BROOKHAVEN BULLETIN
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BROOKHAVEN NATIONAL LABORATORY

Discoverer of AIDS Virus to Give Pegram Lectures

"It is a modern plague: the first great pandemic of the second half of the 20th century. . . . Indeed, in some areas it may be too late to prevent a disturbingly high number of people from dying.

"In sharp contrast to the bleak epidemiological picture of AIDS, the accumulation of knowledge about its cause has been remarkably quick. . . .

"Until a reliable vaccine is developed, intelligent caution and an understanding of the virus are the best weapons against its spread."

— Robert C. Gallo
Scientific American, January 1987

Robert C. Gallo

Much of the present understanding of the AIDS virus can be attributed to the work of Robert Gallo, who will deliver the 17th George B. Pegram Lecture Series. Gallo, who is Chief of the Laboratory of Tumor Cell Biology at the National Cancer Institute of the National Institutes of Health, will discuss "Late Twentieth-Century Viruses and Their Role in Cancer and AIDS," in a two-part lecture on Wednesday and Thursday, July 13 and 14. Both lectures are open to the public and will start at 8 p.m. in Berkner Hall.

In an orderly society, almost everyone follows the rules, but there are also bound to be a few who go against the grain. The same is true on the cellular level, where the usual order of things is for genetic information to flow from DNA to RNA. There are, however, a group of viruses that reverse this order — the so-called retroviruses.

The first human retrovirus was discovered in 1978. In the early 1980's, it was linked to the cause of some human leukemias and lymphomas. In 1984, another new human retrovirus was shown to cause acquired immune deficiency syndrome (AIDS).

All these breakthroughs in retrovirology were achieved by Gallo, but when he began a search for a human retrovirus in 1970, the existence of AIDS was unknown.

The search led to Gallo's 1976 discovery of the T-cell growth-stimulating factor known as Interleukin-2 (Il-2). This discovery made it possible for scientists to study human T-cells in tissue culture for prolonged periods.

Studying adult T-cells for their susceptibility to leukemia led Gallo to the discovery of the first human retrovirus — HTLV. When AIDS first appeared in the U.S., in 1981, Gallo's familiarity with the HTLV family of viruses led him to initiate a search for similar retroviruses in AIDS.

By 1984, he and his coworkers were able to identify another distinct member of the HTLV virus family, HTLV-III, as the primary cause of AIDS. They share credit for the discovery of the AIDS virus with Luc Montagnier, of the Pasteur Institute in Paris.

This discovery led to Gallo's development of the blood test for detecting the AIDS virus.

After completing a clinical clerkship at Yale University School of Medicine and earning his M.D. from Jefferson Medical College in 1963, Gallo did his internship and residency in medicine at the University of Chicago. Immediately after that, in 1965, he joined the National Institutes of Health, attaining his present position in 1972.

In addition, Gallo has sat on almost 30 editorial boards and holds adjunct professorships at George Washington, Johns Hopkins and Cornell Universities; New York State College of Veterinary Medicine; and University of Medicine & Dentistry of New Jersey.

For his achievements, Gallo has been internationally recognized with ten honorary degrees, the latest received in 1988 from the University of Bolgna, Italy, where he was co-recipient, with Prince Charles of Great Britain, of a special Ph.D. commemorating the institution's 900th anniversary.

Gallo has also been honored with some 80 prestigious awards and is a member of 16 professional societies.

The lectures, at which Gallo will be the seventeenth speaker, are named in honor of George B. Pegram, who spent nearly his entire career at Columbia University, where he was a Professor of Physics, Dean and Vice President. In 1946, he headed the Initiatory University Group, which proposed that a regional center for research in the nuclear sciences be established in the New York area. He played a key role in the founding of Brookhaven and was an active trustee for ten years.

Other Pegram lecturers have included J. Robert Oppenheimer, Barbara Tuchman, Richard Hofstadter, Louis S.B. Leakey, André Maurois and David Baltimore.

Will It Rain in Champaign?

Part I: Laying the Groundwork for a Flight Mission

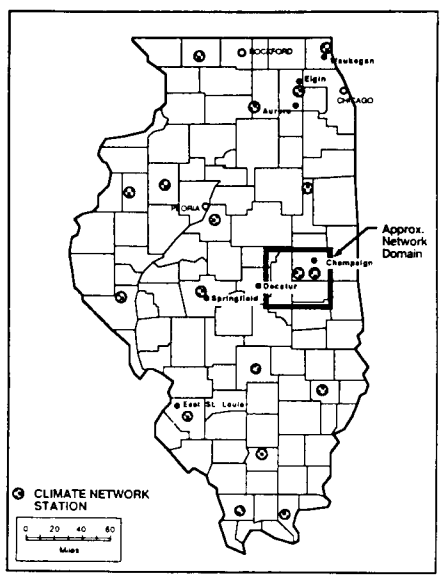
This is the first of a two-part series, reporting on a day in BNL's month-long participation in the Cloud Chemistry and Cloud Physics Organization field experiment, held in Champaign, Illinois, this June.

Mainly no rain has fallen on the Champaign plain.

For weeks, little has been seen on the panoramic, circular horizon, or even on the weather radar. Lacking sufficient precipitation since January, the Plains states, including Illinois and its east central Champaign county, are experiencing a drought.

In June, the weather was terrible: Sunny, hot and dry.

June and July in Illinois are supposed to have the most days of thunderstorms, and they are supposed to produce about three-quarters of the average 10.5 inches of summer rain.



Map of Illinois showing the locations of the 3CPO surface network of acid rain samplers and the Illinois climate network meteorological monitoring stations.

In June, in fact, between five to seven thunderstorm days are the usual.

However, this June was most unusual.

Out-of-town scientists began descending upon the Champaign plain at the end of May, not for the tourist season, but for what was supposed to be the start of peak thunderstorm season. Until the end of their stay at the end of June, they were disappointed, but undaunted in their attempt to study acid rain.

The researchers came from BNL, Argonne National Laboratory (ANL), Battelle Pacific Northwest Laboratory (PNL), the National Oceanographic & Atmospheric Administration (NOAA), the National Center for Atmospheric Research (NCAR) and six universities. They included atmospheric scientists, environmental chemists, cloud physicists and meteorologists.

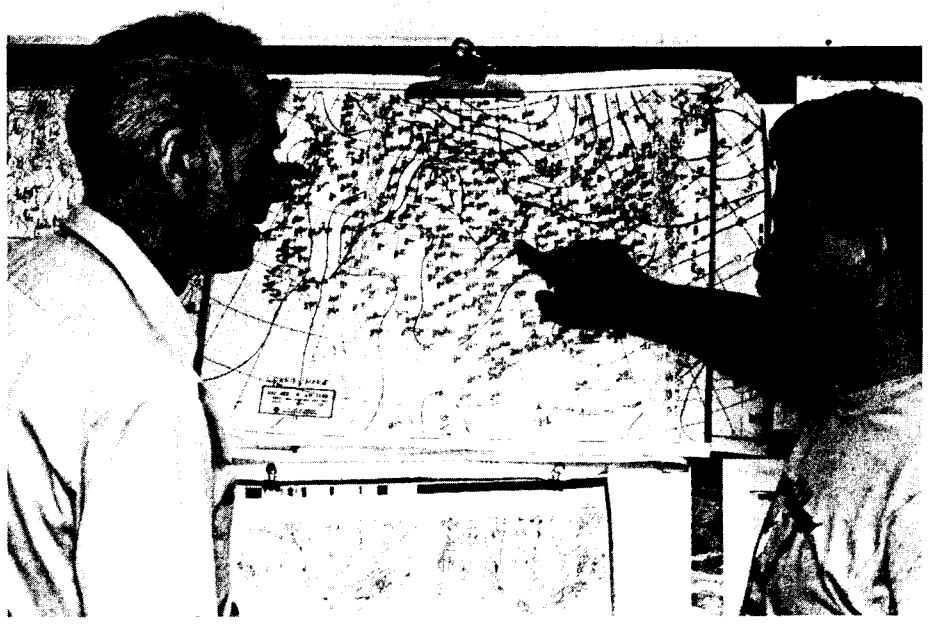
BNL's contingent was assembled from the Atmospheric Sciences Division and the Environmental Chemistry Division of the Department of Applied Science.

These foul-weather friends are known as 3CPO: the Cloud Chemistry and Cloud Physics Organization.

For June, Champaign and the surrounding Illinois counties were their out-of-doors laboratory for a precedent-setting field experiment — the most complete study of the chemistry and physics of thunderstorms in a polluted environment to date.

The scientists are trying to understand how man-made and natural air pollution and thunderstorms interact to produce acid rain. Internationally, precipitation has become more acidic over the years, and acid rain is suspected of causing damage to the environment.

In order to understand the atmospheric chemistry of acid rain, 3CPO needed to learn about the physics of thunderclouds themselves — and how these clouds disperse, distribute and deposit air pollutants.


Discussing the weather, (from left) PNL's John Thorp and BNL's Marty Leach.

For a complete picture, 3CPO looked at thunderclouds from above and below — using three research aircraft especially equipped with meteorological and atmospheric chemistry instruments and radar, and using ground radar and a surface network of rain samplers spread over a 40-mile-by-40-mile grid.

The field experiment was conducted out of Hangar 2 at the University of Illinois's Willard Airport in Champaign County. On the taxi strip before Hangar 2 was parked the NOAA P-3 four-engine turboprop, the NCAR Sabreliner jet and an additional research aircraft, a single-engine Cessna.

In the offices attached to the hangar were a map room, where the weather and scientific flight missions were discussed, and a data room, where flight, mission and surface network data were logged into computers.

This report is a snapshot of one day — Wednesday, June 8 — from the reporter's one-week trip into the field to cover BNL's participation in 3CPO.

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By the beginning of the second week in June, two weeks into 3CPO, 0.00 inches of precipitation had fallen for the month.

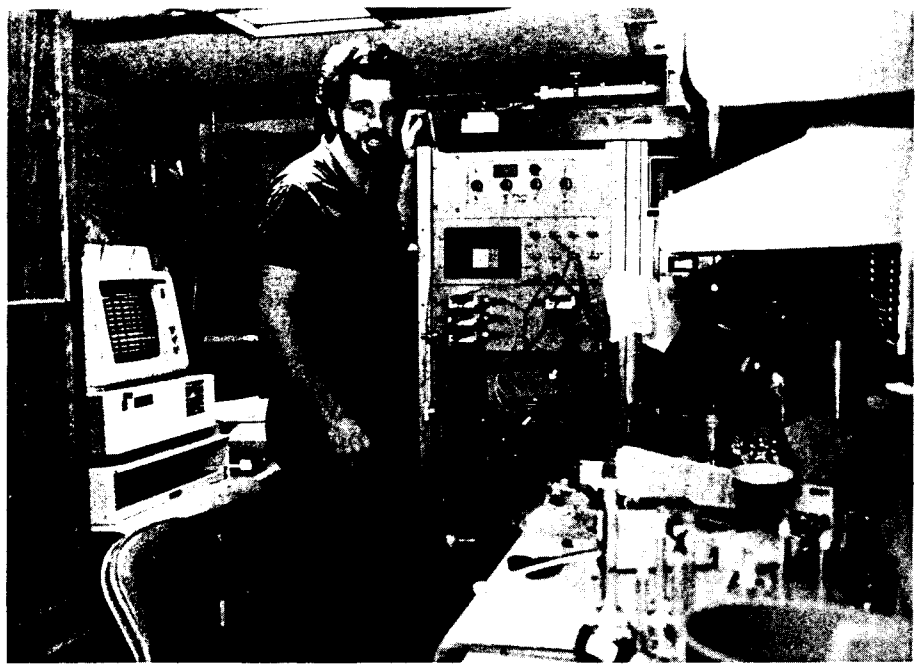
That, according to the local weather channel. First thing in the morning, everyone in this field experiment would turn it on, so why not BNL's meteorologist Marty Leach? He and PNL's John Thorp were the first shift of 3CPO forecasters, and Leach was later replaced by BNL's meteorologist Bob Brown.

When the Weather Channel an-

(Continued on page 2)

Will It Rain in Champaign?

(Cont'd)



Inside BNL's mobile research laboratory, Jim Roberts.

nounced only a 30% chance of afternoon thundershowers, Leach shut off his TV, thinking, What do they know?

Leach knew that, imprinted on the upper air map for about two weeks, a ridge of high pressure had been superimposed over the Central Plain. This invisible skywriting, shaped like the Greek omega, kept temperatures in the 90's and precluded potential weathermakers.

However, Leach had seen the writing on the weather chart: On Monday, the firmly chiseled omega had devolved into a sloppily scrawled one. A trough of low pressure moving east was cramping its writing style.

This low pressure trough, in addition to moving horizontally across the continent, was circulating its contents vertically upward.

Such convective circulation of air and moisture can result in what are called convective clouds and their associated weather phenomena, including thunderstorms and tornadoes. In addition to circulating air and water, convective storms transport and mix pollutants in the air. Hence, 3CPO's and the forecasters' interest in them.

Also on Tuesday, Leach noticed that an unusual cold front of air coming down from Canada had entered the weather picture.

Usually cold fronts come from the west-northwest, but the leading edge of this cold air was coming from the "back door" — the east-northeast — and was moving west-southwest.

The low pressure-cold front combination could produce a thunderstorm. Leach had forewarned on Tuesday, however, "The dynamics are there, but, so far, there's no moisture."

"If we do get a storm, what time will it occur?" BNL's Peter Daum had asked.

An environmental chemist, Daum was 3CPO operations director — the one who decided whether or not the research aircraft fly and what time they take off, so they can be on time to fly in, above, under and about an oncoming storm.

Feeling the pressure of the ridge, the cold of the front and the weight of Peter Daum on his shoulders, Leach had joked, "I'll tell you the time, but I won't tell you what time zone." On Leach's watch, no joke, was Central Daylight Time (CDT) and Greenwich Mean Time (GMT).

"Seriously," Leach added, "if I were you, I'd be ready late tomorrow morning. The front may pass by noon tomorrow, but ask me again early tomorrow morning."

Six o'clock Wednesday morning, half an hour after sunrise and watching the Weather Channel, Leach was again watching TV — the real weather channel — a live broadcast from the Geostationary Operational Environmental Satellite via BNL's satellite antennae. On the silent screen, wispy color-coded clouds swirled over a map of the U.S. superimposed on the globe.

Emerging from an underground laboratory in the middle of an Illinois clover field, BNL's Paul Klotz.

Maps, furiously being transmitted by the National Meteorological Center, unraveled from the fax machine like muslin from a bolt. They were purple, printed with the up-to-the-minute fashion in weather patterns.

Consulting the color monitor and purple maps, as well as less fashionably laid-out data, Leach and John Thorp did what most people dread: They discussed the weather — for an hour, long enough to convince each other that it was foreboding enough for a mission.

Leach agreed to go on the air with the good news — he would tape the weather report so it could be called up on the 3CPO hot line, the number the researchers dialed after watching the Weather Channel to find out the real chance of precipitation and a mission.

Picking up the telephone, Leach found the hot line to be dead.

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SLOW DOWN, 2 MPH MAX, ATMOSPHERIC CHEMISTRY MONITORING IN PROGRESS, MINIMIZE DUST, was the order posted on the first weathered sign at the Illinois State Water Survey's experimental field in Bondville, five miles from Willard Airport.

There, 3CPO had established a field laboratory to measure pollutant concentrations in the surface air, whether or not it rained. From the local air, BNL chemist Paul Klotz, or one of his rotating replacements Chuck Bachsmith, Dan Leahy, Jim Roberts and Roger Tanner, sampled gaseous pollutants and aerosols.

Shifting his rental car into low, Klotz drove the tire-track dirt paths to what was once a motor home but is now BNL's Environmental Chemistry Division's mobile laboratory, which was bivouacked next to a converted camper owned by ANL.

Even by day, this research field is surreal: The juxtaposition of Illinois agriculture and scientific instrumentation is unexpected, eclectic and eerie.

Androids — about two dozen half-assembled rejects from Star Wars resembling modified R2D2s and C3POs — were deployed in the field as acid rain troopers. Among these rain catchers was BNL's air sampler. A C3PO look-alike, it was called Hi-Vol for short, not for the noise it made, but for the high volume of air it sucked in.

It sounded like a vacuum cleaner would in the middle of a clover field because it works like a vacuum cleaner, sucking in air through its snout and exhausting it after it passes through a stack of filters in its neck and a gauge in its belly that measures the air volume.

Twice a day, 1200 and 0000 GMT, or 7 a.m. and 7 p.m. CDT, Klotz changed those filters, which will be analyzed back at BNL for particulates, nitrogen and sulfur oxides, the latter two being precursors to nitric and sulfuric acids — two of the acids in acid rain.

CAUTION KEEP OFF THE ROOF was the second ominous posted warning that Klotz received during his morning and evening rounds. The roof to keep off of was flush with the ground and round. Planted on it was what looked like a lamp post, a glass pole with a chemistry flask attached.

At the Bondville air chemistry site, Bulletin reporter Marsha Belford and BNL's Hi-Vol air sampler.

team safety

It will pay to be on the winning team.

Through the open bottom of that flask, air filtered in and passed through the sampling tube and down through the roof. Klotz opened the corrugated trap door next to the roof. It was dark and dank down there, but Klotz stepped down, down, down.

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Out of Champaign County, BNL's technician John McNeil drove around the potholes and between the soybeans and corn. His road map was nearly useless. "The only way to drive the back roads of Illinois is to ask," explained McNeil.

Though the roads were in a grid and numbered — just like in New York City, many of the road signs were turned around — just like in New York City. "There is a difference between 5th Avenue and 42nd Street," stated McNeil. "There is no difference between two Illinois back roads — unless you count cornfields versus soybean fields along the roadside."

McNeil was out servicing parked CCARS, or Computer Controlled Automated Rain Samplers — R2D2-like units developed by PNL to sample rain rate, amount and composition. Over 40 had been stationed within a 40-mile-by-40-mile area, the center of which was the Bondville surface air chemistry site, and this lot of CCARS was known as the surface network. Set-up by PNL's Terry Dana, the network collected precipitation, the chemical composition of which was to be compared to the cloud water sampled by the 3CPO planes.

During the last week in May, McNeil and other new CCARS dealers set out like traveling salesmen to sell the farmer's wife on the idea of having a CCARS parked in her backyard, where the farmer's lawn met his field.

Most often, the farmer's wife deferred to her husband, "who was home only at dawn, lunch and dusk — I wasn't about to drive my DOE van down the middle of his field to ask him if I could park my CCARS," said McNeil, who was on loan to PNL's crew to establish the surface network and service the CCARS. "When I got them at home, most of the farmers liked the idea of doing something about acid rain."

— Marsha Belford

Next week — Part II: Flying the Not-So-Friendly Skies

(From left) BNL's Paul Michael and PNL's Terry Dana and Jake Hales, in the field with CCARS.

Lift Opens Berkner To Handicapped

A lift, allowing handicapped persons to raise or lower themselves between floors, is now in operation in Berkner Hall. This lift gives the handicapped independent access to the Cafeteria, the conference rooms and the BERA Sales Office.

To operate the lift, a key is required. Christopher Jung of the Design Group of the Plant Engineering Division, who oversaw the lift's selection and installation, explained that the key is necessary primarily for safety reasons. Any BNL employee who would like to be issued a permanent key should contact Jung on Ext. 2584. A key is also kept in Berkner Hall and can be obtained through Patrick Glynn, Staff Services, Beeper 117.

Equipped with an oversized motor, the lift's capacity is 750 pounds. Jung said it was installed as part of a project for retrofitting many Lab facilities to make them accessible to the handicapped. All new construction will meet current requirements for handicapped access.

Berkner Hall, which opened in 1968, was built before the New York State laws requiring access for the handicapped went into effect. The ramp leading to the auditorium was added in 1982.

The End of an Era: Cockcroft-Walton 1959-1988

Disassembly of the Cockcroft-Walton (C-W) preaccelerator began last week, 29 years after it accelerated its first proton beam for the Alternating Gradient Synchrotron (AGS). It took just four days to dismantle the Flash Gordonesque multistory structure (see photo below).

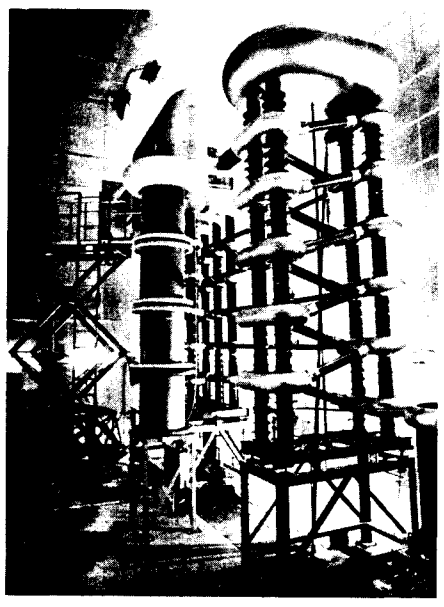
In the C-W, protons were accelerated to 750,000 electron volts before entering the linear accelerator, or linac, that injects the AGS — where the particles can reach energies as high as 33 billion electron volts.

By the time the AGS ends its summer hiatus, the C-W will be replaced by a radio-frequency quadrupole (RFQ) linac that uses radio-frequency voltage, rather than electrostatic high voltage, to accelerate protons. This will be the second RFQ linac in operation at the AGS. The first one has been accelerating polarized protons since 1984.

The RFQ — at roughly 60 inches long and 18 inches wide — is a fraction of the size of the C-W. "It will be easier to service and more reliable," says Pete Montemurro, the linac operations engineer.

Pictured below (from left) removing the ion source dome from the C-W are members of the linac team: Al Mack, Ron Weider, Bob Glasmann, Brian Briscoe, Bob Horton, Tom Russo and Pete Montemurro.

— Alexandra Biesada



Roger Stoutenburgh

Scoop of the Week

This week, two scoops are awarded in the Scoop of the Week contest, to Paul Michael and Joyce Tichler, Department of Applied Science, for their idea to send a Bulletin reporter into the field for the two-part story "Will It Rain in Champaign?" (see page 1).

Throughout the summer, Bulletin readers are invited to trade their hot tips for scoops of frozen yogurt, in the Scoop of the Week contest. To enter, rush your ideas for Bulletin news or features to the Brookhaven Bulletin, Bldg. 134, or call Ext. 5053. If you scoop the Bulletin's informed sources and a story based on your idea is published, you'll win an official certificate for soft-serve, frozen yogurt, redeemable anytime at the Cafeteria.

Summer T-Shirts and Sweatshirts

This summer, in addition to "Summer '88" BNL T-shirts, sweatshirts will be available for all employees, students and visitors to purchase. T-shirts are $6 each, sweatshirts are $12 each, and the prices include tax.

These blue-with-white-print T-shirts are 50% cotton and 50% polyester, for minimal shrinkage. They are available in unisex adult sizes: small (34-36), medium (38-40), large (42-44), extra large (46-48); and unisex children's sizes: small (6-8), medium (10-12) and large (14-16).

T-shirts must be ordered by July 15, and each order should be accompanied by cash or a money order made payable to "Renée Flack—T-Shirts '88." No personal checks, please. Orders and payments can be mailed or brought to Renée Flack, Affirmative Action Office, Bldg. 185A, Ext. 3316. Allow two weeks after placing order for delivery.

24-Hour Banking Starts Next Friday

As announced previously, the Automatic Teller Machine (ATM) "Barclaybank 24" will become operational on July 8.

The ATM, located in the front lobby of Berkner Hall, will be available 24 hours a day to accommodate employees who have Barclaybank 24 cards, or bankcards from institutions that are members of the New York Cash Exchange (NYCE) system, which includes Teacher's Federal Credit Union.

Barclaybank cardholders will be able to make the following transactions:

- Deposits to checking/savings accounts.
- Withdrawals of up to $400 total per day from checking and savings accounts.
- Mortgage and installment loan payments.
- Transfers between checking and savings.
- Account balance information.

Holders of cards from other NYCE-member institutions will only be able to withdraw cash from their respective bank accounts using the Barclays ATM.

By year's end, Barclays intends to join the PLUS network, allowing cardholders to access their accounts at approximately 20,000 locations in the United States, Japan and the United Kingdom.

Once an employee has applied for and received a Barclaybank 24 card through the Upton Branch Office, the card must be validated and the cardholder assigned a Personal Identification Number (PIN). A representative will be at Berkner Hall from 11 a.m. through 2 p.m., Friday July 8; Monday, July 11; and Tuesday, July 12; to validate the cards and provide assistance for ATM users. At all other times, cards can be validated at the Upton Branch Office.

"We anticipate a very enthusiastic response to the added convenience of 24-hour banking," said Fiscal Division Head Mark Israel, "and we encourage employees to inquire about establishing direct deposit of their paychecks in order to capitalize on that convenience." For information on direct deposit, contact Fiscal's Payroll Section, Ext. 2470.

Speakers Set for Lecture Series

High school students in the Lab's new Community Summer Science Program will be joined by participants in a Southampton College program run by the National Center for Excellence in Education for a series of Friday lectures at BNL this summer. Others, including children of Laboratory employees, may also attend the lectures, but are asked to contact the Office of Educational Programs, Ext. 3054, beforehand.

Victor Emery, Physics, will lead off the program on July 8, with a talk on "High Temperature Superconductors," in the Large Seminar Room of Physics, Bldg. 510. On the following Friday, July 15, in the AGS Seminar Room, Bldg. 911, Maurice Goldhaber, AUI Distinguished Scientist emeritus, will discuss "Proton Decay and Supernova Neutrinos," while "RHIC Physics" will be addressed by a speaker to be announced.

This summer's agenda also includes:

Date	Speaker	Topic
July 21* (Thurs.)	Robert Palmer Sheldon Glashow	Future Accelerators Interactions
July 29	William Marciano	The Very Early Universe
August 5	Raymond Davis	Nucleosynthesis and Solar Neutrinos
	Robert Adair	Symmetry Principles
August 11 (Thurs.)	Michael Knotek, Gwyn Williams	Science at the Light Source

*This lecture will be held in the AGS Seminar Room, Bldg. 911; all others will be held in the Large Seminar Room in Physics, Bldg. 510. All lecture sessions in the series will run from 9:30 to 11:30 a.m.

The Community Summer Science Program is being offered this summer for the first time to Suffolk County high school students. In addition to the special Friday lecture series, the program includes other morning lectures by Laboratory scientists, and internships in the afternoons, which give students the opportunity to work in a research environment with a sponsoring BNL scientist.

Summer on Long Island

Visit Our Own Back Yard: BNL's Exhibit Center

Who says you have to travel to find interesting things to do? Every Sunday from July 10 through August 28, you'll find plenty to fascinate you right here — if you participate in the Lab's Summer Sunday Tour Program.

Your Summer Sunday will begin when you arrive at Berkner Hall between 10 a.m. and 3 p.m. Bring as many guests as you want; no reservations necessary. Introduce them — and yourself — to the Lab by entering the auditorium and sitting down to "Quest," an audiovisual presentation about the Lab's research.

After "Quest," you'll board a bus waiting in the front of Berkner Hall to take you to the Exhibit Center, and, along the way, your tour guide will point out and describe the Lab's landmark buildings.

One such landmark is Bldg. 701, which originally housed the Brookhaven Graphite Research Reactor (BGRR), the world's first nuclear reactor built for peacetime research. The BGRR was decommissioned 20 years ago, but it still serves as a dramatic backdrop for the Exhibit Center's three stories of lively displays depicting Laboratory research of the past, present and future.

For example, a display in the chemistry section shows how science has been applied to the study of art and archaeology, and, in the medical section, a friendly skeleton and a plastic man will help you learn about the Lab's research on osteoporosis.

If you bring children, they can use microscopes to explore the world of the invisible, try on the bulky rubber gloves of a sealed "glove box," similar to those used by scientists when they work with hazardous materials, and puzzle over several holograms.

Visitors of all ages can use the Whisper Tube to learn about sound waves while whispering to friends around corners and across the room; study how light is reflected, by looking into mirrors like those in a carnival funhouse; watch a case full of bouncing ping pong balls mimic a "chain reaction"; and pedal a special tandem bicycle that generates enough electricity to run a TV set.

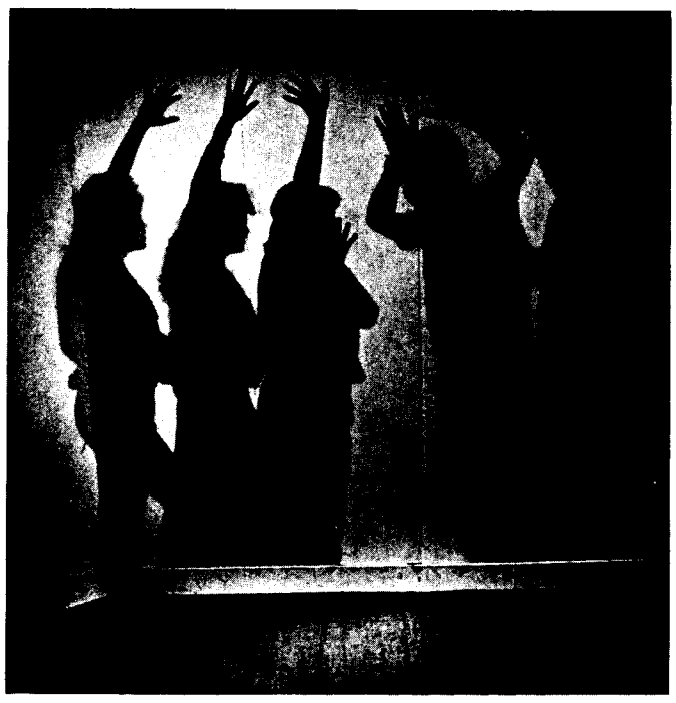
If you have a bent for history, you'll be particularly interested in the Camp Upton Historical Collection, which features an extensive collection of photos and memorabilia from World Wars I and II, when the site was the Army's Camp Upton. A slide show, "From Basic Training to Basic Research," describes the early history of the site.

After visiting the Exhibit Center, or at any time during the day, you can board a shuttle bus to go to the apartment area, for a tour of the Danish House, built here as part of an ongoing study of energy-efficient houses. Furnished with Danish products, the prefabricated house demonstrates the advanced housebuilding technology of Denmark.

The complete program takes about two-and-a-half hours. Refreshments and rest rooms are available, and there is a souvenir shop at the Exhibit Center.

For more information, call the Public Affairs Office, Ext. 2345.

Like a group of Peter Pans, these youngsters flew off and left their shadows behind on a phosphorescent wall in the Exhibit Center, where shadow images are frozen in place by a strobe light.



—photos by Stoutenburgh

Film badges will be changed on Saturday, July 9. Please place your badge in its assigned rack space before leaving work on Friday, July 8.

PSI News

For its excellent education programs and high attendance, the Upton Chapter of Professional Secretaries International (PSI) has received a 1987-88 Education & Program Award from PSI's New York State Division.

Hospitality News

There will be no Hospitality Committee morning get-together during July.

BROOKHAVEN BULLETIN

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Nursery School

The Upton Nursery School is now accepting enrollment of three-and four-year-old children for the 1988-89 school year. The school, a cooperative preschool held on site in the Recreation Building, is open to families of BNL employees and their relatives.

For more information, call Karen Indusi, Ext. 2975, or Marian Drumann, 924-6723 after 5 p.m.

Equipment Demos

IBM will hold a PS/2 Fair in the lobby of Berkner Hall on Tuesday, July 12, from 10 a.m. to 3 p.m. During this time, the latest products of the Personal System/2 series of PCs will be demonstrated and representatives will be on hand to answer questions.

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Xerox Corporation will demonstrate its document processing and publishing products, on Thursday, July 14 at Berkner Hall, from 10 a.m. to 3 p.m. Products will include professional high resolution workstations, graphic scanners for originals up to 11 x 17 inches, laser printers (11 x 17), Ethernet local area network solutions, multilingual capabilities (over 40 languages), page composition software and copiers.

A product technical analyst and sales representatives will be available to answer questions. The demonstrations are intended for people and work groups that produce technical documentation, graphics, reports and presentations.

Children on Site

Many of BNL's summer visitors bring their families to stay at the Lab, and the children find the Lab's road network ideal for biking. Like any community, however, BNL has traffic, which is particularly heavy in the mornings, from about 7:30 to 8:30 a.m.; during lunch breaks, from about 11:30 a.m. to 1 p.m.; and in the afternoons, from about 4:30 to 5:30 p.m.

Drivers should be on the alert for young cyclists, and children should be cautious about traffic. Children should also remember that their summer playground is a working laboratory. They should enter only those areas where they are expected and visitors are welcome.

No AA Meetings Until September

The Alcoholics Anonymous (AA) meetings held on site have been suspended until Tuesday, September 6, when they will resume at a new location.

To find out the location of the meetings when they resume, 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. The AA meetings are held on Tuesdays, at 5:30 p.m. All employees, others with current BNL identification cards and their spouses are invited to participate when the meetings begin again.

Thanks, Blood Donors

The final count was 562 pints of blood collected — and warmest thanks are sent from Susan Foster, who ran the Blood Drive, to all the BNL'ers who braved the June heat wave to come to give blood.

Swim Club

At the New York State Short Course Championships, on April 9-10 at Nassau Community College, the BNL men's medley relay team of Ron Wittlock, Wlodek Guryn, Toshi Sugama and Roger Klaffky took a silver medal for their 2:06.28 combined performance.

50-yard Freestyle		
Paul Michael	32.11	4th men 55-59
100-yard Freestyle		
Roger Klaffky	1:03.69*	4th men 40-44
Paul Michael	1:19.03	4th men 55-59
200-yard Freestyle		
Roger Klaffky	2:25.99*	8th men 40-44
Paul Michael	3:21.11	4th men 55-59
500-yard Freestyle		
Wlodek Guryn	6:25.88	4th men 35-39
Roger Klaffky	7:11.12	5th men 40-44
100-yard Butterfly		
Wlodek Guryn	1:08.70	2nd men 35-39
50-yard Backstroke		
Ron Wittlock	33.97	1st men 50-54
Wlodek Guryn	34.40	3rd men 35-39
100-yard Backstroke		
Ron Wittlock	1:15.35	1st men 50-54
Roger Klaffky	1:23.60	4th men 40-44
200-yard Backstroke		
Roger Klaffky	2:55.37	3rd men 40-44
50-yard Breaststroke		
Wlodek Guryn	33.70*	1st men 35-39
Toshi Sugama	34.64	2nd men 40-44
100-yard Breaststroke		
Toshi Sugama	1:16.62	1st men 40-44
Wlodek Guryn	1:16.75	2nd men 35-39
Roger Klaffky	1:21.37	4th men 40-44
200-yard Breaststroke		
Toshi Sugama	2:48.80	3rd men 40-44
Roger Klaffky	3:01.40	4th men 40-44
100-yard Individual Medley		
Wlodek Guryn	1:08.25	3rd men 35-39
Paul Michael	1:35.84	4th men 55-59
200-yard Individual Medley		
Wlodek Guryn	2:39.36	5th men 35-39

200-yard Medley Relay
2:06.28 2nd men 35

backstroke	Ron Wittlock	33.87
butterfly	Wlodek Guryn	33.92
breaststroke	Toshi Sugama	30.04
freestyle	Roger Klaffky	28.45

At the City College of New York masters swimming meet on March 6, BNL Swim Team members collected nine ribbons for top-three, age-group placings were won.

50-yard Freestyle		
Marsha Belford	35.33	7th women 30-34
100-yard Freestyle		
Roger Klaffky	1:04.94	5th men 40-44
200-yard Freestyle		
Peter Cameron	2:19.33*	4th men 40-44
Roger Klaffky	2:31.74	men 40-44
Marsha Belford	2:46.24	7th women 30-34
500-yard Freestyle		
Peter Cameron	6:22.14	1st men 40-44
50-yard Butterfly		
Wlodek Guryn	29.64*	men 35-39
100-yard Butterfly		
Wlodek Guryn	1:07.80*	2nd men 35-39
50-yard Backstroke		
Ron Wittlock	34.19	2nd men 50-54
Wlodek Guryn	36.06	4th men 35-39
100-yard Backstroke		
Ron Wittlock	1:16.11	1st men 50-54
Roger Klaffky	1:24.38	2nd men 40-44
200-yard Backstroke		
Ron Wittlock	2:47.61	1st men 50-54
50-yard Breaststroke		
Wlodek Guryn	35.16	1st men 35-39
Roger Klaffky	37.89	2nd men 40-44
200-yard Breaststroke		
Peter Cameron	3:03.48	3rd men 40-44
100-yard Individual Medley		
Wlodek Guryn	1:07.35*	5th men 35-39
Marsha Belford	1:27.45	4th women 30-35
200-yard Individual Medley		
Peter Cameron	2:50.64	4th men 40-44

*indicates personal record

See supplement for BERA News and Classified Advertisements.

Roger Stoutenburgh

Louisa Barone, who works at the BERA Sales Office, shows the tan and black T-shirts that are now on sale for $6 each, to potential customers Larry Musso and Nancy Lazarz.

Social Club

Good news! There are more openings for both the Mystery Weekend and Tri-City Tour.

The Mystery Weekend begins September 3, and lasts three days at $219 for two per room, or $215 for three per room.

The Tri-City Tour covers Las Vegas, Honolulu and San Francisco, beginning October 18 and lasting 12 days at $1,425 for two per room, and $1,396 for three per room.

Single accommodations are available for both trips. Call Doris Terry, Ext. 7610. The Club's 1989 trips are now being planned, and flyers will be in the mail soon.

Softball

Week of June 20

League I
Sudden Impact 15 - Light Source 14
Blue Jays 8 - Cool 'n Gang 2

League II
AMD Bombers 23 - Moles 1

League III
Foul-Ups 12 - Farm Team 8

League IV
The Far Side 20 - Seventh Inning Stretch 11
Turkeys 12 - Mudville Sluggers 4

Holiday Closings

The Laboratory will be closed on Monday and Tuesday, July 4 and 5, for the Independence Day holiday. This will affect the regular Lab routine as follows:

- **Brookhaven Bulletin** — Will not be published on July 8.

The deadline for acceptance of ads for the issue of July 15 is Wednesday, July 6, at 4:30 p.m.

- **Brookhaven Center** — Will be closed Sunday and Monday, July 3 and 4, reopening on Tuesday, July 5.
- **Cafeteria** — Will be open for snack bar service only, from 9 a.m. until 2 p.m., on Monday and Tuesday, July 4 and 5.
- **Vended Food Service, Bldg. 912** — Will be in operation continuously.

BROOKHAVEN BULLETIN
Published weekly
by the Public Affairs Office
for the employees of
BROOKHAVEN NATIONAL LABORATORY

ANITA COHEN, Editor
MARSHA BELFORD, Assistant Editor
LIZ SEUBERT, Reporter

35 Brookhaven Ave., Upton, N.Y. 11973
(516)282-2345

Trip to Atlantic City

Whether you'd like to take a leisurely stroll down the Boardwalk, enjoy the ocean, shop, see a show, or try your luck in a casino, all BERA members, their families and friends are invited to sign up for the BERA Board's first bus trip to Atlantic City.

The date is Saturday, July 30, and the trip is to the Resorts International Casino. The initial cost of $20 per person includes round-trip bus fare, but the casino will return $10 in coins to each person, plus a $5 deferred voucher — so, this trip actually costs only $10.

Sign up immediately! Prepaid reservations will be taken on a first-come, first-served basis at the BERA Sales Office in Berkner Hall, from 9 a.m. to 2 p.m., Monday to Friday. No refunds will be made unless someone else wishes to purchase the ticket. A waiting list will be kept.

The plan calls for two buses to leave BNL promptly at 9:30 a.m., returning around 9:30-10 p.m. An additional stop will be made at the Long Island Expressway Exit 63 Park & Ride, if desired.

For more information, call Louisa Barone, Ext. 3347; M. Kay Hunt, Ext. 2873; or Rosalie Piccione, Ext. 3160.

Arrivals & Departures

Arrivals

Terence G. Monahan ..... NSLS
Richard H. Muller ..... Sfgrds. & Sec.
Ilya Shimon ..... AGS

Departures

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

David R. Harding ..... Chemistry
Albert C. Muller ..... App. Science
John G. Skora ..... NSLS
David R. Wales ..... Nuc. Energy

Cafeteria Menu

Week of July 4

Monday, July 4 & Tuesday, July 5
Snack Bar Service
9 a.m. to 2 p.m.

Wednesday, July 6

Minestrone	(cup)	.75
	(bowl)	.95
Baked ziti w/meat sauce & garlic bread		2.95
BBQ spareribs w/1 veg.		3.10
Fruit plate (lite-weight)		2.25
Hot deli: Baked ham	(bread or roll)	2.85
	(hero)	2.95

Thursday, July 7

Navy bean soup	(cup)	.75
	(bowl)	.95
Beef stroganoff over noodles		3.10
Macaroni & cheese w/1 veg.		2.75
Chef's salad plate (lite-weight)		2.25
Hot deli: Pastrami	(bread or roll)	2.85
	(hero)	2.95

Friday, July 8

Manhattan clam chowder	(cup)	.75
	(bowl)	.95
Country-fried steak w/gravy & 1 veg.		2.95
Broiled fresh fish w/1 veg. (lite-weight)		2.95
Hot deli: Sloppy Joes on a bun		2.85

At the BERA Store

The BERA Sales Office, located off the lobby in Berkner Hall, is open each workday between 9 a.m. and 2 p.m. The following sales and services are currently available:

- **Merchandise** — Photo processing services supplied by Union Photo Company of Hackensack, New Jersey; film; some batteries; an attractive selection of Majestic and Gordon Fraser greeting cards; T-shirts; BNL postcards and mugs.
- **Ticket** — Magic Kingdom membership cards for Disney World, Epcot Center and Disneyland at no cost to the employee; Great Adventure discount tickets at $14 each ($19.95 if bought at the park); United Artists Theater discount tickets at $3.25 each.
- **Handouts** — Twofers for some Broadway shows; travel brochures and flyers; Wholesale Club information and brochures; information on various magazine discount subscriptions; copies of East End Art News.
- **Participation Awards** — The Sales Office is the official redemption center for BERA Participation Awards.

For more information about the Sales Office, call Louisa Barone on Ext. 3347.

Summer Schedule At Swimming Pool

The pool will be closed Saturday through Tuesday, July 2 through 5.

The following hours will be effective Wednesday, July 6:

Monday through Friday

11 a.m. — 1:30 p.m.	employees only
1:30 p.m.— 2 p.m.	reserved for speed swimming and training
2 p.m. — 3:30 p.m.	children's lessons
3:30 p.m.— 9 p.m.	employees, families, guests*

Saturday & Sunday

1 p.m. — 5:30 p.m.	employees, families, guests*

Daily Admissions

employee or family member	$1.50
guest	$2.00

Season Tickets (fees not prorated)

Individual Membership	$30.00
Family Membership	$40.00

***Guest Ruling:** One guest per employee is permitted. Advance arrangements for additional guests (up to a maximum of five at any one time) must be made at the Recreation Office in Personnel.

Golf

The fourth BGA golf tournament will be held on Monday, July 11, at the Timber Point, Suffolk County, golf course. The tournament will be conducted as a four-man scramble. BGA members have been sent a listing of flighted golfers; non-members can contact See-Meng Wong, Ext. 2111, for their copies, along with additional scramble rules. Starting times can be obtained by contacting Wong. First priority will go to completed foursomes.

The greens fees are $9 for County residents; $20, non-residents; $4, senior citizens. Riding carts can be obtained for $18 each, pull cart rental is $2. Tee-times are reserved for 11 a.m. through 1:30 p.m., so sign up as soon as you can. Deadline for sign-up is July 6.

The results of the tournament at Swan Lake were:

- Low Gross — John Usher, Flight A; Mike Zguris, B; Joe Carbonaro, C; George Murdock, D; Joe Fortunato, E.
- Low Net — Joe DePace, Ron Webster and Artie Dick, tied in Flight A; Bob Lofaro, B; Jim Petro, C; Dennis Malloy, D; Bob Danowski, E.
- Long Drives — John Dioguardo, Joe Carbonaro.
- Closest to Pins — Robert Meier, Ed Meier Sr.

Congratulations to Pete Bond and Jay Adams for their eagles!

Aerobic Dance: Summer Program

The Aerobic Dance Club has announced a summer program of Monday afternoon stretch classes and modified aerobic dance classes on Tuesday afternoons.

Instructor Pat Campbell explained that her modified aerobics program is designed to maintain muscle tone and cardiovascular fitness, but at a slightly less strenuous level to compensate for the summer's heat. As throughout the rest of the year, stretch classes will concentrate on stretching and strengthening various muscle groups.

All classes run from 5:15 to 6:15 p.m. A mat is suggested for floor exercises in both kinds of classes.

The fee for each ten-week session is $30, payable at registration, which will precede the first class, to be held as follows:

- Stretch — Monday, July 11
- Aerobic Dance — Tuesday, July 12

To confirm the location of each class, or for more information, call Bill Leonhardt, Ext. 2378, or Janet Sillas, Ext. 2345.

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.

2885. TOOL AND INSTRUMENT MAKER - Central Shops Division.

2886. FIREFIGHTER/EMT - Previous substantial firefighter experience is required. Completion of New York State EMT course and possession of training certificate is highly desirable; if not, completion of course within one year is required. Must be willing to work shifts at the completion of a thirteen-week training period. Safety & Environmental Protection Division.

2887. TOOL CRIB ATTENDENT - Will be responsible for receiving and issuing supplies, materiel, tools and equipment. Maintains necessary records and paperwork, assists in inventory and checks condition of items in tool crib. Knowledge of tools and equipment is desirable. Plant Engineering Division.

2888. SECRETARIAL POSITION - Requires AAS in secretarial science and a broad knowledge of Laboratory policies and practices. Will provide secretarial/supervisory administrative support to Division Head. Responsibilities include preparing correspondence and reports on the MICOM, establishing and maintaining files and record systems, and arranging travel. Department of Applied Science.

OPEN RECRUITMENT - Opportunities for Laboratory employees and outside applicants.

2889. TECHNICAL POSITION - Requires AAS degree in mechanical technology or equivalent experience. Must be able to do precision tooling and assembly, coil winding and magnet assembly. Should be familiar with basic machine shop practices. Alternating Gradient Synchrotron Department.

2890. TECHNICAL POSITION - Requires AAS degree in mechanical technology or equivalent. Must be able to operate and maintain large capacity process water cooling systems. This includes pumps, cooling towers, heat exchangers, mixed bed demineralizers, and pneumatic and electric controls. Alternating Gradient Synchrotron Department.

2891. ENGINEERING POSITION - Requires MS degree in nuclear engineering or the equivalent experience and a minimum of 5 years' working background in reactor accident analysis. Will assist in the evaluation of a variety of reactor safety issues related to a research reactor. Ability to obtain DOE "Q" clearance is necessary. Reactor Division.

Continued on other side.

2892. REACTOR SHIFT SUPERVISOR - Requires BS degree in physics, an appropriate field, or the equivalent experience and previous nuclear operating experience. Responsibilities involve directing, training and coordinating work efforts of reactor operators. Shift work required. Ability to obtain DOE "Q" clearance is necessary. Reactor Division.

2893. NUCLEAR REACTOR OPERATOR TRAINEE - Requires AAS or equivalent experience in reactor operations. Must have excellent mechanical ability and aptitude, and be willing to work rotating shifts. Previous naval reactor experience preferred. Ability to obtain DOE "Q" clearance is necessary. Reactor Division.

Motor Vehicles & Supplies

87 TRAVELMASTER MOTOR HOME - sleeps 6, a/c, awning, TV, rear bed, bath, asking $26,000. 929-8772.

86 HONDA GYRO SCOOTER - elec. start, low miles, $495 neg. 589-4407 after 7 p.m.

86 JEEP CHEROKEE 4x4 - a/c, p/s, p/b, 4-spd., black, 23k mi., excel. cond., $9,750 firm. 286-2749 after 5 p.m.

85 CUTLASS SUPREME - all power, new brakes, tires, 42k mi., $6,500. firm. 736-8190.

84 BUICK REGAL - p/b, p/s, a/c, tilt wheel, cruise, 4 new tires, 69k mi., $4,300. 345-5589.

84 CONQUEST - same as Starion, silver leather seats, excel. cond., $5,000. 878-0842 before 2 p.m.

84 MONTE CARLO - V8, all power, tilt wheel, cruise, a/c, am/fm cass., a/t, mint cond. 289-4902.

83 MOTOR HOME - 360 eng., 23', 45k mi., p/s, p/b, burglar alarm, excel. cond. John, 744-2566 or 744-3030.

83 HONDA ACCORD - 5-spd., am/fm cass., a/c, mint cond., 34 mpg highway. Ext. 4713 or (718) 426-3337.

83 FORD ESCORT WAGON - 57k mi., m/t, good cond., Ext. 7152 or 821-1558.

82 CHEVY CAVALIER-TYPE 10 - hatchback, a/c, not running, $600 or best offer. 924-5192 after 5 p.m.

82 BUICK - custom 4-dr., ps/pb, a/c, am/fm cass., new trans., $1,800, neat, clean. 929-3829.

81 VW RABBIT - diesel, whole or parts, $100 neg. 821-3086.

86 MITSUBISHI 4X4 TRUCK - cap, insert, undercoated, perfect cond., am/fm, 5-spd., $7,000. Jack, Ext. 5565.

84 LE SHARO WINNEBAGO MOTOR HOME - 19', fully equipped, sleeps 4. 475-0509.

84 NISSAN SENTRA - 5-spd., 40k mi., 4 dr., wagon, 6 months left on warranty, $4,500, neg. 331-0985.

84 CADILLAC ELDORADO - fully equipped, a/c, am/fm cass., vinyl roof, excel. cond., alarm, 60k mi., $9,500. 265-3227.

84 HONDA ACCORD - a/c, 5-spd. stick shift, 33k mi., garaged, mint, $6,000. 286-0259.

83 CHEVETTE - good cond. 541-6522.

82 PLYMOUTH CHAMP - 60k mi., super stereo, sunroof, $1,150, neg. 363-7032.

81 SUZUKI RS-175 DIRT BIKE - rebuilt eng., good cond., limited edition, asking $350. Phil, 286-1348.

81 HONDA ACCORD - $1,600; 81 Toyota Corolla, $1,300, both 4 dr., 5-spd. Ext. 4214 or 475-5543.

81 LINCOLN MARK VI - Signature Series, black/gray, 2 dr., all options incl., moonroof & cb radio, $5,900. Fred, Ext. 3259 or 473-8622.

80 MUSTANG - new Chevy 350 motor, tranny, rear, asking $4,500. John, Ext 5222 days or 698-5701 eves.

80 HONDA CB900 MOTORCYCLE - custom, excel. cond., must see. Vinny 395-1228 after 7 p.m.

80 YAMAHA 850 MOTORCYCLE - excel. cond., 6,000 mi., full fairing, trunk, $950. Ext. 2697 or 878-0175.

80 FORD FAIRMONT - station wagon, 6 cyl., a/c, a/t, 95k mi., runs well, asking $1,100. Pete, Ext. 2304.

80 CAMARO - V-6, low mileage, new tires, excel. cond., $3,900. 585-8591, eves.

79 OLDS DELTA - p/s, p/b, a/c, am/fm stereo, good running, must be seen, $2,100. Sal, 924-2726.

79 PONTIAC GRAND LEMANS - V-6, am/fm stereo, a/c, power seats, $1,395. Bill, 822-5144.

79 BUICK LeSABRE LTD. - 4 dr., V-8, a/c, p/s, p/b, am/fm stereo, vinyl roof, $1,250. Charlie, Ext. 2107.

79 COUGAR XR-7 - fully loaded, $1,000. Tony, 698-9274 after 6 p.m.

78 GREMLIN - 4 cyl., 4. spd., am/fm, good cond., $525. Frank, Ext. 2022 or 399-4480.

78 TOYOTA COROLLA - station wagon, 5 spd., man. trans., $850. Dave, Ext. 4256.

78 CHEVY MALIBU - 2 dr., 80k mi., $1,000. Steve, Ext. 4346 or 924-1321.

78 DATSUN B210GX - am/fm cass., new tires, 5 spd., good cond., $775. Jim. Ext. 2432.

78 HONDA NC50 MOPED - easy riding, good cond., new batt., extras, $150. Frank, Ext. 4584 or 277-0464.

77 NOMAD - 18' self-contained, sleeps six, awning, excel. cond., $3,200. 732-3585.

77 PEUGEOT 604 - extras, needs some work, must sell, $1,500. Dave, 878-8541.

76 VOLVO 264DL - V-6, 70k mi., new tires, new brakes, new muffler, a/c, $1,500. Dave, Ext. 4396 or 288-6507.

76 VOLVO 264GL - reliable, needs brakes, valve adjust., asking $800. Deena, 732-8819 between 12-4 p.m.

76 PONTIAC FIREBIRD - 84 Fiero. Ext. 4127.

76 TRIUMPH TR7 - hardtop, Porsche red, 67k mi., must see to appreciate. 727-2861 after 5 p.m.

75 PLYMOUTH VALIANT - runs well, many new parts, $400. Susanna, Ext. 3959.

75 BMW R-90-6 MOTORCYCLE - 900cc, very good cond., $1,800. Roger, Ext. 7518 or 878-8847.

72 OLDS DELTA 88 - excel. running cond., $300. Ext. 2500 or 661-6078.

71 FORD TORINO - 2 dr., auto, p/s, p/b, 70k mi., $500. Pete, Ext. 2498.

70 PLYMOUTH FURY III - runs fine, trans. leaks, high miles, $100. Dick, Ext. 2911 or 698-5298.

39 PLYMOUTH SEDAN - 2 dr., 6 cyl., rebuilt motor, good cond., needs paint, TLC, $2,200. Frank, Ext. 2022.

CAMPER - sleeps six, stove, heater, cooler, good cond., $2150. 727-7741.

TIRES - almost new, 2-H78-15 and 1-845-15, ww, on Ford rims, $15 each. Ext. 2434.

MAG WHEELS - 4-lug Ford off Mustang GT, asking $250. John, Ext. 5222, days or 698-5701 eves.

DIRT BIKE - Honda, good cond., $275. 399-0537, eves.

Boats & Marine Supplies

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

19½' CORINTHIAN SAILBOAT - fiberglass w/full keel, sleeps two, O.B., etc., asking $3,995. Ext. 4637 or 692-8659 after 6 p.m.

18' COBRIA BOWRIDER - fiberglass, 1980 75 HP Johnson Stinger, full canvas, trailer, winch, C.B., extras, $3,500. 475-7092.

17' SPORTCRAFT BOWRIDER - 1982, Mercury I/O w/trailer, $3,500. 727-4036 or 724-4663 eves.

16' MOTH FIBERGLASS SAILBOAT - main sail w/jib, oar, daggerboard, best offer over $150. Dorry, Ext. 2103 or 286-0126 eves.

14' DIXIE RUNABOUT - w/1973 65 HP Johnson, trailer, full canvas cover, most accessories, excel. cond., $4,000, flexible. Sue, Ext. 4931.

8' PRAM - plywood, $250. Don, Ext. 4009.

73 CHRIS-CRAFT LANCER - 350 eng., rebuilt 1986, inboard, many extras, $5,000, neg. Ray, 654-0810.

PROPELLER SHAFT - 1¼" Bz., 10 ft. lg., both ends machined, $25. Walter, Ext. 4605 or 938-8353.

JOHNSON 50/1 LUBRICANT - 2 cycle, outboards, 16 fl. oz. can, $1.00. 475-1254.

MORSE TWIN ENGINE - single lever control & cables, $65, neg. Ernie, 588-4987.

Miscellaneous

GOLF CLUB STARTER SET - Wilson 3, 5, 7, 9 irons, 1 & 3 woods, $45. Russ, Ext. 5129.

BIKE - 26" Peugeot, 10-speed, $75; Area Rug, rust/tan 9'x6', $150; coffee and end table, pine, $75. 929-8533.

CEILING FIXTURE - w/3 lamps, $25. Wick, Ext. 7868, 758-6773.

GIRL'S BICYCLE - 24" 10-spd., very good cond., $40. 751-5868 eves.

WOOD STOVE - Franklin-style, insulated box, best offer; brown steel wardrobe, waterbed base, best offer. Ext. 4603.

STEREO RECEIVER - Pioneer, SX6 digital computer-controlled, 45-watt per channel, $100. 732-8837.

DINING ROOM FURNITURE - Drexel, 6 chairs, table, corner china cabinet, buffet, $900. Bob, Ext. 2542 or 878-0375 nites.

FREEZER - Frigidaire, 15.3 cu. ft., chest, white, good running cond., $25. 878-9169.

BEDROOM SET - $50; formica kitchen table w/4 chairs, $25. Ext. 5125.

WOMAN'S BICYCLE - Fuji, 10-spd., $75; adult tricycle w/basket, $125; 18 cu. ft., frost-free freezer, $125, neg. 589-4407, after 7 p.m.

CHINA HUTCH - fine cherry wood, excel. cond., $200. Ext. 4669.

TARPAULIN - 26'x40' blue poly and nylon, never used, $50. Mark, Ext. 5350 or 369-0793.

POOL LADDER - 8 ft., $35; 10 ft. diving board, for in-ground pool, excel. cond., $75. Tony, Ext. 2462.

LAWN MOWERS - 2, Briggs & Stratton, one 21" self-propelled, $45; one 18", $30. 878-2239.

AIR CONDITIONER - 6000 Btu, 7.5A, 115V. 20wx13hx19d, 38" max., new side expansion panels, asking $100. George, Ext. 3061 or 751-0894.

LAWN MOWER - Torro, 21" cut w/bag, 3½ HP, $75. Dan. Ext. 4987 or 698-7322.

FANS - box fan, 20", 3 spd., $10; 22" reversible, thermo control, 3 spd., window fan, $36. Ernie, 588-4987.

MIMEOGRAPH MACHINE - electric, like new, w/fluid, cabinet, cover and mounting tray. Frank, Ext. 3120.

MUSIC BOX — antique Pathé w/vibrating cone, only $350; furniture, Mediterranean bedroom set in good cond., 7 pieces, only $400. 744-0960.

FURNITURE - peacock chair, $35; rocker, $45; Workbench computer table, $185; 1930's desk & chair, $150. 689-9092.

WASHER & DRYER - brand-new, Sears Kenmore heavy duty washer and Kelvinator heavy duty dryer, $500. Kevin, 874-2386.

STEREO - receiver, turntable, loudspeakers, together $250 or separate. Susanna, Ext. 3959.

BABY ITEMS - car seat, Cosco day-cradle, Gerry baby carrier, all very good cond. 821-3925.

PORTABLE PHONE - Uniden, never been used, $50. JoAnn, Ext. 4120 or 689-7963.

PC MONITOR - Tandy VM-2, excel. cond., monochrome, asking $65; dryer, Westinghouse, asking $75. John, Ext. 3292 or 286-1348.

MACINTOSH SE - hardly used, lots of software, Imagewriter II printer included. Ext. 4142 or 345-3915 eves.

DEC EQIPMENT - TU10 tape drive, DL11, Decwriter II, current loop, PDP-11/55 floating point, 128k memory, make offer. Pat, 924-5533, Ext. 250

FURNITURE - living room, 3 bedroom sets, kitchen set. 395-3815.

VIOLINS - 1981 Pickering, $2,500; 1935 Heberlein, $900. 744-3744.

GIRL'S CANOPY BED - w/mattress and boxspring, like new, $100. 821-1525.

RING - initial "L", 14k and sterling silver, 12 diamond chips, worn twice, asking $80. 727-2861 after 5 p.m.

CELLAR DOOR - steel, Ext. 4127.

BENCH VISE - 4" turrent head w/anvil, $20. Walter, Ext. 4605 or 938-8353.

CRIB - full-sized w/mattress, $40; 2 baby strollers, $7 ea.; baby car seats, $15. 363-7032.

DISK DRIVES - 8", two in cabinet w/supply, aligned & checked w/manual, $60. Ext. 4172.

FRUITWOOD CHEST - 18x64x28h, $75; teak desk, $150; 8, hanging teak shelves, ea. 9½x30", 38" teak verticals w/metal arms, $40. Iris, Ext. 3387.

IBM COMPUTER TABLE - heavy duty, $100 or best offer; refrigerator, G.E., large, excel. cond., $225 or best offer. Ext. 4120 or 689-7963.

REFRIGERATOR - G.E., approx. 13 cu. ft., 1 door, works well, white, $50. Paul, Ext. 4665 or 727-4859.

CHANDELIER - brass, $10. Ext. 3558.

REFRIGERATOR/FREEZER - Hotpoint, 18 cu. ft., excel., $125, you haul; wall mirror, shopping cart, cheap. Joe, Ext. 2975.

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

RANGE - G.E., self-cleaning, black glass door, bought 1981, good cond., asking $200. John, Ext. 3292 or 286-1348.

MANUAL TREADMILL - $40; weight set w/bench, $40. 924-0277.

IBM PC JR - 128 KB w/color monitor plus software, $300. Dorry, Ext. 2103 or 286-0031 eves.

ZOOM LENS - 50-200mm macro, Sakar, fits Pentax or Ricoh SLR camera, $60. Charlie, 289-5216 after 5 p.m.

BEDROOM SET - old but good cond., full headboard, dresser w/mirror, chest, night table, vanity w/bench, $250. Karen, Ext. 4262.

AIR COMPRESSOR - 3 HP Sanborn, 30 gal. tank, extra compressor head, 110-220, good cond., $275. Ext. 4081 or 874-3203.

HOME BAR - 7'x18" 3½' high, good for rec. or family room. 281-8685.

LOUNGE CHAIR & OTTOMAN - brown, $75; Eureka upright vacuum w/attachments, $40. Ellie, Ext. 3395 or 325-1537.

DANISH TEAK DESK - file and 3 smaller drawers, w/shelves 5'x30", $400; swivel chairs, 2, chrome/black, $40 ea. Ext. 2007 or 751-1474.

DISHWASHER - Sears Kenmore, works fine, $15; maple dining table w/leaf, good cond., $20. Ext. 2679 or 472-6922.

LAWN MOWER - 8 HP, Briggs & Stratton, $50. 689-9234 eves.

ENGAGEMENT RING - ½-carat, $800. Frank, Ext. 3843 or 325-9584.

Free

GERBILS - very cute and friendly. Ext. 4094 or 751-6575 eves.

Car Pools

BELLPORT/E. PATCHOGUE - person needed for on-time car pool. Joe, Ext. 3569 or 286-9560 after 6 p.m.

PATCHOGUE VAN POOL - seat open, leave name and number. Ext. 4669.

Lost and Found

FOUND - earring, men's locker room. 6/16. Don, Ext. 4821.

LOST - turquoise and silver pendant, vincinity Bldg. 179. Pat, Ext. 2452.

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

BAYPORT - large upstairs studio, furn., carpet, priv. ent., single non-smoker, no pets, refs., req. $495/mo. incl. util., 1 mo. sec., ready July 15. 472-1734, 10 a.m.-8 p.m.

BAY SHORE - 2 bdrm. house, $700/mo. + util., option to buy. 665-7782 after 6 p.m.

BELLPORT - near Woodside, 2 rm. studio apt. w/priv. ent., full bath & eik, aking $575/all included + 1 mo. sec. 286-1385 after 6 p.m.

MASTIC PARK - small 1 bdrm. apt, furn., suitable single, avail. July 15, $375/mo. + elec., 1 mo. sec. 281-7844 eves.

MIDDLE ISLAND - Artist Lake condo, 1 bdrm., new appliances, upper unit, pool, $600/mo. heat incl. 924-3694.

SELDEN - small 1 bdrm. cottage, $475/mo. + utilities, security & refs. required, avail. August 1. 732-8056.

STONY BROOK - 3 bdrm., 1½ bath Cape, large l/r w/fp, eik, screened porch, bsmt., 1-car gar., walk to RR & SUNY, avail. July 1 or Aug 1, one-yr. lease, $1,100. 751-0453.

S. MYRTLE BEACH, S.C. - 1 bdrm condo, sleeps 4, overlooking 18th green, minutes from Atlantic Ocean by shuttle, spa & tennis on site, $74/day or golf package. 286-2749 after 5 p.m.

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

For Sale

CENTER MORICHES - 3 bdrm. ranch, 1½ baths, attached gar., storage shed, lot sized 111'x160' on cul-de-sac, excel. location. 878-0175.

EASTPORT - 2 bdrm., l/r, kit., bath, full bsmt., 100x120 property, good loc., close to school & shopping, beautifully landscaped, $115,000, firm. Ext. 2232 or 325-0835.

HOLBROOK - mint, Timberidge center hall, 3 bdrm. ranch, brick-faced, d/r, den w/brk fp, eik, 2 baths, 5 appl., prof. landscaped, new carpeting, sewers, Sachem schools, $164,000. Ext. 2679 or 472-6922.

MASTIC BEACH - 3 bdrm. house, large l/r, full bsmt., cabinet-lined country kitchen, ohw heat, stove, refridg., carpeting, 2 blks from marina. 281-8685.

MEDFORD - 4 bdrm. Colonial, fenced ½ acre, 2½ baths, FL rm., oversized garage, in-ground sprinkler, prof. landscaped, w/1 bdrm. apt., $182,000. Anne, Ext. 7814 or 475-8456.

MIDDLE ISLAND - handyman special, 2 bdrm., l/r, kitchen, bath, on 2 acres, close to school & shopping, 7 minutes by car to Lab, $95,000. 351-1017.

MILLER PLACE - Scotts Beach, 4 bdrm. ranch, ½ acre plus, private beach community, sunroom, spa, pool, city water, $190,000. Judy, 473-6631 after 5 p.m.

PORT JEFFERSON - Harbor Hills, 3 bdrm. Colonial, l/r w/fp, eik, 2½ baths, beach/country club amenities, mint cond., lovely yard, $189,000. 473-4668.

RIDGE - Strathmore 2 bdrm. townhouse, 1½ baths, storage shed, low maintenance, close to Lab, $98,500. Ext. 3346 or 345-3584.

RIVERHEAD - 4 bdrm. 2-level ranch, 2 baths, possible m/d, ⅔ acre, large l/r, den, deeded beach rights, quiet neighborhood, 5 appliances, $150,000. 727-0499.

SHOREHAM - large, 4 bdrm. 2½ bath Colonial, taxes smaller than square footage, 2-car gar., one mile from beach, good neighborhood for children. 744-0960.

SHOREHAM - 3 bdrm. ranch, carpeted, coal stove, priv. fenced backyard, 2½-car gar., low taxes, SWR schools, clean, move-in cond., $137,900. 744-9677.

WADING RIVER - 3 bdrm. ranch, l/r w/fp, d/r, eik, 2 baths, 2-car oversized garage, 10'x24' deck w/screened room, 1 acre, SWR schools, $189,000 firm. 929-3521 after 6 p.m.

YAPHANK - 3 bdrm. townhouse condo. priv. end-unit, brick front, full bsmt., attached garage, central a/c, w/w, 5 appliances, many extras, $129,900. 924-0612.

FT. PIERCE, FL - adult mobile home park, furn., move-in cond., 2 bdrm., 2 baths, a/c, screened porch, shed, carport, close to shopping and water, pool, recreation hall, s/b courts, $16,000. 266-5591.

HOLLYWOOD, FL - 10 min. S. of Ft. Lauderdale, 3 bdrm., screened porch, fenced, shed, fruit trees, many extras, taxes, $327. $67,000. 289-3586.

PALM COAST, FL - ¼ acre lot, 80'x125', greenbelt backyard, 5 mi. to ocean, 24 mi. no. of Daytona Beach, water, drainage, & sewage util. in, $3,995 & assume payments, must sell. Thomas Nolan, Ext. 5265.

ROCKLEDGE, FL - block & stucco, 2 bdrms., 2 baths, fam. rm. 11x25 porch, carpet, shades, some drapes, extras, good loc., $64,500. 407-631-2840.

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, will rent. 929-8912.

Wanted

SCRAP LUMBER PIECES - CCA-treated 2x4 to 2x10 and 4x4, 10" and longer. Bart, Ext. 3457.

HOUSE TO SIT - free, caring, reliable, experienced, any duration, June to Sept. Jack Allentuck, Ext. 2412.

HOUSEMATE - share 3 bdrm., 2 bath, hi-ranch, 10 min. to Lab, avail. Sept 1. Ext. 4023 or 929- 3721.

LOANER CAR - for visiting scientist & family, August. Ext. 4771 or 286-8747.

OUTBOARD MOTOR - 50-60 HP elect. start. Paul Sparrow, Ext. 4665.

HOUSE/APT - to rent, 3 or 4 bdrms., 1½ baths, l/r, d/r, kitchen, washer & dryer, family neighborhood, end of June (914) 245-0907.

PUMP - Doughboy for A/G pool, ⅓ approx. 1 HP, working cond. Ext. 5403.

TRAINS - Lionel, American Flyer, accessories, any cond. brings good price. Carole, Ext. 7100 or 924-4097 eves.

Services

Services are listed as a courtesy to BNL employees. They are neither screened nor recommended by the **Bulletin.**

HOME IMPROVEMENTS - design, drawings, blueprints & permits, custom design according to your specs. 475-6981.

BASEMENT STORAGE - for small or large items. 282-4120 or 689-7963.

BABYSITTER - in my home, Manorville area, experienced, reliable, reasonable, refs. avail. Nancy, 878-0487.

PARTY TENTS FOR RENT - we setup & take down. Fred Kuehl Ext. 7947/792 or 588-2268.

VIOLIN INSTRUCTOR - classical and traditional Irish. Kathleen, 727-7741.

BAGPIPER - all occasions, try something entertaining. Timmy, 727-7741.

BRICKWORK - patios, walks, swimming pools, Belgian block, landscape ties, retaining walls, Lab discount. Tony, 698-9274.

ON-SITE BABYSITTER - 14-yr-old, avail. during summer. Aya, Ext. 3129.

STUDENT PAINTER - interior and exterior, experienced and reasonable. Dave, 744-8655.

WINDOW CLEANING - professionally done, Islip area. 467-5853.

COMMODORE REPAIRS - 64/128, 1541/71, 1525/26, MPS, 801/02/03, fast, reasonable, reliable. Henry, Ext. 5110 or 399-3087.

WORD PROCESSING - papers, letters, resumes, quality work, reasonable rates, 12 years secretarial experience. 924-2012 after 6 p.m.

SHEETROCKING & SPACKLING - free estimate. Kevin, 874-2386.

NAIL DESIGN - all phases, my home or yours. Karen, 266-3073.

AUTO POLISHING - complete interior/exterior care, compounding, glazing and waxing at reasonable rates. 924-8636.

CHILD CARE - young mother will babysit at home, 5 mins. from Lab. 924-4758.

TYPING - done on an IBM PC, using WordPerfect software. 286-3604.

In Appreciation

The family of the late Denise Harding thanks the management and employees of Brookhaven for their sympathy and expressions of kindness.

— Ronald Harding, Ronald Jr. and Latoya

Classified ad deadline for the Brookhaven Bulletin of July 15 is 4:30 p.m. on Wednesday, July 6.