BROOKHAVEN BULLETIN
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BROOKHAVEN NATIONAL LABORATORY

Sagamore Lake in the Adirondacks, upstate New York, was one of three lakes intensively studied in a BNL project to understand effects of acid deposition on aquatic systems. Slightly acidic, Sagamore contains humic and tannic acid from the mountains in the background. This photo was taken by Helen Quinby, Terrestrial and Aquatic Ecology Division, who lived nearby during the three-year study.

Acid Rain: Brookhaven's Story

Last week, the Bulletin carried part one of an overview of acid rain research at BNL, describing ongoing field and laboratory studies on the formation of acid rain. The second half of this story deals with effects of acid deposition.

Part II: The Effects

The first signs came from Europe: fish kills in Swedish lakes, dying forests in Germany. When news of these environmental disasters reached the U.S., an alarm was sounded, and the acid rain issue was born.

Acidity is measured on a pH scale, where 7.0 is neutral, lower values are acidic and higher values more alkaline. The scale is logarithmic, which means that numbers one integer apart are actually ten times apart in terms of quantity of acidity. For example, lemons, pH 2.4, are ten times more acidic than raspberries, pH 3.4.

Rain is considered to be acidified when its pH is less than about 5.0. What happens to the environment at those levels?

In general, some lakes have been acidified, causing fish loss. Concerns have refocused from crop damage to effects on forests. And there is evidence that building materials are affected, although these studies are just beginning.

The acid problem is so complex, says Bernard Manowitz, that "we must learn to discriminate between the effects of acid deposition, the effects of other pollutants, and the effects of natural stresses such as droughts and frost on specific ecosystems." Manowitz is chairman of the Department of Applied Science (DAS), which oversees all acid rain research at BNL. He also serves as chairman of the National Laboratory Consortium on acid rain.

Manowitz speaks cautiously because there are still major scientific unknowns about acid rain. While large areas of Europe seem to be severely affected, that seems not to be the case in this country, at least not yet. And to complicate matters, some kinds of damage could be due to not just acid rain, but a combination of acid rain, organics and oxidants. The problem is that these uncertainties get lost in all the media hype.

For nearly a decade, DAS scientists have been studying effects of acid rain in two major areas — crops and aquatic systems.

Lance Evans specializes in crops. Evans left Brookhaven's staff in 1975 to join the faculty at Manhattan College, but has continued working as a consultant to the Terrestrial and Aquatic Ecology Division of DAS.

In the U.S., the number one cash crop is corn, followed by soybeans. "Early on," says Evans, "we had some information that suggested that narrow-leaved grasses, like corn, should not be sensitive to acid rain, whereas those plants that are herbaceous and have broad leaves, like soybeans, should be more sensitive." That information made a soybean farmer out of Evans, albeit on a modest scale.

Through the ensuing years of planting and harvesting soybeans, the BNL team developed an experimental technique now considered to be the best in the country. It is based on good statistical design, which means growing a large number of replicate test plots, and also makes use of a unique rainfall exclusion shelter that protects the crops from natural rainfall. The shelters are designed to automatically roll over the plants and cover them when it rains. The plants are grown instead with artificial rain of varying acidities.

A decrease in yield has been measured at pH 4.4, and visible leaf injury has been seen starting at pH 3.3. Rainfall has been measured at BNL as acid as pH 3.0. The problem in evaluating these numbers, says Evans, is that the weather is different every year. Adds Keith Lewin, who is part of Evans' team, "We grow the soybeans as a farmer would, and the same variables affecting a farmer affect us. We don't have a handle yet on what makes plants sensitive to acid rain, but those variables might have an effect."

What Evans will confirm is that only certain cultivated varieties of soybeans are sensitive to acid rain. "A decade ago, people thought we could kill plants with acid rain," he says. "The press carried statements that built up this conception. Now we know that's not the case."

Press hype about dead lakes has encouraged the same idea about aquatic systems. "There is no such thing as a dead lake," says George Hendrey, head of the Terrestrial and Aquatic Ecology Division and now assigned by BNL to work at the U.S. Department of Energy in Washington. "There might not be fish life, but an acidified lake is often swarming with just a few of the hundreds of species of organisms found in a healthy lake. The problem seems to be that natural controls on these acid-tolerant organisms are removed by acidification, and the biological system is severely destabilized. That means one should worry about acid rain effects on aquatic systems even if they aren't dead."

Hendrey also says there is no doubt now that surface waters of the Northeast are acidified because of acid deposition. "The thing to remember," he stresses, "is that a healthy ecosystem is tightly integrated. If changes occur in one component you will have problems somewhere else. What we've been doing at BNL is gathering enough information on surface water chemistry to assist in making predictions about what might happen to a lake if sulfur deposition is increased or decreased."

During the past seven years of field and laboratory work, Hendrey's group, in collaboration with researchers from

(Continued on page 2)

RHIC Rap

Ludlam Heads New Task Force

The formation of a new task force to continue the development of Brookhaven's plans for a Relativistic Heavy Ion Collider (RHIC) was announced earlier this month by Nicholas Samios, Laboratory Director. The RHIC Task Force, which reports to Paul Reardon, Associate Director for High Energy Facilities, is headed by Thomas Ludlam. Harald Hahn is deputy head of the group, which includes a number of scientists and engineers from BNL and other U.S. and overseas laboratories.

The concept of RHIC is described in depth in a proposal entitled "RHIC and Quark Matter," prepared by the first RHIC Task Force, headed by Mark Barton and R. Ronald Rau, for submission to the Department of Energy in 1984. The new task force will concentrate on carrying the proposal through to an approved construction project.

If the RHIC proposal gets the go-ahead, the Alternating Gradient Synchrotron (AGS) will become the injector for this huge accelerator, where two beams of heavy ions, up to and including gold, will collide at six points in the 2.4 mile ring originally constructed for the CBA project. Since many facilities, including the ring, a complete refrigeration system and the injection system, will already exist, Ludlam said, "It would be an enormous bargain for the nuclear physics community." At this point in its development, RHIC is funded by the Laboratory's Exploratory Research Program (see Bulletin, 10/26/84).

Coordination of the RHIC effort and implementation of heavy ion experiments at the AGS are only two of the reasons for the new task force. "We want to become an international center for high energy heavy ion physics," said Ludlam, "so part of the task force's job will be communication, to make sure all physicists who would use this machine know what's going on. This involves sharpening the research program, keeping in touch with other labs where heavy ion research is being done, and developing an awareness that people who want to come here to do physics can help us polish the design, to make sure the machine is what the international physics community really wants."

Towards that end, the RHIC Task Force is sponsoring a workshop in April on "Experiments for a Relativistic Heavy Ion Collider." Said Ludlam, "Essentially, we're trying to get the whole world to come to design experiments for RHIC."

The task force will also concentrate on research and development (R&D). "In the best circumstances," said Ludlam, "construction will start in fiscal year 1987. This requires updating our original proposal, which called for a five-year construction plan. We can streamline our R&D effort, so our revised proposal will feature a four-year construction plan, allowing us to keep the original completion date of 1990."

Another reason for updating the proposal is to get more specific. The original report, for example, suggested two possible magnet designs, but that has been narrowed down to one, and the proposal must be revised accordingly.

The RHIC magnets will be dual

(Continued on page 2)

Acid Rain (Cont'd)

several other institutions, contributed to some significant findings. In the Adirondacks, Panther Lake, Sagamore Lake and Woods Lake were intensively studied in a project funded by the Electric Power Research Institute. Even though all three receive the same amount of acid loading, Panther Lake is relatively neutral, Sagamore is only slightly acidic, and Woods Lake is acidified. The reason for the differences is that Panther has more soil in its watershed, and that soil is able to provide enough neutralizing capacity to remove most of the effect of acid deposition.

"We've learned that if you know the geology, soils and topography of a lake's watershed, you may be able to predict the lake's response to acid deposition," says Hendrey.

Work in the Adirondacks has led to the development of simple models of lake acidification, which Hendrey is using as part of his testimony in regulatory hearings concerning allowable sulfur emissions from power plants in the Hudson valley.

Some states, including New York, have passed bills that call for a certain percent reduction of emissions over a specified time period. As yet, there is no Federal legislation on controls.

The Federal government, however, is taking action in that direction. Assessment of the acid rain problem on a national scale has been going on for several years, and due this fiscal year is the first document with Federal interagency funding that will integrate research results from all over the country, from scientists like those in DAS who study specific pieces of the problem. BNL's Fred Lipfert is part of the effort.

Lipfert's group has been assigned to assess damage to materials, and he will rely eventually on a study being planned in DAS to study concrete. Elsewhere, other groups will evaluate damage to crops, lakes and forests. At present, there is no field program at BNL to study forests.

Says Lipfert, the national assessment will be done from the perspective that there is environmental damage. The task will be to quantify the damage, identify the sources and eventually recommend cures.

"The hard part is sorting out natural effects from those driven by pollution," says Lipfert. "We are dealing with subtle things, and if you look at the nation as a whole, a few damaged lakes in the Adirondacks may not look all that important in the context of everything else."

In 1987, control strategies will be assessed. The critical question to be answered, of course, is: If emissions are reduced, how much will damage be reduced and at what cost?

"From a national perspective, the damages may not be as bad as we first expected, in economic terms," says Lipfert. "But we cannot ignore the problem and wait for it to go away. What is important is that we must make sure that irreversible damage to the environment does not occur."

And Lipfert's statement perhaps best summarizes Brookhaven's acid rain story. BNL scientists, from atmospheric chemists to meteorologists to ecologists, have been studying acid rain for many years. There is much they know and still much they don't know. Their work is like an insurance policy for the vast environmental riches of this country.

— Mona S. Rowe

Editor's note: Leonard Newman was misquoted in last week's article. The ocean is not acidic; it is well buffered against acid deposition.

Addled Addresses

Mrs. Brookhaven Lab
Brodichaven Nat. Lab.
Chemical Department
University of Brookhaven
B. Havenlab
Brook Heaven National Laboratory
Brookhaven National Lab.
Upjohn, LI, NY
Beckman Labs
Ven Brookhave Broo Kha
Dr. AGS Accelerator Lodge
Brookhaven National Laboratory
Long Island, New York,
United States of America
Brookham National Lab
Brookhaven Nutritional Laboratory
Department of Energy
Grookhaven Area Office

Arrivals & Departures

Arrivals

Gregory P. Heppner ..... AGS
Michael D. Mapes ..... DNE
John C. Mollica ..... Pl. Eng.
Larbi M. Nouri ..... DAS
Alanson R. Warren ..... Pl. Eng.
Debra L. Zahra ..... P&GA
Shou-Yuan Zhang ..... AGS

Departures

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

Barbara Jones ..... NSLS
Michael W. Matthew ..... Chemistry
Nathaniel K. Ng ..... DAS

For Your Information

On Monday this week, the Laboratory reported to Suffolk County officials that water from one of BNL's monitoring wells located just outside the eastern perimeter of the site contains concentrations of tritium that are slightly above the maximum concentrations allowed for drinking water by EPA.

Samples taken from the well last week showed a concentration of .022 microcuries per liter. Although this level does not constitute a health hazard, it is higher than EPA's drinking water standard by about 10%. EPA specifies that drinking water should not contain more than a yearly average of .020 microcuries per liter. Use of this water for cooking and drinking for entire year would produce a dose to an individual of four millirems per year. This is about the same amount of radiation that a person flying from New York to San Francisco would receive from cosmic radiation.

It is believed that the current elevated concentrations are a temporary condition and that the EPA standards will not be exceeded when the tritium concentrations are averaged over the specified year-long time period. BNL's drinking water has not been affected by this situation.

The Laboratory has 110 monitoring wells on site and around the perimeter, as well as six off site. Routine sampling is done by the Safety and Environmental Protection Division (S&EP).

At present, S&EP personnel believe that the above-normal tritium concentration is due to a discharge from the Lab's sanitary sewage system in October, 1984, when the tritium level in the discharge was higher than normal, although still below Federal guidelines.

S&EP is continuing to take daily samples from the monitoring well. As a precaution, Suffolk County has taken samples of drinking water from homes in the vicinity of that well. At press time, lab analysis of water from those homes had not been completed.

Equipment Demo

All County Business Machines Corp. will present their line of Adler electronic typewriters and calculators at Berkner Hall on Friday, February 8, from 9 a.m. to 4 p.m. They will also show the Wang Office Assistant, a complete word processor, and demonstrate that all electronic typewriters can be upgraded to word processors.

RHIC (Cont'd)

magnets — two separate and independent superconducting magnets in the same vacuum vessel. The heavy ion beam will go through one magnet in one direction and through the other in the opposite direction.

On December 17, testing of the first RHIC demonstration magnet began, conducted by the Magnet Division of the Accelerator Development Branch of High Energy Facilities, which worked closely with the Accelerator Theory Branch in the design of the magnet. Called "Quick RHIC," because it was assembled and tested in record time, the magnet exceeded its design specifications, which call for a magnetic field of 3.5 teslas (T) at a temperature of 4.5 kelvins (K). But when cooled to that point, the magnet reached 4.3 T, with essentially no training. When cooled still further, to 2.6 K, fields soared to 5.3 T.

As physicist Per Dahl pointed out, this test "signifies cooperation between laboratories. Though we used conductor material left over from CBA, the coils for this magnet were made at Fermilab. The RHIC magnet's coil has an inner diameter of about 7.5 centimeters, which happens to be almost exactly the inner coil diameter of the coils for Fermilab's Tevatron magnets, so we could use their tooling, instead of making our own. That's one reason we were able to get Quick RHIC so quickly."

Fermilab made several coils for BNL. The first went into Quick RHIC, while the others were shipped to the Brown-Boveri Corporation in West Germany, which will assemble additional RHIC magnets.

The magnet test also showed that some new design features will work. Until now, Brookhaven's experience has been with two-layer coils in the magnets. The RHIC magnet features a single layer coil. Also, although this demonstration magnet was about five meters long, its full-length successors will be ten meters long, and they must be curved to fit the bend in the RHIC tunnel. "This demonstration magnet was our first experience with a curved magnet," Dahl said, "and we needed to see if it worked. It worked very well."

— Anita Cohen

For the third year, ever-popular gospel singers will raise the roof in song at Berkner Hall. The Gospel Extravaganza on February 2 at 7 p.m. will feature the Young People's Choir from Somerset, New Jersey, a 25-member group which was established 18 years ago. They will be joined by the Friendship Baptist Church Mass Choir of Riverhead, the Holy Trinity Baptist Mass Choir of Amityville and Frank Anthone White and the Voices of Truth, a group of seven singers from area churches. The program will include both traditional and contemporary gospel music. Tickets may be purchased in advance from Fran Ligon, Bldg. 460, Ext. 3709 at $6; tickets at the door are $8.

The Macramé Exhibit and Sale by Ella McLean and Virginia Eleazer can be seen tomorrow night in Room C from 6 — 11 p.m. The items will also be shown on February 4 and 5 from 10:30 a.m. to 2 p.m. in Room D.

Chisholm To Speak at Berkner

Shirley Chisholm, a feisty, articulate woman who became nationally known during her years as Representative of the 12th Congressional District in the Borough of Brooklyn, will speak at Berkner Hall on Thursday, February 7 at 7 p.m. Her talk, "The U.S. Constitution and Black America," is sponsored by the Afro-American Culture Club in celebration of Black History Month. Admission is free.

Chisholm's Congressional district included Bedford-Stuyvesant, parts of Bushwick, Brownsville, East New York and Greenpoint. Her constituents were 85% blacks and Puerto Ricans, and her ability to speak and write fluent Spanish was a great asset in developing a rapport with her Spanish-speaking constituents.

Chisholm left an imprint from her first days in Congress. She was assigned to the House Agriculture Subcommittee on Forestry and Rural Villages — an assignment which had no relation to the needs and problems of her district. When told by the Speaker of the House to "be a good soldier" and accept it, she made the unprecedented move of placing an amendment before the House to remove her name from the committee assignment. She won her point and was then given a seat on the Veterans' Affairs Committee. During her 14-year career, Ms. Chisholm also served on the House Education and Labor Committee and became a ranking member of the Rules Committee.

Shirley Chisholm

In February 1982, Chisholm announced she would not seek reelection and now spends her time writing, teaching and lecturing.

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Service Awards

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

Thirty Years

Kurt Jellett ..... Accel. Dev. Branch

Twenty-Five Years

Alice Alberico ..... Medical
John J. Hennessy ..... Plant Eng.
Frances B. Scesny ..... Personnel
Harvey E. Wegner ..... Physics

Twenty Years

John Aloi ..... Central Shops
John N. Brown ..... AGS
Leola Wells ..... Physics
Joseph R. Klemish, Jr. ..... S&EP
Fred B. Krieger ..... Appl. Math.
Wayne A. Rasmussen .. Light Source
Ronald M. Yuhas ..... Appl. Math.

Ten Years

Dennis G. Carlson ..... Light Source
R. Bruce Klemm ..... Appl. Sci.
Mow S. Lin ..... Appl. Sci.
Joseph A. Lopez ..... Plant Eng.
William H. Marlow ..... Appl. Sci.
Brian R. Oerter ..... Appl. Math.
Stephen J. Pendola ..... S&M
Frank A. Perez ..... Appl. Sci.
James Pittman, Jr. ..... S&M
Eva M. Schwarting ..... Appl. Sci.

Hospitality News

Some Israeli visitors will join Hospitality Committee members at their next morning coffee on Tuesday, February 5, at 9:30 a.m. in the Brookhaven Center, and will share some firsthand information about their country and its culture.

Wives of Laboratory employees and guests are welcome. Coffee, tea and danish will be served. Babysitting will be provided free of charge, so bring the children.

Badge Exchange

Before you leave for home tonight, return your film badge to the board. Your yellow January film badge will be replaced over the weekend with a green one for February.

The light, colorful, plastic film badges have been in use since December 1, 1984, and the exchange rate has so far been a big improvement over the 50% rate for the old metal badges. Ninety-five percent of film badge wearers had their old metal badges on the board on time for the switch to the new plastic badges, and 90% had their blue December badges in place for the change to January's yellow badges.

"The response has been much better than it used to be, and we thank all film badge wearers for their cooperation in getting the badges turned in on time," says S&EP project engineer Alan Kuehner. "However, we hope that we won't continue to slip by five percent each month."

"For good dosimetry, film badges should be on the board every night after work," says physicist Peter Gollon of S&EP. "But we ask that a special effort be made to return the badges on the Friday before the first Monday of each month when the exchange will be made. With the old system, you could turn your badge in late, and you would still get a reading of it that month. Under the new system, people who turn in their badges late will have their reports delayed."

Place your badge in its assigned slot on the board. There are 76 badge boards located near entrances and exits of most buildings on site. The badges are collected, and new ones left in their assigned places the weekend before the first Monday of every month. To help remind film badge wearers of the badge exchange, signs will be posted at the front gate on the Thursday and Friday before the exchange, and a notice will be published in the Bulletin.

Swim Club

The BNL Swim Club will meet at 5:15 p.m. on Thursday, February 7, at the pool. Forward flipturns and different breathing techniques for the crawl stroke will be taught. All those who can swim at least one lap of the pool without stopping are invited. To join the club, call Marsha Belford, Ext. 3327, or Mark Catan, Ext. 2504.

Roger Stoutenburgh

1984 FOOTBALL CHAMPS: Their reactions must have been pretty good because the winning football team, Delayed Reaction, beat the runner-up, Roga, by a score of 13-0. Four teams make up the BNL Football League and they play an eight-week season into the late fall. Winning team members are from left, 1st row: Pete Ratzke, John Beacon and Walt Reams; 2nd row, Lou Evers, Mitch Williams, Ed Meier Jr., and Jerry Sheppard. Missing from the photo are Wayne Rambo (Capt.), and Gordon Smith.

BERA Board Names Committee

A nominating committee has been appointed by the BERA Executive Board to select a slate of candidates for the 1985 BERA Board election scheduled to be held the latter part of March. Committee members are:

Slim Blevins	Ext. 3084
Barbara Boerjes	4956
Don David	3800
Kay Hunt	2882
Helen Keeley	5158
Frank Marotta	4273
Ed Meier, Jr.	3931
John Scandizzo	3281
Karl Swyler	7171
Mike Zguris	4728

Nominees are now being considered by the committee in preparation for a meeting to be held Thursday, February 14. Qualifications of finalists will be evaluated at that meeting, and an election slate will be selected.

Any employee who wishes to propose a name for nomination is encouraged to do so by contacting a member of the nominating committee by Friday, February 8. (Please make certain the person being proposed has agreed to accept the nomination.)

Ski Trip

Deposit for the Gore Mountain ski trip is due today. Call Doris Terry, Ext. 2228, for reservation application. The balance will be due February 8.

Model Plane Club

The regular monthly meeting of the R/C Model Airplane Club will be held on Tuesday, February 5, at noon in Room C of Berkner Hall. Those interested are encouraged to attend.

Cafeteria Menu

Week Ending February 8

Monday, February 4		
Chicken rice soup	(cup)	.65
	(bowl)	.85
Beef teriyaki & 1 veg.		2.30
Farmer's omelet & 1 veg.		2.10
Hot Deli — French bread pizza		2.15
Tuesday, February 5		
Lentil soup	(cup)	.65
	(bowl)	.85
Stuffed pepper & 1 veg.		2.15
or spaghetti		2.35
Sautéed chicken breast on rice		2.20
Hot Deli — Sloppy Joes		2.20
Wednesday, February 6		
Split pea soup	(cup)	.65
	(bowl)	.85
Swiss-style steak w/onions & 1 veg.		2.35
Pork 'n cabbage crisp on toasted Chinese noodles		2.15
Hot Deli - Chicken patty club	(bread)	2.35
	(roll)	2.55
Thursday, February 7		
Spinach egg drop soup	(cup)	.65
	(bowl)	.85
Corned beef and cabbage & parsley potatoes		2.35
Spanish macaroni & 1 veg.		2.25
Hot Deli — French toasted ham & cheese		2.00
Special: Top your baked potato served with chili & cheese sauce, with a choice of two additional toppings.		1.25
Friday, February 8		
Fish chowder	(cup)	.65
	(bowl)	.85
Salisbury steak & 1 veg.		2.10
Seafood platter		2.30
Hot Deli — Breaded fish fillet	(bread)	2.00
	(roll)	2.20

Diners Note

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

HMO Enrollment Open to February 28

The Laboratory is offering eligible employees the annual option of enrolling in the Blue Cross/Blue Shield Community Health Plan of Suffolk Inc., as an alternative to coverage under the AUI Group Medical Insurance Plan. The deadline for enrollment in the Blue Cross/Blue Shield Plan is February 28, with coverage effective March 1, 1985 through February 28, 1986.

The BC/BS Plan is a New York State certified Health Maintenance Organization (HMO) Plan which serves residents of the five western townships of Suffolk County and the eastern part of Nassau County. It is affiliated with eight hospitals. The local hospitals are St. John's Episcopal in Smithtown, Smithtown General Hospital and, for more specialized services, Stony Brook University Hospital.

The BC/BS HMO provides continuity of care under the direction of an internist, or pediatrician, who is, in effect, the member's private physician. In addition to primary care physicians, specialists in such areas as gynecology, ophthalmology, urology, dermatology and neurology, as well as registered nurses and supporting health care personnel, are on the staff.

The facility is equipped to take x rays and laboratory tests, and to provide immunizations, allergy treatments, eye examinations, well-baby care and physical examinations. Care is available 24 hours a day, seven days a week.

It is AUI's policy to subsidize the cost of the HMO Plan by paying the same premium amount it currently pays for the AUI Medical Insurance Plan.

Based on the current rates paid by the Laboratory for the AUI Medical Insurance Plan, there will be no charge for employees who enroll in the HMO Plan at this time, unless they are covered by the AUI Dental Assistance Plan. Those who enroll in the HMO Plan and also are covered by the AUI Dental Plan will be charged a monthly amount of $2.08 for individual and $5.20 for family coverage. This charge is to offset the difference in costs between the $100 and $200 a year deductible coverage in the AUI Medical Plan, and agreed to by employees who enrolled in the Dental Plan.

Blue Cross/Blue Shield will send membership application forms and literature describing the HMO medical program to the home addresses of BNL employees.

Those who are interested in the BC/BS HMO Plan are encouraged to visit the facility at 3001 Express Drive North, Hauppauge (intersection of LIE Exit 57 and Veterans Highway). Open House dates for BNL employees have been scheduled for Wednesday, February 6 at 7:30 p.m. and Saturday, February 23 at 10 a.m.

Employees wishing to enroll in the BC/BS HMO Plan must send their completed application forms to Personnel Services, Bldg. 185, Ext. 2877.

Runners' Corner

The BNL Roadrunners will update its mailing list for 1985. In order to do this, all members and all persons who wish to join should fill out the coupon below and mail it to Bernard Silverstein, president, BNL Roadrunners, Bldg. 535A.

BNL Roadrunners

Name _____

Bldg. _____ **Extension** _____

Return to B. Silverstein - 535A

Classified Advertisements

Placement Notices

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

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

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

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

OPEN RECRUITMENT - Opportunities for Laboratory employees and outside applicants.

2177. TECHNICAL POSITION - Requires an AAS degree in electronic technology or equivalent experience. Will be responsible for developing, assembling and testing aperture assays used in a prototype laser accelerator. Familiarity with electro-optical technology, chemical machining or lithography or solid state processing methods common to those used in VLSI is advantageous. Knowledge of both optical and scanning electron microscopes necessary. Instrumentation Division.

Autos & Auto Supplies

85 JAGUAR XJ6 WHEELS - (4) brand new, boxed, orig. cost $1,100, asking $600. 266-1688.

76 MONARCH - 2 dr., a/t, p/s, p/b, good cond., new tires. Ext. 3592 or 744-9475.

81 TOYOTA TERCEL - 4 spd., excel., 36 mpg., rustproof, metallic rust color, excel. serv. record, Michelin tires, $3,700. Ext. 2830 or 543-0487.

82 CHEVY PICKUP BED - 8', undercoating, green, excel. cond., w/cap, $700. 281-7206.

75 VW RABBIT - 4 dr., runs well, good tires and battery, body rusted, best offer. Ext. 4587 or 929-8443.

83 MAZD GLC - custom 2 dr., hatch, 5 spd., a/c, am/fm, good cond., 40 mpg. Steve, Ext. 3293 or 736-5130.

TIRES - (2) Pirelli-P3, 175SR14, low mi., $75/pr. Ext. 2253.

CAR LIFT - post type, 220V, perfect for the home mechanic, $850. 286-1829.

70 OLDSMOBILE - convertible, low mi., best offer. Ext. 2831.

70 CHEVY NOVA - 307, V8, a/t, p/s, high mi., $350. Joe, Ext. 4212.

80 CHEVY CITATION COUPE - 2 dr., 2 tone, V6, 4 spd., immac., like new, $2,450. Richard, 821-9296 after 5 p.m.

SNOW TIRES - C78-13, 2 different brands, price neg.; VW tune-up kits, 1964-1967, $2. Susan, Ext. 4267.

VW PARTS - generators, starters, clutches, flywheels, etc. Fred, Ext. 4407.

70 VW FASTBACK - good for parts, best offer. 286-3851 eves.

80 SUBARU BRAT - 4 WD, radials, fiberglass cap, 86,500 mi., 1983 engine, 20,000 mi., $2,950. 728-3285.

70 CHEVY STATION WAGON - 400 ci, p/b, p/s, a/c, a/t, running, fair cond. R. Perry, Ext. 3270 or 475-1636 after 5 p.m.

VOLKSWAGON BUGS - 1964 & 1969, good engine, 40 mpg, good for parts, best offer. Ext. 7139.

77 PINTO SEDAN - excel. body, new tires, exhaust, heater, battery, needs engine work, $700. Ext. 3351.

72 PONTIAC WAGON - a/t, p/s, p/b, reliable trans., $500. Ext. 2500.

ALUMINUM HARDTOP - for Jeep C-J, $200. Joe Bush, Ext. 4638 or 736-2728 eves & weekends.

VAN SEAT - heavy duty const., blue, excel cond., $50. Dick, 878-1580 after 6 p.m.

13" TIRE - good cond., B78-13, $10. Ext. 4758.

FORD ENGINE - rebuilt, 2.3 L, all machine work by Roadmaster, new parts, $990. Joe, Ext. 3464 or 281-7683.

TIRES - (4) 14", Performance-70 GT on Appliance rims, low mi., $300. Ext. 7138 or 732-4224.

TOYOTA RADIO - am/fm, 4 speakers, $40. Ext. 4095.

76 CHEVY MALIBU - station wagon, excel. eng., good body, new brakes, tires and more, 128k mi., runs very well. Ext. 2830 or 543-0487.

74 CHEVY LUV - pickup, rebuilt engine, mech. excel., am/fm cassette, $2,000. 821-0729.

82 ESCORT GL - 4 spd., am/fm stereo, 32-40 mpg, 33k mi., excel. cond., must sell, $3,500. Licalzi, 473-3328.

77 JEEP WAGONEER - good for parts. 981-3750 after 5 p.m.

73 FORD - pickup, A-1 cond., cap, lots of extras, $1,300. 331-5118 5-9 p.m.

74 VEGA - mint cond., $900 or best offer; 70 Ford, dependable, $300 or best offer. John, 878-0939 after 6 p.m.

83 1/2 HONDA PRELUDE - 5 spd., a/c, am/fm cassette, rustproofed, p/moonroof, body molding, red, excel. cond., $10,500. 422-1846.

70 CHEVY NOVA 307 - V8, high miles, $350. Joe, Ext. 4212.

75 VW BUG - excel. cond., am/fm, snows, ski rack, 2 extra rims, $1,400. Bill, Ext. 2906 or 929-6189.

76 MONARCH - 2 dr., good cond., p/s, p/b, a/t, 6 cyl., high mileage. Ext. 3592 or 744-9475.

MOTORIZED WINNIBAGO - 26', full bath, 5 kW generator, built-in vac. sys., mint cond., $12,000. 744-8672.

TIRE - P205/74R15; Chevy wheel cover. Morris, Ext. 4192.

79 DATSUN 280ZX - 2+2 GL, mint cond., 5 spd., cassette stereo, 77k miles, $6,500. 928-6778.

WHEELS - (4) for 1985 Jaguar XJ6, brand new, boxed, orig. cost, $1,100, asking $600. 266-1688.

83 MAZDA GLC - 2 dr. hatchback, 5 spd., am/fm, a/c, mint cond., $4,700. Ext. 3293 or 736-5130.

78 MAZDA GLC - hatchback, 5 spd., new radials, $1,500. Ext. 4524 or 643-5551.

81 TOYOTA TERCEL - 4 spd., excel. in/out, metallic rust color, rust guarded, reliable, asking $3,600. Ext. 2830 or 543-0487.

81 CHRYSLER LeBARON - 6 cyl., a/t, 4 dr., p/s, p/b, a/c, p/w, p/d locks, tilt, velour int., $4,995. Ext. 4482 or 277-1129.

69 DART SWINGER - everything new, fair body, value $2,000, sell for $600, neg. 929-6531 after 6 p.m.

74 MERCURY COUGAR - completely overhauled, new tires, $1,200. 924-3236 after 5 p.m.

74 MUSTANG - needs work. Paul, Ext. 7760 or 744-5256.

Boats & Marine Supplies

20' O'DAY SAILBOAT - 1975, 6 HP, galvanized trailer, keel/cb, sleeps 4, head, galley, excel., $6,800. Bill, Ext. 2906 or 929-6189.

CB - 40 channel w/marine antenna, $40. 399-4122.

MARINE TOILET - w/bronze pump, excel. cond., $50. Joe Bush, Ext. 4638.

MUSHROOM ANCHOR - 600 lb., $250. Ext. 4095.

23' PUMA KEEL SLOOP - sleeps 4, head and galley, 6 HP, many extras, $9,000. Walter, Ext. 4605.

25' O'DAY SAILBOAT - 1979, VHF, depth gauge, knotmeter, many extras, clean, best offer. 472-4196.

19' RANKEN - 1983, all fiber., w/canvas top, inbd./outbd., low hrs., mint cond., $6,800. 665-2915 after 5 p.m.

Miscellaneous

BMX MONGOOSE - bike, alloy cranks, proneck, KKT lightning pedals, zap pads, $115. Dave, 821-0250.

MICROSCOPE - junior, 100X - 800X, built-in light, prepared & blank slides, wooden case, $40. Ext. 4438 or 472-1585.

DINING ROOM TABLE - large wooden, 45 years old, $40; old wooden china closet, $100; good foot pedal sewing machine, 70 yrs. old, $50. 878-6637.

HANG GLIDER - Quick Silver B, flown once, $500. 286-1829.

ANSWERING MACHINE - Phonemate, dual cassette, $50 firm; computer, TRS80-4P, 4 mo. old, dual disk drives, 64K, TRSDOS6.2 and TRSDOSD6.1, value $1,300, asking $1,000 firm. 736-6691.

FURNITURE - triple dresser, high chest, twin headboard, nightstand, baby crib, recliner, etc., moving must sell. Ext. 3293 or 698-6437 eves.

HOCKEY SKATES - boy's, never worn, $15; space heater, brand-new, $25; humidifier, like new, $25; snow boots, size 3, excel. cond., $3. S. Spark, Ext. 4111.

TAPE DECK - TEAC A4010SL, reel-to-reel, mint cond., $200. Lowenstein, Ext. 4611 or 286-2788.

DISK DRIVES - 5-1/4 ds/dd MPI, IBM compatible, new $100; Coronet, Olds Ambassador, w/case, $100. Jim, Ext. 3372.

BUNK BEDS - $30; high riser, $75; (2) chests of drawers, $40 ea. 929-4701.

MOVIE PROJECTOR - 16 mm, sound, Singer model, new cond., $250. 878-9256.

GAS RANGE - 36" Hardwick w/storage cabinet. 941-4581.

SKIS - Atomic, 150 cm, beginners model, Tyrolia 150 bindings, good cond., $50. Ext. 4238 or 286-3509.

PVC DARKROOM SINK - corrugated bottom, 18", splashboard, 72"x24", like new, $250. 324-7643.

VAPORIZER - cool mist, $5. Ext. 4935 or 928-5737 after 3 p.m.

POOL LADDER - 4', very good cond., $25; Minnesota Fats pool stick, 2 pc. in case, $30. 399-4122.

ELECTRIC GUITAR - Global, 2 pickups w/case, $75. Lydia, Ext. 2380 or 929-8142.

WEAVING LOOM - large oak, includes seat, $300. 289-9724.

ELECTRIC TYPEWRITER - Smith Corona, 12" carriage; solid Ponderosa pine louver door, 30x80; touch-tone Trimline wall phone, brown. 751-6418.

DINING ROOM TABLE - custom, 42x72, solid 1-3/4" pine, 3" apron, 4 genuine Nichol/Stone rush hi-back chairs, $500 firm. 744-3289.

SNOWMOBILE - Rupp, 634 cc, big & fast, $500. Joe, Ext. 4638.

COLOR TV - 25", Heathkit, plug-in circuits, built-in dot generator, large console cabinet, manuals, needs picture adjustment, $100. Dick, 878-1580 after 6 p.m.

DISK DRIVES - (2) Panasonic, new, never used, $125 ea. Ext. 4758.

CAMERA - SLR Yashica, body only, needs cleaning, asking $15. 286-0237.

REFRIGERATOR - side-by-side, good cond., $125; pool table fixture, $15. 475-4792 after 5 p.m.

CORNER BOOKCASES - (2) Ethan Allen, chest combo, butternut maple, excel. cond., $350 ea. Molly, 744-9632.

SWAG LAMP - 16", brown wicker, $30; brass headboard (dbl. bed); Zenith B&W TV, $25. 744-6874.

ATARI 2600 - w/8 tapes, $75; girl's Strawberry Shortcake tricycle, $20. Fran, 399-4822.

REFRIGERATOR/FREEZER - Bradford, 19 cu. ft., good running cond., $100. Ext. 7505 or 689-8605.

WOMAN'S SKI JACKET - white/blue/green/orange (Aspen), like new, $15; matching ski pants, blue, size med., $10. Linda, Ext. 7745.

DISHWASHER - G.E., heavy duty, 30", very good cond., $75. Tom, Ext. 4084 or 878-1060.

COUNTRY STYLE SECTIONAL - two convertible love seats, best offer. 929-8287.

ROCKWELL 6" JOINTER - 1 HP motor, like new, $350. 325-0648.

EARTH STOVE - wood/coal, A-1 cond., complete w/chimney kit, $375. 588-4703 after 5 p.m.

ELECTRIC CLOTHES DRYER - G.E., white, excel. cond., asking $175. John, Ext. 3397 or 732-2702.

VERTICAL BLIND - for 6 ft. wide patio door, beige. Carol, Ext. 4398.

SKI EQUIPMENT - children's and/or junior's, good to excel. cond. Ext. 4449 or 751-8403 after 6 p.m.

TV - 19", G.E., $50. Walt, Ext. 5316.

JACUZZI PUMP MOTORS - (2) 1 HP, and 1-1/2 HP, $40/ea. Ext. 4597 or 924-8213.

CRIB - w/mattress, excel. cond., Simmons, pale yellow, all wood, $120. Mike, Ext. 7941.

STORM WINDOWS - (2) 36" x 39", alum., triple track, good cond., $20 ea. Ext. 2350 or 732-9517.

SKI BOOTS - 8-8-1/2 Raichle, never used, list price, $90, sell for $39. Ext. 3164.

BATHROOM SINK - w/faucet, pink. Morris, Ext. 4192.

CAR SEAT - for toddlers (1-3 years), $7. Christina, Ext. 3107 or 7164.

BEDROOM SET - 6 pieces, walnut, good cond., moving, price neg. 698-6437 eves.

SPALDING SKIS - $15; Technica boots, like new, variety, from junior to adult, $25. 862-6259 after 6 p.m.

CONSOLE STEREO - colonial, excel. cond., $120. Larry, Ext. 2021 or 281-7240.

SKIS - Kneissl epoxy, 215 cm, w/bindings and Scott poles, $50; Head std., 210 cm, w/Look-Nevada bindings, $50; boots, size 12-13, w/carrier, $25. Ext. 4438 or 472-1585.

COLOR TV - Sharp 13", excel. cond., only 300 hours, good for monitor/TV, $180. Bob, Ext. 4656 or 928-1806.

VERTICAL BLINDS - standard size, sliding door, neutral color, excel. cond., asking $150. 289-3047 after 5 p.m.

HOME MOVIE SCREEN - WWI helmet, $5 ea.; giant 4" Nixie tubes and drive boards, 2 tubes/board, $2/board. Victor, Ext. 2395.

19" B&W TV - $20; 3'x5' colonial trestle table, $20. Ext. 3859 or 286-1712.

GIRL'S ICE SKATES - 2 pr., child's, size 13. Ext. 4846.

DRUMS - (2) 55 gals., used exclusively for kerosene. $11.50 ea. or 2/$20. 924-3236.

SKI EQUIPMENT - children's and/or juniors', good to excel. cond. Ext. 4449 or 751-8403 after 6 p.m.

Free

DOG - Chesapeake Bay Retriever, papers, 1-1/2 yrs old. 286-1829.

PERSIAN CAT - 3 yrs. old, needs good home & TLC. 399-3381.

CAT - white and tan, 3 yr. old, female, needs stable home, fixed and has shots. Pete, Ext. 7627 or 744-2653.

Car Pools

PORT JEFFERSON/STONY BROOK - will drive or ride. Pierrick, Ext. 3464.

STONY BROOK - Transvan has two openings. Sid, Ext. 4125 or Paul, Ext. 2476.

NORTHPORT/FT. SALONGA - 3 person on time car pool, looking for 4th member, door-to-door. Brian, Ext. 2799.

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 Rent

CENTER MORICHES - 3 bdrm. house, family rm., 2 baths, available 2/15, near Old Neck Marina, beach rights. 878-9541.

NORTH PATCHOGUE - 1 bdrm. apt., private entrance, w/w, cable hookup, single only, no pets, references please, $430 includes all. Carol, 289-3917.

HAMPTON BAYS - 1 bdrm. cottage, w/w, panel, f/p, no pets, couple or single, $335 mo. 728-2104 eves.

RIDGE - Private Lake, 2 bdrm. house, 5 mi. from BNL, newly renovated, w/w, lake rights, avail. 2/1, $625 mo. plus util., 2 mo. security. 929-4663.

CENTER MORICHES - 2 bdrms., large eik, l/r, bath, washer/dryer, separate heat, elect., entrance, centrally located, quiet, rear yard, $525/mo., security required. 878-2461.

NORTH PATCHOGUE - cozy studio apt., full kitchen, full bath, cable hookup, priv. entrance, single only, no pets, all for $330. Carol, 289-3917.

NORTH SHIRLEY - large, furnished studio apt., priv. ent., util. incl., 5 min. from Lab and stores, 1 person only, security, $400 pays all. 281-8044.

SOUTH BLUE POINT - studio apt., $475. Ext. 4846 or 363-6940 after 5 p.m.

MILLER PLACE - furnished house, 3 bdrms., kitchen, l/r, d/r, $715/mo. + util. 928-5103 eves.

E. PATCHOGUE - S. of S. Country Road, 2 bdrm. apt., eik, living room, bath, priv. ent., avail. Feb. 1, $410/mo. + util., (no pets). Walt, Ext. 2907 or 698-0576.

For Sale

FARMINGVILLE - ranch, 4 bdrms., assum. mort., many extras, LIE exit 62. 698-3353.

IRVINE, CALIFORNIA - 4 bdrms., 3 baths, wet bar, sprinkler system, 13 yrs. old, 2 car garage, $165,000. Ext. 2389 days or Ext. 3131 nights.

ROCKY POINT - adorable starter home, walk to beach, 15 mi. to Lab, fenced yard, alum. siding, w/w, full basement, easy to heat, low taxes. Ext. 2697 or 744-2870.

CORAM - Birchwood at Bretton Woods, 3 bdrm. condo., Dalton model, den, l/r, formal d/r, 1-1/2 baths, patio, gas heat, central a/c, like new, many extras, 1/2 block to Clubhouse, $102,000. 324-7643.

N. CORAM - townhouse, w/w carpeting, fenced yard, basement, mud room, washer/dryer, club house, tennis court, lots of extras, $75,000. 331-5118 before 9 p.m.

YAPHANK - 2 bdrm. condo., 1-1/2 bath, full basement, new w/w carpet, new oil heat/hot water, clubhouse, tennis courts, 2 pools, 2 miles to Lab. Henry, Ext. 4547 or 924-6688.

Wanted

RUGBY ANYONE? - all ages, all sizes, no experience necessary. Pierrick, Ext. 3464.

MECHANICAL WATCHES - working or not, clocks, coins, and old jewelry by collector/watchmaker. Al Campbell, Ext. 2043.

HOUSEMATE - to share large house, 8 min. from Lab, 8 acres, $200 month, plus 1/4 util. Roland, Ext. 4290 or 924-3669.

REFRIGERATOR - apt. size, left hand door preferred. Paul, Ext 2476 or 751-2149.

OUTBOARD MOTOR - 6-8 HP, short shaft, will consider motor requiring repair. Ext. 2799.

ACCESSORIES - for a Texas Instrument computer (printer, interface, cable, disk drive). Ext. 4933.

PIANO - cheap to free, should be decent cond. for living room, children learning. 286-3623, leave message.

BABYSITTER - dependable, daytime hours, for care of two small children, while I substitute teach. Barbara VanDerlaske, 399-4929.

POSTAGE STAMPS - for Lutheran Church program, should have 1/4 in. of envelope around stamp. Al Campbell, Ext. 2043.

CHESS PLAYERS - to join existing club. Kim, Ext. 7110.

SKI BINDERS PERSON - familiar w/putting ski binders on snow skis. Ext. 7921.

BABYSITTER - in my home, Coram area, experienced. Catherino, 732-2702.

TRAINS - Lionel, any "0" gauge or "027" gauge cars, track and equip.; records, 45 rpm and some LPs of the 50's and 60's era. Frank, Ext. 3120.

REFRIGERATOR - apt. size, 10 or 11 cu. ft., good cond. Paul, Ext. 2476.

TIRES - Michelin or Pirelli, size CR78-14 or equiv. Ext. 4393 or 589-3272 eves.

TRAINS - Lionel, American Flyer, accessories, any condition brings good price. Carole, Ext. 3362 or 924-4097 eves.

Lost & Found

FOUND - keys for Subaru car in Bldg. 134 parking lot. Ken, Ext. 3263.

FOUND - man's watch, cafeteria. Peter, Ext. 4094.

FOUND - wallet & keys on Wednesday in Apartment Area. Rosaria, Ext. 3102.

Services

TEACHER/TUTOR - experienced special education teacher w/references. 475-8581.

GENERAL CONTRACTOR CARPENTER - extensions, dormers, garage conversions, basements, decks, kitchens, licensed. Jim, 698-2501.

MOVING - man w/truck will do moving jobs, reasonable. 563-2847 after 5 p.m.

HANDYMAN - avail., reasonable prices. Elisabeth, Ext. 3110 eves.

TYPING - experienced typist will type resumes, term paper, etc. 475-8581.

BABYSITTING - my home, references avail., plenty of TLC, Bellport. Maryann, 286-2435.

BABYSITTER - reliable, experienced teen, avail. nights & weekends. Mary, Ext. 2926 or 281-0268 eves.

IBM PC CONSULTING - Planning to buy? Having a problem? Hardware & software help avail. Ext. 4967.

CONSTRUCTION - licensed, fully-insured, expert carpentry, general contracting, references avail. 821-9656.

HOUSESITTER - Suffolk & Nassau areas. Ext. 3671 or 736-2131 eves.

AUTO SERVICE - all areas of auto body repair, insurance estimates given; auto cleaning, compound waxing, interiors, rugs, chrome, professional detailing, $49.95; oxidation, $20 additional. pickup & delivery. Bob, 744-4047.

TAXES - prepared by Tax Consultant, your home or mine, reasonable. John, 732-2472.

JEWELRY REPAIR - gold and silver chains, rings and pendants. Dan, Ext. 2319.

TUTORING - K-3 level, O.T. for handicapped persons, reasonable prices, my home. 475-1636.

Classified Ad Policy Deadline is 4:30 p.m. Friday for publication Friday of the next week.