

## Stem Cell Focus Of Cancer Study

Leukemia, a cancer of the blood, and a scourge of children particularly under ten years of age, is the field of research of Ursula Reincke, M.D., a research scientist in the Medical Department.

Prior to the last decade, no more than 1% of children afflicted with acute lymphoblastic leukemia lived five years after diagnosis of the disease. Now, due to advances in leukemia treatment, up to 30% of children so afflicted can survive for five years or more.

Dr. Reincke's specific project is to test the renewal capacity of stem cells in bone marrow which are responsible for blood cell regeneration.

In the human being, white cells live for only six hours, red cells for 120 days. At the end of each cycle, they are resupplied by the stem cell. It follows that the cancer must be in the stem cell, says Dr. Reincke. If it were in one of the other cells, the longest it could last would be 120 days before being replaced by a new cell. But leukemia does not end after 120 days.

Dr. Reincke received her M.D. degree from the University of Freiburg. She was engaged in cancer research when Dr. E.P. Cronkite, Chairman of the Medical Department, spent a sabbatical at Freiburg. As a consequence of this meeting, she came to Brookhaven eight years ago to learn about cell kinetics - the dynamics of cell replacement - a field in which Dr. Cronkite is a pioneer.

For the first two years here, her research was supported by a Damon Runyon fellowship. Subsequently, she presented a proposal to the Leukemia Society of America,

Inc., and was awarded a five-year scholarship from the Society in 1972.

Dr. Leonard Hayflick of Stanford University, who is conducting experiments on human cells, was recently reported in the press as saying that in laboratory tests, cells subdivide between 40 and 60 times and then die out. "As the renewal of cells is accomplished by dividing into two and if the capacity to keep on dividing is finite, then what?" says Dr. Reincke.

"If Hayflick is right and the renewal powers of cells can be exhausted, this exhaustion may never come about within an ordinary life span and with ordinary stresses," she said. However, extraordinary demand for stem cell regeneration may hasten the exhaustion. Dr. Reincke cites the possibility that a vast drug treatment in, say, childhood leukemia, while killing the diseased stem cells, may use up so much of the renewal capacity of the healthy stem cells, that there is not enough left for a normal life span.

Also, if the cell division is finite, Dr. Reincke speculated that "it may be so large you could never measure whether it is finite, maybe enough for 300 years of life." The present life span of man is about 70 years, and as she says, "70 is plenty for me."

Dr. Reincke and Technical Associates Naomi Pappas and Michael Makar, and Technical Specialist Betty Heldman, work with two strains of white and black mice in the project. The mice are used in the assay, an important process in the research, in order to measure the stem cells. "If you  
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Carl Thien (left) and Doug Humphrey set up *Quest* paraphernalia.

## Brookhaven's Show Is Tops

*Brookhaven's Quest*, the dramatic, fast moving slide presentation, which portrays the story of the Laboratory and its people, has won first place in audio-visual competition for the northeast section of the International Association of Business Communicators.

Today, Carl Thien and Doug Humphrey, co-producers of the show, are in New York to accept the award at a luncheon in the Barbizon-Plaza Hotel. *Quest* will be the highlight presentation at the luncheon.

The award was given on the basis of how well the presentation worked to effectively communicate with the intended audience, and technical excellence was a basic requirement. The honor is particularly significant as the show was an "in-house" production made after hours, and competed against such companies as Eastman Kodak and Xerox.

The 20-minute *Quest* is a three screen multi-media slide show using five projectors. It was first shown to employees last April and has since been viewed by the thousands of citizens who came to Open House in May. It is a feature on the program for all groups touring the Laboratory during the year.

Initially proposed by Carl Thien, Public Relations Officer, in July 1974, *Quest* was given the go-ahead in November of that year. Together with Doug Humphrey, staff photographer, he began the back-breaking work of choosing slides, music, editing tapes of radio programs and lectures and writing narration.

Some 1000 slides later, they selected 286 as representative of the Laboratory's work, to be shown with 371 cues. Many an evening after work, the producers worked un-

til two in the morning sifting slides, and listening to stacks of records to find suitable music. The five pieces eventually chosen were selected for the beat and to match the mood of the picture being shown on screen.

Then came weeks of "make that a horizontal slide, take an air shot of this, music up, music down, pause here, revise, revise." "You know," said Thien, "there is as much work in fading from a slide to a blank as there is in fading from a slide to a slide."

Besides Doug Humphrey, photographers Mort Rosen and Bob Walton shot and re-shot pictures for inclusion in the show. The slides are a mixture of old and new photographs. The panorama of employee photos which concludes the *Quest* was culled from pictures taken over the years for the *Bulletin*.

Julie Peierls, wife of Ron Peierls, Physics Department, and active in Laboratory theatrical productions, does the 6-minute narration interspersed throughout the show. Graham Campbell, Applied Mathematics, did the preliminary narration.

Sam Eneman, a New York based audio-visual consultant, with particular knowledge of design and programming, lent his expertise in making the "racetrack" - the overall plan for cueing in all the bits and pieces.

*Quest* replaces the motion picture "Spectrum" which was made by an all-professional crew and which became outdated. In order to revise the movie, the Laboratory would have had to shell out at least \$45,000. Using all Laboratory personnel, the cost of *Quest* was about \$4000. The versatility of the slide show format is a great advantage over a movie. Updating of the Laboratory's changing programs can be easily accomplished.



Dr. Ursula Reincke and laboratory associates on stem cell renewal research, from left, Mike Makar, Naomi Pappas and Betty Heldman.

## Retirement Plan

The Employee Retirement Income Security Act of 1974 requires changes in the AUI Retirement Plan. The following changes will be effective January 1, 1976.

### Eligibility Revision for Employee Participation in the Retirement Plan

All regular employees (including Research Associates and employees working 1000 hours or more per year) who have attained age 25 with three years of continuous service are eligible to participate in the Plan. Such employees who have attained age 30 and have completed three months of service with AUI will be required to participate in the Plan. Participation includes the AUI contribution in both cases.

Personnel Services will contact all employees who will be eligible to participate in the Retirement Plan prior to their becoming eligible. Information regarding the Retirement Plan will be provided and appointments scheduled for filling out necessary Retirement Plan enrollment forms.

### Refund Option

Terminated employees with total contributions of less than \$2000 may request from TIAA-CREF a repurchase of their annuity contracts and receive their entire accumulation, including AUI contributions.

Repurchase of annuity contracts with total contributions in excess of \$2000 will not be permitted and must remain in force.

### New Maximums Established for Salary Reduction Options

The maximum of retirement plan contributions most employees will be permitted to tax-shelter through a salary reduction agreement will be 12 percent of their total base salaries. In some cases the amount may be less.

Payroll will notify those individuals whose salary reduction agreements defer amounts in excess of the new maximum permitted under the law.

A new salary reduction agreement is required for any employee changing the salary reduction amount for 1976.

If you have any questions concerning these changes, please contact R. Schonberg, Ext. 2881, or B. McAlary, Ext. 2494.

## Biophysicist To Give 131st BNL Lecture

"Neutron Scattering Analysis of Biological Structures" is a new addition to the ever growing number of physical techniques that have been employed to unravel the complexities of living things.

This will be the subject of the 131st BNL Lecture to be given by Benno Schoenborn, Biology, on December 3, at 8 p.m. in Berkner Hall.

About ten years ago during Schoenborn's stay at the Molecular Research Council Laboratory in Cambridge, England, it became apparent to him that neutron scattering could provide a major new technique in protein crystallography, membrane and virus analysis, providing information hitherto inaccessible.

Since 1968 he has developed neutron scattering for the analysis of biological structures. During the first few years Schoenborn and his colleagues worked on their own, producing evidence that neutron protein crystallography is indeed possible, and then widened their scope by extending this neutron technique to membranes and protein complexes.

Their work was eventually taken up by a group in Harwell, England, and more recently at the I.L.L. in Grenoble and at Dubna near Moscow. The biological neutron scattering symposium held last June



Benno P. Schoenborn — photo by Rosen

was a sort of coming-of-age celebration and brought nearly all the active scientists in the field to Brookhaven.

Neutrons are ideal for the study of biological structures since they enable the localization of the chemical constituents much better than equivalent x-ray studies. Neutron studies have been particularly

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## Holiday Notices

Because of the Thanksgiving holidays on November 27 and 28, please make a note of the following:

- The *Brookhaven Bulletin* will not be published next week. Classified ads for the December 5 issue should be received no later than noon, December 1.
  - The *Pool* will be closed on November 27 and 28, but will be open the following Saturday and Sunday from 1 - 6 p.m.
  - *Paychecks* for both weekly and monthly employees will be distributed on Wednesday, November 26. A memorandum from Payroll has been sent to all departments about the handling of monthly time cards.
  - The *Cafeteria* will operate only the Snack Bar Service from 9:00 a.m. until 2:00 p.m. daily over the Thanksgiving Holiday weekend, Thursday, November 27 through Sunday, November 30.
- The Center will be closed on Thursday, Friday and Saturday, reopening at 5:00 p.m. on Sunday, November 30.
- Happy Turkey to All!

## Arrivals & Departures

### Arrivals

Jack Allentuck	Applied Science
Arnold A. Dubow	Applied Science
Dennis J. Fuzie	Staff Services
Edward C. Jackle	Central Shops
Jong H. Kim	Applied Science
Samuel G. Logan	Central Shops
Stephen E. Mercier	Plant Engrg.
Edwin A. Pedersen	Plant Engrg.
Edna D. Sceviour	Medical
Henry J. Schnakenberg	Applied Science
Jeffrey S. Sunray	Physics
Brijesh Vyas	Applied Science
Judith B. Weinstein	Chemistry
Samuel P. Yamin	Accelerator

### Departures

Louis DiPietro	Health Phys. & Safety
Jan Kooistra	Biology
Helen W. Richter	Chemistry
Gerald Walker	Applied Science

## Traveling Abroad

The policy of restricting official foreign travel by air to U.S. carriers has been expanded to include travel by ship. Associate Director Vincent O'Leary has announced guidelines relative to availability and unavailability of American flag service. The Travel Office will assist employees in determining when an American carrier is considered to be "unavailable," and will not obtain tickets on foreign carriers unless "unavailability" of American carriers can be established.

## Last Reminder On FTS

By the time you come back from Thanksgiving holidays, the new FTS system will be in operation. The directories have been distributed and the new "bull's eye" should be on your telephone. If you're still not sure what it's all about, call extension 2000 for the answers to your questions.

## Local 2230 IBEW Meeting

Because of the Thanksgiving Holiday, Local 2230 will hold its regular monthly meeting on Monday, November 24, 1975, in the Knights of Columbus Hall in Patchogue at 8 p.m.

There will be a 2 p.m. meeting in the Union office on Oak Street for shift workers.

## Camera Club Meeting

The BNL Camera Club will hold a meeting on November 24, at 6:30 p.m. in the Recreation Building.

All are welcome, but especially new members are urged to attend in order to acquaint themselves with the darkroom facilities.

Call 924-7389 for further information.

Come See Audubon Wildlife  
Film and Lecture  
"Adventure High Arctic"  
Friday, November 21  
8:00 p.m. in Berkner Hall  
\$1.00 adults, 50¢ children

## BNL Lecture (Cont'd)

successful with regard to membrane systems like myelin, the sheath surrounding nerves, and retinal rods, the membrane system that converts light to a nerve impulse.

The main advantage of using neutrons instead of x-ray for such architectural studies of biological components lies in the different way neutrons interact with hydrogen and deuterium, atoms that can scarcely be detected by x-rays. Hydrogen atoms play a significant role in biological molecules; they account for about one-third of all atoms and play a major role in the catalytic action of enzymes.

Neutron protein crystallography makes it possible, therefore, to elucidate the atomic position of all atoms including hydrogen in molecules with several thousand atoms. The structure of myoglobin, the oxygen storage device in muscle, has been determined by neutron diffraction to determine the position of hydrogens as well as the ice-like water structure that surrounds these types of molecules.

Apart from these detailed studies on the atomic architecture of biology, neutrons have also given insight into the internal arrangements of the ribosome. Ribosomes are the factories that produce all the proteins; the blueprint of the particular protein to be assembled is read off the genetic code (DNA).

A complex machinery of enzymes and other nucleic acids selects the various components, joins them together and properly folds the newly made protein. In order to understand these machines, pharmacological agents are often bound to proteins to find out how drugs alter the structure and influence the chemical reactions.

In order to fully utilize the present neutron facilities, Schoenborn has formed a number of collaborative efforts with research groups at Yale, Brandeis, Boston and the University of Pennsylvania. These groups contribute a vast array of biological problems, while the Reactor Division, the Physics Design Group, Applied Math and Instrumentation have set up some of the sophisticated mechanical and electronic machinery needed to unravel these problems.

Benno Schoenborn's education was a hybrid of electronics, physics, physiology and molecular biology. Born in Basel, Switzerland, he attended Swiss schools and after finishing the gymnasium traveled to America. In Los Angeles, while working as an electronic technician, he attended U.C.L.A., first in electrical engineering, then in physics. After receiving a bachelor's degree, he continued his travels, this time to Sydney, Australia, where he took a position as a teaching fellow at the University of New South Wales.

He received a Ph.D. in solid state physics from that university in 1962 and later the same year accepted a postdoctoral fellowship at the University of California, San Francisco. Shortly after he became an assistant professor in biophysics and pharmacology, pursuing research on the theory of anaesthesia. A two-year leave of absence took him to the MRC lab in Cambridge, England where he worked on the localization of the binding sites of anaesthetics such as xenon and cyclopropane to proteins, after which he returned to San Francisco. In 1967, Schoenborn joined the Brookhaven staff and is now a Senior Biophysicist in the Biology Department.

A buffet supper will be served at the Brookhaven Center before the lecture beginning at 6 p.m. Reservations should be made in advance by calling Ext. 3541 before 5 p.m. Refreshments will be available in the lobby of Berkner Hall immediately after the lecture.

## Cafeteria Menu

### Week Ending Nov. 28, 1975

<b>Monday, November 24</b>	
Tomato Vegetable Soup	
Keilbasy w/Sauerkraut	1.05
Ham Steak & 1 veg.	1.15
<b>Tuesday, November 25</b>	
Cream of Potato Soup	
Fried Chicken & 1 veg.	1.10
Macaroni & Cheese & 1 veg.	1.00
<b>Wednesday, November 26</b>	
Onion Soup	
Corned Beef & Cabbage	1.25
Tuna Noodle Casserole	1.10
<b>Thursday, November 27</b>	
Snack Bar Open 9 a.m. to 2 p.m.	
<b>Friday, November 28</b>	
Snack Bar Open 9 a.m. to 2 p.m.	

## "It's a Small World" at the Center, November 12



Ruth Dimmler, Hospitality Chairperson, Tove Abrams, Norma Camp and Karen Hasselriis listen as Dolly O'Connell talks about the dolls she exhibited at the Fall Tea and Sherry Party. Dolls were also exhibited by the Museums at Stony Brook and the Historical Society of Bellport-Brookhaven.



Barbara Kowalski (left) and Gail Bird, a member of the Hospitality Committee.



Evelyne Agoritsas (left) stops for a cup of tea poured by Kimie Shimamoto.



Art-Deco room in miniature, one of the dollhouses exhibited by Karen Hasselriis. Other dollhouses were lent by Norma Camp. — photos by Rosen



Ginny Thien (left) and Frances Caruso examine doll collection as Roberta Zucker (left) and Lucy Kinne chat in background.

Ruth Dimmler, Chairperson of the Hospitality Committee, wishes to thank all the members of the Committee who worked so hard on the Tea and Sherry Party, and every member of the Committee wishes to extend her most sincere thanks to those who brought in their dolls and dollhouses for display, contributed food, and helped in any other way to make the party such a success.

## Hospitality News

The next morning coffee will be held on Tuesday, December 2, from 9:30 to 11:30 a.m., at the Brookhaven Center. Babysitting will be provided free of charge.

Ms. Barbara Gray will show us how to make pine-cone wreaths for the Holiday Season. Everyone is welcome.

**BROOKHAVEN BULLETIN**

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BERNICE PETERSEN, Editor

DOUG HUMPHREY, Photo-Journalist

CAROL GOLDSTEIN, Copy Preparation

40 Brookhaven Ave. Upton, N.Y. 11973  
Telephone 516 345-2345

CARL R. THIEN, Public Relations Officer

**Letters To The Editor**

To the Editor:

Many thanks to all my friends for the cards, phone calls, and visits while at home recuperating from my illness. I appreciate your concern and thoughtfulness and hope to see you all soon.

Sincerely,  
Mike Iarocci

**Rambling Around**

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

● A practical demonstration of the value of a scientific education was recently reported in the press.

A physicist accused of traveling 33 miles an hour in a 25-mile zone argued in court that the ionized air preceding a thunderstorm affects a speed radar unit. A thunderstorm struck in the area after he received his ticket.

The judge accepted his argument and said static electricity in the air could bend the straight radar beam and result in a false reading.

They are both theoretical physicists at Los Alamos Scientific Laboratory - one also serves part-time as a Municipal Court judge.

● Nature magazine held a limericks competition to illustrate scientific principles. Herewith the winner!

"Apollo to Mission Control -  
We are almost in reach of our goal,  
But our readings of G  
Seem excessive to me,  
So we may be inside a black ho . . ."

● How about sitting at a desk, typing or whatever you do there, and staying fit and svelte at the same time?

The chair you sit on is the key.

After work, generally desk-bound these days, those who are interested in their health and shape, go charging off to tennis courts, swimming pools and the like. The rest of us just spread in all directions.

Now if we could sit in a chair equipped with pedals, we could type, do accounts, solve equations, and pedal like crazy at the same time.

This could result in increased circulation, clearer heads, greater productivity and a plus all around.

● Bumper sticker seen on site:  
Save a tree  
Eat a beaver.



Police Officer Joyce Robinson affixes sticker to front left bumper of her car in Police parking lot.

**Stem Cell Renewal (Cont'd)**

can't measure stem cells, you can't do anything," says Dr. Reincke.

To drain stem cells into extraordinarily high renewal rates to see if and when they get exhausted, Dr. Reincke uses a radioactive isotope, Iron-55, in mice. She explains the technique this way:

"The isotope is not recognized by immature red blood cells and they take it up like ordinary iron to synthesize hemoglobin. The radioactivity of Iron-55 will subsequently destroy the immature red cells, and this is called Radioiron-Cytocide. Other than red cell precursors are much less affected because they don't take up lots of iron and almost no radiation gets out of the cell into the neighborhood. Thus, stem cells are placed under high demand for red cell resupply while suffering little direct damage. If their division capacity is unlimited they should sustain the mouse throughout a normal life span in spite of ongoing cytoicide. But if the renewal capacity of stem cells can be exhausted, then the mouse might die early from lack of blood cell replacement."

Dr. Reincke grew up in Germany during the Hitler years. Her father, a scientist and one-quarter Jew, was forced to leave his profession and found office work in a factory. He was later drafted into the army and was killed during the war. The family lived in a part of Germany that later became East Germany. One day, Ursula packed a small bag, took the subway to West Berlin and declared herself a refugee. Since that time, her mother, brother and sister have all made their way to West Germany.

Last month, Dr. Reincke participated in a symposium in New Orleans for the Leukemia Society of America. According to reports sent to the Bulletin, she was a "star" on radio and TV programs and with the press in that city.

**CREF Values**

1975			
January	\$30.67	February	\$32.80
March	33.77	April	36.12
May	38.07	June	39.88
July	36.81	August	35.86
September	34.31	October	\$35.89

**'76 Bumper Stickers**

A supply of BNL vehicle stickers for 1976 has been distributed to all departments throughout the Laboratory. They are valid from now through December, 1976.

Employees and official guests will be issued stickers by their department's designated representative upon request. The Personnel Office will continue to issue stickers to new employees. They may also be obtained by any employee at Police Headquarters.

A person who regularly drives a privately owned vehicle on site is requested to register it. Vehicle registration cards are also available from your department representative and are to be completed when you pick up your sticker.

Please note: The sticker is to be affixed to the left side of the vehicle's bumper, not on the windows.

BNL vehicle stickers are intended to identify vehicles of our employees and associates and to permit speedy entrance and exit from the Laboratory site. Please avoid the possible inconvenience of having to show your I.D. card at the gate.

All previously issued stickers will be invalid as of January 1, 1976.

**Volleyball**

Joe Mead

**Men's League Standings:**

	Won	Lost
Cool Tools	3	0
Spikers	3	0
Busters	2	1
Atom Spikers	1	2
Circuits	0	3
Easy Aces	0	3

**Charlie Brown Cast**

Those in the cast of the musical, "You're A Good Man, Charlie Brown!" who wish to learn their songs may contact Nancy Bernius, Ext. 3404, to make arrangements to meet.

**Bowling News**

Cathy Van Noy

**Black N Blue League**

"Congrats" to the "Odd Balls who are the winners of the first third. For the past two years, the team languished in the cellar but now, they are the team to beat. We have two new members joining the 678 club. Don Schug with a 690 and Dick Murgatroyd 686. High games were Don Schug 218, Dick Murgatroyd 212, Lew Jacobson 208, Ellie Murgatroyd 191, Debbie Antonio 186, Wilma Erickson 164. Pots were won by Don Schug 264 and Ellie Murgatroyd 247 gross.

**Red League**

S. Kiss had a good night bowling a 233 scratch game. This brings his average to a 176. Other 200 games were E. Sperry 211, W. Reams 207, J. Sheehan 205, W. Kolmer 205, J. Ferrero 205 and J. Scesny 203.

**Green League**

The "Got-A-Hit-Ums" still hold their lead as they squeaked five points from the "Charley Browns." The "Blue Jays" moved up three points in second as they took eight from the "Phoubars". 200 games were rolled by D. Stelmashuk 234, G. Speidell 215, G. Meinken 201 and F. Stahman 200.

**Purple and White League**

The "Flounders" are still on their winning streak. After taking first place for the first quarter, they made bait out of the "Brown Bulls" and are leading this quarter with a 14-0 lead. High for the evening is Dot Pollock with a 447 series and 651 gross. E. Sperry 190, M. Bull 194 and J. Scott 205 for a 550 scratch series.

**Pink League**

The "Spares" are well on their way in the second third as they are still in first place with the "Swingers" a close second. High game was rolled by Pat Oster with a 178.

**BERA Nominating Committee**

The BERA Executive Board has appointed a Nominating Committee to select the slate of candidates for the 1976 BERA election.

The committee members were chosen by the guidelines set forth in the Nominating Procedures of the BERA Policy Manual which states . . . "the Executive Board shall appoint a Nominating Committee of approximately nine employees who have actively participated in the recreation program. The Board shall attempt to have the committee representatives of as many Laboratory subdivisions and recreation interests as possible . . ."

The committee members chosen are:

- Kenneth Asselta - Physics
- Audrey Bangel - Reactor
- John Binnington - Technical Information
- Lindora Boyd - Medical
- Walter Chornoma - Plant Engineering
- Dennis Klein - Accelerator
- Gerald Levine - Health Physics & Safety
- Frances Scesny - Personnel
- McHarrell Thomas - Medical

Each of the committee members is now considering possible candidates and will meet on Monday, December 8, to present their selections. Any employee wishing to make suggestions for candidates may do so by contacting any one of the above committee members.

**Safety Award**



John Jewett, ERDA Area Manager, presented an Award of Honor to Brookhaven last week for operating 4,486,194 man-hours March 1, 1974, to December 31, 1974, without a disabling injury. From left, Laboratory Director George Vineyard, Mr. Jewett, Associate Director Victor Bond and David Schweller, ERDA.

**1976 BNL Holidays**

New Year's Day	Thursday	January 1
Floating Holiday	Friday	January 2
Washington's Birthday	Monday	February 16
Memorial Day	Monday	May 31
Independence Day	Monday	July 5
Floating Holiday	Tuesday	July 6
Labor Day	Monday	September 6
Veteran's Day	Thursday	November 11
Thanksgiving Day	Thursday	November 25
Day after Thanksgiving	Friday	November 26
Christmas Eve	Thursday	December 23 (1/2 day)
Christmas Day	Friday	December 24

The schedule is being announced earlier than usual because the first floating holiday occurs on the second day of the new year.

Note: All New York State public schools observe Veteran's Day as designated by the state, on November 11. It seems more practical for the Laboratory to be consistent with local practice, therefore, we are designating November 11 as Veteran's Day, starting in 1976. The federal government will do the same beginning in 1978.

## Classified Advertisements

### Placement Notices

Each week the Personnel Office lists personnel placement requisitions, currently being processed. The purpose of these listings is, first, to give notice of all non-scientific staff positions being filled and, second, to give employees an opportunity to request consideration for themselves through the Personnel Office. In filling vacancies, the Laboratory's objective is to give first consideration to present employees, as follows: employees within the immediate group having the vacancy, employees within the department or division, employees within the Laboratory as a whole.

For further information regarding a placement notice, or to request consideration for an available position, contact Supervisor, Personnel Placement & Development, extension 2874 or 2882.

267. MATHEMATICS ASSOCIATE - BS or equivalent in mathematics or computer science with 1-2 years' experience in Fortran programming and mathematical analysis. Department of Applied Science.

268. CHEMISTRY ASSOCIATE - Minimum BS or equivalent in chemistry with training in structural chemistry or crystallography and a good working knowledge of Fortran. PDP-10 computer experience desirable. Chemistry Department.

269. OPERATIONS ENGINEER - BS or equivalent in Electrical Engineering or Physics with 3-5 years' experience in power supplies and control systems. A working knowledge of computers and peripheral equipment desirable. Responsibility includes supervision of technicians involved in AGS shift operations. Accelerator Department.

270. SECRETARY - Department of Applied Science.

271. CUSTODIANS - Staff Services Division and Plant Engineering Division.

272. DATA SERVICES ASSISTANT - Part-time position. Instrumentation Division.

273. ACCOUNTANT - BS degree or equivalent in accounting, with 3-5 years experience in preparation and analysis of financial statements. A knowledge of Laboratory's fund accounting system is desirable. Fiscal Division.

### Autos & Auto Supplies

68 RAMBLER - Wagon, 6 passenger, 6 cylinder, auto trans, new snow tires, very good cond. Ron Manning, Ext. 3887, 286-0353 after 6.

2 CHROME WHEELS - 14", new for Chrysler products or Ford, fits both, deep dish. \$25. 588-4703.

71 TOYOTA - Station wagon, Carolla 1200. \$775. John, 475-0126 after 5.

CAR STEREO SPEAKERS - Set of walnut speakers, 9x11", \$10. A. Cambell, Ext. 3354.

69 FORD GALAXIE - 500, good cond. \$450. 588-1713.

65 FORD - 4 dr, runs good, needs exhaust system. \$75. Charlie, Ext. 3950.

65 BUICK SKYLARK - New shocks, brakes, hoses, water pump, good tires, 17 mpg, 80,000 mi, good for another 80,000. \$450. Ext. 3581.

5 WHEELS W/TIRES - Dodge, 8-hole, 800 16-5, 6-ply, 2 tires almost new. Elton E. Tank, 878-1572 after 5:30.

ASSORTED RIMS - O. Booker, Ext. 4719.

73 JEEP WAGONEER - V8, 4 dr, ps/pb, ac, tinted glass, luggage rack, deluxe interior, exterior, excel cond. 20,000 mi. \$4500. Paul, 281-3000.

67 FORD VAN - 6 cyl, standard long body. \$625. 475-2101.

64 AMERICAN - Clean, good running cond, good transportation. Asking \$225. R. Rau, Ext. 3830, 286-0451.

72 CHEVY - Low mileage, ps/pb/ac, excel cond. \$2200. 473-0178.

72 VW ENGINE - 16,000 mi, asking \$300; other parts reasonable. 589-9103.

74 CHEVY - Monte Carlo, swivel bucket seats, ac/ps/pb, wire spoke rims, rear defogger, radials, full vinyl roof. Jim, Ext. 3840.

73 PINTO HATCHBACK - 4 spd trans, ac, 24,000 mi. \$1700. Ext. 3506.

71 DODGE MONACO - Must be seen, ac/ps/pb, auto. \$1000. 589-6151 after 6.

68 PONTIAC LEMANS 350 - V8, auto, ps, needs minor work. \$400. Dick, Ext. 4313.

3 TIRES - 685-15; (3) 645-13", come have a look, reasonable. 475-0144 after 6.

70 OPEL KADETT - 2 dr sedan, 59,000 mi, 2 new snows, new clutch, radio, good econ trans. 286-3742 after 6.

TIRES - 520-12, 700-13. \$10, each very good. Hank, Ext. 3848.

67 OPEL - Over 30 mpg, \$150. Ext. 3535, 878-4878.

70 CHEVY NOVA - Small V8, 2 dr, vinyl top, auto, r&h, 47,000 mi, excel running cond, no dents. Asking \$1350. 281-6652.

### Boats & Marine Supplies

12' ALUM STARCRAFT - 9 1/2 Evinrude, Tee Nee trailer, oars, cover & accessories, perfect cond. Ext. 2482.

TACKLE BOX - Big Adventurer #2036 w/6 half trays which rotate out, box 18"x10"x10", brand new. \$14. Phil, Ext. 4636.

23' PEMBROKE - Sport fisherman, complete refinish, flying bridge, full canvas, d/f, extras, excel cond. Asking \$1650. Laird, Ext. 4068, 298-5092.

### Miscellaneous

FENWICK LUNKER STIK - & Garcia 6000c, brand new. Ext. 2482.

FENWICK TROUT ROD - & skirted Daiwa ultra light reel, brand new. Ext. 2482.

REVOLVER - K38, target trigger, hammer & stocks, hardly used. Ext. 2482.

RELOADING EQUIPMENT - & accessories, complete, RCBS, rock chucker & RCBS dies, .38WC, mint cond. Ext. 2482.

FLY ROD - Pflueger reel & many accessories, never used. Ext. 2482.

.177 GERMAN AIR PISTOL - Rifled barrel, blued steel w/oversize genuine walnut target grips, single shot, hardly used. Ext. 2482.

HO TRAIN SET - Mounted on table, beautiful layout, incl mountains, lakes, airstrips, numerous accessories. \$100. 286-0799 after 4.

TABLE & 4 CHAIRS - Painted & hand decorated, excel cond for dining rm or kitchen, \$125; doll house, wooden A-frame, handcrafted, wired. \$75. 286-0799 after 4.

AMER INDIAN JEWELRY - Sterling silver, turquoise, coral, bracelets, rings, earrings, necklaces. Marie, 588-5586.

PLUSH CARPET - 1 1/2" deep, antique gold, 9x11, for area or w/w, foam padding incl. \$55. Dick, Ext. 3860.

SOFA - Early American, high back 3 cushions, dark green, dark pine trim, pleated skirt, good cond. \$60. Dick, Ext. 3860.

WASHER - \$80; dryer, \$100, GE, both in very good cond. Ext. 2031, 751-2139.

WINTER COAT - Jr. size 13, clean, \$5; crazy curl iron, used once, \$10. Jolie, Ext. 3993.

26" SNOW BLOWER - Craftsman, 6 hp, self-propelled, elec start, windshield. \$295. Ext. 4761, 924-3556 eves.

FURNACE FILTERS - Warm air, 20x20x1, 11 for \$2. Ext. 4761.

KIRBY VACUUM CLEANER - W/all attachments, excel cond. \$60. 286-1062.

FIREPLACE SET - All brass, \$50; andirons fence, tools & rack, very old, very good. Ed McKenna, Ext. 4592.

BEDRM FURNITURE - Lightwood, 2 dressers, 2 night stands, double bed, box spring & mattress, very clean cond. \$150. 475-7737.

AIR CONDITIONER - A1 cond, must sell, Big Unite, will cool half a house. \$75. 588-4703.

CUB SCOUT UNIFORM - Size 12, \$8. 289-0413.

JR DINING RM SET - 1 yr old, French Provincial, walnut, china closet, 4 chairs. \$300. 567-3962 after 6.

AM/FM STEREO RADIO - & phonograph, Sears silvertone, contemporary cabinet, \$100; Chibini mini trail bike. \$75. E. Turner, Ext. 2456.

COMPLETE TOOL SET - New, never used, 1/4, 3/8, 1/2" socket drive & more, orig cost, \$50, sell \$25 firm. Ken, Ext. 3574.

OVAL DINING ROOM TABLE - All wood, 4 chairs, good cond. \$50. Jack, Ext. 2907.

ELEC WALL OVEN - Yellow, \$35. Ext. 4240, 286-0295.

ZIG ZAG SEWING MACHINE - In cabinet, \$65. Ext. 4240, 286-0295.

STORAGE BOX - Black vinyl covered steel, lock & key to fit on transmission hump of stick shift cars. \$10. Bill Espensen, Ext. 3992.

65 TRAVELMASTER TRAILER - Sleeps 6 w/awning, spare wheel w/tire, good cond, gas refrig, heat & water heater. \$1900. Elton E. Tank, Ext. 3762.

BABY CAR BED - \$7.50; wind up swing, \$7; both excel cond; backpack & bouncer chair, \$2.50 each. 928-4922.

BABY ITEM - Back carrier, \$1.50. O. Booker, Ext. 4719.

GRILL - Hamilton Beach Baconer, never used. \$20. Bill Espensen, Ext. 3992.

DINING RM TABLE & 6 CHAIRS - 4 straight back, 2 captain, w/pad for table, matching glass top server, med color. \$130 or best offer. 363-6845.

LOVESEAT - French provincial, armless, orange, eider-down cushion w/foam core. \$35. 286-3357.

SEARS REFRIGERATOR - 2 dr, auto ice cube maker, \$35; 2 oven eye level height elec stove, \$25; both 11 yrs old. 363-6845.

GAS RANGE - Bottle caloric, 30" used one month. Cost \$325, asking \$200. 585-7094 after 5.

71 COX TENT TRAILER - Sleeps 5, dinette, oversize 6 ply tires, hitch, spare, like new cond. 929-4417.

OHM MILLIAMMETER - EICO, 565 volt, new, never used, list price \$49.95, sell \$35. D. Vail, Ext. 2046.

POODLE - Miniature champagne, female, 4 yrs old, has papers, adorable, lovable, very good w/children, free. 744-1443.

MEN'S 25" RALEIGH GRAND PRIX - 10 spd racer, like new. \$125. 473-0178.

KIRBY VACUUM CLEANER - W/attachments & waxer, used very little. Cost \$350, sell \$200. Brown, Ext. 2430.

CB RADIO - Radio Shack, 6 channels, mobile or portable, \$50. Don, 929-6646.

TAPE DECK - Revox A77, like new. \$320. Don, 929-6646.

CB WALKIE TALKIE - 3 watts, 2 channels, sharp. \$25. Don, 929-6646.

HANGING LIGHT FIXTURE - Teak & glass, 3 tier, ideal for dining area. \$12. Sandy, Ext. 3369, 286-1022.

CONTEMPORARY BIRCH DINING RM - Solid wood, no veneer, 9 pieces, 4 chairs, table, buffet, china, mirror, leaf. \$300. 744-2821.

HAM RECEIVER - Hallicrafters model S120, in perfect cond to 30 MHz, \$40; 21" Zenith b&w TV w/stand, perfect, \$65. Jack, Ext. 4581.

WILDFLOWER HONEY - Pure natural fresh from upstate, 1 lb, 2 lb & 4 lb jars. \$1.25/lb. Antonia, Ext. 3725, 473-3328, 6-8.

SKI BOOTS - Size 3, children's, laced type, \$5; ice skates, figure, boy's size 7, like new, worn once. \$10. Ext. 4247.

OCILLOSCOPE - EICO 460, wide band DC 5, new in carton, list \$189.50; Heathkit EF2 test & experiment chassis, \$5, scope instruction manual, all for \$150. D. Vail, Ext. 2046.

HI FI - Telefunken concertino, 150, complete set, good cond. \$150 or best offer. Van, Ext. 4515, 4509.

LOVE SEAT - Black & gold tweed, 3 yrs old, excel cond. \$90. June, 589-6243.

IZZY WILL TAKE ORDERS - For Christmas wreaths. Ext. 3693, 3613.

STORM WINDOWS - Wooden frames, various sizes suitable for greenhouse. 363-7119.

23" COLOR TV - Zenith, w/remot control, good cond. \$150. J. Cross, Ext. 2535.

BABY'S FOLDING DRESSING TABLE - \$5; jumper seat, \$3; coffee table for sectional beige formica, \$8. 727-1329.

GREEN SPRING COAT - Checked, size 14, good cond. \$12. 744-5871.

BLAZER - Navy blue, good cond, 1940's style, \$5; melton spring coat, size 12. Ext. 3609.

SHIRT - Pullover, men's medium, blue, new. \$4. Ext. 3609.

2 AIR CONDITIONERS - Good cond, \$50 each; singer sewing machine, power factory model, in work table. \$50. Marie, Ext. 2456.

LAMPS - 1 pair custom decorator type, venetian glass, 45" tall, shades included, \$45 each. 475-8658 after 7.

DINETTE SET - Howell, formica, top table, 36"x47", extra leaf & 5 chairs, excel cond. \$75 or best offer. 475-8658 after 7.

ICE SKATES - Black, size 9, used 2 times, \$10. 475-8658 after 7.

SHOE SKATES - Roller rink, size 4, black w/carry case, almost new, \$15. 475-8658 after 7.

COFFEE TABLE - Mediterranean & 2 catching octagon end tables, 1 yr old, orig \$80 ea, \$150 takes all. Ext. 4208, 924-3756.

MOBILE HOME - 12x60, colonial, 2 bedrm, full bath, appl, oil hot water heat, landscaped in park. \$13,000. 929-6090, 727-8582 after 5.

RADIAL ARM SAW - Dewalt, 3 phase, \$150; wood lathe, Duncap, 48" set new chisels w/mtr, & wood bench. \$150. Ron, 289-1003.

ASST GAMES - Children's ages 5-12, used but still usable, this Sat 11-4, Sun 1-4, South Rd, Wading River. 929-4425.

FREE DISHWASHER - Needs timer, Tappan, 289-1089 after 6.

CRIBS W/MATTRESS - Full size, \$20; small crib, \$10. 751-2740 eves.

HAIR DRYER - Professional, like new. 751-2740 eves.

MANUAL WINCH - \$6; clamp on side mirror for hauling trailers, \$4. Ext. 2485.

GARAGE DOOR OPENER - Excel cond, auto controls, very reasonable. Ext. 3120, 286-0626.

3 WHEEL MOTORCYCLE - Battery operated for 3-7 yr old, \$10; Fisher Price Fam Garage, \$4; doll high chair, \$2; Playschool blocks, \$2; Fort Apache w/plastic figure, \$2. 289-1003.

WALL OVEN - Elec, auto, on-off brushed chrome/glass door. \$30. 368-2361 after 6.

SUNN SPEAKER CABINET - (2) 15" JBL speakers & horn. \$250. 473-3693, Ext. 4021.

### 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

WADING RIVER - Contemporary ranch, central air cond, 3 bedrms, 2 baths, many extras. \$56,500. Virginia Wilson, Ext. 2883, 929-6486 after 5:30.

NORTH SHORE - 3 bedrm, 1 1/2 baths, partially finished cellar, knotty pine interior, fireplace, 20'x30' garage w/pit, 23,000 btu ac, appliances, 15 min to Lab, low, low taxes. 744-3312.

BROOKHAVEN HAMLET - 9 rooms, fireplace, 1 1/2 baths, 4-5 bedrms, study, 2 1/2 car garage, small barn, boat landing, woods, marsh, 2.4 acres. 473-7667.

SHOREHAM - Cape cod frame & brick, living rm w/ fireplace, dining, den, 3 bedrms, kitchen, 2 baths, center hall, 2 car garage, 1/2 acre, beach rights, many extras. \$60,000. 744-8949.

CUTCHOGUE - 1 acre building lot, a water view, beach rights, near schools & shopping, asking \$15,000. G. Laird Stubbings, Ext. 4068, 298-5092.

MILLER PLACE - Ranch, 3 bedrms, living rm, dining, eat-in-kitchen, 2 baths, 150x100 lot. \$38,900. 744-2821.

BLUE POINT - 5 bedrm, 4 1/2 baths, garage, bungalow, rear, excel location. 363-7119.

MILLER PLACE - Log cabin, 1/2 wooded acre, 3 bedrm, 2 bath, cathedral ceiling, fireplace, paneled throughout. \$17,000, takes over \$36,000 7% VA mortgage. 928-6492.

LAKE RONKONKOMA - Spacious 4 bedrm expansion ranch, 1 1/2 baths, modern eat-in-kitchen, 5 appliances, garage, fenced 1/2 acre, attractive residential area, near LIE/Nichols Rd, schools, shopping. \$39,990. George, 588-6352.

#### For Rent

TO SHARE - 5 bedrm house in Medford, 7 mi to Lab, \$30/wk + 1/2 util. Jack, Ext. 4255, 289-6708.

VERMONT VACATION - 3 bedrm mobile home, 10 acres, near fishing, golf, tennis, avail weeks or weekends. Bob, 473-8186.

2 BEDRM APT - \$150 includes heat. 878-0130 days, 878-2215 eves.

BELLPORT - Comfortable one bedrm cottage, furn, near stores, short term lease preferred. Avail Dec 1. Ext. 2441, 286-0932.

#### Wanted

2-3 BEDRM HOUSE - Or apt to rent for approx 6 mos. Ext. 4433.

PHONO RECORDS - 1950's & early 1960's, R&B, R'n'R albums, 78's, 45's, any cond. D. Vaile, Ext. 2046.

LARGE HOUSE - In Bellport to rent, must be on quiet street. Ext. 4320, Ext. 3135.

RUG - 12x10 or any size near it, for sale or give away. 588-4703.

CLAMP ON TOW BAR - U-Haul type to tow car. A. Campbell, Ext. 3354.

ON SITE BABYSITTER - Friendly warm person to care for 3 month old on Mon eves. 472-3329.

CAMPBELL'S LABELS - Soup & bean, send to F. Chandler, Bldg T-89.

PICK-UP TRUCK - 1/2 ton, good cond. Ext. 4173.

OLD 5 GALLON WATER JUGS - Cheap. C. Nielson, Ext. 3935.

CAMPING EQUIPMENT - Used tents, sleeping bags, cooking utensils, etc, for local boy scout troop. 732-6712.

DRAFTING BOARD - 585-4038.

EMPTY CIGARETTE PACKS - Any brand, needed to sponsor young kidney dialysis patient, send to R. Piccione, Bldg 355, Rosalie, Ext. 3160.

MARS HAM GEAR - 281-5173.

TRAILER HITCH - Frame type, for 1967 Falcon sedan. 286-8229.

WAFFLE IRON - Teflon lined, good cond. 286-3742 after 6 & weekends.

NEEDED - Broken guitars for student guitar maker, you may need me someday. Fred Usack, Ext. 4597, 475-4935.

LADDER - For bunk bed, reasonable, prefer maple. Bob Baldwin, Ext. 3481.

GAS BOILER - 100,000 btu capacity or more. 273-7931.

#### Car Pools

BLUE POINT/PATCHOGUE - Wish to join or form car pool. Ext. 2977.

MILLER PLACE - Driver wanted for already existing 3-person car pool. Susan, Ext. 3609.

BAYPORT - Established car pool needs 5th driver. Don Huszagh, Ext. 2408.

#### Lost & Found

LOST - Dapper Dan doll, in gym on day of tea & sherry party, please return if mistakenly taken. Ned, Ext. 4331.

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

### Classified Ad Policy

**Deadline is 12 noon Monday for publication Friday of the same 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.
- Firearms offered for sale or trade may not be brought on site.

- Ads not carried because of space restrictions will be held for publication in the next issue.
- Ads are run only once and must be resubmitted if they are to be repeated.
- Ads should be restricted to 20 words or less and typed or printed on the form provided, and must bear the employees signature.

<input type="checkbox"/> For Sale: Auto & Auto Supplies	<input type="checkbox"/> Wanted	Check <input checked="" type="checkbox"/> the heading applying to your ad. Print or type your ad in 20 words or less.
<input type="checkbox"/> For Sale: Boats & Marine Supplies	<input type="checkbox"/> Carpools	
<input type="checkbox"/> For Sale: Miscellaneous	<input type="checkbox"/> Lost & Found Services	

Ads concerning 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, Room 111, 40 Brookhaven Avenue.

(Name & Phone No. To Call)