

Healthy Fish — Healthy River

Jan Naidu spent two weeks this summer, as he has for the past four summers, fishing on the job. An ecologist with the Environmental Protection section of Safety & Environmental Protection (S&EP), Naidu has fished the freshwater Peconic River from its headwaters in the middle of the CBA ring to the Lab's eastern boundary. The river then continues to flow west to east for 15 miles to Peconic Bay at Riverhead; the Peconic is one of four rivers on Long Island and is being considered for designation as a New York State scenic and recreational river. As part of a cooperative program to monitor the quality of the Peconic's water and radioactive discharges from the Lab, Naidu fishes with the New York State Department of Environmental Conservation (NYSDEC).

From their fishing studies, Naidu has learned that the Peconic supports the same population of fishes and fish species as it did 47 years ago, according to the first survey performed in 1938. The river supports a diverse population of fish. Bass, bullheads and pickerel are the three main species, and all the fish species are healthy, normal and abundant.

Information about the population dynamics and the health of species and individual fish is used as an indicator of the purity of the Peconic's water. "If the river only supported one or two species, that would indicate that only the hardy species had survived and that there was a pollution problem," explains Naidu. The vigor of the species and the individual fish attests to the fact that the Peconic River is not polluted.

S&EP has conducted continuous ecological monitoring since the early 70's to look at the entire river by its individual components: sediment, water, vegetation, and fish. "We began collaborating with New York State to study Peconic fish so we could compare them to the fish around Long Island and the rest of the state," states Naidu.

NYSDEC conducts fish surveys on Long Island to record the distribution and diversity of fish, as well as to determine the amount of chlorodane in fish. Chlorodane is a banned insecticide formally used extensively on Long Island to eliminate termites. Since it is not biodegradable, it has found its way into groundwater and, through groundwater recharging rivers, into fish. In addition, NYSDEC looks at the level of radioactivity in fish from around the state.

Since S&EP and NYSDEC divide the fish that are collected, they perform independent analyses of the fish. Their independence is a quality assurance check on the amount of radioactivity found within the fish. The Peconic receives minute amounts of radioactivity as a result of the Lab's discharging liquid waste into the river. The discharges, which are stringently controlled by the Lab, are well within Federal and State limits. "What we are adding is an infinitesimal amount compared to the background level," explains Naidu.

Since the river is used for fishing, and the fish are eaten by people downstream from the Lab, fish are considered to be an important pathway for pollutants going from the river to people. The Laboratory uses the fish as a way to gauge the radioactivity within the river ecosystem and the resulting dose that people will receive by eating Peconic River fish. The dose to an individual who eats



NYSDEC Biologist Chart Guthrie (left) fishes with an electronic fishing net, while S&EP Ecologist Jan Naidu collects the catch.

fish from the Peconic has averaged less than 0.02 millirem per year, which is less than 0.02% of the natural background, which averages about 100 millirems per year for Long Island. In comparison, the radiation dose from drinking one quart of milk per day is about 5 millirems per year, which is

approximately 5% of natural background.

"It has been stated, 'The Peconic River is the most radioactive river in the country,'" says Naidu, "but that is a grossly misleading statement." The misunderstanding centers on tritium, a radioactive isotope of hydrogen,

which the Lab discharges in small quantities into the Peconic. The concentration of tritium in the Peconic averaged 6,000 picocuries per liter in 1984 at the site boundary, or 0.2% of the maximum allowed concentration of three million picocuries per liter. While it is true that the concentration of tritium in the Peconic is among the highest in the country, the dose to people resulting from such releases is about one millirem, which, in relation to the natural background, is extremely small.

By far, tritium is the least toxic of all the radionuclides, therefore the maximum limit for tritium is higher than for other radionuclides, such as strontium-90 and cesium-137. Tritium emits low energy particles called soft beta particles, which deposit low energy in body tissue. Additionally, tritium is recycled rapidly from the living tissue and the body, as hydrogen is. For example, a similar concentration of strontium-90 in the Peconic would lead to doses to people about 2,500 times higher.

"Clearly, then, the best way to evaluate the impact of environmental releases on people is to look at the resulting dose to people and not at the magnitude of the radionuclide concentration alone," says Naidu.

Throughout the summer, Naidu participates in all the NYSDEC field work on site. To collect the fish, a net is used, and to get the fish in the net, they are momentarily stunned with the high voltage and low current from an electrical battery attached to the

(Continued on page 2)

Promoting Science at the International Level



Signing the agreement on high energy physics collaboration between the United States and China are the co-chairmen of the Joint Committee: (left) Madame Gu Yu, Advisor to the Chinese Academy of Sciences, and William Wallenmeyer, Director of the Division of High Energy Physics, U.S. Department of Energy.



Among those attending last week's Workshop on the Construction and Commissioning of Dedicated Synchrotron Radiation Facilities were (from left) Lu Jia-Xi, President of the Chinese Academy of Sciences, Beijing; Alvin W. Trivelpiece, Director, Office of Energy Research, U.S. Department of Energy; and Ling Lie Chau, BNL Physicist.

BNL is prominent in the areas of high energy physics and synchrotron radiation, and both fields figured in important events that occurred here in a one-week period. From October 16-18, the Laboratory hosted a Workshop on the Construction and Commissioning of Dedicated Synchrotron Radiation Facilities. Then, from October 21-22, Brookhaven was the site of discussions about high energy facilities that culminated, on Tuesday, with the signing of a cooperative international agreement.

For six years, an agreement has existed between the U.S. and China, promoting cooperation in high energy physics by such means as exchange of personnel or assistance in construction and experiments. The current agreement, which centers on the specifics of next year's collaborations, was the product of two days of discussion by representatives of all the institutions that have high energy facilities, in both countries.

The workshop, which attracted over 100 participants from synchrotron radiation groups worldwide, was organized by BNL Deputy Director Martin Blume and Michael Knotek, Chairman of the National Synchrotron Light Source Department, with BNL Physicist Roger Klaffky acting as conference chairman. "Since synchrotron radiation facilities are often located at high energy facilities, it was natural to have this workshop one week before the agreement," said Blume. The workshop focused on difficulties and successes various institutions had encountered during construction of synchrotron radiation facilities, with an eye toward making it easier for those who are now involved in such projects.

Patents Awarded

Masaki Suenaga and Carl J. Klamut, both in Department of Applied Science, and Thomas S. Luhman, former BNL employee, were awarded U.S. Patent #4,489,219 for inventing a wrapping process for fabrication of A-15 superconducting composite wires. A billet of copper containing filaments of niobium or vanadium is rolled to form a strip that is wrapped about a tin-alloy core to form a composite. The alloy is made of tin and copper for niobium filaments and gallium and copper for vanadium filaments. The composite is then drawn down to a desired wire size and heat treated.

During the heat treatment process, the tin in the bronze reacts with the niobium to form the superconductor niobium tin. In the case where vanadium is used, the gallium in the gallium bronze reacts with the vanadium to form the superconductor vanadium gallium.

This new process eliminates the costly annealing steps, external tin plating and drilling of bronze ingots required in a number of prior art processes.

U.S. Patent #4,500,508 was issued to Suresh C. Srivastava, Medical; Rashid A. Fawwaz, research collaborator in Medical; and Powell Richards, a former BNL employee, for developing radionuclide-labeled lymphocytes for therapeutic use.

Radiosensitive lymphocytes that arise in the reticular tissue of the lymph gland are the cells primarily responsible for the recognition and destruction of allografts. It follows that lymphoid ablation should inhibit or prevent the rejection of allografts, tissue grafts from genetically unlike donors.

In the past, total body irradiation (TBI) using an external beam has been utilized to stop allograft rejection. However, the dose of TBI required for permanent acceptance of an allograft is lethal to bone marrow cells and cells of the gastro-intestinal mucosa. This and other complications have led to the search for immunosuppressive methods employing radioactive compounds, the beta-emissions of which will selectively destroy lymphoid tissue.

In the present invention, lymphocytes labeled with palladium-109 were tested in rats. The technique is also applicable to other radionuclides and other mammals, including humans. Radionuclide-labeled lymphocytes are useful for a number of purposes, including the treatment of lymphomas, autoimmune diseases and splenic disorders, as well as to prevent the rejection of allografts.

C.R. Krishna, Department of Applied Science, and Julius S. Milau, a former BNL employee, were issued U.S. Patent #4,511,474 for inventing a cyclone separator having boundary layer turbulence control.

The basic principles common to most cyclone separators have been known and used for years. For example, such devices are useful to separate cream from milk, entrained water from steam, as well as to separate dust from air supplies and smoke from the discharge gases in chimney flues.

Krishna and Milau's invention is an improved version for removing particulate material from fluids, including a wide variety of liquids and gases. It includes a boundary layer turbulence control that is operable to prevent undue build-up of particulate material at selected critical areas on the separator walls. It selectively varies the fluid pressure at those areas to maintain the momentum of the vortex, thereby preventing particulate material from inducing turbulence in the boundary layer of the vortical fluid flow through the separator.



Chart Guthrie displays the catch. The fish are small because they were caught in the shallow pond, which has limited space and food for fish, within the CBA ring.

Roger Stoutenburgh

Peconic

(Cont'd)

net. This method of fishing is better than using rods and reels or regular nets. The usual methods of fishing can permanently damage the fish, while the electronic fishing net method ensures the return of endangered species and immature fish to the river. After the fishes' species, length, weight, characteristics, etc. are recorded, most of the fish are returned to the river. A portion of fish is retained for analysis of radioactivity.

In addition, Naidu has initiated a program to look at mussels in Peconic Bay and clams from the marine environment surrounding the Island. "Fish migrate, so you can never be sure where they pick up pollutants, but shellfish just sit in one spot and feed by filtering the water," says Naidu. "So shellfish are a good indicator of the source of any pollutants." Naidu has not found any radioactivity from the Lab in Peconic Bay or other shellfish, though he has found natural radioactivity, such as radium and thorium. — Marsha Belford



(From left) Chart Guthrie measures the fish with the assistance of Naidu, as Technician Bruce Cronmeyer of NYSDEC records the data.

Roger Stoutenburgh

On Site

Q: What's being constructed behind the Water Treatment Facility?

A: It's a new filtering system to replace the existing one. The new filter consists of a bed of sand and coal, which basically removes iron and manganese. The system will be operational sometime next spring.

Work on the Water Treatment Facility is part of a larger water system improvement project. For example, the new water tank in the eastern skyline is now complete. When it was put on line October 8, water pressure on the eastern end of the site increased from 50 psi to 70 psi.

ANS Meeting Features HFBR

The October 29 meeting of the Long Island Section of the American Nuclear Society, will feature "The High Flux Beam Reactor: Twenty Years of Operating a Nuclear Reactor for Research." Gerald Kinne, Reactor Division Manager and David Rorer, Deputy Manager and leader of the Research Coordination Group, will be the speakers. The meeting will begin with cocktails at 6 p.m. and dinner at 7 p.m. at the Bavarian Inn, Lake Ronkonkoma. Cost: \$11.50 members, \$12.50 non-members. Reservations, call Dorothy Thompson, Ext. 2444.



On Bell Avenue, in front of the Medical Department, the stop signs have been taken down and pedestrian signs put up. Walkways are being put in from the parking lot leading to the Clinic, and crosshatching will be painted on the road. Drivers should note that pedestrians crossing the street have the right of way.

Peter Horton

Service Awards

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

Thirty-Five Years

Warren J. Johnson . . . Applied Science
Mary T. Kinsley . . . Applied Science
Constance F. Swezey . . . S&EP

Thirty Years

Mark Q. Barton . . . Light Source
John J. Fuhrmann . . . Physics
John J. Ruscica . . . Biology
William A. Scott . . . Medical
James D. Smith . . . S&EP

Twenty-Five Years

Robert B. Aronson . . . Medical
Roger R. DePuy . . . Plant Engineering
Caroline Ferris . . . Biology
Joseph W. Glenn III . . . AGS
Rudolph S. Hodor . . . Nuclear Energy
William J. Jordan . . . Light Source
Robert B. Palmer . . . Director's Office
Richard T. Seebeck . . . Chemistry
Richard B. Squires . . . Instrumentation
James W. Sutherland . . . App. Science

Twenty Years

Geraldine G. Callister . . . Medical
Richard A. Carlsen . . . Applied Math
Alan S. Carroll . . . AGS
Eugene Jablonski . . . AGS
Edward McKenna . . . Light Source
Charles W. Neuls Jr . . . Light Source
Richard L. Witkover . . . AGS

Ten Years

Michael Bannon . . . AGS
April Donegain . . . Nuclear Energy
Patricia E. Gorden . . . Personnel
Eileen M. Kelly . . . Reactor
Dolores J. Knighton . . . P&GA
Marian E. LeFevre . . . Medical
Frances V. Ligon . . . Director's Office
Paul E. Poleski . . . Applied Math
William E. Schoenig . . . Physics
Henry Schwicardi . . . Plant Eng.
Terry E. Whittedge . . . Applied Science

Storing Vegetables

Want to extend the life of garden vegetables? The Cooperative Extension Association of Suffolk County says it can be done without canning or freezing. The following steps could help maintain quality from six days, for sweet corn, to six months and more for potatoes, onions and winter squash.

- Clean crops of most soil before storage.
- Leave an inch of top on root crops to avoid "bleeding" and opening for diseases.
- Disinfect the storage area yearly.
- Store pumpkins and squash so fruit doesn't touch.
- Store tomatoes, muskmelons, apples and pears away from other crops because they give off ethylene which causes leafy vegetables to lose color and gives carrots a bitter taste.
- Store onion and garlic away from other produce or apples and pears will quickly become unacceptable and tomatoes may taste like spaghetti sauce.
- Green tomatoes benefit from isolation or wrapping. A staked tomato plant can be pulled totally from the garden and hung by its roots in the basement to be harvested when needed.
- Root crops can be left in the garden until late fall and keep best stored in baskets of wet sand, peat or vermiculite.
- Chilling improves edibility of parsnips and turnips.

Danish House Open Oct. 30

The Danish House will be open to visitors on Wednesday, October 30, from 10 a.m. to 4 p.m. Representatives of the Consulate General of Denmark, as well as Hosby International, builders of the prefabricated, modular house, will be on hand to answer questions.

The house is located in the apartment area on East Street, across the lawn from the Recreation Building.

BROOKHAVEN BULLETIN

Published weekly for the employees of BROOKHAVEN NATIONAL LABORATORY

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Looking For A Club? Take Your Pick.

When the workday is over, many Lab employees participate in one of the activities sponsored by BERA. So if you're a physicist who's also a camera buff, a secretary with a yen to learn judo, an engineer seeking a golf partner,

or anyone else with a specific interest, you'll probably find other BNL'ers who share your enthusiasm by checking out the groups listed here. For more information, call the Recreation Office, Ext. 2873.

Arrivals & Departures

Arrivals

Daniel M. Brown..... Biology
Joyce J. Crews..... App. Math.
Alan G. Gustavsson..... AGS
Martin Howard..... Physics
Arthur C. McMichael..... Pl. Eng.
Frank J. Monroig..... Central Shops
Kenichi Nomoto..... Physics
Hoydoo You..... Physics

Departures

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

Kevin L. D'Amico..... Physics
Ramesh Dayal..... DNE
James D. Rush..... Chemistry
Carol A. Sheehan..... NSLS

Mountain Club

There will be a hike at the Gunks on Saturday, Nov. 2. The Gunks (short for Shawangunk Mts.) are located 5 miles west of New Paltz, NY, about a 3½ hour drive from BNL. We plan to start hiking about 10:30 a.m. and should be back about 4 p.m. Bring lunch. There is a campground for those who want to camp over either Friday or Saturday nights. We will have an informational meeting at noon on Thurs., Oct. 31 in Room D, Berkner Hall. Call Don David, Ext. 4821.

IBEW Meeting

Local 2230 of IBEW will hold its regular monthly meeting on October 28, at 6 p.m. in the Knights of Columbus Hall, Railroad Avenue, Patchogue. On the agenda is regular business, committee reports and the president's report.

Cafeteria Menu

Week of October 28

Monday, October 28

Cream of chicken soup (cup) .65
(bowl) .85
Veal scallopini over rice 2.40
Baked macaroni & cheese 2.35
Hot Deli: Smoked turkey breast (bread) 2.25
(roll) 2.40

Tuesday, October 29

Canadian cheese soup (cup) .65
(bowl) .85
Chili Mac casserole w/1 veg. 2.40
Beef broccoli stir fry 2.40
Hot Deli: Hot meatloaf sandwich (bread) 2.25
(roll) 2.40

Wednesday, October 30

Beef barley (cup) .65
(bowl) .85
Steak tidbits & mushrooms over noodles 2.45
Baked meatloaf with Spanish sauce 2.45
Hot Deli: BBQ chicken breast (bread) 2.30
(roll) 2.45

Halloween Menu

Thursday, October 31

Witches brew soup (cup) .65
(bowl) .85
Ham Hawaiian w/1 veg. 2.45
Spook getti w/meatballs 2.40
Hot Deli: Fish-witch sandwich 2.40
Top your own dessert
Pumpkin pie
Boo-berry pie
Devil's food cake

Friday, November 1

Bean & bacon soup (cup) .65
(bowl) .85
Eggplant Parmesan w/ spaghetti 2.45
Fried clam plate w/1 veg. 2.45
Hot Deli: Turkey croissant sandwich 2.40

Activity	Description	Contact	Phone
Aerobic Dance Club	Classes held 2-3 times per week.	Anita Cohen	5054
Afro-American Culture Club	Meets regularly to promote cultural awareness and encourage inter-cultural exchange.	April Donegain	2903
Archery Club	Uses outdoor range year-round; provides free instruction to beginners.	Joseph Bauernfeind	5131
Art Committee	Organizes professional and employees' exhibits.	Eleanor Dahl	7125
Astronomy Club	Shares interest in the skies through observation and lectures.	Robert Mills	5043
Aviation Club	Meets monthly to promote understanding, safety, enjoyment of flying; all are welcome.	Louis Addressi	4758
Badminton Club	Plays year-round; holds winter tournaments in gym.	William Love	3996
Basketball League	Teams compete once a week in gym, Dec.-Mar.	Mac Thomas	2959
Bowling League	Leagues bowl at local alleys, Sept.-April.	Albert Pinelli	3868
Camera Club	Meets monthly; uses club's darkroom facilities for black & white and color processing.	Lewis Jacobson	7636
Camping Club	Organizes campouts spring, summer and fall, at Lab and off-site; holds monthly meetings.	Peter Fennelly	5320
Chess Club	Meets weekly in Brookhaven Center.	Kim Mohanty	7110
Choral Group	Rehearses four-part harmony, particularly in Nov. & Dec. for annual Christmas concert.	John Weeks	2617
Commodore Users Club	Members share information and techniques on the Commodore computer.	George Sintchak	4227
Concert Committee	Organizes series of chamber music concerts at Berkner Hall.	Donald Lazarus	4643
Cooking Exchange	Meets alternate Wednesdays, Oct.-May, for international cooking demonstrations.	Sara Morse	286-1712
		Susan Sears	744-7831
Cricket Club	Plays at ball fields, spring, summer and fall.	David Cox	3818
Exercise Club	Informal exercises during noontime hour.	"Whitey" Caiazza	2913
Fly Tyers Club	Fresh-water fans meet weekly year-round.	Helen Quinby	3069
French Club	Meets year-round for discussions, lectures, movies, dinner parties.	Michael Levine	4575
Golf League	Teams compete weekly; holds tournaments at local courses; May-August.	Ronald Webster	2845
Ham Radio Club	Uses club's transmitting equipment in Recreation Bldg., meets year-round.	George Walzcyk	4243
Handball Club	Plays at noontime on site.	Gerald Bennett	7590
Hispanic-American Club	Presents cultural and social Hispanic programs.	Jose Medina	7636
Judo Club	Meets weekly in gym.	Robert Marascia	4672
Microcomputer Club	Meets weekly to discuss growing microcomputer technology.	James Hainfield	3372
Motorcycle Club	Plans frequent outings; meets monthly.	Erno Ostheimer	8478
Mountain & Canoe Club	Plans year-round trips; meets as necessary.	Patrick Thompson	7635
Nursery School Committee	Operates classes for 3 and 4 year old children of Lab employees, Sept.-June.	Marian Dreimann	924-6723
Performing Dance Committee	Organizes dance programs featuring renowned artists.	Gail Williams	3338
Quilting Club	Meets twice a month for learning and working.	Bernadette Benz	928-1068
Racquetball Club	Uses Royal and Unique Racquetball courts located off-site.	Richard Horwitz	4134
R/C Model Aircraft Club	Flies radio-controlled model planes during scheduled weekends, April-Oct.	Ken Morton	7772
Rifle & Pistol Club	Holds shoots year-round at BNL range and elsewhere; meets monthly.	Otto Jacobi	4406
Runners Club	Schedules meets spring and fall; holds planning meetings as necessary.	William Medeiros	2665
Singles Club	Holds meetings, parties and arranges short group trips.	Doris Terry	7610
Soccer League	Plays Mondays, 5:30 p.m. at ball fields; plays in gym during winter.	Enrique Abola	4383
Softball League	Leagues play from May-Aug. on ball fields.	George Greene	2296
Special Events Committee	Organizes events, including picnics, dinner-theatres, and contemporary entertainment.	Rosalie Piccione	3160
Swim Club	Organized to promote health and fitness through swimming.	Marsha Belford	3327
Table Tennis Club	Plays at noontime in Recreation Bldg.	Upendra Rohatgi	2475
Tennis Committee	Sets rules for court use; organizes tournaments.	Eena-Mai Franz	7103
Theater Group	Meets year-round for readings and presentations of plays and shows.	Kurt Fuchel	4116
Touch Football League	Plays on ball fields, Sept.-Oct.	Edwin Taylor	7589
Volleyball League	Plays in gym, twice weekly, Nov.-March.	Robert Marascia	4672

Halloween Party

The Afro-American Culture Club is having a Halloween costume party on Saturday, November 2, starting at 9 p.m. at the Recreation Hall. All respectable ghosts and goblins are invited. The price is \$2 if paid in advance, or \$3 at the door. There will be a cash bar and free snacks. Music by DJ "E.T." Among several prizes to be awarded will be one for the most original costume.

Public Sale of Motor Vehicles

Forty-three vehicles will be available for public sale. They may be inspected at Warehouse T-87 on weekdays, between 9 a.m. to 4 p.m., from October 28 through November 1.

Informal competitive bidding will open on November 12. Bid forms may be obtained at Building T-87. For further details, call Ext. 2302.

Indoor Soccer

The Soccer Club is moving indoor today, October 25. We will be playing pick-up games starting at 5:30 at the gymnasium. We will continue to play outdoors at the BERA field on Wednesdays at noon. For more information, call Enrique Abola, Ext. 4383.

Bowling

White League

High games were bowled by Ted Erickson 216, Ben Belligan 211, Jim Petro 210, Dan Clemente 201, Pat Manzella 184, Kathy Griffin 183, Nancy Roesler 172, Fern Coyle 171, Kay Conkling 171, the Old Timers had a 2433 gross series.

Purple League

Ed Sperry III had a 222, Ed Meier 205/216/599 scratch series, Tony Natoli 200, Fran Brown 188, Marge Stoeckel 181, Donna Monteleone converted the 6-7-10 and 3-6-10.

Red/Green League

K. Riker rolled a 212, J. Connelly 207, H. Marshall 204, E. Sperry IV 204, E. Meier 200, J. Carroll 200.

PC/Workstations

The PC/Workstations Group will meet on Tuesday, October 29 at 10 a.m. in the Applied Mathematics Department Seminar Room. Decision Resources, Inc., will present a talk on presentation graphics using the IBM PC.

An informal newsletter for IBM PC users is being planned. Those who wish to receive this publication or make contributions to it should send their name, department and mailing address to Kurt Fuchel, Bldg. 515.

AMD is offering a one-hour introduction to the IBM PC and its uses. To register, call Fuchel at Ext. 4116.

Fall Back

Set back your clock one hour on Sunday, October 27. Eastern Standard Time goes into effect at 2 a.m.

Classified Advertisements

Placement Notices

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

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

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

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

LABORATORY RECRUITMENT - Opportunities for Laboratory employees.

2348. CLERICAL POSITION - Requires accurate typing and data entry skills to perform general clerical support which includes IPAP & JCARS data entry and stores and vehicle reports. Responsibilities will also include library and Chairman's office assistance. National Synchrotron Light Source Department.

2349. OFFICE MACHINE REPAIR MECHANIC - Will be responsible for the repair, overhaul and maintenance of all office machines, i.e., adding, copying, date stamp, dictaphones, transcribers, typewriters, etc. Must be able to utilize technical manuals needed for the repair/maintenance of varied and numerous machines. Supply and Materiel Division.

2350. CLERICAL POSITION - Will provide clerical/administrative support in all phases of the Housing Office. Responsibilities include setting up of housing reservations for large groups of visitors, data entry, filing, typing of invoices, and settling accounts. Staff Services Division.

OPEN RECRUITMENT - Opportunities for Laboratory employees and outside applicants.

2351. ELECTRICIAN A - (2 positions) Under minimum supervision lays out, constructs, installs, maintains, repairs and operates electrical systems, equipment, controls and related devices. Requires minimum of five years' industrial electrician experience. Plant Engineering Division.

2352. TECHNICAL POSITION - Requires an AAS or equivalent experience in electromechanical technology. Will be responsible for the construction, maintenance and operation of all clinical facilities developed by the medical physics group. Will also assist investigators in various medical physics and related clinical research projects. (Temporary Position) Medical Department.

Autos & Auto Supplies

TOW CHAINS - heavy duty w/hooks. \$1 per ft.; vise, heavy duty, reasonable; 69 and 72 Chevy truck parts and 3 spd. trans., reasonable. 732-3338.

78 CHEVETTE - 2 dr., 4 spd., 30 mpg, good cond., \$1,200. Ext. 2610 or 924-5272.

HARDTOP FOR JEEP - CJ-5, good shape. Joe Bush, Ext. 4638 or beeper 572.

75 PLYMOUTH VALIANT - slant 6, 6 cyl., a/c, p/s, p/b, rebuilt trans., runs well, \$950. Ext. 2733 or 475-5448.

TIRES & RIMS - 15", 6-lug for Chevy, \$100. Ron, Ext. 4082 or 289-1003.

80 CHEVY MONZA - hatchback, new clutch, tires, brakes, rebuilt engine, 25 mpg, excel. cond., \$1,395. 751-4822.

77 HONDA MC - 4 cyl., 750 cc; fully equipped, automatic, 3,500 miles, \$1,400. Vinney, 281-5814.

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

68 MUSTANG - V6, new brakes, tires, battery, good running cond., \$1,500. 878-0480.

77 CHEVY MONZA - whole car or just parts. 698-1282.

80 RX7 MAZDA - 76k mi., 4 spd., excel. cond. Ext. 2537.

83 CHEVY MALIBU - s/w, a/c, a/t, p/s, p/b, roof rack, spoke wheel, excel. cond., \$5,800. Ext. 5030.

73 CHEVY IMPALA - p/s, a/c, dependable, \$350. Jim, Ext. 3372.

78 VW RABBIT - very dependable, no rust, 4 spd., reg. gas. 286-1549.

73 FORD LTD - wagon, new tires, exhaust, brakes, \$750 neg. Neil, Ext. 2023.

76 AMC HORNET - 2 dr., hatchback, a/t, 80k mi., runs well, very reliable, \$800. Ext. 3850.

TIRES - (2) Michelin 1.85x14 snows on Dodge Dart rims, \$10 ea. Ext. 4597 or 924-8213.

79 CAMARO - a/t, 305 eng., fair cond., \$1,700. Tony, 744-2438 after 6 p.m.

78 CADILLAC - Fleetwood Brougham, 4 drs., like new, \$4,900; (4) tires, 195R14, \$10 ea.; 82 Chevy Malibu Classic, V6, \$4,900. 475-4596.

75 VW BEETLE - rebuilt eng., converted to carburetion, body good cond., am/fm stereo, \$850. 66 Mustang convert., classic, 6 cyl., a/t, recent top, needs partial restoration, orig. owner, \$2,000. 589-5490.

76 CHEVY LUV - 4 cyl., am/fm cass., tool boxes, \$1,800. 563-2751 after 5 p.m.

76 HONDA CIVIC CVCC - rebuilt eng., new tires, snows, runs great, \$850. 286-3509.

72 OLDS DELTA 88 - a/c, am/fm, eng. seized, \$300 firm. Ext. 2333 or 732-3002.

69 BUICK SKYLARK - recent tires, exhaust tune-up, dependable, runs great, \$450 firm. Matt, Ext. 5215.

78 FORD FAIRMONT - a/t, r/h, excel. mech. cond., new brakes, 58k mi., \$1,500. Ext. 2914 or 286-3742 eves./wknds.

TRUCK CAP - custom, Toyota, cream, 60"x72", excel., \$375. Jack, Ext. 4411 or 929-8287.

79 BUICK REGAL - V6, a/t, p/s, p/b, am/fm stereo, new tires, excel. cond., \$3,350. Barry, Ext. 5624 or 727-5956.

67 DODGE DART - 225 eng., runs well, \$300. Ext. 7531 or 929-3550.

80 CHEVY CITATION - 78k mi., very good cond., new battery, muffler, \$1,500. Ext. 4494 or 246-9257.

74 BLAZER - V8, 350, blue, 4x4, rollbar, 36" tires & rims, many new parts, good cond., \$2,000. Rich, Ext. 4688 or 929-8294 eves.

81 PLYMOUTH RELIANT K - 49k mi., a/t, p/s, excel., \$3,000. 472-4228.

SPEAKERS - Jensen, co-axe, 4-8 ohm, \$30 pr. Joe, Ext. 4439.

74 BUICK APOLLO - a/c, p/s, a/c, am/fm, 4 dr., 95k mi., \$950. Ext. 3701/7771.

70 NOVA - a/t, p/s, reliable eng. & trans., new suspension & exhaust system, \$380. Wait, Ext. 2907 or 698-0576.

79 PACER - wagon, tan, good cond., a/c, p/w, am/fm stereo, high mi., \$850. Otto, Ext. 4248.

73 PINTO - wagon, new tires, battery, muffler, \$425. 399-4169 after 5:30 p.m.

78 DATSUN B210 - 78k mi., very reliable, new exhaust system, \$600 firm; 77 Datsun B210, good for parts, eng. good, \$60. Ext. 4494 or 246-9257.

72 VOLVO - wagon, good running cond., needs some work, best offer above \$300. Ken, Ext. 2008 or 928-5875 after 6 p.m.

74 VOLVO 164E - excel. body, excel. running cond., \$2,500. Kevin, Ext. 2211 or 473-0961 eves.

77 HONDA - hatchback, 4 spd., rebuilt trans., good mech., tape am/fm, new eng., 42k mi., \$740. Jack, Ext. 3164 or beeper 740.

CONVERTOR - 8 track to cassette player for your car. Carol, Ext. 2907 or 698-8510.

78 SUZUKI GS1000E - black, 23k mi., excel. cond., \$800. Ext. 4027 or 286-1121.

76 TOYOTA - yellow, needs eng., \$200. Loretta, 929-8287.

79 HONDA CBX - 6 cyl., good cond., w/helmet, \$1,100; 82 RM125, water cooled, new top end, \$650. 399-3598.

73 NOVA 350 - 300 HP, built for racing, many extras, \$3,500. William, 744-2204.

73 PINTO - excel. cond., all new parts, tires, am/fm stereo, no rot. 226-1828 after 5 p.m.

77 PONTIAC FIREBIRD 400 - a/t, am/fm 8 track, \$3,250. 654-5583.

77 DATSUN B210 - fair cond., 4 spd., good trans., must sell. 957-7742.

76 FORD VAN - 351-V8, a/t, flares, spoiler, sunroof, refrig., sink, toilet, bed, excel. cond. Ray, Ext. 3536 or 289-7615.

77 CADILLAC DE VILLE - sedan, 56k, full power, new parts, many extras, excel. cond., \$2,300. 924-3320.

83 CHEVY CELEBRITY - white, 60k mi., V6, a/c, a/t, p/s, cruise, excel., \$5,400. 472-4228.

77 DATSUN B210 - 4 spd., 4 dr., \$250. Ext. 2184 or 269-9836 after 5 p.m.

81 OLDS CUTLASS SUPREME - a/c, a/t, \$5,000. 286-0466.

Boats & Marine Supplies

115 HP MERCURY - completely rebuilt, new powerhead & lower unit, water pump, \$1,800. 298-8662, Mon./Tues. after 6 p.m.

MOTOR STAND - light outboard, 15 lb., Navy anchor, (2) oars, all \$50. 732-3338.

19' SEARAY - 1974, 350 cu. in. OMC, aqua, \$3,500. Roger, Ext. 2384.

Miscellaneous

JACKET - suede, sheep lined, worn twice, size 40, \$55; collector beer mugs from different states, \$5 ea.; (2) sleds, Flexible Flyer, very good cond., \$15 ea. 732-3338.

PIANO - needs work, best offer. Ext. 3919 or 2385.

SNOWMOBILE - Rupp 634 cc eng., runs well, \$375. Joe Bush, Ext. 4638 or beeper 572.

VACUUM - Hoover Celebrity IV, canister, auto rewind, 2 spd., 3.7 HP, attachments, good cond., \$90. 744-9677.

CHILDREN'S TOY CHEST - for ages 3-10 yrs., fancy, excel. cond. \$10. 751-4822.

PAPERBACK BOOKS - science fiction, adventure, sports, horror, music, etc., 35¢ to 75¢ ea. 751-4822.

CAMERA - Kodak Disc, w/carrying case, \$25. Sharon, Ext. 3995.

RECORDER - low range Mach-1 computer graph. Ext. 4312.

MOVER'S DOLLY - heavy oak construction, ball bearing swivel casters, padded, \$10. Ext. 4745 or 722-4076.

TRUMPET - w/case, \$50. Jim, Ext. 3372.

KITCHEN CABINETS - used, formica counter, sink w/faucets, \$200; kitchen exhaust fan, 6 mos. old, \$40. Ext. 3173.

TODDLER SNEAKERS - Nike, 6, 7, 9, \$7 ea.; leather Buster Brown ties, 9W, \$10, orig. \$30; car seat, crib, swing, walker, stroller, all good. 499-0637.

BABY BED - \$40; buggy \$25, clothes dryer \$50; archery set, \$75; oil hot water heater w/burner, \$50. John, Ext. 4214 or 475-5543.

MEN'S BIKE - Mosberg, 5 spd., like new, \$70. 654-3968.

CANDELABRA BULBS - 25¢ ea.; oil electric radiator heater w/thermostat, \$25; matching colonial wall coat rack & mirror w/brass hooks, \$25; picture clock, \$10. Ext. 3293.

CHILD'S PHONOGRAPH - stereo, portable, excel. cond., 3 spds., \$15. 751-3551.

COUCH & LOVE SEAT - traditional, pale gold print, \$150. 281-5652 after 3 p.m.

SKI BOOTS - Caber, men's 8-1/2, used one season, \$65. Ext. 4530 or 261-2719.

TELESCOPE - 3", Unitron, Equatorial mount, drive motor, tripod, carrying cases, new \$1,300, sell for \$595. 589-3608.

FREEZER - large, upright, Westinghouse, like new, \$200. Jim, 286-0024.

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

CAMERAS - Hasselblad, Bronica, 611 flash & extras. Roger, Ext. 2384.

PRINTING CALCULATOR - Sears, portable, \$15; GE compact stereo, am/fm, phono., no speakers, \$20. Dick, Ext. 3273.

FOLDING BED - \$20; 4-wheel or 3-wheel cycles, \$5 ea. Chandra, 924-0582.

BABY CARRIAGE - good cond., old model, clean, \$10. 246-9257.

POOL LINER - new, never used, 12x18, has 10 year guarantee, orig. \$119, sell for \$75. Ext. 3319.

WOOD BURNING STOVE - Efel, w/pipe, \$250. 653-6694.

VACUUM - Hoover, upright, w/bags, like new, \$60. Paul, Ext. 4106 or 689-8675.

SOFA - Herculon, \$35; end tables, \$25 ea.; Herculon recliner, \$35, vinyl recliner, \$20; lamps, \$20 ea.; pivoting rocker, \$15. 281-0557.

CASSETTE PLAYER - Audiovox, under dash, for auto, good cond., \$15. Ext. 4153 or 732-5829.

OPERA TICKETS - (2). Oct. 29, BERA seats, Khovanshchina, \$25. Ext. 2617 or 751-1149 eves.

IRISH-KNIT SWEATERS - hand-knit, shipped from Ireland, \$100, order by Nov. 8 for delivery by Christmas. Dory, Ext. 3389.

1925 DINING SET - mahogany, (5) chairs, china closet, very lg. table, \$350. 744-3792.

CANON FD LENSE - 70-210 zoom/F4, like new, \$100. Ext. 4524.

LAFAYETTE TUNER - \$5; German-made turntable, \$10; lamp, \$10; twin bed frame, \$5; kitchen exhaust fan, \$15; GE stereo record player, \$15. Ext. 2971 or 473-3616.

LEAF VACUUM - bagger/shredder, Sears, 3.5 HP, (2) machines, \$100 and \$200. John A., Ext. 4636 or 588-7260 after 6 p.m.

FIR TREES - (125) left, need trimming, 2' to 5', 3 for \$10, you dig; (7) golf clubs, \$12; kitchen table, (4) chairs, \$25. 878-6637.

FIREWOOD - split, seasoned oak, 4'x16'x20'-22" pieces, \$110 delivered. 732-2849.

BABY ITEMS - white wicker bassinet, swing, playpen, crib w/mattress, carriage, car seat, 1-5 yr. old, \$100 for all. 281-0360.

Free

CAT - Siamese. Ext. 4477.

DOG - Labrador-Shepherd mix, desperately needs home, male, 1 yr., 50 lbs., healthy, loving. 331-1150 or 744-7338 eves.

Lost & Found

LOST - gold bracelet, thin, 5 weeks ago. Carol, Ext. 7215.

Yard Sales

WADING RIVER - corner of Frost La. & Russell Dr., multi-family, 10/26 (rain date 10/27), furniture, household goods, children clothes.

W. PATCHOGUE - 5 Dogwood La., (3) families, Oct. 25, 26, 27, 9-5.

Car Pools

PLAINVIEW - Bethpage, Hicksville, 8:30 to 5:00, (2) person, on time, non-smoker, looking for additional drivers. Walter, Ext. 4605.

Classified Ad Policy

Deadline is 4:30 p.m. Friday for publication Friday of the following week.

- The Brookhaven Bulletin's classified section may be used only by active and retired Laboratory employees.
- All items for sale or rent must be the advertiser's property.
- Ads for material acquired for resale in association with a full or part-time business cannot be accepted.
- Ads for the sale or trade of firearms will not be accepted.

5. Ads not carried because of space restrictions will be held for publication in the next issue.

6. Ads are run only once and must be resubmitted if they are to be repeated. One ad per person per week.

7. Property for sale or rent cannot be accepted on this form. Special Real Estate Ad Forms are available at the office of the Brookhaven Bulletin, Building 134.

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|--|--|---------------------------------------|-------------------------------|
| <input type="checkbox"/> For Sale: Autos & Auto Supplies | <input type="checkbox"/> For Sale: Miscellaneous | <input type="checkbox"/> Lost & Found | <input type="checkbox"/> Free |
| <input type="checkbox"/> For Sale: Boats & Marine Supplies | <input type="checkbox"/> Car Pools | <input type="checkbox"/> Wanted | <input type="checkbox"/> |

Please print your ad below in 15 words or less using one word per block. Include name and phone number to call.

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Note: The following must be completed for your ad to appear.

NAME (Please Print)

Employee's Signature

Life No. Ext.
Send to: Brookhaven Bulletin, Building 134 (Ext. 2345)