

## BNL and DESY Share Magnet Resources

A new Hadron Electron Ring Accelerator (HERA) is being built in Hamburg, Germany, by Deutsches Elektronen Synchrotron, familiarly known as DESY. Because it is a substantial investment and requires considerable manpower, many countries are going to participate in its construction. When complete, HERA will be open to physicists from all over the world for the study of electron-proton collisions at high center of mass energies.

Last month, Lab Director Nicholas Samios and Associate Director for High Energy Facilities Paul Reardon traveled to Hamburg to sign a memorandum of understanding with DESY, in which BNL's participation in the building of HERA is outlined. Brookhaven is the first U. S. laboratory to sign an agreement with DESY. Under this agreement, the Laboratory will provide its expertise in magnets and cryogenics. In return, DESY will make

available for BNL use, the tooling used to develop and build the superconducting magnets for HERA. Says Reardon, "We can use this tooling to build RHIC earlier than expected and also save money." (RHIC is BNL's proposed Relativistic Heavy Ion Collider).

Specifically, BNL will build temperature sensors and flow meters for HERA, and provide assistance with the commissioning of refrigerators and their controls. BNL will also provide magnet field measurement equipment and do short sample measurements on both wire and cable for dipoles, quadrupoles and trim coils for the entire HERA construction project. Says Reardon, "Three European companies will build the superconducting wire and then it will be sent to BNL and we will act as quality control for DESY. It's made to order for us as we have such an elaborate setup here for measuring wire." It is expected that the work will be completed by the end of 1987.



Signing the Memorandum of Understanding between BNL and DESY are from left: Bjorn H. Wiik, HERA Project Leader; Nicholas Samios, BNL Director; Volker Soergel, Chairman, DESY-Directorate; and Paul Reardon, BNL Associate Director for High Energy Facilities.

Both Samios and Reardon are on the HERA Management Board and

Reardon is also a member of the Machine Committee.

## Hospital Kitchen Has New Use Serving County Seniors

A celebration was held in BNL's Medical Department last Monday afternoon to mark what Suffolk County Executive Peter F. Cohalan called "a perfect example of government and the private sector coming together to make something that works." The occasion was the grand opening of the Suffolk County Office for the Aging's (SCOFA) Central Kitchen at BNL, which is operated by the Suffolk County chapter of the American Red Cross (ARC).

The purpose of the Central Kitchen is to provide nutritious, hot foods for senior citizens in Suffolk County. Formerly, the BNL kitchen was used in the preparation of meals for inpatients at the Medical Research Center. Since that facility was closed in 1984, however, the kitchen has been unused. As Associate Director Vincent O'Leary remarked at the opening ceremonies, "This comes under the heading of an ill wind that blows some good. It was unfortunate that the Medical Research Center had to

close, but we're pleased that you can use its kitchen. We're really delighted to have the operation here." Laboratory Director Nicholas Samios concurred. "This is a very pleasant occasion for both Brookhaven and Suffolk County," he said, "of benefit to all of us."

Though BNL has provided the kitchen and some assistance in hooking up new equipment, the project is totally separate from the rest of the Laboratory and even runs off its own electric meter. Funding comes from the Federal, state and county governments, through SCOFA, to the ARC, which administers the project. Representatives of all these groups, as well as volunteers who make the program possible, made up the crowd of more than 50 people who celebrated the Central Kitchen's opening. They agreed with SCOFA Director Adelaide Silkworth when she said, "For many of us in this room today this is truly a dream come true. It was an impossible

(Continued on page 2)



Norma Gillespie, Manager of the SCOFA Central Kitchen at BNL, retired last year after working for 32 years in the Lab's Medical Department.



Adelaide Silkworth, Director of the Suffolk County Office for the Aging (SCOFA), and Suffolk County Executive Peter F. Cohalan confer during the grand opening celebration of SCOFA's Central Kitchen at BNL.

## Radon — An Uninvited House Guest

After the news reports from Pennsylvania earlier this year, many Americans might be wondering if they can breathe easy inside their own homes. A number of houses in Berks County, PA, were found to have high concentrations of radon, a radioactive gas that has been linked to lung cancer.

Even before public attention was focused on this potential health threat, however, the scientific community had begun studying radon. At BNL, the Biomedical and Environmental Assessment Division (BEAD), in the Department of Applied Science, recently completed for the U.S. Department of Energy (DOE) a review of radon health effects and existing standards.

### DOE Handbooks On Indoor Pollution

BEAD's work on radon will be published by DOE in the second of a series of handbooks on indoor air pollution. The first handbook, also containing a contribution from BEAD, centered on indoor combustion sources such as gas stoves and kerosene heaters. Still to come is a handbook on building materials and structural characteristics.

Says BEAD member Michael Rowe, "As people have tightened their houses in response to rising energy costs, indoor air quality has become a health concern." With ventilation reduced, pollution levels indoors can build up to dangerous levels.

The DOE handbooks are aimed at local public health officials and planners, who may not have any special expertise on indoor air quality, but eventually may have to grapple with the issue. This is the case in Pennsylvania, in wake of the radon discovery. Rowe says the handbooks are also intended to inform a general audience, including homeowners who want to understand the significance of measurements made in their homes and what they can do about them.

### Natural Decay Product

BEAD member Ken Novak, who, with Kristina Rybicka, also works on the radon project, explains that radon is an inert, or non-reactive, gas that is a natural decay product in the uranium series. The series begins with uranium-238 and continues through successive decays through other elements, until it ends with nonradioactive lead-206.

Although there are no nationwide

surveys of radon in houses, says Novak, certain areas of the country are now known to have higher radon concentrations. Why? Natural geology. Berks County, for example, sits

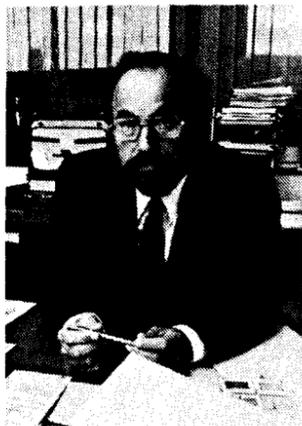
in a region called the Reading Prong, which is rich in uranium deposits. The Reading Prong stretches from Reading, PA, eastward across north-

(Continued on page 2)



From left, Krystyna Rybicka, Michael Rowe and Ken Novak.

## The 16th George B. Pegram Lecture Series



**David Baltimore,  
Nobel Laureate**  
*Director, Whitehead Institute  
for Biomedical Research*

Regulation of Antibody Synthesis  
on Wednesday, December 4th

Saga of an Oncogene  
on Thursday, December 5th

David Baltimore was a co-recipient of the 1975 Nobel Prize in Physiology or Medicine for discoveries concerning the interaction between tumor viruses and the genetic material of the cell.

Both lectures are at 8:00 p.m., in Berkner Hall

### Radon

(Continued)

ern New Jersey, and into New York State west of Suffern and Peekskill.

Because radon is a gas, it can flow easily through gravel and loose soil. "For the most part, radon enters a house through cracks and crevices in the foundation or basement," says Rowe. "How long it stays depends on its normal decay rate and the airtightness of the house." In fact, one solution to indoor radon is to ventilate. But, as Rowe cautions, if ventilation is not done properly, even more can be sucked in.

Although radon itself is radioactive, its decay products, the so-called radon daughters, produce most of the radiation dose. Radon, with a half-life of 3.8 days, decays in sequence through several solid radioactive particles. These solid particles can become lodged in lung tissue. Two in particular, polonium-214 and polonium-218, decay in minutes, emitting alpha particles. Alpha particles are relatively large and can be stopped by skin or a piece of paper, but inside the body, they can do enough damage to living tissue to cause lung cancer.

Just how serious is the radon problem? "The human biosystem has evolved through millions of years of continuous radiation exposure, of which radon is a natural part," says BEAD Head Leonard Hamilton, an international authority on health effects of radiation. He points out that we live all the time with radiation from the earth, from cosmic rays, and from within our own bodies. It isn't radiation exposure, *per se*, that is the problem, it is the amount of exposure.

#### Few Measurements

Because there has been no general survey of radon concentrations in homes across the country, no one has measurements of how many people are affected and what the radiation doses are. But Novak says one should approach the radon issue conservatively, the same way one would navigate through icebergs. "You have to assume the problem is greater than what you actually see," he says.

Part of the reason for his conservative attitude is that radon cancers may have a latency period of 20 years. Even more compelling is this statistic: The highest level of radon recorded in a Pennsylvania home was 16 working levels. A working level (WL) is the measure used to describe the exposure of uranium miners to radon gas and its daughters. For a family spending half its time in a house with 16 WL,

that exposure is 100 times the occupational limit for uranium miners.

Indoor radon levels can vary tremendously from one house to another, according to Novak. The house next door to the one that measured 16 WL, for example, had no radon problem.

Still, in a survey of 3,618 homes by the Pennsylvania Department of Environmental Resources, 1,417 homes were found with levels above the U.S. Environmental Protection Agency standard of 0.02 WL. "That's not a trivial number of homes," says Novak, "and this finding has prompted Pennsylvania state officials to begin a survey of 30,000 more homes." The problem is not limited to Pennsylvania. Areas of Maine have reported elevated levels in well water, and Florida has identified high radon levels in homes built over phosphate deposits.

"We know that radon can cause lung cancer in miners, and we are now starting to see high exposures in some indoor environments, so there is clearly cause for concern," says Novak. "But because the underground environment is different from houses, we are not sure that the relationships we find in mines will also apply in houses."

Rowe adds, "We just don't have enough data to say without reservation that radon is a serious threat to the general public. Even though evidence is building that radon is an important source of indoor air pollution, we don't know how widespread the problem is. At BEAD, our job is to identify potential problems so that DOE can plan how to prevent them."

— Mona S. Rowe

### Tech Info on Japan

A representative of Japanese Technical Information Service (JTIS), which is a University Microfilms International affiliate, will be here on Monday, November 25, from 1:30 p.m. to 3 p.m., in Room C, Berkner Hall, to discuss this service with potential users. JTIS produces monthly English language abstracts and indexes of all the articles in over 750 Japanese technological and business journals, and is the largest single source of Japanese technical and business information available in the Western World. Contact Marilyn Galli in the Research Library, Bldg. 477, or your department librarian, for further information.

### Kitchen

(Continued)

dream, but because of many good friends and conscientious people, it has come true and come true very quickly."

The story of how the Central Kitchen came to BNL begins with the 1984 closing and the early retirement of Norma Gillespie from her position as dietitian, which she had held since the Medical Research Center opened in 1959. "About one month after I retired," Gillespie said, "I saw an ad in the local paper asking for volunteers to help start a Meals-on-Wheels program out of Patchogue. I volunteered as dietary coordinator."

The program prospered but soon reached its limits. Meals for housebound clients were prepared at the Brookhaven Memorial Hospital Research Center, which could handle only 25 dinners. And the waiting list was growing. So finding another meal preparation site became a primary topic at the next steering committee meeting.

"I immediately thought of this beautiful kitchen lying idle," said Gillespie. "I suggested it, and they asked me to look into it. So I did, and to make a long story short, it happened, and I was asked to manage it." As Manager of the SCOFA Central Kitchen at BNL, Gillespie was greeted at the opening with warm applause and introduced by remarks such as those by Pat Nocher, Executive Director of the Suffolk County chapter of ARC, who said, "I will tell you very honestly. I had very many misgivings about taking on a kitchen until I met this very wonderful woman."

For her part, said Gillespie, "I was so happy coming back here and unlocking the door. I really didn't plan on coming back. I was just interested in having this happen. But it's really nice to be driving back to the Lab every day."

Gillespie's tenure began "with a bang," on October 1, when the Central Kitchen opened by responding to the ARC's request to prepare meals for victims of Hurricane Gloria (see story page 2). Her normal assignment, however, is to plan and provide balanced, hot lunches that supply at least one-third of the recommended daily dietary allowances. She is assisted in this effort by Cook Margaret Mosely and Assistant Cook Pearl Jones, who now prepare an average of 270 meals a day. These meals are loaded in bulk into a van, in double-insulated containers. Then Driver/Kitchen Aide John Sigismund delivers them to ARC/SCOFA nutrition sites in Bellport, Mastic and Patchogue. Senior citizens who are able gather at those centers, where their meals are dished out. Workers at the sites prepare individual meals for those who are housebound.



Bob Jansson, Chairman of the 1985-86 United Way Campaign at BNL, and Rita Kito, United Way Representative for the Director's Office, discuss the campaign, which began on November 4. Since then, 534 employees have pledged a total of \$44,108. This is still about \$25,000 shy of the \$70,000 Jansson would like to collect for agencies such as Skills Unlimited in Oakdale and the Association for the Help of Retarded Children in Riverhead. While preparing for the campaign, Jansson visited these agencies, which are both devoted to helping retarded citizens realize their full potential. But, like other United Way agencies, they need your support to continue. "If everyone put in fifty cents a week, we'd be making \$80,000," said Jansson. "And if everybody were to see an agency firsthand like I did, we'd go over \$100,000. I know it."

Beginning in February, the Central Kitchen's output will almost double when they begin to prepare meals for the Meals-on-Wheels (MOW) South Shore program. MOW differs from the ARC/SCOFA program in that two individual meals are delivered to a housebound client daily: one a hot lunch and the other a bagged dinner. While Gillespie plans to serve the same hot lunch in both the ARC/SCOFA and MOW programs, the MOW lunches must be put in double-insulated individual containers.

Like the larger ones used in the ARC/SCOFA program, these containers maintain foods close to the temperatures at which they leave the Central Kitchen. Because the facility comes under the jurisdiction of the Suffolk County Department of Health Services, Gillespie's staff must take the temperature of all food before it leaves to be sure that hot dishes are above 140°F and cold foods are below 42°F. Between the two temperatures is a danger zone in which harmful bacteria can grow. To verify the integrity of the containers, temperatures are also taken and recorded at the nutrition centers.

Costing about \$100 each, the individual containers are one of the two factors that limit the size and scope of the MOW program. The other is a continuing need for volunteer drivers to deliver the food to clients. The planned February startup reflects the fact that people are more likely to begin a new volunteer enterprise after the holidays.

Given sufficient funds and personnel, Gillespie said, "We could go much further, though we might have to put in some more ovens. I just want to see it grow and grow because there is such a need."

— Anita Cohen

### Coping With Gloria - The United Way

The Suffolk County Chapter of the American Red Cross, which operates the Suffolk County Office for the Aging's Central Kitchen at BNL, is also one of 129 agencies and hospitals across Long Island supported by the United Way.

That United Way agencies are there when you need them is illustrated by what happened on October 1, when the Central Kitchen first opened for business. In the wake of Hurricane Gloria, said Manager Norma Gillespie, "The Red Cross asked us to feed some of the victims. So on our opening day, and for a total of three days, we prepared about 5,000 meals a day, sending food to the Selden and Riverhead campuses of Suffolk County Community College." To accomplish this enormous task, Gillespie and her staff were assisted by Red Cross volunteers.

# BROOKHAVEN BULLETIN

Published weekly for the employees of BROOKHAVEN NATIONAL LABORATORY

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## Winter Holiday Sale

Scientific Toys and Kits  
New Items, Old Favorites

Exhibit Center Science Shop (Bldg. 701)

Dec. 6, 13, 20 10 a.m. - 3 p.m.



### Att: Young Artists

If you're a child, age 6 to 12, whose parent is a Lab employee, get out your crayons because the Bulletin wants your help. We're looking for original drawings of holiday scenes for possible publication in our issue of December 20. Whether your drawing is about Christmas or Hannukkah or the winter season, it should be no larger than 9" x 12". Submit your artwork to the Bulletin, Bldg. 134, by Friday, December 6, and please don't forget to put your name and age on the drawing. Those whose work is published will receive a chocolate surprise.

### Town of Brookhaven Holiday Toy Drive

Because last year's response was so willing and generous, Laboratory employees are again asked to join employees of other industries in the area to take part in the "Brookhaven Interface Toys-for-Kids Drive." Toys may be dropped off at the BERA Store in Berkner Hall from 9 a.m. to 2 p.m. during the work week. If a toy is gift-wrapped, please indicate on the outside of the package the age and sex of the child for whom the toy is appropriate.

#### Volunteers Needed

As the toys donated by Lab employees accumulate, they, along with donations collected by other companies, will be transported to a Lab warehouse, to be sorted and packaged for holiday delivery. Volunteers who can spend at least one lunch period from December 9 through 12 are needed to prepare the toys for distribution. Employees who would like to help, please call Blanche Laskee, Ext. 2873.

### Change Direction

If you are a woman, interested in a career change, why not consider the Craft Apprenticeship Program? Join Job Training Specialist, Maria Trivelli, for lunch on Monday, December 2. Trivelli is with the Job Service Division of the New York State Department of Labor and will describe opportunities for women in a variety of trades. The meeting will be held from 12 to 1 p.m. in Room C, Berkner Hall. Bring your lunch with you. Direct questions to Mary White at Ext. 7994.

### CREF Values

November	65.69	December	67.04
January	72.01	February	72.38
March	72.35	April	71.97
May	75.52	June	76.40
July	76.69	August	75.94
September	73.77		

October \$77.12

### Notice

Because of the Thanksgiving holidays on November 28 and 29, the Bulletin will not be published next week. We will be back on the stands December 6. Last day for acceptance of ads for that issue is November 26.

### Arrivals & Departures

#### Arrivals

Chu Ng ..... Physics  
Long-gui Wang ..... Biology

#### Departures

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

Munawwar Sajjad ..... Chemistry  
Lindora Boyd ..... Medical  
John G. Frezza ..... Plant Eng.  
Michael W. Capizzi ..... Plant Eng.

### Choral Group

Rehearsals for the annual Christmas concert will be held in Berkner Hall at noon on the following dates: Monday, 11/25; Monday, 12/2; Friday, 12/6; Monday, 12/9; Friday 12/13; and Tuesday, 12/17. Every effort will be made to limit rehearsal time to 45 minutes.

Anyone interested in singing is invited to join the BNL Choral Group to take part in what has become a Laboratory holiday tradition.

The concert will be presented in the cafeteria during the lunch hour on Wednesday, December 18.

### I.B.E.W. Meeting

Local 2230, International Brotherhood of Electrical Workers, will hold its monthly meeting on Monday, November 25, at 6 p.m. in the Knights of Columbus Hall, Railroad Avenue, Patchogue. The agenda includes regular business, committee reports and the president's report.

### Note to Diners

The Cafeteria will offer only snack bar service from 9 a.m. to 2 p.m. daily over the Thanksgiving holiday, Thursday, November 28, through Sunday, December 1. The Brookhaven Center will be closed that Thursday, Friday and Saturday, but will reopen on Sunday, December 1, at 5 p.m. The vended food service in Bldg. 912 will be in operation throughout the four-day Thanksgiving weekend.

### Cafeteria Menu

#### Week of November 25

<b>Monday, November 25</b>	
<i>Thanksgiving Special</i>	
Cornish game hen w. rice pilaf, stuffing and homemade cranberry sauce, w. choice of candied carrots or string beans Amandine	\$3.75
or	
Ham steak Hawaiian w. Hawaiian noodle pudding and stuffing, w. choice of candied carrots, or string beans Amandine	\$3.75
<b>Tuesday, November 26</b>	
French onion soup w. croutons	(cup) .65 (bowl) .85
Taco chili platter	2.35
Chicken à la king w. 1 veg.	2.45
Hot Deli: Swedish meatball hero	2.40
<b>Wednesday, November 27</b>	
Cream of tomato soup	(cup) .65 (bowl) .85
Spaghetti carbonara w. 1 veg.	2.45
Chicken croquettes w. 1 veg.	2.45
Hot Deli: Knockwurst and kraut on rye	2.35
<b>Thursday, November 28</b>	
Closed for Thanksgiving	
<b>Friday, November 29</b>	
Snack Bar Service Only	

### Singles Club Ski Trips

The deposit date for both the January 24 to 26 Lake Placid ski trip and the February 21 to 24 Mount Snow ski trip has been extended to Friday, November 22. Beginner skiers are especially invited. There is still time to join the fun, so call Doris Terry, Ext. 2228, to make a reservation.

### Volleyball

#### League I

	W L
Dinkers	8-1
Bumpers	7-2
Up FaGrabs	6-3
Net Results	3-6
X Rayted	2-7
TNT	1-8

#### League II

Phoubars	9-0
Fossils	5-4
Nuts & Bolts	4-5
Chungas Revenge	4-5
Cannon Balls	3-6
Upton-Ups	2-7

#### League III

Print-outs	9-3
Buddys	6-6
Screwballs	6-6
Light 'n Lively	6-6
Foul-Ups II	5-7
Couples	5-7

### Holiday Hams

Holiday hams are available at the Cafeteria. They are fully cooked and decorated for Thanksgiving and Christmas at \$2.00/lb. plus tax. Call Ext. 3541 to place your order.

### Swim Club

The next meeting of the BNL Swim Club is Thursday, December 5, at 5:15 p.m. at the BNL pool. Dive starts, front and back flip turns and individual medley transition turns will be taught. Members and those who can swim at least two laps of the pool without stopping using the crawl stroke are welcome. The BNL Swim Team will meet on Thursday, December 12, at 5:30 p.m. for a 1600-yard sprint workout. For more information, call Marsha Belford, Ext. 3327, or Mark Catan, Ext. 5060.

### Hispanic-American Society

A meeting of the Hispanic-American Society will be held on Wednesday, November 27 at 11:45 a.m. in Room C, Berkner Hall, to discuss action the group can take to help in the Colombian disaster. All members and friends are urged to attend.

### Bowling

#### Red/Green League

R. Jones rolled a 225, K. Asselta 224/201/604 scratch, W. Kristiansen 222, R. Larsen 215, N. Combatti 212, C. Bohnenblusch 210, J. Morris 206, J. Ferrante 206, G. Meinken 202, E. Sperry 200, T. Prach 200.

#### Purple League

J. Ferrante had a 212, L. Barberich 183/172, D. Miesell 197/182/167, S. Smith 210, K. Asselta 223.

#### White League

K. Riker bowled a 230/601 scratch series, D. Adams 213, F. Gaetan 208, K. Jacobs 197, P. Manzella 176, T. Skelaney 172, J. Penoyar 171, J. Stelmaschuk converted the 3/7/10 split.

### Pool/Gym Schedules

#### Swimming Pool Holiday Hours

Thu. 11/28 & Fri. 11/29	closed, Lab holidays
Sat. 11/30 thru Mon. 12/23	regular hours
Tue. 12/24 thru Thu. 12/26	closed, Lab holidays
Fri. 12/27 thru 1:30 p.m. Tue. 12/31	regular hours
Tue. 12/31 thru Wed. 1/1/86	closed, Lab holidays
Starting Thu. 1/2/86	regular hours

#### Swimming Pool Regular Hours

Mon. thru Fri. 11 a.m. - 1:30 p.m.	employees only
5 p.m. - 9:30 p.m.	employees, families & guests
Sat. & Sun. 1 p.m. - 6 p.m.	employees, families & guests

#### Gymnasium and Exercise & Weight Rooms Holiday Hours

Thu. 11/28 & Fri. 11/29	closed, Lab holidays
Sat. 11/30 thru Sun. 12/15	regular hours
Mon. 12/16 thru 5 p.m. Thu. 12/19	closed, Blood Drive
5 p.m. Thu. 12/19 thru Mon. 12/23	regular hours
Tue. 12/24 thru Thu. 12/26	closed, Lab holidays
Fri. 12/27 thru 2 p.m. Tue. 12/31	regular hours
5 p.m. Tue. 12/31 thru Wed. 1/1/86	closed, Lab holidays
Starting Thu. 1/2/86	regular hours

#### Gymnasium Regular Hours

Mon. thru Fri. 11 a.m. - 2 p.m.	employees only
Mon. 5 p.m. - 9:30 p.m.	mixed volleyball
Tue. 5 p.m. - 9:30 p.m.	tennis (sign up)
Wed. 5 p.m. - 9:30 p.m.	men's volleyball
Thu. 5 p.m. - 9:30 p.m.	basketball
Fri. 5 p.m. - 7:30 p.m.	soccer
7:30 p.m. - 9:30 p.m.	general activity
Sat. 10 a.m. - 12 p.m.	badminton & volleyball
12 p.m. - 6 p.m.	general activity
Sun. 1 p.m. - 6 p.m.	tennis (sign up)

#### Exercise & Weight Rooms Regular Schedule

Mon. thru Fri. 11 a.m. - 2 p.m.	employees only
Mon. thru Fri. 5 p.m. - 9:30 p.m. *	employees, families & guests
Sat. 10 a.m. - 6 p.m. *	employees, families & guests

\* when attendant is on-duty

## Classified Advertisements

### Placement Notices

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

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

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

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

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

2373 CRAFT APPRENTICE - CABINETMAKER - Participate in a formal, four-year training program during which time the apprentices receive on-the-job instruction and enroll in outside study programs in subjects related and supplementary to their occupations. At the successful completion of the four-year program, the apprentices will be graduated to the position of Cabinetmaker. The position description for Cabinetmaker is as follows:

Under minimum supervision lays out, constructs, modifies and maintains furniture, laboratory equipment and buildings and component parts. Works with wood, wood substitutes and combination materials and flooring, roofing and wall materials. Uses hand, portable and fixed tools common to building construction and cabinet making trade. Works from prints, rough sketches and verbal instructions. Requires broad shop skills to perform difficult operations requiring ingenuity on complex jobs where previous standards or methods of operation do not offer complete solution. May perform Carpenter duties as required.

2374 CRAFT APPRENTICE - MACHINISTS (2 positions) - Participate in a formal, four-year training program during which time the apprentices receive on-the-job instruction and enroll in outside study programs in subjects related and supplementary to their occupations. At the successful completion of the four-year program, the apprentices will be graduated to the position of Experimental Machinist. The position description for Experimental Machinist is as follows:

Works on various materials from prints, sketches, or verbal instructions. Sets up and operates machine tools and also performs benchwork on jobs where standards of operation may require unique application. Performs layout, preparation, measurement, setup, assembly and installation. Makes own tools, performs maintenance incidental to operation of machines, and may specialize.

2375 CRAFT APPRENTICE - PLUMBER - Participate in a formal, four-year training program during which time the apprentices receive on-the-job instruction and enroll in outside study programs in subjects related and supplemental to their occupations. At the successful completion of the four-year program, the apprentices will be graduated to the position of Plumber. The position description for Plumber is as follows:

Under minimum supervision lays out, constructs or installs, repairs, and maintains water and gas distribution systems, related facilities and auxiliary equipment, and equipment utilizing water, gas and heat distribution services.

2376 CRAFT APPRENTICE - STEAMFITTER - Participate in a formal, four-year training program during which time the apprentices receive on-the-job instruction and enroll in outside study programs in subjects related and supplementary to their occupations. At the successful completion of the four-year program, the apprentices will be graduated to the position of Steamfitter. The position description for Steamfitter is as follows:

Under minimum supervision lays out, constructs, or installs, repairs and maintains heat, steam and water distribution systems, related facilities and auxiliary equipment and piping and equipment utilizing heat, steam and water distribution services.

**Applications for the Apprentice Program are available in the Personnel Office.**

2377 MAIL CLERK - Staff Services Division.

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

2378 TECHNICAL POSITION - Requires AAS degree in electronic technology or equivalent and a minimum of three years' experience in the design, fabrication and testing of high power rf systems. Experience with high voltage equipment is desirable. (Reposting of Job No. 2332.) National Synchrotron Light Source Department.

2379 TECHNICAL POSITION - Requires broad mechanical abilities with a basic understanding of chemistry, physical concepts, and mathematics. Responsibilities include, sorting, neutralizing, packaging and decontaminating of hazardous waste chemicals and radioactive waste materials. Must be able to keep neat accurate records, and have a valid driver's license in order to operate laboratory vehicles. Safety and Environmental Protection Division.

2380 TECHNICAL POSITION - Requires AAS degree or equivalent experience in electronics technology. Specialized knowledge, experience at a high level of demonstrated competence in multilayer printed circuit board design and layout

with Rascal Redac design automation system is required. Instrumentation Division.

2381 BIOLOGY ASSOCIATE - Requires a BS or equivalent in biochemistry, biophysics or molecular biology with knowledge of standard biochemical preparative procedures. Responsibilities include working on chromatin and ribosome structures. Experience with FORTRAN programming desired. Biology Department.

2382 REFRIGERATION AND A/C ENGINEER - Requires substantial experience troubleshooting, repairing, installing and operating commercial/industrial air-conditioning and refrigeration equipment including steam absorption, centrifugal and helical screw refrigeration machines. Successful completion of refrigeration and A/C apprenticeship program or related course work is highly desirable. Must be available to work shifts as required. Plant Engineering Division.

### Autos & Auto Supplies

76 AMC HORNET - a/t, hatchback, white, 2 dr., 80k, good running cond., \$600. Ext. 3850.

78 FIAT SPIDER - good cond. Tom, Ext. 5275

76 FORD GRANADA - clean in/out. Frank, Ext. 3531.

75 CHRYSLER STATION WAGON - a/c, p/b, p/s, am/fm, runs well, must sell, \$400 or best offer. Armin, Ext. 4570 or Ext. 3104.

78 PINTO WAGON - 4 spd., body excel., \$900. Joe, Ext. 4661.

80 BUICK REGAL - turbo, all elect., tilt wheel, a/c, am/fm, stereo, mint cond. 289-3798 eves.,

70 NOVA - a/t, p/s, new suspension and exhaust systems, reliable eng., and trans. Walt, Ext. 2907 or 698-0576.

76 FORD SHOW VAN - customized, sunroof, spoiler, toilet, bed, V8-351, a/t, p/s, p/b, refrig., excel. cond., Ray, 289-7615.

80 VOLVO WAGON - roof carrier, extra seat, am/fm cassette, low miles, excel., \$5,995. 751-8707.

76 CHRYSLER CORDOBA - runs very well, needs minor repairs. Cathy, Ext. 2474.

78 F250 TRUCK - good motor, 4 spd., rear frame, no body, will separate, reas.; heavy duty engine, hoist row behind car, \$300. Dick, Ext. 3499 or 589-9103.

TIRES - (3), A-78-13" snows; (1) A-78-14" w/rim, good condition, make offer. Janet, Ext. 2345 or 929-8152.

79 CELICA GT - liftback, 5 spd., am/fm, 8 track, excel. cond., high mileage, \$2,500. Tom, Ext. 5172.

75 VW BEETLE - good cond., asking \$800. 589-5490

72 TRAILER - sleeps six, Tandem wheels, a little damage from Gloria, was \$2,100 now, \$1,500. 73 Camaro, primed, w/spoiler, \$700, needs work. Bob, Ext. 2964.

76 VW RABBIT - needs work, best offer. Ext. 2537.

82 CHEVY S10 - a/t w/utility cap, runs well, \$3,000. Joann, Ext. 4120.

68 BUICK SKYLARK - running cond., \$375. Phil, Ext. 4860 or 654-3732 after 6 p.m.

77 HONDA CIVIC - excel. mech., 36 mpg, new trans, clutch, brakes, 4 spd., \$640. Jack, Ext. 3164.

74 PLYMOUTH SATELLITE - 6 psgr, V-8, p/s, p/b, a/t, a/c, 150k mi., runs okay, \$650. Steve, Ext. 3100 or 878-4880.

74 MONTE CARLO - a/t, p/s, p/b, a/c, needs some body work, \$650. Fred, Ext. 3259.

70-72 CHEVELLE PARTS - bumpers, rear, doors, turbo 350-trans, 307-eng needs valves, much more. 821-0144 after 5 p.m.

85 KX80 - excel. cond., used six months, many new parts. Brett, 929-4753 or Lois, Ext. 4904.

74 DODGE DART - 2 door, runs well, rebuilt 6 cyl., a/t, p/s, new tires, many new parts, \$1,100, wheels, Chevette, 13', 4 lug. Bob, Ext. 4824, 4561 or 744-5098.

84 CHRYSLER TOWNE & COUNTRY - wagon, fully loaded, mint cond., owner has moved, must sell. 477-2262 after 6 p.m.

73 PINTO - am/fm, new tires, parts, clean, must sell, 2nd owner. 226-1828 after 5 p.m.

72 FORD MAVERICK - good station car, \$450. Ext. 3067.

78 CADILLAC FLEETWOOD BROUGHAM - new cond., \$4,700. 82 Chevy Malibu Classic S.W., very good cond., \$4,700. 475-4596.

67 CHEVELLE MALIBU - 402 CI BB, new timing, chain, carb. & tune-up, B&B, Monroe, good tires, needs some body work & paint, \$1,500 or best offer. 588-0677.

78 DATSUN 510 - hatchback, a/c, a/t, very good cond., \$2,100. 473-1620.

SNOW TIRES - Sears Tractionex, H78x15, w/w, on Ford rims, like new, \$50 ea. Frank, Ext. 5107 or 277-0464.

81 VW RABBIT - manual trans., good cond., reliable, \$3,000. Uli, Ext. 5508.

76 MERCURY - 59k, orig. mi., body excel., mech. sound, \$1,350. 585-7841.

77 OLDS SALON - 2 dr., 350, a/c, p/s, p/b, am/fm, cassette, \$2,200 negt. Richie, 231-5749.

76 OLDS - 4 dr., white, a/c, p/s, 350, asking \$1,000. Kevin, 563-1189.

78 HONDA CIVIC - am/fm, stereo cassette, 12k mi., new engine, new brakes, exhaust, \$1500. Ed, 3293.

76 CHEVY LUV TRUCK - 38k mi., 4 cyl., am/fm cass., tool boxes, excel. cond., \$1,850. 563-2751 after 5 p.m.

TIRES - (4), 165SR-13, radials, good, \$50. 9:50x16.5, (2) reg/snow, \$15/ea. Ken, 289-8212 eves.

80 CHEVROLET CITATION - a/t, V6, p/s, p/b, a/c, am/fm stereo, 66k mi., excel. cond., \$2,750. Barry, Ext. 5624 or 727-5956.

82 BUICK SKYLARK - a/t, a/c, p/b, p/s, am/fm, stereo cassette cruise, 39k, excel. cond., \$5,995. Bill, Ext. 2047. 472-4684 after 6 p.m.

74 VEGA - parts, best offer, extra (4) tires, (2) rims, \$30. 744-3069.

76 CAPRI - 63k mi., new exhaust, am/fm stereo, a/t, \$1,200. Ext. 2577 or 473-6429.

80 OLDS OMEGA - 4 dr., sedan, 4 cyl., p/s, a/t, 8,500 mi., \$1,500. Randy, 751-2634 after 6 p.m.

83 ALLIANCE - low mileage, like new, a/t, a/c, am/fm, \$4,850. Joe, Ext. 4037 or 765-5373.

### Boats & Marine Supplies

22' CATALINA SLOOP - 1982, swing keel, excel. cond., \$8,000. 589-5490.

18' BOWRIDER - 1971; 150 HP Mercury, 1977, trim & tilt, full canvas, galvanized trailer, excel., \$3,500. 277-9709.

26' PEARSON - 1972, 15 HP engine, 5 sails, DF. Ext. 3921 or 689-9214.

### Miscellaneous

PLAY PEN - mint cond., \$35. 744-3069.

PIGLETS - two months old, \$45 ea. Bob, 281-2875 after 4 p.m.

POINSETTAS RED - several sizes, low prices, locally grown, del. around Dec. 10th. 727-6818.

FIR TREES - U-dig, (22" to 5'), 3 for \$10; Presto, 6 qt., pressure cooker, \$10; (4) wooden, sturdy kitchen chairs, \$20 for all. 878-6637.

ELECTRIC GUITAR - Les Paul type, excel. cond., \$50. 751-3551.

TREES - locally grown, evergreens, maples, dogwood, you dig., reason. 924-6582

CANNON ZOOM LENS - 35-70 mm, w/autofocus, AE-1 or AE1-Program, case & filter included, \$65. Ext. 4524.

GREEN HOUSE - poly type, 22' x 100', galv. pipe construct., fan & sprinkling sys., boiler, \$3,000. 289-0876.

BABY ITEMS - Lul-a-Bye crib, mattress & bumpers \$40, white wicker bassinet, \$25, port-a-crib, \$15, swing-o-matic, \$10; plaid carriage, \$25 or all for \$100. 281-0360 after 6 p.m.

MICROBLINDS - (7), 1/2", white vinyl, 26 1/2" (W) 55" (L), \$8 ea., like new. Ext. 3589.

SKI BOOTS - child/adult sizes, \$15; antique canopy bed, \$65. Jim, Ext. 3372.

CAR SEAT - Century 300, used for 9 months, \$30 or best offer. Peggy, 286-9388 or John, Ext. 3292.

TELESCOPE - 10.1" Odyssey compact, w/Teirad and 2"x6" spotter scope, Televue eyepieces, Star Atlas, \$625. Ext. 4524.

HOCKEY SKATES - size 5, new, \$15, Christmas ornaments, wood, excel. cond., toys and games, snow boots, size 3. S. Spark, Ext. 4111.

UNICEF CHRISTMAS CARDS - Ann, Ext. 2022 or 744-8386 eves.

FOLDING BED - \$20. 924-0582.

TABLE SAW - 9" Craftsman, w/legs and carbide blade, excel. cond., \$150. Ed, Ext. 4768.

HOMESTEREO - Aiwa, RX-30, receiver, w/equalizer, clock, alarm, autom., turntable, cas. deck, w/Dolby B.C. (NP \$600), \$300. Ext. 7144.

MEMORY EXPANSION BOARD - 64/256 KB for IBM PC, \$120; bed, dresser, mirror, mattress & box, spring old but excel. cond. \$200. Ext. 2981.

BOYS BIKE - 24", Columbia, 10 spd., excel. cond., \$45. Richie, Ext. 2175 or 734-7342.

COCKATOOS - (2), Muluccan with brass cage and Goffins with brass cage. 924-3008.

OAK TABLE - Gate-leg, excel. cond., \$300, Karastan Oriental Heriz-design, 8x10', all wool, \$500. 286-1470.

RECORD PLAYER - Phillips GA212, electronic, Shure V-15 type III cartridge, diamond stylus, excel. cond., \$75. Corlis, 472-1585.

AIR CONDITIONER - used, fan, neg. Olle, Ext. 3019 or 3137.

CAMERA LENSES - Pentax, 35 mm, zoom lenses, 80-200 mm, like new, \$125, 40-80 mm, like new, \$100. Ext. 4153 or 732-5829.

COMFORTERS - (2), twin size, feather-down, & (4) pillows, as good as new, \$200. Paul, Ext. 4106 or 689-8675.

G. E. RANGE - self cleaning oven, new elements, excel. cond., \$150. 325-0563.

RABBIT COAT - size 8, full length, excel. cond., hat included. 588-4806 after 5:30 p.m.

ELECTRIC PORTABLE TYPEWRITER - Smith Corona, like new, cost \$218 new, sell for \$130. Annamaria, Ext. 2352.

ORGAN - new Lowrey, Holiday, 44 note keyboard, 13 note pedals, \$6,000. 744-9020.

EARTH STOVE - wood/coal, with stack kit, used one season, must sell. 588-4703 after 5 p.m.

SKIS - men's, Lange boots, size 9, Look-Nevada bindings, \$50. Bob, Ext. 7197 or 399-1679.

FUR - long coat, brown, size 8, Chinese mink, 2 yrs old, \$470. Ext. 3187.

KILN - Paragon A-88, stainless steel, 17 1/2"x18" deep, two full shelves, one half one, cones/stills 220 current, \$250. 475-5448.

FURNITURE - sofa, \$250; (2) chairs, \$100 ea., good cond. Don Schuette, Ext. 3084 or 929-4818.

VHS MOVIE - Camcorder-Quasar, uses full size tapes, 4 heads, 2 months old, case, \$975. Pete, Ext. 7627.

DRESSERS - (1) white, (1) brown, also white headboard. 722-4821.

SKIS - men's large boots, size 9, Look-Nevada bindings, step in, \$50. Ext. 7197 or 399-1679 eves.

GAS DRYER - and washer, Whirlpool, heavy duty, used 1 year, \$375. Ext. 2389 or 751-1224.

DEEP WELL PUMP - Goulds Jet, 1 HP, w/glass lined tank, like new, \$125. Emil, 289-0072.

AKC CHESAPEAKE BAY RET - 9 wks., m/f, OFA certified, champion stock, excel. temperament. Maureen, 288-9077.

SOUND SYSTEM - (2) SMS speakers, w/ casters, (2) Numark mixers, microphone, SAE power amp., ideal for DJ use. Frank, Ext. 3120.

MANNY'S P.A. COLUMNS - 59" high, (8) 12" speakers, 200 watts, total \$275/pr. Tony, 4095.

MEXICAN HANDCRAFT GLASS - clay and blankets. Ext. 3755 5 pm or 3222 mornings.

TWEED JACKET - Haggar, brown, size 38R; matching corduroy slacks, excel. cond., hardly worn, \$40 for lot. Ext. 2914 or 286-3742 eves/wkends.

COAL STOVE - Roseries, new in box, \$100. Frank Rumph, Ext. 5107 or 588-3565.

BLONDE MAHOGANY - hi-fi, cabinet w/speaker, \$45; set (4) TV/snack tables, \$18. 265-0501.

JENSEN - co-axial speaker and cabinet, \$20, folding bed, 2 inch mattress, \$20; weight bar, \$25. 265-0501.

DARKROOM EQUIPMENT - enlarger, easel, timer, print trays, developing tanks, print drier, etc., \$100. Ext. 2423.

FRIGIDAIRE - 17 cu. ft., 4 yrs. old, white, \$150. 924-0277.

T199/4A COMPUTER - w/(6) games, Joysticks, data cassette, interface & voice synthesizer, \$150. Bill, Ext. 2807 or 281-0557.

UNIVERSAL TYPE FITNESS GYM - (Marcy), 2 yrs. old, excel. cond., orig. cost, \$2,800, asking \$1,500; oak dining table, 2 leaves, 6 chairs, can seat 16 people, orig. cost \$1,500 asking \$700. John, Ext. 3292 or Beth 475-4370.

DINETTE TABLE - 36"x46", yellow formica, chrome legs, excel., \$25. 281-7844.

BOY SCOUT CHRISTMAS WREATHS - \$7. Ext. 2543.

### Carpool

BLUE POINT - want to join non smoking, on time carpool. Carol, Ext. 7215 or 363-2268 after 6 p.m.

SOUTHOLD - or vicinity, seeking rider. Ed, Ext. 3293.

BABYLON/W. ISLIP - driver needed, for on-time car pool, 8:30-5:00. Mike, Ext. 2705.

### 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

AQUEBOGUE - large 3 bdrm. ranch, 1-1/2 baths, 1-1/2 car garage, fireplace, full basement w/game room, 1/3 acre, fenced in backyard, asking \$125,000. 722-4644.

SOUTH JAMESPORT - 1/2 acre, private, short walk to beach, wooded, \$38,500. 727-7741 after 6 p.m.

BROOKHAVEN HAMLET - 12 acres, trees and shrubs, 14" top soil, large barn, (2) 4" wells, estate surroundings, terms. Jim, Ext. 4040 or 289-0876.

### For Rent

N. SHIRLEY - large furn. studio apt., w/kitchen, private entrance, utilities included, 5 min. from Lab & stores, non smoker, no pets, security, \$400 pays all. 281-8044.

CENTER MORICHES - South of Montauk, 3 bdrm., full bath, modern eik, basement, outside entrance, garage, neatly landscaped, \$850 month, neg. plus util. 878-8177.

STRATHMORE RIDGE - 2 bdrms, 1-1/2 baths, central a/c, all appl., available 11/1/85, \$650 mo. plus util. Ext. 3541 or 924-4070.

ROCKY POINT - 1 bdrm. apt., full bath, priv. ent., eik, walk to beach, 15 min. to Lab, \$400 plus util. 821-3692.

MASTIC BEACH - 3 bdrm. ranch, detached Florida room w/fireplace, walk to water, quiet, economical, pretty, \$625 mo. Susan, Ext. 7235 or 399-1736 after 5:30 p.m.

FLORIDA - Port Charlotte-W. Coast, property, 120'x125', high, dry land, walking distance to Peace River, w/direct access to Gulf, asking \$18,000. 732-8216 after 5 p.m.

E. PATCHOGUE - S. of S Country Rd., 1st fl. apt., 2 bdrms., l/r, eik, priv. ent., avail. 12/1, \$420 mo. plus util., no pets. Walt, Ext. 2907 or 698-0576.

VERMONT - reasonable vacation, 3 bdrm. house, 2 bath, 1/p, fully equip., beautiful view, x-country & downhill skiing, family oriented. 732-6499 after 6 p.m.

WHITE MOUNTAINS - New Hampshire, Ski Loon, deluxe, 3 bdrm., 2 bath condominium, fireplace, color T.V., with H.B.O., clubhouse, jacuzzi, 1/4 mile slopes, free shuttle, easy drive, 4 nights, \$450; weekly \$600. (914) 232-4039.

RONKONKOMA - close to L.I.E., beach and recreational facilities; 2-3 bdrms. l/r, eik, full bath, yard, \$600 plus. Ext. 2676 or 543-0487 eves.

MASTIC BEACH - studio apt., fully furn., kit., priv. ent., quiet, 15 min. from BNL, avail. 1/1/85, \$350 incl. util. & cable. Ext. 7144.

CHALET - Catskills Mts., good for hunting and skiing, near Windham and Hunter Mts., fully furn. Judy, or Bea, Ext. 3595 or 3642.

ROCKY POINT - 3 bdrm. cape, modern kitchen, 2 baths, fireplace, carpeting, basement, \$750 plus util. 744-8659.

### Lost & Found

LOST - multicolored Venetian china necklace, predominately red, approx. 12" long, sentimental value. J. Byrne, Ext