

Environmental Protection at BNL

Part I: Keeping a Watchful Eye on the Environment

If you grew up in the early 1950's, you may remember the smell of burning leaves in the autumn, as fall's remnants were added to the backyard barrel that was used to incinerate the family trash.

Now that the polluting effects of burning leaves are known, now that the family's typical bag of garbage contains plastics that might add toxic fumes to the air if burned, disposing of household refuse has become much more regulated and much more expensive. But Long Islanders have accepted the ever-changing disposal regulations and increasing expenses as the necessary costs of preserving a fragile environment that has already suffered from previous lack of knowledge about the effects of waste.

As a Long Island institution, Brookhaven National Laboratory shares this fragile environment. And, like other Long Islanders, BNL is working hard to preserve it.

Of particular concern to the Laboratory is hazardous waste, which includes any potentially harmful materials that are chemically toxic, radioactive or a mixture of both. Regulations are very specific as to how much of these materials are permitted to be released to the soil, water and air.

The problem is that, while today's regulations are quite stringent, that was not always the case. And though BNL has always operated well within applicable laws of the time, today's regulations call for the activities of the past to be corrected in the present.

Most of the Lab's current remedial efforts are generally not aimed at any single major spill or accident: They address the combined effects of disposal of small amounts of materials over time. In mitigating these situations and preventing future ones, the Lab can only be as successful as the sum of its parts — the 3,200 employees and 1,800 guests and visitors who use the facilities annually.

Thus, it is to you that this three-part series is addressed. The information you need to help the Lab continue its vigilance in protecting the environment begins with this week's article, which explains how problem areas are defined. The two articles to follow will show how the Lab is solving known problems, then what BNL is doing to minimize future ones.

... An analysis of the gaseous waste system was made after consultation with the meteorologists. . . . Procedures have been set up for disposing of solid wastes produced by the Biology Department. . . . The area monitoring group in Health Physics will be closely involved in the operation of all these waste disposal arrangements.

— From BNL's Scientific Progress Report, July-December 1947, Health Physics Section

The first employees came on site to begin organizing a new research laboratory early in 1947. By the end of that year, scientific activities had overshadowed the ghost of Camp Upton, and BNL had issued its first *Scientific Progress Report*, which

included the report of the Health Physics Department.

This report shows that, since its inception, the Lab has been aware of the potential for problems with hazardous waste disposal and has taken steps to avoid such problems.

BNL has also been open with the public and regulatory agencies about the effects of its operations on the environment. One way this is done is through Environmental Monitoring Reports (EMR) — public documents, which have been issued every year since 1947.

BNL's extensive program of environmental monitoring is conducted by the Safety & Environmental Protec-

(Continued on page 2)

BNL Lecture: Labeling Molecules, Using STEM

Your favorite blue jeans are past the point of no return and need replacement, but, when you enter the store, all the jeans are piled high and mixed up on the same counter. How are you going to tell which pair is the same as the one you've been so fond of?

By the label, of course.

The same principle applies when looking at specimens under BNL's Scanning Transmission Electron Microscope, or STEM. To find a specific antibody or protein molecule, an individual atom or a precise spot in a sequence of DNA, look for the label that marks it.

The creation of such labels has been a major interest for Biophysicist James Hainfeld. In the Biology Department, he and Joseph Wall are the two principal investigators for STEM. Hainfeld will talk about his work "Labeling Molecules for Biology and Medicine, Using STEM," in the 244th Brookhaven Lecture, on Wednesday, May 18, at 4:30 p.m., in Berkner Hall.

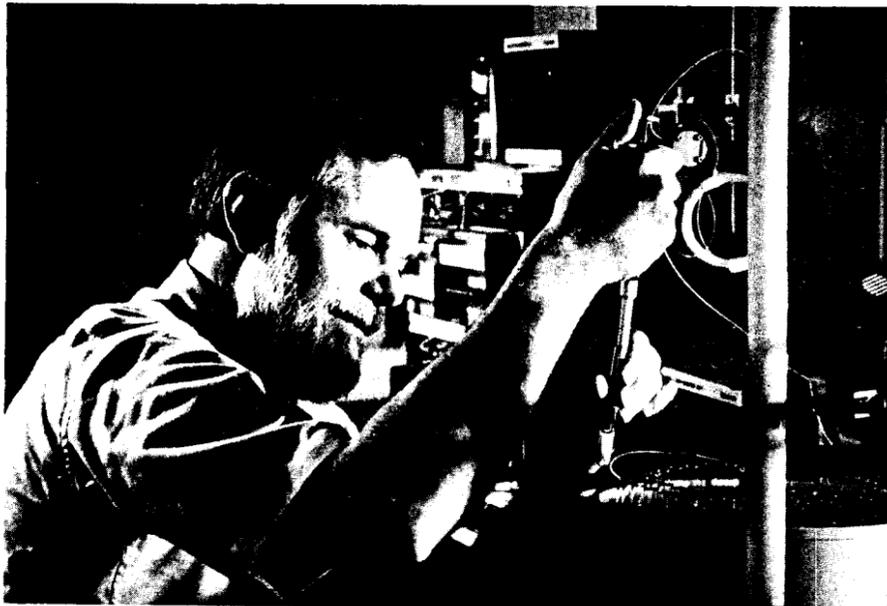
Hainfeld will begin his talk by introducing STEM. Designed and built at BNL, it is one of only two such instruments in the world capable of easily imaging single heavy atoms. As a National Institutes of Health Biotechnology Resource, STEM is available to outside user groups about 70% of the time.

STEM is primarily used for weighing individual molecules. A single antibody, protein molecule or virus can be seen in the microscope, then weighed very accurately. By weighing individual molecules in this manner, for example, the construction of a virus might be determined.

Similarly, as Hainfeld will point out, STEM might be used to map the genetic structure of long pieces of DNA. The STEM group has proposed this idea to the Department of Energy (DOE), as a means of decreasing the amount of time and money needed to complete DOE's plan to map and sequence the entire human genome.

The microscope's other main application is for looking at atoms heavier than silver. Because these atoms can be seen and imaged with STEM, they can be manipulated and maneuvered under the microscope, and used as labels.

Hainfeld will discuss how, using this technique, he has created clusters



James Hainfeld

of 11 radioactive gold atoms, then attached them to a specific site on antibody molecules. Antibodies are proteins that exist naturally in the blood and are produced in response to infection by foreign substance.

One purpose of this work is to inject the gold-labeled antibodies into a body

to accumulate on a tumor, where the radioactivity could destroy the cancer cells. Hainfeld will explain that, while this is not a new idea, it has never been successful, perhaps because there have been only two or three radioisotopes per antibody — too few for the radioactivity to be lethal to enough

cells. With more radioisotopes, then, the chance of success would be increased.

James Hainfeld received his B.S.E. in Electrical Engineering from Princeton University, in 1967, and spent the next year as programmer for the city of Dallas, Texas. While pursuing the Ph.D. in chemistry and biophysics that he earned from the University of Texas at Austin in 1974, he spent a year as a teaching assistant and received a Fellowship from the National Science Foundation.

In 1974, Hainfeld became a research associate at the University of Chicago, where the concept for STEM, and the first microscope of its kind, had originated. He used that STEM for his research on the red blood cell membrane.

Hainfeld came to BNL as an Assistant Biophysicist in 1976, to work on the Brookhaven STEM, which had been commissioned the previous year. He was named Associate Biophysicist in 1978 and Biophysicist in 1981.

All those interested in getting together after the lecture are invited to go with the lecturer to a restaurant off site. To be part of this group call Paul Furcinitti, Ext. 3372.

Physics of the 1990's Viewed at AGS Users Meeting

A break in the busy agenda of talks at the Alternating Gradient Synchrotron (AGS) Users Group annual meeting on May 5 and 6 gave these participants a chance to chat: (from left) BNL Director Nicholas Samios; Samuel Treiman, Princeton University; and Wilmot Hess, Associate Director, Department of Energy Office of High Energy and Nuclear Physics.

Among those who addressed the user group, Hess and Congressman George Hochbrueckner both spoke optimistically on the outlook for the Lab's proposed Relativistic Heavy Ion Collider, to be supplied with ions by the AGS complex.

Their remarks were in keeping with the meeting's theme of "Brookhaven Physics of the 1990's." In this vein, Robert Adair, Associate Director for High Energy and Nuclear Physics, and Derek Lowenstein, Chairman of the AGS Department, outlined plans for an AGS complex which will be an important high-intensity facility for hadrons. Such a hadron facility is in increasing demand for physics research around the world.

In addition, AGS users reported on the accelerator's broad and active program (see story inside), with many new results coming from present experiments.



Peter Horton

Environmental Protection at BNL

(Cont'd)

tion Division (S&EP). Its purpose is to ensure that all Lab operations are conducted safely and with minimum effect on the environment. The program includes monitoring all Lab releases to air and water, as well as assessing the impact of Lab operations on the local groundwater and the Peconic River.

Some Results of Monitoring

It is from this continual monitoring that the Lab became aware in 1984 that, in earlier years, the groundwater near the Hazardous Waste Management area had been contaminated by trichloroethane (TCA). Commonly used as a degreaser, this organic material had entered the Lab soil long before environmental sensitivities to groundwater concentrations of TCA had developed. In drinking water, the presence of TCA is limited to concentrations of 50 parts per billion.

The discovery of TCA in the aquifer, Suffolk County's sole natural source of drinking water, prompted BNL to initiate the Aquifer Restoration Project, to be discussed in the next article.

Continual monitoring also gives the Lab assurance that it is not responsible for the plume of oil that is currently threatening residences in the North Shirley area, south of BNL. As S&EP Head Robert Casey explained, "Groundwater travel rate and direction of flow, combined with the results of our on-site monitoring, rule out any possibility that the North Shirley plume is related to BNL activities."

Still, Casey continued, "Past practices and past spills can create problems in the groundwater. We are addressing each of them as they are identified. Our location above a sole-source aquifer requires that we be alert and vigilant about our activities, to be sure we don't make problems for ourselves or our neighbors in the future."

Forty years' worth of environmental monitoring data helped ease the Lab's neighbors' concerns a year ago, when Suffolk County said that, of the 656 potential hazardous waste sites they had identified in aerial photographs of the County, 29 were within the Lab's boundaries. The



As part of the agreement signed last fall between BNL and Suffolk County, two Suffolk County inspectors will examine every Lab building by the end of the year, to see that hazardous wastes are being disposed of properly. Here, Barbara Royce (second from left), Safety & Environmental Protection (S&EP) Division, who is BNL's liaison with the County, consults with County inspector Isadore Doroski outside Bldg. 930. Madelaine Feindt, a second Suffolk County inspector confers with Steve Musolino, a Project Engineer in S&EP.

Suffolk County Sanitary Code: Article 6, which largely affects connections to the Lab's sewer systems; Article 7, which is concerned with protecting the aquifer through water pollution control; Article 10, which involves air pollution control; and Article 12, which deals with the storage and handling of toxic and hazardous materials.

Within S&EP, responsibility for overseeing the implementation of this agreement falls to Barbara Royce, who is both a civil and environmental engineer. She is now working with Suffolk County inspectors to complete an ambitious program of inspecting each of the Lab's 300-plus buildings by the end of the year.

The inspections began on March 1. As Royce explained, the inspectors are reviewing the storage of chemicals and of drums that contain hazardous materials, the proper disposal of liquids in water drains and

conduct a two-week baseline environmental survey of the site. This survey identified a number of existing and potential environmental problems. Although the final survey report has not been issued, Jan Naidu, S&EP Environmental Protection Section Head, explained, "We are already working to correct many of these problems."

For instance, the survey pointed out that there were drums in disrepair in various locations, perhaps leaking their contents into the ground and staining the soil. "The Lab started an amnesty program," said Naidu. "We asked employees to tell us where drums and stains were, and we would take care of it. No one would be at fault. Now this problem has been reduced significantly."

To address another major issue — groundwater — the Lab has been expanding its groundwater monitoring program. All existing wells have

been surveyed and mapped by Plant Engineering. A consulting firm has been working on a plan for the installation of 25 additional wells and developing more complete information on groundwater flow patterns. This effort will continue over several years.

A Sampling & Analysis Plan

To further assess some of the potential environmental problems identified during the DOE survey, the survey team, in conjunction with Oak Ridge National Laboratory (ORNL), developed a sampling and analysis plan.

An ORNL sampling team spent two weeks at BNL this past April, collecting samples of surface water, groundwater, soil, sludge and waste materials, which were requested in the plan. All sampling was conducted in accordance with the approved procedures and protocols outlined in the DOE Environmental Survey Manual. In addition, a quality assurance team from the Environmental Protection Agency conducted a three-day field audit of all sampling activities. All samples were shipped to ORNL for analysis.

The second phase of the DOE survey sampling and analysis program, which will take place this summer,



For the Department of Energy's environmental survey, an Oak Ridge National Laboratory sampling team took almost 1,000 soil samples during a two-week visit in April. Here, team members bore a testing hole at one of the 30-plus sites on their schedule.

will include the installation and sampling of six groundwater monitoring wells.

Though BNL has had a long-term program for monitoring and protecting the environment, the Lab recognizes that the new perspectives from DOE and Suffolk County are valuable. Therefore, while working with Suffolk County and DOE, the Lab will also continue to correct its known environmental problems through the remediation programs to be discussed in the next article in this series.

— Anita Cohen



Before joining the Oak Ridge National Laboratory (ORNL) sampling team, Susan Barisas, Fred Taylor (center) and Jan Naidu consult a site map. As a representative of the Department of Energy, Barisas had a major role in last year's environmental survey. Taylor is leader of the ORNL team, and Naidu heads the Environmental Protection Section in BNL's Safety & Environmental Protection Division. The team was always accompanied by either Naidu or one of his associates, Robert Miltenberger or Joseph Steimers. The team was also observed by S&EP technicians Richard Lagatolla and Annette Meier, who perform all the environmental sampling and testing at BNL regularly.

Photos by Peter Horton

Options Added to Safety Glass Program

A change has been made to the Lab's Safety Glass Program: Effective immediately, the program is being expanded to allow employees to select various cosmetic options, which employees can pay for when ordering new safety glasses.

The Safety Glass Program provides employees with necessary eye protection where working conditions indicate a need. Until now, options were only provided with supervisory approval.

In the expanded program, employees needing safety glasses will be covered in full for the standard issue eyewear, depending on the complexity of the prescription, i.e., single lens, bifocal lens, etc. Additional options can be selected and paid for by employees as follows:

Tinting (maximum of 10% tint without prior safety approval)	\$15
Scratch-resistant coating	\$20
Anti-reflective coating	\$45
Frames with "spring hinges" (metal)	\$25
Varilux no-line bifocals	
• clear	\$100
• sunsensor	\$110
• with scratch resistance	\$120

One primary condition governs the selection of options: The final eyeglasses must conform to the safety requirements of ANSI Z87.1. Under no circumstances will the optician agree to perform any work that compromises the integrity of that standard.

For more information, call Michael Guacci, Ext. 2976.

data showed that, of these, only 13 were truly related to hazardous waste disposal and were already being monitored.

Working With the County

Working with Suffolk County on environmental concerns is not new for Brookhaven. In addition to routinely receiving the EMRs, County personnel have come on site quarterly for more than ten years, to examine the sewage treatment plant, and annually for the last five years, to take samples from the water treatment plant and various cesspools.

Most recently, Laboratory Director Nicholas Samios and then acting Suffolk County Executive Michael LoGrande signed an agreement last September stating that BNL will voluntarily conform to the applicable environmental requirements of the

cesspools, the condition of storage tanks, and the existence of appropriate air emission permits. BNL already holds more than 30 permits for such things as the sewage treatment plant, the landfill and air emission points.

Of the inspections conducted so far, Royce said, "The program has been beneficial to the Laboratory in assuring a high level of environmental protection. Also noteworthy has been the cooperation of various BNL staff members in the conduct of these inspections."

DOE Surveys the Situation

In addition to the County inspections, BNL is currently part of an environmental survey being conducted by the Department of Energy (DOE) at all its facilities.

DOE first came on site a year ago to

Making Good Use of the AGS

Since 1960, the Alternating Gradient Synchrotron (AGS) has been accelerating protons for studying the fundamental characteristics of matter.

Though far more energetic proton accelerators now exist, few are as versatile. Within this decade, the AGS has become known for its ability to provide users with polarized protons and heavy ions.

In addition, the regular proton program is now recognized as providing the most intense beams of kaons anywhere. These have become especially valuable lately for a set of experiments searching for extremely rare kaon decays. Such processes, if they occur, would signal new physics at a fundamental level. With this important program and increased versatility have come users in ever increasing numbers.

Information compiled by Neil Baggett, Special Assistant to the Associate Director for High Energy and Nuclear Physics, shows that the number of AGS users increased by a factor of 2.7, from 248 to 660, between fiscal years 1980 and 1987. In this time, the number of current experiments and institutions using the AGS approximately doubled.

What was once essentially an East

Coast U.S. user community has since expanded into an international one, as Baggett's questionnaire of experimental spokesmen showed (see figure 1). Of the 100 institutions participating in the AGS program in 1987, 41 came from outside the U.S.

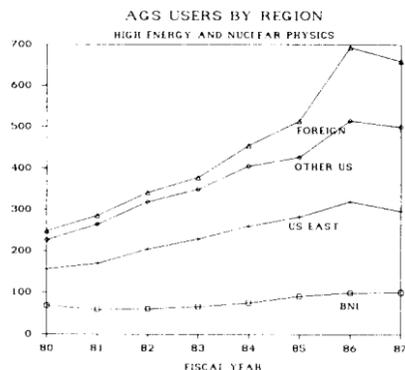


Figure 1

Some other interesting facts Baggett's research turned up include:

- The number of proposals submitted to the AGS has increased, yet the fraction approved has stayed fairly constant since 1980, at about one-half.
- The nuclear physics program has recently grown, due to the addition of heavy ion beams. There has also been substantial growth in high energy

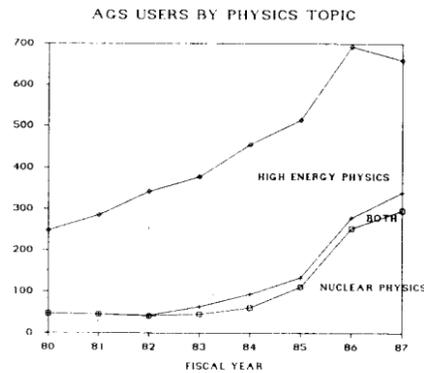


Figure 2

physics research, with the number of proton users nearly doubling, from 201 to 364, since 1980 (see figure 2). (A small number of researchers are involved in both types of experiments.)

• The numbers of students, faculty or staff and professionals doing research at the AGS have grown at roughly comparable rates, while the number of research associates has grown a bit more slowly (see figure 3). In fact, out of 660 AGS users in 1987, 134 were graduate students, participating in research and learning their craft.

• A few large experimental groups appeared in the last few years, ranging up to 60 participants; however, average group size — 20 in 1981 and 22 in 1987 — has not changed greatly over this time. In a day when physicists working at high energy colliders

often form collaborations of several hundred people, this small group size may be one of the attractive qualities the AGS has to offer. It is especially appealing to graduate students, who, as a result, can participate in the full scope of an experiment.

• A total of 47 experiments was completed from fiscal years 1980 through 1987. Overall averages for the whole period show an approximate 20-month waiting time from approval to the beginning of the run and an estimated 15-month running time per experiment.

In short, a modest-sized group with a good idea can propose a new experiment with a reasonable prospect of having it approved and completed within a few years, so it looks as if the AGS will continue to be a busy place.

— Suzanne Cybart

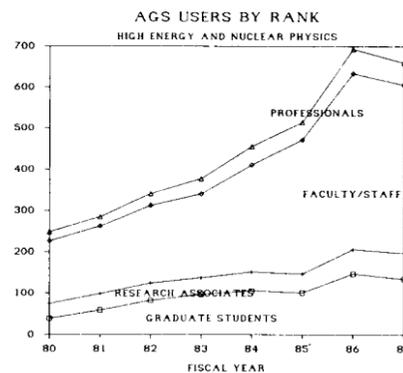


Figure 3

Tick Talk

In spring, an average northern deer tick is the size of the period at the end of this sentence.

By fall, *Ixodes dammini* has grown to one-sixteenth of an inch. From spring to fall, however, its bite is bigger than its size: In Suffolk County, this tick is likely to harbor the bacteria causing Lyme disease in humans and their pets — and one tick bite can transfer that bacteria.

Unfortunately, of the 33 states reporting Lyme disease cases, New York ranks number one, with Suffolk County having the highest incident rate in the state.

You cannot be immunized for this disease, so the best defense is preventing tick bites. When walking in the woods or brush: Wear light-colored pants, long-sleeved shirts and high socks; avoid brushing against plants and branches; and don't touch wild animals. Chemical tick repellents are available at drug stores. After jaunts into nature or your backyard, check yourself, your children and your pets for ticks.

If a tick is attached, grasp the tick with tweezers close to the skin. Slowly pull the tick straight out. If the tick won't let go, smother it with a dab of petroleum jelly. If its head parts break off in the skin, consult your physician.

Don't kill the tick, especially not by crushing. Save it in a jar for identification if necessary. Apply antiseptic to the bite site and wash your hands.

Not all tick bites lead to Lyme disease, as there are other types of ticks and not all northern deer ticks are infected. But you may not know when you are bitten: Engorged from its blood meal, a tick will fall off your skin.

If a tick bites and transmits the bacteria, Lyme disease will manifest itself in three stages:

• **First stage:** One to ten days after a bite, a red, circular skin rash about four inches in diameter appears around the site of the tick bite on two-thirds of those with Lyme disease. It often looks like a bull's-eye.

The rash may be accompanied by flu-like symptoms. If not treated at this stage, the symptoms may disappear, but not the disease itself.

• **Second stage:** Weeks or months later, the disease can manifest itself in neurological disorders, such as inflammation of the brain, in about 40% of its victims, and cardiological disorders in about 10%, including heart-beat irregularities.

• **Third stage:** About 60% of untreated victims will develop arthritis affecting the large joints. Even at this stage, Lyme disease usually can be cured if properly diagnosed and treated with large doses of appropriate antibiotics.

For More Info

For further information about Lyme disease, its prevention and cure, come to the Health Promotion Seminar on Friday, May 20, at noon, Berkner Hall. The speaker will be Raymond Dattwyler, the physician who heads the Lyme Disease Clinic at the University Hospital, State University of New York at Stony Brook. For those who cannot attend, a videotape of the talk will be available in the Health Promotion Section of the Research Library.

As well, look in your mailbox for the May issue of the Safety & Environmental Protection (S&EP) Division Information Bulletin on Lyme disease. S&EP is also mailing a Suffolk County Department of Health pamphlet on Lyme disease to all on-site employees.

AACC Elections

The Afro-American Culture Club (AACC) will hold elections for President and Treasurer on Tuesday and Wednesday, May 17 and 18. Members may vote from 11:30 a.m. to 1:30 p.m., in the lobby of Berkner Hall.

Sign up for Bus Trip To U.S. Open

Don't forget to sign up in the BERA Sales Office for the September 6th bus trip to the U.S. Open at Flushing Meadows. Cost is \$27 for round-trip bus coach and entrance ticket for the daytime tennis matches.

WIS Meeting

The next luncheon meeting of Brookhaven Women in Science (BWIS) will be held on Thursday, May 19, at noon, in Room A, Berkner Hall. Please bring your lunch.

This will be the annual business meeting. All BWIS members are urged to attend. Important programs for next year will be discussed, and your input and comments are essential.

Microcomputer Club

The BNL Microcomputer Club will present a general lecture on data communication, by Ralph Trondle of the Applied Mathematics Department, at noon on Thursday, May 19 in the main conference room, Bldg. 475. In his talk, Trondle will discuss modems, leased facilities and networking. All those interested are invited to attend. For more information, call Frank Salzano, Ext. 4458.

PC Users Group

MathCAD 2.0, an integrated mathematical software package that allows engineers and professionals in technical fields to use a personal computer like a scratchpad will be featured at the next PC Users Group Meeting on Wednesday, May 18, at 2 p.m., in the Applied Math Seminar Room, Bldg. 515. Ralph Hirsch, of MathSoft, Inc., will demonstrate MathCAD, which is designed for people who must perform numerical analysis and document the results. On the same screen, users enter and calculate equations, create plots, and enter and edit text. For further information, contact Kurt Fuchel, Ext. 4116.

Mountain Club

Ten adults, a young boy and a baby girl participated in the Mountain Club's canoe trip down the Carmans River last Saturday.

The next club outing will be camping at FINS, Watch Hill, on May 20-23. A limited number of campsites are available to the club.

The Mountain Club will make its annual trip to canoe the Delaware River at Narrowsburg, New York, on the weekend of June 11.

Anyone interested in these trips should call Don David, Ext. 3942

Volleyball

Standings - Week of May 2

- League II**
Nuts & Bolts defeated Set-Ups.
- League III**
Printouts defeated MISfits.
Sourcerers defeated Screwballs.
- Open League**
Phoenix defeated Dakota.

Awards Dinner

The Volleyball Awards Dinner will be held at the Rock Hill Country Club in Manorville on Friday, May 20, at 6 p.m. Tickets are \$10 per league member and \$14 each for guests. Tickets may be purchased from Barry Karlin, Ext. 5624 or beeper 883, Bldg. 725A, or Walt Reams, Ext. 3408, Bldg. 526. Please contact one of them as soon as possible if you are interested in attending.

Bowling

Pink League

The Apple Blossoms — Renie Rosati, Maria Apelskog, Kathy Folkers and Anne Ostermeyer — are the winners in this league. High games were bowled by Donna Cunningham 201/168/161, Renie Rosati 184, Ann Parrinello 183, Sandy Asselta 176, Kathy Folkers 175, Maryann Reynolds 173.

Red/Green League

R. Mulderig rolled a 256/207/646 scratch series, T. Prach 209, L. Jacobson 204, E. Sperry IV 203/200.

White League

The Diamonds — Nancy and Ted Erickson and Pat and Vito Manzella — are the winners for this league. High games were bowled by Jim Griffin 216, Paul Callegari 209/203, Denise Monteleone 185.

Purple League

Four of A Kind — Sharon and Bob Jones and Mary Grace and Ed Meier — are the second half winners. Jim Marsch rolled a 214/201, Caryl MacDougall 211/188, Skelly Frei 210, Ed Sperry 201, Renee Flack 200, Sharon Smith 192/190, Joyce Pinelli 189.

Softball

Week of May 2

- League I**
Six Pax 11 - Phoubars 9
Cool 'n Gang 10 - Magnuts 9
Blue Jays 16 - Sudden Impact 1
- League II**
AMD 21 - Binary Bombers 11
Titans 13 - Scrambled Legs 9
Dirty Sox 5 - Scram 3
Phase Out 18 - Moles 15
- League III**
Simply Awesome 20 - Source 15
- League IV**
Sandboxes 16 - Seventh Inning Stretch 5

BROOKHAVEN BULLETIN

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ANITA COHEN, Editor
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Arrivals & Departures

Arrivals

Srinivasan Iyer MIS

Departures

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

José Medina Plant Eng.

Cafeteria Menu

Week of May 16

Monday, May 16

Minestrone	(cup)	.75
	(bowl)	.95
Grilled ham steak w/pineapple ring & 1 veg. (lite-weight)		2.75
Turkey Alfredo w/1 veg.		2.85
Pizza deluxe	(slice)	1.35
Hot deli: Pastrami	(bread)	2.75
	(roll)	2.85
	(hero)	2.95

Tuesday, May 17

Chicken noodle soup	(cup)	.75
	(bowl)	.95
Baked meat loaf w/1 veg.		2.85
Shrimp chow mein over rice w fried noodles		2.95
Banana split cold plate (lite-weight)		2.25
Hot deli: Chicken patty on a bun		2.85

Wednesday, May 18

Beef noodle soup	(cup)	.75
	(bowl)	.95
Pork cabbage crisp over rice		2.95
Baked fish w/ Creole sauce & 1 veg.		2.85
Lemon baked fish & 1 veg. (lite-weight)		2.85
Hot deli: Roast breast of turkey	(bread)	2.75
	(roll)	2.85
	(hero)	2.95

Thursday, May 19

Chicken vegetable soup	(cup)	.75
	(bowl)	.95
Stuffed green peppers w/1 veg.		2.95
Veal curry over rice		3.05
Special summer fruit plate (lite-weight)		2.25
Hot deli: Baked ham	(bread)	2.75
	(roll)	2.85
	(hero)	2.95

Friday, May 20

New England clam chowder	(cup)	.75
	(bowl)	.95
Roast turkey w/stuffing & 1 veg.		2.95
Baked moussaka & 1 veg.		2.75
Baked fish w/lemon butter (lite-weight)		2.85
Hot deli: Two chili dogs		2.85

Classified Advertisements

Placement Notices

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

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

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

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

LABORATORY RECRUITMENT - Opportunities for Laboratory employees only.

2855. LABORER - Plant Engineering Division.

OPEN RECRUITMENT - Opportunities for Laboratory employees and outside applicants.

2856. COMPUTER OPERATIONS POSITION - Requires AAS degree in data processing or successful completion of computer operations training program or equivalent experience. Will assist in the operation of a large electronic digital computer. Shift work required. Applied Mathematics Department.

2857. ENGINEERING POSITION - Requires BS in architecture or architectural engineering and a minimum ten years' experience in the design and construction of commercial and industrial type buildings. Experience must include at least five years in project management. Professional certification desirable. Responsibilities include defining project scope through direct contact with user groups and the preparation of drawings and specifications for bidding purposes. Plant Engineering Division.

Motor Vehicles & Supplies

88 CHEVY PICKUP - 4x4, 2500 Silverado, western plow, running boards, loaded, must sell, \$18,500. 734-7325.

86 HONDA SPORT MOPED - 230 mi., like new, excel. cond., \$500. 732-7785.

85 YAMAHA YZ125 - like new, never raced, asking \$900. 585-4176 after 5 p.m.

84 RENAULT ENCORE - hatchback, 54k mi., 35 mpg, 4 speed, am/fm cass., excel. cond. in/out, \$2,500. Torsten, Ext. 3817 or 878-1210.

84 BUICK REGAL - a/c, p/s, am/fm tape, excel. running cond. 878-2038.

84 CHEVETTE - a/t, am/fm cass., new tires, excel. cond. \$3,000. 878-0874 after 5 p.m.

84 FORD MUSTANG - console, am/fm/tape, p/s, p/l, a/c, sunroof, alum. wheels, s/t, 2.3 lt., excel. cond., \$4,999. Ext. 4846 or 363-6940.

83 BUICK REGAL - a/c, p/s, am/fm, beige landau top, excel. cond., \$5,700 neg. Ext. 2964.

82 VOLVO DL - beige, a/t, a/c, stereo, new exhaust, brakes, excel. cond., asking \$6,300. Ext. 2830 or 543-0487.

82 DODGE ARIES - 4 cyl., am/fm stereo cass., new brakes & tires, excel. cond., \$2,250. 363-9527.

82 HONDA ACCORD - 125k mi., good cond., \$1,500. Ext. 4144.

82 CADILLAC SEVILLE - black/grey, loaded, mint throughout, must see. Ext. 4821 or 727-1412.

81 FORD ESCORT - 65k mi., 4 speed, high mpg, excel. running cond., \$1,750. 289-7607.

81 CHEVY MONTE CARLO - a/c, am/fm stereo, 82k mi., very clean, dependable, \$1,850 neg. Saeed, Ext. 4339 or 282-2862, Rm. 8.

80 SUZUKI RS-175 DIRT BIKE - limited edition, runs well, asking \$400. Phil, 286-1348.

80 CITATION - very high mi., many new parts, dependable, basic transportation, \$350 neg. Ext. 4538 or 924-2012 after 6 p.m.

80 MONZA - 4 cyl., 4 speed, look good, needs some work, \$850. Ext. 2175.

80 TOYOTA CELICA GT - 5 speed, moonroof, cass., runs fine, looks good, user friendly. Bill, Ext. 2378 or 758-3284.

80 FORD FAIRMONT - 4 dr., rebtl. 6 cyl. eng., p/s, p/b, a/c, new tires, \$1,800; 81 Fairmont Wagon, 6 cyl., p/s, p/b, a/c, am/fm cass. \$1,800. 736-2494.

79 FORD PINTO WAGON - 4 speed, am/fm, 94k mi., reliable, good cond., \$600. Graham, Ext. 4253 or 331-4171.

79 MUSTANG - p/s, p/b, a/c, am/fm cass., 8 cyl., good cond., asking \$2,000. Ext. 2175 or 399-0224.

78 DATSUN 280Z - 5 speed, new engine, differential, new rear tires & battery, sunroof, mint cont., \$3,800. Sue, Ext. 4931 or 928-7571 eves.

77 PEUGEOT 604 - nice car, needs some work, will consider partial trade for VW 412 or Bug, \$1,500. Dave, 878-8541.

77 DATSUN 810 - p/s, p/b, stick shift, new tires & brakes, runs well, \$625. 286-0682.

76 VOLVO - blue, 4 dr., 244-DL auto, a/c, p/s, p/b, 102k mi., new tires, good cond., \$1,200. 924-0138 after 5 p.m.

76 MUSTANG - 48k orig. mi., red & black, excel. cond., \$1,895. Ext. 5400 or 878-6098.

75 COSWORTH TWIN CAM VEGA - fuel injection, 16 valve, 4 speed, factory alloys, \$2,900. Mark, 731-3629.

75 FORD GRANADA - a/t, p/s, 4 dr., runs well, \$300. Ext. 4530 or 261-2719.

74 CHEVY MALIBU 350 - V8, new battery, ball joint, looks great, running cond., best offer. Pat, Ext. 4254 or 878-8235.

74 VOLVO - 4 speed, 4 cyl., new brakes, good running cond., interior fine, \$500. Ext. 3817 or 878-1210.

71 YAMAHA DIRT BIKERT360 - needs work or for parts, \$50. Ext. 3464 or 737-1458 after 6 p.m.

68 CAMARO - rebtl. 350 eng., good cond. George, 732-6647.

67 MUSTANG - 6 cyl., a/t, runs, needs body work, parts restore, \$550. 924-5248 after 5 p.m., M-F.

SLIDE-ON CAMPER - 10 1/2', self-contained, gas/elec. refrig., sleeps 4, good cond., \$1,500. C. Barrett, Ext. 4558 or 325-0013.

CAR TOW DOLLY - new tow bar, lights, wires, \$1,100. 475-0068.

CAR BATTERY - top mounted, 530 cranking amps, \$30. Lou, Ext. 5454.

TIRES - 4, general, all-terrain, on Ford rims, P235/75, like new, \$300. Ken, Ext. 2350 or 588-2350.

TRAILER - 6x10, 4' sides, fiberglass deck, good cond., asking \$300. Roy, 286-5962.

ATV - H.D. pipe frame & running gear, tow bar, very good shape, needs engine, asking \$200 neg. Ext. 4561.

Boats & Marine Supplies

25' MACH-I CRUISER - 1984, 260 OMC, galley, head, sleeps 4, DF, VHF, Loran, \$19,000 or best offer. Ext. 4345 or 473-9124.

BAYLINER BOWRIDER - 1984, 125 h.p., Volvo I/O, used 100 hrs., fully equipped, mint. \$6,800. Ext. 2981 or 424-6916 eves.

12' SEAGULL SAILBOAT - needs work, \$450 neg. Rick, Ext. 4662 or 744-6059.

14' PENNYAN - 1960, wood, runabout w/glass bottom, 35 h.p., long shaft, '78 Johnson w/generator, new water pump. Ext. 5286.

27' TARTAN - 9 sails, VHF-FM, DF/RDF, autohelm, compass, refinish topside, many extras. 669-9202 after 6 p.m.

14' BLUEJAY SLOOP SAILBOAT - w/trailer, as is, \$400 or best offer. Ext. 7657 or 924-2933.

SKI-MASTER 57 - fiberglass & metal water skis, small; O'Brien water vest, used once, paid \$140, \$65. Ext. 2981 or 744-1440.

Miscellaneous

TAPESTRY SOFA - loveseat, kitchen set, triple dresser, mirror, queen-size bed, headboard, solid wood. 584-6206 eves.

TABLE - round, 48" dia., 4 chairs, mint cond., \$250. Pete, Ext. 4574 or 878-1225.

DISHWASHER - Sears Kenmore, works fine, \$25; Ext. 2679 or 472-6922.

LOUNGE CHAIR - & ottoman, \$75; Eureka upright vacuum, \$40; Waring blender, \$15; punch bowl, \$25. Ellie, Ext. 3395 or 325-1537.

CELLAR STAIRWAY - 8'x3'w, \$50; Singer sewing machine, cabinet model, \$50. Don, Ext. 4821.

DISK DRIVES - in cabinet, w/supply aligned, checked, w/manual, \$90. Rich, Ext. 4172.

DINETTE - small, w/2 swivel chairs, good cond., \$50. 369-2716.

BICYCLE - girl's, 24", 10 speed, very good cond., \$40. 751-5868 eves.

BEDROOM SET - full-size bed, etc., \$200; super 8 mm sound movie camera, projector screen, \$100. Jim, Ext. 4615.

PATIO VACUUM - elec., high cap., indoor/outdoor, \$35. Al, Ext. 2043.

POOL TABLE - w/many accessories, \$300. Ady, Ext. 4531 or 331-3785.

HOSPITAL BED - w/new inner spring mattress, \$450. Pete, Ext. 4574 or 878-1225.

G.E. AIR CONDITIONER - 7500 Btu, \$50; Fleetwing adult bike, \$20; Underwood-Olivetti portable typewriter, \$20. 744-3792.

ELECTRIC RANGING - Kenmore, self-cleaning, 4-5 yrs. old, mint., asking \$285. 281-8274.

FURNITURE - 3 pc. sect., glass tables, driftwood lamp, 6 chair dinette set, queen-size mattress & boxspring, excel. cond., \$800. 727-1412.

ORGAN - Hammond sounder, w/electronic rhythm section, excel. cond., \$200; drum set, Rogers, 5 piece, chrome, excel. cond. 277-2671 after 6 p.m.

COLOR TV - 26", Sharp, remote, \$450. Lynette, Ext. 5136.

COAL - 3 tons, nut, pick up, \$175. 698-7530.

DESK - woman's writing desk, maple, w/chair, \$75; dark maple twin bed, \$50; folding bed, \$25; sm. drafting table, \$25; mini-bike, \$20. 585-4038.

BATHROOM CABINET - hardwood, 3'x2'x10" d, \$50; combo stroller/highchair/rocker/car seat, heavy duty, paid \$600, sell for \$100. 474-3837.

STEREO - top of line Pioneer, 100 watts per, incl. rec., spkrs., turntable, cass. deck. 821-0820 eves.

WATERBED - full-size, good cond., \$180. Dave or Nora, 757-6392.

WEDDING HAT & VEIL - beaded, w/wide brim, \$65. Ron, 289-1003 eves.

GRANDFATHER CLOCK - moving moon dial, triple chime movement, \$400. Jce, Ext. 2898.

SOFA & CHAIR - sell together or separately, very good cond. 475-0509.

CHARCOAL GRILL - Weber kettle, 18", \$30. 473-2473.

FURNITURE - bedroom, Colonial, \$250; living room, contemporary, \$150; wooden table w/2 chairs. Ext. 3969 or 878-6580 after 6 p.m.

LAWN MOWER - 21" cut, self-drive, rear bagger, \$125; JC Penny lawn mower, 21" cut, 3 1/2 h.p., \$50. Dan, Ext. 4987 or 698-7322.

LAWN TRACTOR - Huffly H1054, 8 h.p., pull start, Briggs & Stratton, 26" cut, tuned, \$250. Ext. 3428 or 427-6738 eves.

COUNTRY TABLE - w/2 leaves, 4 chairs, excel. cond., \$300. 924-1038.

FRESH EGGS - brown & white, \$1/dozen. Whitey, Ext. 2913.

GOLF BAG - Ram, w/cover, excel. cond., \$20. Pat, Ext. 2452.

PROM DRESSES - new, never used, reasonable, sizes 7/8, 9/10 & 13/14. 563-2889 after 6 p.m.

BICYCLE - 10-speed, 23 lbs., good cond., \$160. Waiman, Ext. 5488 or 5515.

OCTAGYM - 3-way compact unit, w/rower, vert./horiz. gym & cycle, like new, \$75. Darcy, Ext. 3362.

MEN'S SHIRTS - short sleeve, new, size 15, \$5/each. Susan, Ext. 7715.

REESE EQUALIZER HITCH - single level, \$50. Ext. 4846 or 363-6940 after 5 p.m.

HUTCH - early American, dark pine, 66" w, excel. cond., \$400. 472-2581.

RABBIT/BIRD CAGE - new, metal, removeable cleaning tray, 14x22x19, \$45. 286-0002.

SCREENS & STORM WINDOWS - wood, 9 each, good cond., \$35. Cliff, Ext. 3794.

DOG COLLAR/CHAIN - tire rims. Ext. 2950.

TELEPHONE ANSWERING SYSTEM - Radio Shack Duofone, \$45; Mamiya 35mm camera, model ZE-2, new, \$150. Ext. 3699.

HOME STEREO EQUIPMENT - JBL 3-way speakers, \$300/pr; Pioneer direct drive turntable w/cart-ridge, \$70. Artie, Ext. 5211.

SCREEN - 3-section, amber plastic bottle-glass pattern, oak frame, 78"x77", \$20. Ext. 2981 or 744-1440.

POOL SUPPLIES - diving board, ladder, stabilizer, vacuum head, hose, etc. Ext. 4727.

FOLDING CHAIRS - wood, sturdy, like new, 4, \$10/each; rowing/exercise machine, almost new, \$50. Harry, 345-5467 days or eves.

PRINTER STAND - narrow carriage PC printer, metal, bottom feed slot, orig. \$30, asking \$20. John, Ext. 3292 or 286-1348.

DRAWING TABLE - 72" x42", hardwood top, steel frame, \$225. Ext. 2274 or 878-9023.

DOG KENNEL - chain link, 6'x10', excel. cond., \$50. Dick, Ext. 4797.

Yard Sales

EAST PATCHOGUE - 38 Evergreen Lane, South Country Shores, May 6 & 7. 475-1254.

SHOREHAM - moving, everything must go, Ashley Lane, May 28 & 29. 821-0840.

Free

SOFA BED - queen size. 289-8253.

Car Pools

BOHEMIA/OAKDALE - 2 drivers needed. Frank, Ext. 2314.

BELLPORT - 5th person needed to complete car pool. Liz, Ext. 2456 or ED, 286-7539.

WEST ISLIP/BAYSHORE - looking to join car pool, 8:30 a.m.-5:00 p.m. Mike, Ext. 2705.

Real Estate

Real Estate advertised for sale or rent is available without regard for the race, color, creed, sex or national origin of the applicant.

For Rent

MORICHES - waterfront room in shared house, avail. June 1, \$330/mo. + util. 874-3729 eves.

CALVERTON - 2 bdrm. townhouse, f/p, a/c, 5 appliances. 878-0874.

LAKE PLACID - modern 2 bdrm. A-frame, loft, sleeps 8, full furn., near swimming, boating, golf, tennis, hiking, more. 757-1775 after 3 p.m.

HILTON HEAD, SC - 2 bdrm. condo, sleeps 6, beach, pool, golf, tennis, May-Sept \$420/wk. 585-9149.

BROOKHAVEN HAMLET - 4 bdrm. house, 2 bath, share w/two other professionals, 3/4 acre, \$350 includes all. Sydney Stafford, 286-4028.

PORT JEFFERSON STATION - 2 bdrm. ranch, 1 1/2 baths, furn., 3-Village schools, avail. August 1 to June 30, \$950. T.F. Wong, 331-5049 after 6 p.m.

STONY BROOK - 3 bdrm. house, immaculate cond., walk to village & campus, no pets, non-smoker. 862-7998 eves.

ROCKY POINT - furn. studio apt., private ent., patio, full kitchen & bath, suitable for one person, non-smoker, \$425/all. Ext. 2882.

PORT JEFFERSON VILLAGE - 3 bdrm. house, \$1,100/mo. + util., 1 mo. sec. 821-0840.

SHIRLEY - studio apt., one working person preferred, private ent., \$450/mo. incl. util. 399-0969.

For Sale

PORT JEFFERSON - Harbor Hills, 3 bdrm. Colonial, l/r w/fp, d/r, eik, 2 1/2 baths, near beach & country club, fenced yard/patio, \$210,000. 473-5668.

PORT JEFFERSON - Harbor Hills, 4 bdrm. split ranch, d/r, eik, family room w/fp, brick patio, winter waterview, 24'x44' bsmt., excel. cond., \$199,000. Ext. 4483 or 473-3689.

HILTON HEAD, SC - 3 bdrm. condo, sleeps 8, 2 baths, washer/dryer, wet bar, 6 tennis courts, 3 pools, whirlpool, golf, ocean view, asking \$89,000 or will rent. 929-8912.