28' PEARSON - (2) 225 h.p. Chrysler engines, fiberglass, sleeps 4, automatic anchor, tabs, stove, loaded, TV-CB, head, \$9,500. 765-3041.

15' RUNABOUT - wooden lapstreak w/7 1/2 h.p. motor, needs work, \$1,000. Frank, Ext. 2022 or 399-4480.

69' EVINRUDE - 85 h.p. w/controls, wiring harness, needs power pack, \$200. 878-8177.

13 1/2' DURANAUTIC - aluminum boat, mint cond., in water twice, will take 10 h.p. motor, \$500 firm. Ext. 3254.

19 1/2' BAYLINER - Capri Bowrider, 1984, Volvo I/O, trlr., Coast Guard & ski equip., full canvas, all covers, extras, \$8,500. Ext. 2981 or 473-7809.

### Miscellaneous

WASHER - portable, Whirlpool, \$50. Ext. 3015.

PING PONG TABLE - \$40; roaster oven, \$20; Smith-Corona manual typewriter, \$20. Ext. 4341 or 475-4005.

BICYCLE - girl's, Sear's Free-Spirit Racer, 10 spd., 24", very good cond., \$45. Ext. 2616 or 751-5868.

LEATHER JACKET - man's, size 40, good cond., \$50. Wait, Ext. 4798.

TOP SOIL - screened, delivered, \$12 per yard. 924-7746.

DINING ROOM SET - Colonial, trestle table, 6 chairs, large hutch, excel. cond., like new, must go. Ext. 2456 or 758-4684.

BUNK BEDS - good cond., \$280; 21" mower, \$60; student desk w/captain chair, \$45; rug, 9x12, red, \$5; 10x12, beige, \$10. Ext. 3294 or 751-4868.

FARM TRACTORS - (1) diesel Intl. w/3 pt. hitch; (1) gas, Farmall w/hydrul cultivators, plows, discs & other access., \$9,000. Jim, Ext. 4040 or 289-0876.

MIRRORS - (7) 5x5, excel. cond., best offer. Denise 365-8013 or 286-5572 after 7 p.m.

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

GENERATOR - Agtronic, 4kW, never used, \$500. Mark, Ext. 5350 or 369-0793.

WASHER/DRYER - portable, excel., \$100/both; small desk/chair, \$8; blender, \$8. Ext. 3135.

COLOR TV - (2) Heathkit, 25" w/manuals & testers, needs tuning, \$50. Ext. 4100.

ELECTRIC RANGE HOOD - 30", stainless steel, light, inside vent, \$50. 281-6026 after 5 p.m.

DRYER - electric, G.E., 20 yrs. old, works but squeaks, \$25; pottery kick wheel, w/concrete flywheel, built from Brent kit, \$125. Anne, 475-5543.

PIANO - Yamaha upright, ebony, 56 1/2" x 46 1/2" x 24 1/2" w, excel. cond., \$1,500. 277-4091.

MOVING SALE - wagon-wheel lighting fixture; Fedders 6,000 Btu a/c; Hoover vacuum; elec. broom; port. sewing machine; more. 273-5574.

MATTRESS - full-size w/bedframe, excel. cond., \$50; 8-track tapes, approx. 20, \$8; headboards (2), maple, twin size, \$40. Tony, Ext. 2050 or 698-9274.

BICYCLE - girl's Ross, 20" wheels, excel. cond., \$45. 751-8403 after 6 p.m.

LADDER - 24', wood, exterior, \$20; kerosene stove/can, \$40; white, corner, china cabinet, \$65. 924-2726.

ENLARGER - Acurra 35, \$25. Ext. 4262.

HORSE - chestnut, QH, gelding, 12 yrs., sound, English, shown successfully, \$3,500. Lois, 929-4753 or 4904.

FLOWERS/VEGETABLES - 4 & 6 packs, large selection, del. week of 5/11, 80¢/pack. 727-6818 after 3:15 p.m.

BIBLE STANDS - \$25; twin beds, mattress, dresser, chest, asking \$350; sofa bed, \$50; glass shower doors. 475-1254.

MICROWAVE - Panasonic, Dimension 4, Mod. NE-9970, 16" x 15" x 10", t/table, cook book, 1 yr. old, \$225. Vincent, Ext. 3772 or 281-5578.

WATERBED FRAME - Q-size, headboard, heater & velvet side rails, best offer. Denise, Ext. 3630.

ROWING MACHINE - Tunturi, dual action, storable, like, \$150 or best offer. Debby, 369-0419 eves. & wknds.

KITCHEN COUNTER - 42", stainless sink, white metal base table, 2 chairs, best offer. 924-4749.

CLOTHES - boy's, for 4-6 yr. old, cheap, good cond.; bicycle for age 5-10, \$15. 821-9328.

TABLE CHAIRS - pine, (2) Ethan Allen club chairs; sofa, excel. cond. 751-1761, eves.

BICYCLE - 20", red, girl's/boy's conv., used, great for learners, \$15. Ext. 4611 or 286-2788.

MOTORCYCLE HELMETS - open face, brand-new, 1 Hondaline, brown, \$40; 1 Vetter, white, \$35. Dick, Ext. 3273.

CAMERA - Mamiya 35mm, model ZE-2, quartz auto, carrying case, new \$125. Ext. 3699.

BI-FOLD DOORS - (2) 30" x 80", \$10 ea.; Honeywell auto thermostat (2) \$40 ea.; recliner, brown vinyl, \$90. Ext. 2683 or 751-2469, eves. & wknds.

PLAYER PIANO - without player, inside needs work, you pick up. 732-5451 after 5 p.m.

TRASH COMPACTOR - \$75; gas stove, \$35; air cooler, \$15; hexagonal end table, \$35. Judy, 698-4882 after 5 p.m.

MACINTOSH - 512k, 64k roms., 400k external drive, carry case, Macwrite, Macpaint, \$750. Jim, Ext. 5190.

APPLIANCE - hand truck, w/web strap, ratchet & crawlers, 500 lb. capacity, \$100. Ext. 4112.

WALKING SHOES - Rockports, woman's size 9, never used, \$25; Dexter shoes, \$15. Karen, 929-3547 eves.

DOUBLE GAS OVEN - Tappan; range hood, copertone, \$100 for both; (2) chandeliers, \$30. each. 821-3762.

IBM PC - amber monitor & color monitor, 2-floppy drives, 20k-hard disk, AST-6-pack board, Epson printer. Ext. 2044.

LIGHTING FIXTURES - used; chandeliers, 5-incand. bulbs, glass, \$40; brass-finish, \$35; pole lamp, \$45. 878-0874 eves.

PARROT CAGE - 2'x2'x5 1/2', wrought iron, \$250; Umbrella cockatoo needs home. Bob, 281-8001.

DINETTE SET - white formica & oak table w/four cushioned swivel chairs, \$400. 475-4792 after 5 p.m.

Car Pools

ROCKY POINT - western, seeks new member(s). Kurt, Ext. 4115 or Ron, Ext. 5305.

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

Free

SOFA - extra-long, serviceable w/summer slip covers, Blue Point. 363-6521.

TYPEWRITER - Smith-Corona electric, shift broken. John, Ext. 5152.

Yard Sale

MIDDLE ISLAND - May 16 & 17, neighborhood, Artist Lake Boulevard off Bailey Road.

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

N. SHIRLEY - lg. furn. studio apt., w/kit., pvt. ent., util. inc., 1 person only, non-smoker, no pets, 5 min from Lab & stores, security, \$425/mo. pays all. 281-8044.

EASTHAM, CAPE COD - 4 bdrm. home, compl. furn., 2 baths, washer/dryer, dishwasher, deck, short walk to beaches, wks. open July & Aug. 722-3865.

HILTON HEAD, SC - 2 bdrm. condo, sleeps 6, many extras, beach, pool, tennis, golf, many extras, some May & June dates avail., \$400/wk. 585-9149.

SHIRLEY - 2 bdrm. apt., 1/r, lg. kit., full bath, ground floor, walk to beach, \$650 inc. all. 744-2821, leave message.

CORAM - spacious 2 bdrm. apt., pvt. ent., w/w, a/c, laundry, heat & gas cooking inc., tennis, pool, gym room, \$570 inc. all, avail. 6/15 or 7/1. Max, Ext. 5094 or 928-6041.

PORT JEFFERSON - Harbor Hills, single room, pvt. bath & ent., furnished or unfurnished, \$350 inc. util. 473-7739 after 6 p.m.

For Sale

SHOREHAM NORTH - 4 bdrm. Colonial, 2 1/2 baths, den/fp