BROOKHAVEN BULLETIN
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BROOKHAVEN NATIONAL LABORATORY

Medical Invention Offers Better Way To Identify Lead-Toxic Children

Crawling babies or toddlers often put their hands in their mouths, and that's not usually a problem.

There are, however, millions of U.S. homes with pre-1960, lead-containing paint that can peel from the walls. Young children living in such homes, especially those in urban areas with increased atmospheric lead from vehicles or factories, are at risk from the insidious condition of lead toxicity.

Because of this, from two to four million children in the U.S. today are endangered by undiagnosed lead toxicity. Yet routine tests for the condition are too time-consuming and costly to be generally available.

Now, Lucian Wielopolski, a Scientist in BNL's Medical Department, has invented a device that quickly and easily detects low, but hazardous, levels of lead in pre-school children.

These low levels of lead can result in the child's IQ being compromised before parents are aware of the situation. The child's weight, growth and behavior can also be affected, and the developing central nervous system can be permanently impaired.

Lead in Bone

To identify lead toxicity, Wielopolski's new device relies on the fact that from 60 to 80 percent of the lead in a child's body accumulates in the bone. After much research, the key breakthrough came with Wielopolski's use of a low energy, partially polarized x-ray beam. This causes the lead to show more clearly in the resulting energy spectrum.

"I validated the idea using polarized radiation with aqueous samples," said Wielopolski. "It seemed that the same principles should be useful for patients — and it is."

The beam is directed from an x-ray tube onto about two square centimeters of leg bone. It stimulates the lead in the bone to emit low energy, characteristic x-ray fluorescence (XRF), which is measured by a special detector. Then the amount of lead present is calculated.

"Working out how to build the instrument took about 16 months," said Wielopolski. He was helped in the task by Louis Maresca, Central Shops Division, and John Rothmann Jr., Medical Department, as well as by two visitors, Marek Marianski of the Institute of Medical Biology, Gdansk, Poland, and Ri-qing Zhang of Tsinghua University, Beijing, People's Republic of China.

In the summer of 1986, Wielopolski and Rothmann first used the instrument successfully to measure bone lead in children. Because the test relies on low energy x-rays, the radiation dose to the bone marrow is less than the amount from a single dental x-ray. "Or, less than you'd get from a day in a place like Denver, Colorado, one mile above sea level. From a radiological point of view, it's truly negligible," said Daniel Slatkin, a physician in the Medical Department.

Several Advantages

Slatkin, who has long been interested in research on lead toxicity detection, has worked with Wielopolski since 1981. He explained that the low energy x-rays measure only superficial bone tissue, eliminating the need to account for the shape and thickness of the bone.

The tibia is the most suitable bone to use, as it is covered by the least amount of soft tissue, about two to seven millimeters. Extensive experiments in which bones were analyzed by XRF and then by atomic absorption spectroscopy proved the accuracy of the new method.

Another advantage of low energy x-rays is that concentrations of iron, copper, zinc, bromine, rubidium and strontium contained in bone or overlying soft tissue also show in the spectrum during the lead test, and they can be calculated if required.

Mort Rosen

Lucien Wielopolski checks the height of the scanner on the device he invented for measuring lead content in children, while John Rothmann Jr. adjusts its position. At the same time, Daniel Slatkin arranges the seating angle for Courtney Rowe, who is assuming the role of a patient being screened.

The main advantage of Wielopolski's invention, however, is the speed and ease with which it makes possible an accurate assessment of the need for therapy in lead-toxic children. The conventional procedure first requires a blood sample, which can be very difficult to get from some young children. Also, it signals only lead absorbed during recent months. In contrast, the BNL instrument measures bone lead accumulation over a child's whole lifetime.

Then, using the conventional method, children with blood lead levels above 25 micrograms per deciliter undergo a further, often painful, test, requiring careful monitoring in the hospital for at least eight hours. Wielopolski's invention is painless and takes only 15 minutes.

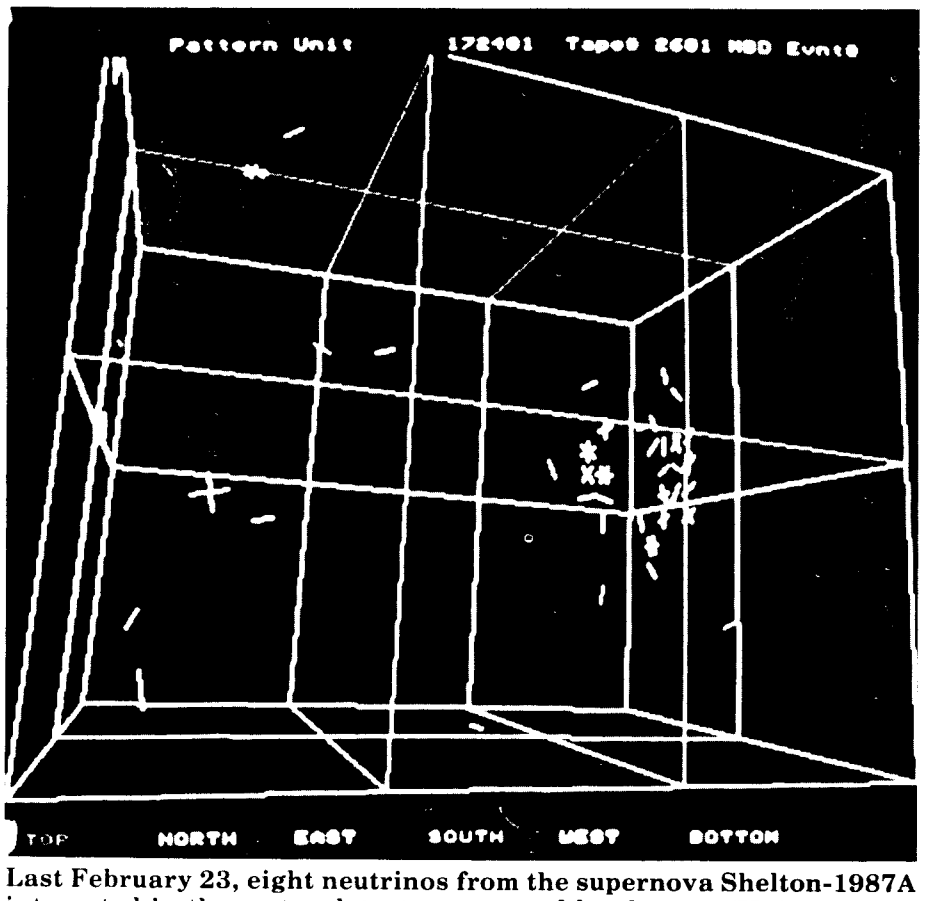
The BNL instrument is currently being evaluated at the Pediatrics Department of the Montefiore Medical Center in the Bronx, in collaboration with John F. Rosen, Professor of Pediatrics, Albert Einstein College of Medicine.

"Both the conventional and new methods are used to test preschool children suspected of lead toxicity," said Wielopolski. "From these initial clinical trials on about 50 children, results have been very good. There is an excellent concordance, about 80 percent, between the standard test and the new measurements."

Refinements to the design are expected to cut the test time to about eight minutes and improve the sensitivity of diagnosis. In addition, said Wielopolski, "A mobile unit is being designed with the Montefiore group as a prototype for assessing children in high-risk areas of New York City. Lead toxicity diagnosis will become more available for anyone needing it."

— Liz Seubert

Signature of a Supernova's Neutrino



Last February 23, eight neutrinos from the supernova Shelton-1987A interacted in the water detector operated by the IMB (University of California at Irvine, University of Michigan and BNL) collaboration in a salt mine near Cleveland, Ohio. This image was produced when photomultipliers were activated by Cherenkov radiation from a 40-million-electron-volt electron produced by the interaction of one of the neutrinos. It was recorded at 7:35:42.02 Universal time (five hours ahead of Eastern Standard Time). The supernova became visible about three hours later.

Patent Awarded

David R. Elmaleh and **Shlomo Levy**, former BNL research collaborators; and **Chyng-Yann Shiue** and **Alfred P. Wolf**, Chemistry Department, were issued U.S. Patent No. 4,617,386 in October 1986 for inventing a new process for the production of ^{18}F-2-Deoxy-2-Fluoro-D-Glucose (^{18}FDG).

The development of the radiotracer ^{18}FDG, coupled with the development of positron emission transaxial tomography (PETT), has made it possible to measure local cerebral glucose metabolism noninvasively in man. The biomedical community is thus able to study the correlation of metabolism and function in a variety of human pathologies as well as in normal activity.

Intense interest in this field has led to many cyclotron-PETT centers setting in place the technology required to produce ^{18}FDG. Since the radiotracer has a half-life of 110 minutes, hospitals equipped with PETT scanners and located within this time limit of a cyclotron center will be able to form "urban clusters," buying any excess ^{18}FDG from the cyclotron for their own use.

However, the original system for making ^{18}FDG needs energies unavailable in many medical cyclotrons. Also, the low chemical yield of the system means that, often, there is not enough ^{18}FDG produced to have any extra.

With the new procedure developed at BNL, rapid, facile production of ^{18}FDG in highly purified form is possible, at a yield much higher than that achieved with conventional methods.

The process begins with the preparation of the novel compound methyl 4,6-O-benzylidine-3-O-methyl-β-D-mannopyranoside. This is then reacted with a triflating reagent, and the resulting compound is reacted with a fluorinating agent. The end product — ^{18}FDG — is isolated and purified by conventional procedures.

Coming Up

Michael Knotek, Chairman of the National Synchrotron Light Source Department, will give the next Brookhaven Lecture, on Wednesday, April 22, at 4:30 p.m. in Berkner Hall. His topic will be "Chemical Surface Bonds: Breaking Up Is Hard to Do."

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The all-Beethoven series the Concord String Quartet has begun at BNL will continue with a concert on Wednesday, April 22. The performance will begin at 8:30 p.m., in Berkner Hall. Tickets will be sold at the door at $9, general admission; $6 for students and those over age 65; and $5 for those under 18.

Arrivals & Departures

Arrivals

John M. Hammond ..... Physics
Jonathan M. Reich ..... Accel. Dev.
William F. Sassano ..... Plant Eng.

Departures

None

Inside Info

Richard Casten and **Robert Chrien,** both Senior Physicists in the Physics Department, have been named Fellows of the American Association for the Advancement of Science (AAAS). A Fellow of the Association is described as a member whose efforts on behalf of the advancement of science or its application are scientifically or socially distinguished.

During the annual AAAS meeting in February, Casten was cited "for ingenious experimental studies of nuclear level structure leading to important insights into the validity of the Nilsson model and Interacting Boson (Fermion) approximations." Casten, who is the Neutron Nuclear Group Leader, collaborates at the High Flux Beam Reactor on studies of symmetries and collective effects in atomic nuclei, with emphasis on the role of the proton-neutron interaction, using both the isotope separator TRISTAN and the neutron capture technique.

Chrien's citation reads: "For fundamental studies of gamma rays associated with nuclear capture of slow and intermediate energy neutrons and recent pioneering measurements of gamma rays emitted from hypernuclei." As Medium Energy Physics Group Leader, he is involved in nuclear physics experiments at the Alternating Gradient Synchrotron, using high energy pions and kaons to probe the atomic nucleus.

14 Win AUI Scholarships for 1987

Fourteen sons and daughters of BNL employees have been chosen to receive 1987 AUI Trustee Scholarships. Each winner will receive $2,000 towards his or her college education, for up to four years of study. The finalists were selected from over 60 applicants by an independent committee appointed by the College Scholarship Service, Princeton, NJ, which administers the program for Associated Universities, Inc.

Daniel Bernstein is the son of Frances Bernstein (Chemistry) and Herbert Bernstein (Applied Science). A student at Bellport High School, he lives in Bellport. He will enter Princeton University, where he will major in mathematics.

Richard DuBois, the son of Maurice DuBois (Fiscal), is a student at Earl L. Vandermeulen High School and lives in Mt. Sinai. He is planning to attend either Harvard University or Yale University and to major in political science.

Marni Goldman is the daughter of Michael Goldman (Associated Universities, Inc.). A resident of Dix Hills, she is a student at Half Hollow Hills High School, West. She will enter the University of Pennsylvania and her major will be materials science.

Carolyn Goodzeit, the daughter of Carl Goodzeit (Accelerator Development), lives in Brookhaven and attends Bellport High School. To pursue pre-law studies, she may matriculate at Duke University.

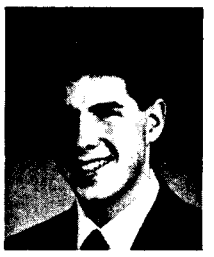
Megan Holden is the daughter of Norman Holden (Nuclear Energy). A student at Shoreham-Wading River High School, she lives in Shoreham. She plans to attend the College of William and Mary and will probably major in government.

Brian McBreen, the son of James McBreen (Applied Science) and Elizabeth McBreen (Physics), will enter Reed College to study archaeology/anthropology. He is a student at Bellport High School and lives in Bellport.

Jennifer McNerney is the daughter of Andrew McNerney (Accelerator Development). She lives in Shoreham and attends Shoreham-Wading River High School. To pursue an engineering major, she will enter either the College of the Holy Cross or the United States Military Academy at West Point.

Christine Melucci, the daughter of Richard Melucci (Applied Science), lives in South Setauket and is a student at Ward Melville High School. She will enter the State University of New York at Stony Brook to major in chemistry as a pre-med student.

Laura Reisman is the daughter of Ann Reisman (Nuclear Energy). To major in Biology, she will attend the State University of New York at Binghamton. She is a resident of Southampton and a student at Southampton High School.



Jeffrey Sacker is the son of Donald Sacker (Medical) and Maureen Sacker (Occupational Medicine Clinic). He lives in Mattituck where he is a student at Mattituck High School. He will enter the College of William and Mary to study history and government.

Jennifer Squires, daughter of Richard Squires (Instrumentation), lives in Shoreham and is a student at Shoreham-Wading River High School. She plans to major in English at either Barnard College or Swarthmore College.

Morag Sutherland is the daughter of James Sutherland (Applied Science). A resident of Brookhaven, she is a student at Bellport High School. She is undecided about her future college and major.

Kevin Tebbutt, son of Ann Tebbutt (Biology), lives in Stony Brook and is a student at Ward Melville High School. He plans to matriculate at either Duke University or Tufts University to major in business administration.

Kelly Tighe is the daughter of John Tighe (Fiscal). She lives in Shirley and is a student at William Floyd High School. To study optometry, she will enter the Joint Accelerated Optometry Program, run by the State University of New York (SUNY) College at Potsdam and the SUNY College of Optometry.

Reports Available

The following reports are now available to the Laboratory staff and to affiliates of the DOE, AUI and NRC. Others may purchase the reports from the National Technical Information Service, U.S. Dept. of Commerce, 5285 Port Royal Rd., Springfield, VA 22161. Staff members should call the designated contact at the extension listed.

BNL-51993
Contact: L. Morrison, Ext. 4207
1985 Environmental Monitoring Report. L.E. Day, et al.

NUREG/CR-4659
BNL-NUREG-52007
Vol. 1
Contact: J. Murray, Ext. 2446
Seismic Fragility of Nuclear Power Plant Components (Phase 1). K. Bandyopadhyay, et al.

BNL-NCS-51771
First Edition
Supplement Two
Contact: A. Lopez, Ext. 2902
Integral Charged Particle Nuclear Data Bibliography. Literature Scanned from April 1, 1985 through March 31, 1986. N.E. Holden, et al.

AA Meetings

Alcoholics Anonymous (AA) meetings are being held at the Lab every Tuesday at 5:30 p.m. All employees, others with current BNL identification cards and their spouses are invited to participate. To find out the location of the meetings, call the Employee Assistance Program, Ext. 2733. As participation in AA is confidential, you will not be asked to identify yourself when making the inquiry.

NATIONAL SCIENCE & TECHNOLOGY WEEK APRIL 5-11 1987

BNL's Fabulous Forty

Photography Supervisor Robert Walton first picked up a camera at age 12. That same year, the young amateur photographer tied his camera to a kite to take his first aerial picture and to a railroad track to take his first stop-action photo. The interest in technical photography that he demonstrated from a young age would serve him well, first in the Navy during World War II and then at the Lab, from its beginning in 1947.

After enlisting in 1943 at the age of 17, Walton enrolled in two Navy photography schools. "Being a photographer gives you a front row seat to the action on stage," comments Walton. "As a combat photographer, I got my first chance to see a lot and meet a lot of the important players during the war in the Pacific — Iwo Jima, Okinawa, Guam and Saipan."

After his three-year stint in uniform, Walton returned home to New Hyde Park and snapped publicity photographs for New York shipping lines. As an ambulance chaser covering Nassau County, he moonlighted taking accident pictures, which he then sold to the New York Daily Mirror, Daily News, the Times and news wire services, as well as to the victims' insurance companies.

Mort Rosen

Robert Walton

"My father, who had worked at Columbia for the Manhattan Project and had become BNL's stock supervisor, suggested that I come out and look at the place," recalls Walton. "So I did — on April 2, 1947. I met [then head of Photography & Graphic Arts Division] John Garfield. We talked photography, and he hired me on the spot."

Walton was issued BNL life number 536. His daughter, Pamela Esposito, Chemistry, is the family's third generation working at the Lab.

In the beginning, Walton used his personal photography equipment, which included a Speedgraphic 4 x 5 format camera, to make images of construction, experiments and visiting dignitaries. He processed his own film in a darkroom, which actually was a walk-in refrigerator, in Bldg. 134, a former mess hall.

"From the beginning, the product of the Lab's research often has been either photographs or papers — and often those papers contain photographs," explains Walton. "I get a kick at seeing pictures I took many years ago just published in school textbooks."

Photography was not only his vocation, but also his avocation: After the Camera Club was formed in 1949, Walton served as president and was an active member for many years.

During the construction of the Brookhaven Graphite Research Reactor, Walton received his most memorable assignment: to photograph the welds holding together the bed plates on which the northern half of the reactor would sit. To do this, Walton was required to shimmy under the bed plates to what would be the center of the reactor and shoot by the light of a flashlight. Admits Walton, "That was when I was a slim youth with a 28-inch waist — I couldn't do it today."

Since he had taken pictures over the Pacific, Walton made the first aerial photograph of the site. "A duck farmer in Center Moriches had a Piper Cub at a little air strip, which is now the Brookhaven Airport, and he'd fly me up at high noon, and I'd hang out the side to shoot," Walton reports. While the techniques didn't change much, the aircraft did: Walton did his last overhead shoot in a Jet Ranger helicopter seven years ago.

"Because they all came through Brookhaven, you name some important scientists and I have probably taken their pictures," says Walton. "I must say it is an experience telling a Nobel Prize winner in physics to turn around and smile for the camera."

Of the scientific personalities he has photographed, Walton was most impressed with American physicist J. Robert Oppenheimer. Reports Walton, "He had a dignified bearing, and something about him invited your interest and commanded your respect. Before I met him, I had read about his work and the controversy surrounding him. Though he was not popular with some, I thought he spoke well and I admired him for it."

Photography has on file half a million negatives, but "I couldn't guess how many are mine," says Walton. In addition to shooting numerous stills, he took motion pictures of different experiments in action. "High-speed motion pictures in those days were 8,000 frames a second — today it's high-speed video," he explains.

Walton went from photographer to supervisor in May 1969. "Except on vacation, I don't shoot anymore, and I miss having my hands on a camera and being out in the field," Walton adds, from behind a desk in Bldg. 118. Having put down the camera, he is thinking of picking up the pen "to write a novel about a man's journeys in life — but I probably won't start my book until I retire, and I haven't thought seriously about retiring yet."

— Marsha Belford

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Swim Club

As the sole representative of the BNL Swim Team at the Connecticut Masters April Fool's Swim Meet in New Haven last Saturday, Team Captain Peter Heotis pushed back the clock to set personal records in two individual events.

50-yard Freestyle		
Peter Heotis	25.45	4th men 35-39
100-yard Freestyle		
Peter Heotis	56.19*	4th men 35-39
200-yard Freestyle		
Peter Heotis	2:08.99	4th men 35-39
100-yard Butterfly		
Peter Heotis	1:01.70*	2nd men 35-39

*indicates personal record

The Swim Club will meet for our usual practice on Thursday, April 16, at 5:15 p.m. at the BNL pool. All who can swim two laps of the pool without stopping using the crawl stroke are invited. For more information, contact Marsha Belford, Ext. 5053, or Peter Heotis, Ext. 2304.

Generosity Recognized

Mort Rosen

More people than ever can be helped by United Way this year, since Long Islanders increased their 1986 donations by 10.8%. BNL employees went even further. Lab contributions, totaling $76,205 in the 1986 fund drive led by Louis Di Carlo, Supply & Materiel Division, were up 15% over the previous year. In late March, a Leadership Award was presented by Janet Pearce, representing the United Way, to Di Carlo (right) and James Desmond, Director's Office, who is responsible for nominating each year's BNL fundraising representative.

Volleyball

Standings - Week of March 30

Open League	
Phoenix	55-5
Dakota	48-12
Odds & Sods	35-25
Court Jesters	30-30
Rowdy Radicals	28-32
Target	24-36
Duituits	13-47
Out of Control	7-53
League I	
Dinkers	45-9
Upfagrabs	44-10
Xrayted	32-22
Phoubars	21-33
Bumpers	14-40
Net Results	6-48
League II	
Cannonballs	37-14
TNT	36-12
Nuts & Bolts	33-12
Fossils	23-22
Chunga's Revenge	22-26
Misfits	7-41
Upton Ups	7-38
League III	
Floaters	39-12
Printouts	35-16
Foul Ups	31-23
Sourcerers	24-27
Screwballs	24-27
Not Yets	17-34
Odd Couples	10-41

At The BERA Store

The BERA Store, located off the lobby in Berkner Hall, is open each workday between 9 a.m. and 2 p.m. In addition to the newly improved film processing service supplied by Union Photo Company of Clifton, New Jersey, the following sales and services are available.

- **Merchandise sales** — Film, flashbulbs, batteries and a attractive assortment of Majestic and Gordon Fraser greeting cards.
- **Ticket services** — *Magic Kingdom* membership cards for Disney World, Epcot Center and Disneyland at no cost to employees; *Great Adventure* tickets at $14 each; sale of *UA Theatre* discount tickets at $3 each will resume during the month of May; *Metropolitan Opera* and *Islanders Hockey* tickets are sold during the regular seasons (Bulletin announcements are made one to two weeks prior to the start of ticket sales).
- **Handouts** — Twofers for some Broadway shows; travel brochures and flyers; B J Wholesale Club info brochures; various magazine discount subscription info flyers; copies of East End Art News.

The BERA Store is also the official redemption center for the BERA Participation Awards.

For more information about the store, call Louisa Barone, Ext. 3347.

Afro-American Culture Club

The Afro-American Culture Club will hold elections for vice president, recording secretary and corresponding secretary, on Wednesday and Thursday, April 15 and 16, from 11:30 a.m to 1 p.m. in the lobby of Berkner Hall. The candidates are:

Vice President —
Clement Auguste
William Sells
Roger Taneus

Recording Secretary —
Pauline Dixon
George Grigg
Jean Sells

Corresponding Secretary —
Barbara Kponou

Cafeteria Menu

Week of April 13

During Passover, look for these items throughout the Cafeteria:

Passover matzo	Clear chicken soup
Gefilte fish	Borscht (hot & cold)

Monday, April 13		
French onion soup	(cup)	.75
	(bowl)	.95
BBQ chicken w/1 veg.		2.75
Pepper steak over confetti rice		2.75
Hot vegetable plate (lite-weight)		2.20
Hot Deli: Fresh ham	(bread)	2.45
	(roll)	2.55
	(hero)	2.65
Tuesday, April 14 — First day of Passover		
Turkey noodle soup	(cup)	.75
	(bowl)	.95
Clear chicken soup	(cup)	.75
	(bowl)	.95
Broiled fresh fish w/1 veg.		2.85
Chicken croquettes w/1 veg.		2.65
Hot Deli: Grilled Reuben sandwich		2.55
Wednesday, April 15		
Potato leek soup	(cup)	.75
	(bowl)	.95
Clear chicken soup	(cup)	.75
	(bowl)	.95
Beef stew w/biscuit & 1 veg.		2.65
Broccoli & shrimp stir-fry w/1 veg.		2.75
Hot Deli: Turkey	(bread)	2.45
	(roll)	2.55
	(hero)	2.65
Thursday, April 16		
Tomato beef vegetable soup	(cup)	.75
	(bowl)	.95
Hot borscht	(cup)	.75
	(bowl)	.95
Chicken stir-fry w/snow peas		2.65
Seafood croquette w/1 veg.		2.75
Hot vegetable plate (lite-weight)		2.20
Hot Deli: Roast beef	(bread)	2.45
	(roll)	2.55
	(hero)	2.65
Friday, April 17		
Seafood gumbo	(cup)	.75
	(bowl)	.95
Hot borscht	(cup)	.75
	(bowl)	.95
Broiled fresh fish w/1 veg.		2.85
Yankee pot roast w/1 veg.		2.65
Hot Deli: Pastrami	(bread)	2.45
	(roll)	2.55
	(hero)	2.65

Basketball

First Game

Longshots — 50		Hollywood — 37	
W. Cummings	18	E. Meier	13
J. Cyr	12	G. Mack	10
F. Molone	6	R. Domenech	8
L. Walcott	6	D. Nordstrum	4
R. Seymore	4	W. Gunther	2
R. Rowley	2		
S. Springston	2		

Second Game

Runaways — 77		Celtics — 62	
G. Shepherd	22	J. Gaeta	12
R. Moran	16	T. Mendez	12
S. Gilbert	15	P. Ratzke	12
J. Desmond	14	M. Williams	8
T. James	9	M. Fulkerson	6
A. Stillman	1	R. Garappolo	6
		N. Schaknowski	4
		R. Mease	2

Bowling

Red/Green League

High games were bowled by F. Hohmann 229, J. Morris 214/200, C. Bohnenblusch 212, C. Bachsmith 210, R. Jones 203, E. Sperry IV 202.

Pink League

M-G Meier rolled a 197, Ellie Kristiansen 195/177, Sandy Asselta 174, Ann Parrinello 165/161, Donna McCambridge 163.

White League

Ed Sperry IV had a 236, Ken Asselta 211, Ken Riker 210, Skelly Frei 203, Ron Picinich 202, M-G Meier 195, Pat Manzella 180/176, Kay Conkling 177, Gerry Riker 176, Ruth Sheehan 176.

Purple League

Lee Barberich had games of 213/202, Fran Brown 205, Betty Jellett 182, Pat Oster 180, Mary Scheidet 182/180, Joe Ferrante 213, Ben Belligan 214.

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.

2583. LABORER - (6 openings, 5/18/87 - 10/4/87) Plant Engineering Division.

2584. LAUNDRY OPERATOR B - (5/18/87 - 10/18/87) Plant Engineering Division.

2585. MATERIAL HANDLERS - (6/15/87 - 9/4/87) Supply and Materiel Division.

2586. SECRETARIAL POSITION - Requires AAS degree in secretarial science or equivalent, the ability to take shorthand and knowledge of general office procedures. Previous experience in a purchasing environment and familiarity with MICOM word processing and IPAP system desirable. Contracts & Procurement Division.

OPEN RECRUITMENT - Opportunities for Laboratory employees and outside applicants.

2587. MANAGER, SAFEGUARDS & SECURITY DIVISION - Reports to the Assistant Director Reactor, Safety and Security. Requires extensive managerial experience in the security field, experience in assessing the security needs of a facility and the implementation of a comprehensive security plan. Must have the demonstrated ability to efficiently and effectively manage and coordinate a staff of professional and support personnel. Previous experience in the DOE system is highly desirable. Additional requirements include excellent oral and written communication skills, and a BS degree in a relevant field or equivalent experience. Will have oversight responsibilities for the Police Group including training, classified information; and technical, physical, and personnel security functions. Please submit resume to Marsha R. Kipperman, Personnel Division, Bldg. 185.

Autos & Auto Supplies

84 CADILLAC FLEETWOOD BROUGHAM - V8, full power, low mi., Royal Seal tires, 4 dr., $13,000. neg. Ext. 2021.

YAMAHA MINIBIKE - used, any reasonable offer: Ext. 7156 or 751-3223.

81 GRAND PRIX - a/t, V6, low mi., p/s, p/b, a/c, am/fm, $4,000; 76 Cutlass Supreme, T-top, a/t, V8, p/s, p/b, a/c, restored, $1,650. 732-6569.

TIRES - P215/75R15 WW steel-belted radial, (1) new, driven 50 miles, (1) driven 16,000 miles, both for $50. Ext. 2981 or 473-7809.

71 F350 FORD PICKUP - high cap, trailer hitch, wiring, extra duals, very good motor, tires, box, etc., $2,500. 878-6637.

81 FORD MUSTANG - metallic blue, htchbck., 4 spd., am/fm cass., new tires, very good cond., orig. owner, $1,800. Bill, Ext. 3173.

WESTERN WHEELS - (4), cast aluminum, Cyclone II, 15x7, w/all parts, locks (4-lug), were on 78 Datsun 280Z, $175. Sue, Ext. 4931.

78 BUICK SKYLARK - 2 dr., gray, black vinyl top, needs trans. work, $400. neg. 399-0942.

FORD RIMS - (2), 14", $5./each. Al, Ext. 7588.

73 FORD RANCH WAGON - full-size, seats 8, dependable transportation, new 5 yr. battery, $300. Jack, Ext. 4447 or 744-3919 eves.

TOYOTA - am/fm cass. equalizer, retail $800., asking $300. 231-5749.

82 PLYMOUTH CHAMP - new tires, brakes, 4 spd., sunroof, excel. in/out. 363-7032.

CHEVY 327 - early heads, 350 water pump, pulleys, brackets, distributor, etc., $50. takes all. Dan, Ext. 4987 or 698-7322.

79 FAIRMONT - a/t, a/c, p/s, p/b, recently replaced tranny, exhaust system & more, excel. running, $800. 929-8105 eves.

74 BRAVO POP-UP - sleeps 8, sink, 3-burner stove, 3-way refrig., gas heater, 2 gas tanks, tandem axle, port-a-potty. 924-0539.

76 GMC JIMMY - V8, 62K mi., rebuilt a/t, am/fm cass., a/c, High Sierra Package, asking $2,500. John, Ext. 4489.

79 MALIBU WAGON - p/s, p/b, a/c, V8, a/t, $1,100; Chevy Nova, 6 cyl., a/t, $500. 281-2452.

77 DODGE MONACO WAGON - runs well, no oil, good tires, loaded, hitch, $1,250. 473-0495.

77 VW RABBIT - 4 dr., htchbck., a/t, sunroof, new trans., asking $1,200. Ext. 4049 or 744-8087.

85 CHEVY CHEVETTE - sunroof, mint, 24k mi., $5,000 firm. Marie, Ext. 7692.

75 FORD GRANADA - 3 spd., excel. running cond., $500. Ext. 3045.

84 PONTIAC SUNBIRD - 4 cyl., 5 spd. std., metallic blue, sunroof, excel. cond., 727-5371 after 3 p.m.

75 FORD LTD - 4 dr., new trans., orig. owner, excel. cond. Ext. 2265 or 289-0567 eves.

77 CAMARO - V8, a/t, black; 73 Capri, stand., decor. group, many new parts; 79 Pontiac Sunbird, must sell. 744-0725 eves.

74 YAMAHA 400MX - dirt bike, rebuilt, many extras, asking $300. Jim, Ext. 4986.

80 FORD - 4 dr., a/t, a/c, am/fm cass., 6 cyl., 65k mi., best offer. 924-9637, please leave message.

78 AMC CONCORD - 6 cyl., 4 dr., a/t, p/s, am/fm cass., 65k mi., new exhaust, good tires, brakes & battery, asking $1,500. Ext. 2621 or beeper 266.

67 CHRYSLER CONVERTIBLE - 383 V8, a/t, p/s, p/b, p/w, new top. Tony, 698-9274.

72 PLYMOUTH - full-size station wagon, excel. running cond. Ext. 2022 or 744-8386.

77 ELDORADO - new tires & exhaust system, am/fm stereo w/tape, good cond., must sell. Ext. 7732.

81 DATSUN 200SX - 5 spd., a/c, p/s, p/b, Keystone sun spokes, am/fm stereo cass., excel. cond., $3,000. Bob, Ext. 4446 or 654-3989 after 6 p.m.

75 VW BUG - yellow, good running cond., good transportation, $575. Fred, Ext. 7947 or Brian, 399-6333.

75 DODGE DART - custom, 6 cyl., a/t, p/s, p/b, 4 dr., very good cond. in/out, $790. 862-7821.

77 CAMARO - runs, needs work, good for parts, $400. 878-2040 after 6 p.m.

80 FORD FAIRMONT - s/w, a/c, p/s, p/b, stand., runs well, $900. Ext. 3499 or 736-2575f eves.

JAWA MOPED - class C, no license or helmet required, $275. Bob, Ext. 4002 or 924-7658.

76 WILDERNESS CAMPER - 18', self-contained, excel. cond., $3,500. 874-3796.

75 PALOMINO POP-UP - sleeps 6-7, stove, oven, 3-way refrig., generator, pres. water, porta-potti, battery, awning, easy lift, $1,800. 473-6546.

71 CHEVY MALIBU - 2 dr., 307 engine, a/t, p/s, orig. owner, $550. Gordon, Ext. 3216.

67 CHRYSLER CONVERTIBLE - 383 V8, a/t, p/s, p/b, p/w, new top. Tony, 698-9274.

77 MERCURY COUGAR - good cond., asking $600. John, Ext. 3292 or 286-1348.

70 POP-UP TRAILER - Starcraft, sleeps 8, sink, ice box, gas stove, awning, good cond., $1,200. Frank, Ext. 7684.

REAR LOWER PANEL - holds tail lamp assemblies, also left rear quarter panel, for 1960-67 Mercedes 200, 200D, 190, 190D. Ext. 4204.

WIRE WHEEL COVERS - (4), 15", like new. 325-0447 after 6 p.m.

AMC TIRE - 14", w/rim, good for spare. $10. Janet, Ext. 2345 or 929-8152.

79 MUSTANG II - 4 spd., high mi., good tires & body, new exhaust, asking $790; 81 Suzuki GS250T, low mi., excel cond., $590. 929-8287.

77 PLYMOUTH VOLARE - station wagon, $500. 924-7262 after 6 p.m.

78 CORVETTE - mint cond., completely redone, white/red interior, asking $11,500. 589-7496.

78 DATSUN 200SX - very good running cond., am/fm, recent exhaust & brakes, asking $700. 281-0486.

80 VOLVO DL - 4 dr., a/c, am/fm cass., 72k mi., orig. owner, excel. cond., $4,800. Howie, 751-6172.

71 CHEVY MALIIBU - 2 dr., 307 engine, a/t, p/s, orig. owner, $550. Gordon, Ext. 3216.

85 DODGE OMNI - 2.2, 5 spd., am/fm, p/s, p/b, 32k mi., excel. cond., asking $4,200. Ext. 3872.

72 TRAIL KING POP-UP - hardtop, sleeps 6, dinette, refrig., stove, sink, very good cond., $900. Mike, Ext. 3476 or 473-2863 after 5 p.m.

78 MUSTANG II - 72k mi., V6, a/t, p/s, p/b, exhaust, tires, blue, new paint, excel. cond., $2,150. Ext. 4527 or 281-9412.

86 MONTE CARLO SS - black, T-tops, loaded, 13k mi., $13,500 firm. 736-7352 after 6 p.m.

78 CAMARO Z28 - a/t, p/s, B&M shifter, Holly carb., stereo, 45k mi., excel. cnd., $3,200. 289-0904.

79 FIAT X 1/9 - hardtop convertible, black, 5 spd., new Blaupunkt stereo, new exhaust, 61k mi., 981-0838.

Boats & Marine Supplies

19½' BAYLINER - Capri Bowrider, Volvo I/O, trailer, top quality Coast Guard & ski equip., full canvas, all covers, $9,400. Ext. 2981 or 473-7809.

18' REDKEN - 1983, I/O, 120 h.p. O.M.C. w/trailer and full cover, excel cond., $5,900. Ady, Ext. 4531 or 331-3785.

19' FIBERGLASS - w/115 h.p. Johnson, trailer, and many extras, very good cond. Shu, Ext. 3499.

30' COLOMBIA - 1975, Parlmer V8, VHF, new depth finder, s. platform, all covers, extras, $17,500 neg. Ext. 2021.

20' GLASTRON - f.g., full canvas, less motor, Teleflex steering, $990. Jim Klein, 298-8805.

GALVANIZED CHAIN - ⅜, $1.60 per foot. 399-1679.

27' BRISTOL - weekender, new diesel aux., good sails, fully equiped, teak trim. 941-9423.

16' STARCRAFT - aluminum boat, Holsclaw galv. trailer, spare, extras, $500. Ext. 4238 or 286-3509.

TELEFLEX STEERING CABLE - used one season, asking $50. Bob, Ext. 4446 or 654-3989 after 6 p.m.

Miscellaneous

ROSS CHILDREN'S BIKES - (2), 14" & 16", w/training wheels, good cond., $25./ea; child's car seat, good cond., asking $10. Peter, Ext. 4094.

NY METS TICKETS - (2), reserved box seats, various dates. Bill, Ext. 2171.

YANKEE/SOX TICKETS - (2), great seats, behind home plate, May 12, night game. Ed, Ext. 2007 or 751-1474 eves.

AZALEAS - 5' diam., U-dig; Franklin stove. 689-9234.

WHIRLPOOL DRYER - portable electric, like new, harvest gold, asking $150. Grace, 732-3549.

RIVAL MEAT GRINDER - $20; kerosene heater, Sun-air glow, 22,800 Btu, $90; recliner, brown vinyl, $90. Ext. 2683 or 751-2469 eves/wknds.

MOVIE CAMERA - Sanyo, EM-40XL, w/tripod, like new, best offer. 363-7032.

TRADITIONAL SOFA - blue & white floral velvet, $75; range, 40", self-cleaning, double oven, $100. 744-0722.

HOTPOINT RANGETOP - 4 burners, 20"x20½", $15; birch box cabinet for rangetop, $15. Jack, Ext. 4447 or 744-3919 eves.

WINDOWS - (2), custom-made, vinyl, double-hung, insulated, 35"x37", barely used, $75./ea; chest of drawers, (4), nursery blue, $40. Ext. 7112.

LAWN MOWER - 20" blade, 3½ h.p. Briggs & Stratton, good cond., $50. Dan, Ext. 4987 or 698-7322.

10-SPEED BICYCLE - Schwinn LeTour III, Avocet saddle, toe clips. Frank, Ext. 2377 or 325-9584.

STEREO - power amplifier, QSC-A31, 125/200, @8/4 ohms., 0.1/Thd., black; waterbed, king, bookshelf headboard, 6-drawer base. Ext. 5110.

TWIN BED - & mattress, good cond., $25. 751-3062.

MICROWAVE OVEN - large. 475-9452 after 5:30 p.m.

L.I. PHILHARMONIC TICKETS - (2) each, April 11 & May 2 performances, $15./each. Ext. 4690 or 265-5218.

METS TICKETS - various games, loge box, behind 1st base, $20./per pair. Tony, Ext. 3194.

PHYSICAL FITNESS EQUIPMENT - Soloflex deluxe, $400. firm. Maria, Ext. 7692.

TRAVERSE CURTAIN ROD - gold. John, Ext. 5279.

ENGAGEMENT RING - 14k gold, .27 carat, premium stone, (2) side diamonds, appraised at $625, asking $450. Pete, Ext. 7627 or 929-3847.

PC SOFTWARE - math compatibles, fraction, decimal, equation. 751-1042 eves.

9" TV - J.C. Penny, solid state, b/w, very good cond., $25. Ext. 2733.

FABERWARE PERCOLATOR - 2-4 cups, $15; 8-piece Flint utensil set w/rack, $15; 6-piece Flint knive set w/rack, $15. 744-6292.

INFANT'S EASTER COAT/HAT - size 2T, lt. green satin trim, worn twice, $5. 744-3069.

19" TV - Zenith, portable, B&W, good cond., $45; (1) men's tennis racket, (1) women's tennis racket, $25./ea. Ext. 3701.

SPEAKERS - (2), wood cabinets, 6½ woofers, 2½ tweeters, 20 watt capacity, 8 OHMS, $30. Hohn, Ext. 7671.

ROSS BICYCLE - man's, 12-speed, 21" frame, 27" wheels, Shimano components, extras. Ext. 2022 or 744-8386.

HUMIDIFIER - West Bend Vapor, all automatic, 8 gallon/24 hour, asking $25. Bob, Ext. 4446 or 654-3989 after 6 p.m.

1200 WATT GENERATOR - 3.5 h.p. Briggs & Stratton, needs minor work, $100. Scott, Ext. 7578.

10-SPEED BIKE - like new, $74. Bill, Ext. 2378 or 758-3284.

ROWING MACHINE - DP300, $75; Carafe, silver-plated, 20-cup, w/warmer, $30. Paula, 654-1185 eves.

FLOWERS & VEGETABLES - 4 & 6 pack, large selection, delivery week of 5/11, 80¢/pack. 727-6818 after 3:15.

AZALEAS - 2'-3' high, $5./ea; petunias, begonias, marigolds, $10./flat; hanging fuschia baskets, 8", $10; geraniums, $2./ea. Ken, Ext. 7915 or 744-0722.

CAMERA - Vivitar PS-35, auto., w/gadget bag, excel. cond., $50. Ext. 3894 or 744-9812.

LIVING ROOM FURNITURE - couch, love seat, dark brown crushed velvet, swivel chair, Belgium-cut velvet, very good cond., $275. Jim, Ext. 4758.

TYPEWRITER - Smith Corona, electric, shift key broken, $25. John, Ext. 5152 or 281-2471.

BABY ITEMS - crib, playpen, etc. 473-0794.

SEARS WASHER/DRYER - like new; tot's crib/mattress. 289-5377.

SONY CAMCORDER - 8 mm, CCD8AFU, like new, auto. focus, standard access., Sony guarantee, $995. Paul, 727-4859.

SKIS - 160 cm., Hart Freestyle w/Tyrollia 170 bindings, poles, $90; Caber 8½ med. boots, $35; combination, $120. Dave, 744-7981.

SONY STEREO SYSTEM - HP250, am/fm w/external speakers, $70; (2) headboards, maple, twin size, $15; card table, felt top, $40. Tony, Ext. 2050.

TOP SOIL - screened, delivered, $12./per yard. 924-7746.

COPPER TUBING - (24) ½" pieces, 10' long, type M, $2./ea. Ext. 5400 or 874-3447.

8' PATIO DOOR - double glass, $200; aluminum sliders, 6'x5', 4'x5' many more, w/storms & screens, best offer. Al, Ext. 3492 or 331-1003.

KITCHEN TABLE - Colonial, w/leaf, (4) captain's chairs, $100; glass shower doors, w/track for tub, $50. Ext. 4049.

H.F. HAM STATION - Heathkit, MR-1, MX-1, AC power supply, great for novice, am & cw 80-10M. Jack, Ext. 7869.

MOVING SALE - 7' sofa, (2) chairs, $175; marble lamp, $55; elec. organ, $175; refrig., $350. 758-7365 or 475-7024.

Car Pools

STONY BROOK - van, needs members, door-to-door service. Sid, Ext. 4125 or Paul, Ext. 2476.

ELMHURST, QUEENS - Costas, Ext. 4944.

OAKDALE/BOHEMIA - would like to form car pool. Frank, Ext. 2314.

PATCHOGUE - van, seat open, leave name & number. Ext. 4669.

LIE EXIT 54/WILKES RD. - driver needed for 4-person car pool, 8:50 a.m.-5 p.m. Mike, Ext. 2705.

Free

BASSET HOUND - pedigree, female, 14 mo. old., spayed, housebroken, shots, likes children, brown, white & black. Richie, 732-6838.

SIBERIAN HUSKY - female, fixed, shots, papers, great with children, blue eyes. Scott, Ext. 7578.

DACHSHUND - 1½ yrs. old, AKC, w/papers, needs good home. 286-2743.

CAT - female, darling, young, neutered, adoption by properly qualified person(s). Ron Manning, Ext. 7533 or 286-0353 eves.

KITTEN - named Smudge, please adopt, male, litter trained, 6 mo. old, very loving. Ext. 3012 or 286-2120 eves.

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

HILTON HEAD, SC - 2 bdrm. condo, sleeps 6, extras, golf, tennis beach, pool, $300/wk. before 4/11, $400/wk. after 4/11. 585-9149.

SELDEN - Village in the Woods, spacious 1 bdrm. apt., eik, cent. a/c, w/w carpet, 1 yr. lease, avail. June 1, $625/mo. incl. heat and gas cooking. Lynn, Ext. 2780 or 732-7954 after 6:30 p.m.

EAST PATCHOGUE - good neighborhood, large studio rooms, l/r, bdrm., kitchenette, full bath, single prefered, ref., no pets, $650/mo. incl. heat and water. 758-3599 after 7 p.m.

SOUTH JAMESPORT - 3 bdrm. ranch, completely furnished, summer rental, cathedral ceiling, f/p, private bay beach, $9,000/season. 722-8096.

For Sale

SHOREHAM - 3 bdrm. ranch, l/r, d/r, eik, fam. rm., heavily wooded acre, SWR schools, taxes $1,200. $129,000. Ed, Ext. 7786 or 744-7796.

EAST PATCHOGUE - steps from the bay, located on quiet lane, near marina, 4 bdrm., 2 baths, eik, l/r, den. 289-6407 after 6:30 p.m.

PATCHOGUE - 3 bdrm. custom-built ranch, l/r, w/f/p, 1½ baths, 2 extra finished rooms in bsmt., breezeway, gar., screened back porch, pool patio, mint cond., taxes $1,200. $152,000. 475-7272 after 6 p.m.

RIVERHEAD - 12'x55' mobile home, 2 bdrm., 1½ baths, l/r, eik, new shed, dbl. drive, corner lot in adult park on Peconic River. Jeff, Ext. 2907 or 727-5915 after 6 p.m.

BROOKHAVEN HAMLET - ten, one-acre+ building plots, prime area, treed, shrubs, 12" top soil. Ext. 4040.

Wanted

TENOR - & bass for on-site Octette. Janet, Ext. 2345 or John, Ext. 2617.

BELLPORT HOUSE - for August rental, long-time Bellport residents, recently moved, look forward to visit. Dahl, 472-1174 or (607) 273-5391.

DISSECTING MICROSCOPE - used, suitable for a child. Michael Rowe, Ext. 2081.

PIANO - Traditional style, spinet or console, good cond., reasonably priced. Ken, Ext. 7915 or Linda 744-0722.

HOUSE TO SIT - free, reliable, experienced, caring, any period after April 15. Jack, Ext. 2412.

CHILD'S BICYCLE - 16" w/training wheels, good cond. Ulrich, Ext. 2341 or 821-2716.

OAK TREE REMOVAL - in exchange for the wood. Ext. 4099 or 698-9214.

TRAILER - for 19' boat, w/ or w/o winch. 878-8177 eves.

HOUSE - Norwegian scientist and family, mid-July to mid-Sept. Ext. 4490 or 744-2275.

BICYCLE - 25" frame, 10 or 15 speed, good or repairable cond., reasonable. Ext. 2180 or 286-3937.

YARD SALE ITEMS - for Boy Scouts. John, Ext. 4243 or 924-3492.

CHEVY 350 SHORT BLOCK - or engine, must be rebuildable, reasonable. Mike, Ext. 3988 or 231-8889.

PROJECTOR - 8mm, old, reasonable. Bob, Ext. 2964.