

## Sifting Through Long Island's Black Sands

Black sands, hot erratics... sounds like a new rock group, but what Physicist Thomas Ward, Department of Nuclear Energy (DNE), and his summer research student Krishna Divadeenam, of the Shoreham-Wading River High School, discovered last summer is as old in geological time as Long Island.

In looking for natural radioactivity on Long Island, Ward and Divadeenam stumbled upon heretofore unreported mineralogical deposits of thorium ore in the black sands of Long Island. A soft metal, thorium is a naturally radioactive element, and it changes from silvery white to dark gray or black when exposed to the air.

As Ward also discovered, three others at the Lab had previously uncovered the natural radioactivity of the black sands: Leigh Phillips, Safety & Environmental Protection, who made his finding in 1953; James Cumming, Chemistry, about 20-25 years ago; and, more recently, Walter Becker, DNE. However, other than making a mental note of the fact, they did not report their findings.

### The Sands of Time

There are only a half-dozen black-sand, thorium beaches known in the world, including one in the U.S., in North Carolina. Deposited during the Ice Age by the retreating Wisconsin glacier (see sidebar), Long Island's black sands were first noted in the geological record by the U.S. Geological Survey before 1850. In examining well drillings on Long Island, layers of black sand were reported at depths up to 100 meters.

"Black sands have been encountered at all depths of the Long Island glacial drift," observes Ward.

During Colonial times, the black sands had been mined for iron, and again, at the turn of the 19th century, Thomas Edison had attempted to establish a plant in Quogue for separating iron out of the black sands using electromagnetism.

### Red Hot Garnet

Only 16 percent of the black sands are magnetic, and over 75 percent are nonmagnetic, as Ward and Divadeenam found when they separated black from white sand. Six to eight percent

of black sands are not black at all — they are actually nonmagnetic, deep red stones containing garnet.

"The thorium content in the beach sands was almost proportional to the amount of black sands — and almost all of the thorium radioactivity was found in the garnetiferous stones," reports Ward.

Long Island's white sands, as well as its common soils and rocks, also contain thorium and uranium, another naturally radioactive element, but only concentrations of 1-3 parts per million (ppm).

### No Ordinary Rocks

Ward and his student found much higher concentrations — 30-1,500 ppm of thorium and 5-50 ppm of uranium — not only in Long Island's black sands, but also in its erratics — the surface boulders and rocks that had been transported south from the Adirondacks by the Wisconsin glacier.

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Krishna Divadeenam (left) and Thomas Ward.

Roger Stoulenburgh

## BNL Lecture: Searching for One in a Billion



William Morse

Roger Stoulenburgh

Picture yourself standing in a vast field of clover, entranced by the endless conformity of three leaves of green — only to find your eyes drawn to one four-leaf clover. Despite its great similarity to what seems like a million shamrocks in the field, your eye can detect that one in a million by its outstanding characteristic — an extra leaf.

In the same way, from among the billions of new particles produced when a particle beam decays, a sensitive particle detector can identify one decay mode of interest by measuring its outstanding characteristics. Right now, at BNL's Alternating Gradient Synchrotron (AGS), such detectors are being used by four experimental groups in their searches for signs that particles called kaons are decaying in ways that theory predicts to be either very rare or completely forbidden.

Physicist William Morse, Physics Department, who is on the team of Experiment 845, will discuss these groundbreaking experiments in the 251st Brookhaven Lecture on Wednesday, March 22. His talk on "Rare K Decays: Searching for One in a Billion" will begin at 4 p.m. in Berkner Hall. Physics Department Chairman Peter Bond will introduce the lecturer.

To begin his talk, Morse will offer a nontechnical explanation of what kaons, or K mesons, are and how they were discovered. The first kaon, he will recall, was seen in 1947, in cosmic rays. The next one was seen two years later. Obviously, if physicists were going to study K mesons, they needed a better source.

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## Police Chase Mustang, Capture Suspect on Site



SCPD vehicles still held the gray 1980 Mustang captive at 4:40 a.m. last Tuesday morning, when Lab photographer Peter Horton arrived on site to take this photo.

Flashing lights and a whirl of vehicles at the intersection of William Floyd Parkway and the Lab's entrance — that's what BNL Patrol Officer Christopher Tersigni observed at 2:45 a.m. last Tuesday morning while on duty at the Main Gate. At first he thought it was an accident, but moments later, when a gray Mustang turned in to the Lab's outgoing lane with three Suffolk County Police Department (SCPD) vehicles in hot pursuit, he knew otherwise and notified BNL Police Headquarters.

As the vehicles sped past the Main Gate, Tersigni and Patrol Officer Luke Greco, who was also at the gate, both observed that the driver of the 1980 Mustang was driving in an extremely erratic fashion. Patrol Officer William Staker, who was approaching the Main Gate in the westbound lane, observed the vehicles approaching in his lane. He turned on his overhead lights and held his position, but the oncoming vehicles crossed the median to the eastbound lanes. He and Greco then joined the pursuit.

After leading the BNL and SC Police around the site for several minutes,

the suspect's vehicle was rammed by the three SCPD cars. A SCPD officer broke the Mustang's driver's side window and pulled the suspect from the car. After a short scuffle, he was apprehended. He was later charged with a number of offenses, including second-degree assault and driving while his ability was impaired by drugs.

"The Suffolk County Police certainly handled this situation very efficiently," said Gerald Kinne, BNL's Assistant Director for Reactor, Safety and Security. "I was very pleased to see the cooperation between the Suffolk County Police and the Laboratory Police Group."

The incident began when SCPD officers observed Brian Fattorusso of Centereach driving erratically while going south on William Floyd Parkway, just before turning in to the Lab site.

Proceeding east on Princeton Avenue, the Mustang crossed the median twice before heading north on Upton Road. It then turned right, driving over the grassy area southeast of Brookhaven Avenue — across from the Cafeteria. The car continued

(Continued on page 2)

## Black Sands (cont'd)

"These are no ordinary rocks," says Ward, "as they have extraordinary concentrations of thorium and uranium in them." He and his student found that the erratics contain an average of 94 ppm of thorium and 11 ppm of uranium.

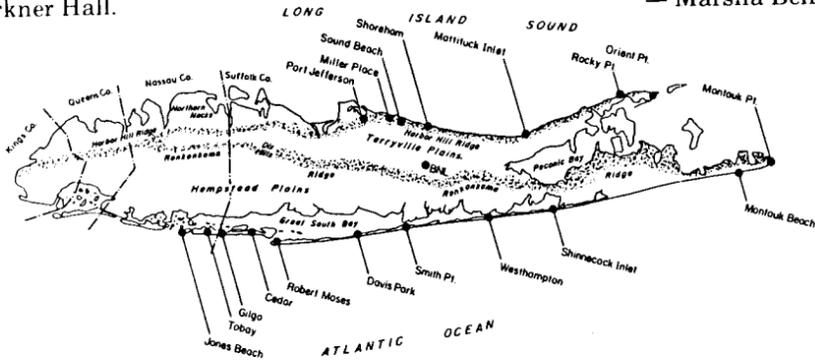
In fact, Ward and Divadeenam measured more than 50 BNL erratics for their natural radioactivity, and found that they contain these elevated levels. For example, several large erratics, used as decorative stones, can be seen near the entrance to Berkner Hall.

## Rocks & Sands Are Safe

From the concentrations he has measured, Ward estimates that the total amount of excess thorium ore on Long Island may be about one million tons or more. However, the thorium-containing erratics and black sands are not a health threat.

"The black sands do not present a radiation health hazard to Long Island's 15 million beachgoers since the cumulative lifetime dose of natural background radioactivity is about 12,000 times greater," explains Ward.

— Marsha Belford



Long Island locations from which samples were taken and measured for their thorium content. While the surface distribution of black sands changes with the currents, many Long Island beaches have displayed black sands for much of this century. From an aerial survey of south-shore beaches from Shinnecock Inlet to Jones Beach, it is estimated that at least one million tons of black sand sit on these beaches.

## Great Adventure Tickets on Sale

The Great Adventure park in New Jersey will be opening on Friday, March 24, featuring a new ride — the Great American Scream Machine.

The BERA Sales Office has discount tickets to Great Adventure available now for all fun seekers. Adults' tickets are \$22 at the gate, but they're \$17 at the BERA Sales Office. There's no discount on the \$14 children's tickets, but buying them early saves you waiting on line at the park.

Great Adventure's operating schedule for 1989 is on display at the BERA Sales Office, which is open Monday to Friday, 9 a.m. to 2 p.m.

## BNL Lecture (Cont'd)

Over the years, BNL has provided physicists with a source of kaons. Morse will summarize this long history — from the discovery of the neutral K long, in 1956 at the Cosmotron, to the Nobel Prize-winning observation of CP violation, at the AGS in 1963, to the factors that today make the AGS the world's most prolific source of K mesons.

During the present AGS run, four experiments — E787, E845, E851 and E791 — are observing those kaons as they travel through their detectors and transform into different, lighter particles. Morse will introduce each collaboration and the specific rare K decays in which each is interested. Then, he will describe the sensitive, state-of-the-art, detector systems each is using in its quest. Finally, he will explain the impact the searches will have on current physics — whether or not any rare K decays are ultimately observed.

A distant relation to Philip Morse, BNL's first Director from 1946-48, William Morse earned his B.S. degree at the State University of New York at Stony Brook in 1969.

After receiving his Ph.D. in physics from Purdue University in 1976, Morse joined the staff of BNL's Physics Department as a research associate. In 1979, he became an associate physicist, and he was named physicist in 1981. Morse has been a spokesman for E845 since February 1988.

After the lecture, those attending are invited to join the speaker for discussion and hors d'oeuvres. In addition, anyone interested in joining the lecturer for dinner at a restaurant off site should call Edward Jastrzembski, Ext. 3881.

## To Your Health

"Causes and Prevention of Lower Back Pain" will be the topic at the next Health Promotion Seminar. Michael S. Horney, D.C., a chiropractor in private practice, will present the seminar on Thursday, March 23, noon to 1 p.m., in Berkner Hall.

## Police Chase (cont'd)

across Brookhaven Avenue, through the Berkner Hall parking lot and across the grassy field parallel to Johns Hopkins Street, and pulled into the parking area west of the modular part of Bldg. 902.

One of the BNL patrols and the three SCPD cars blocked Fattorusso in there, but he managed to maneuver the Mustang out, slightly damaging a stairway in the process. Then, Fattorusso doubled back past the Cafeteria, to the southeast corner of Brookhaven and Upton where SCPD units rammed his vehicle to a stop.

As the three SCPD vehicles concentrated on stopping Fattorusso, members of BNL's Police Group blocked off all roads that might provide him with an escape route. Involved in this effort were: Sergeant Paul Sawina, Acting Sergeant Eusebio Beniquez and Patrol Officers Iris Caceres and Richard Thorp.

BNL Lieutenant Peter Garcia arrived at the scene as three SCPD officers were attempting to arrest Fattorusso. As Fattorusso was resisting, one of the SCPD officers asked Garcia for assistance, and Garcia handcuffed Fattorusso to the bumper of one of the SCPD cars.

A SCPD sergeant then requested that a BNL ambulance take Fattorusso to the hospital. Captain Russell Dunn and Emergency Medical Technicians Charles LaSalla, Robert Mosley and William Strelecki responded, and, at 3:35 a.m., Fattorusso was taken to J.T. Mather Memorial Hospital in Port Jefferson for treatment of head lacerations and a possible broken hip. Also treated at Mather, then released, were three SCPD officers: one whom Fattorusso had stabbed in the hand with a hypodermic needle, and two who suffered cuts from the Mustang's broken glass.

SCPD crime scene units arrived at 4 a.m. to take photos and measurements and to search the vehicle. BNL Photographer Peter Horton was also called to the scene to photograph the area.

The SCPD impound wrecker removed the Mustang from BNL at 6 a.m.

## Meet the Candidates for BERA Board

Elections for two new members to serve on the Executive Board of the Brookhaven Employees Recreation Association (BERA) will take place during the week of March 27. The four candidates are pictured here, along with short biographies emphasizing their BERA involvement.

In February, BERA members voted to amend the BERA constitution to change the number of Executive Board

members from six to eight, and to change their terms from three to four years. Thus, none of the present Executive Board members is leaving office this year, and the two winning candidates will join the present six BERA Board members to bring the total membership of the Executive Board up to eight.

Those eligible to vote in the BERA Board election include employees of BNL, AUI and DOE, as well as all other permanent, on-site employers.

Absentee votes for employees who will not be on site during voting week will be accepted in person at the Recreation Office, Bldg. 185, prior to election week.

Ballots may be cast as follows:

Date	Time	Place
Mon., 3/27	11:00-1:30	Cafeteria
Tues., 3/28	11:00-1:30	Cafeteria
Wed., 3/29	11:00-1:30	Cafeteria
Thurs., 3/30	10:00-2:00	Barclays Bank
Fri., 3/31	10:00-2:00	Barclays Bank



**Rick Backofen** . . . Specialist A, Photography & Graphic Arts Division . . . has worked at BNL 8½ years . . . on Foulups softball team, Mixed League, since 1984; team captain since 1985 . . . with the Employees Softball League since 1986, now on Sudden Impact . . . Softball League vice president 1986 & 1988, and League I representative in 1986 . . . played volleyball 1986 & 1987 with Foulups, team captain 1986 . . . participated in Mixed League bowling, 1984, 1985 and 1987 — again with Foulups . . . in the Runners Club since 1987 . . . member of Commodore Users Club since 1986 . . . joined Social Club in 1985, vice president since 1986 . . . member of BERA Special Events Committee since 1987 and BERA Nominating Committee in 1987.



**Michelle Cummings** . . . Information Support Analyst, Management Information Systems Division . . . been a BNL'er for ten years . . . played volleyball since 1988 on MISfits . . . member of Afro-American Culture Club (AACC) for six years, became treasurer in 1988 . . . involved in AACC's Black History Month activities as member of the Gospel Extravaganza Committee for three years and a judge for this year's Youth Talent Show.



**April Donegain** . . . Executive Secretary, Fiscal Division . . . came to BNL 14 years ago . . . member of the DO-nuts Volleyball League team for two years . . . played with Who Cares in Softball's Mixed League for one year . . . bowled with the Lickety Splits in the Women's League for three years . . . founding member of the Afro-American Culture Club in 1981; corresponding secretary for two years; vice president for two years; and president for two years . . . served on BERA Nominating Committee in 1987.



**Richard Scheidet** . . . Project Engineer, Plant Engineering Division . . . at the Lab for 13 years . . . currently in second year on the Scrambled Legs in the Employees' Softball League; in 9th year on the Kidz R Us in the Mixed Softball League, where he is team captain; in 12th year in the Mixed Bowling League, of which he is past vice president, now with the Honeymooners; and in third year with the Bodybuilding & Exercise Club . . . in the past, was on Men's Bowling League, 3 years; with Volleyball League for one year; in the Runners Club for six years . . . has also been a member of the Commodore Users Club for three years and a member of the committee for the BERA-sponsored Toy Drive . . . previously served on BERA Board in 1986-88 and was president in 1988.

## Nursery School

The Upton Nursery School is now enrolling three- and four-year-old children for the 1989-90 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, 473-6550.

## Camera Club

The agenda at the next Camera Club meeting will include:

- Replacement of pictures in photo exhibit. To be part of the display, bring in your framed prints, 8 x 10 or larger.
- Discussion on developing, printing, and enlarging black and white film.
- Election of officers.

The meeting will begin at 5:30 p.m., on Thursday, March 23, in the lobby of Berkner Hall.



As March heads towards spring, the Team Safety Program is proceeding well despite the rocky 1989 start. This past week there were several more three-time winners. Central Shops posted two triple plays with the Support Area Team and the Welding, Cutting and Metal Shop Team coming up for the third time. Supply and Materiel posted the Central Stores Team with a triple play. Again, hats off to all!

There was one negative occurrence on the field. The third Platoon of the Police Group had an eye injury, which resulted in lost time. All other teams are continuing with their records free of lost-time accidents.

Word from the locker room is that the Commissioner's trip to Florida did not result in any new recruit deals, but the fishing was great. We assume the trip was not all business.

Keep up the safe work.

## Social Club

The BERA Social Club has planned the following trips:

- **Maine Clambake, June 25** (note date change) — four-day trip; \$427 for a single, \$313 each for two per room, \$309 each for three per room; includes round-trip motorcoach transportation, three nights accommodations, five meals, clambake, an evening at the Carousel Theatre, two drinks, taxes, service charges, tour guide. \$25 deposit due now, balance due by June 16.
- **Montreal, September 1** — four-day trip; \$436 for a single, \$313 each for two per room, \$303 each for three per room; includes round-trip motorcoach transportation, three nights accommodations, five meals, taxes, service charges, tour guide. \$25 deposit due now, balance due by June 23.
- **San Francisco-Three Island Hawaiian Deluxe, October 14** — 14-day trip; \$2,469 for a single, \$1,899 each for two per room, \$1,870 each for three per room; includes round-trip air transportation, interisland transportation, all transfers between airports and hotels, 12 deluxe and superior class hotels, 14 meals, all taxes and service charges, all handling of luggage (2 pieces per person), four nights of entertainment, tour guide. \$100 deposit due as soon as possible, balance due by August 11.

Send deposits to Doris Terry, Bldg. 197C. Make checks payable to "Collette Tours." For more information, call Terry at Ext. 7610.

## Facing the Challenge of a Changing World

A challenging situation confronts both the Hospitality Committee sponsored by the Personnel Division and the BERA-sponsored International Cooking Exchange: Changing lifestyles make it difficult to find volunteers to run these groups, and, when an event is scheduled, attendance may be low. Yet, given the number of people living in apartments and houses on site, many who have no transportation off site and are unable to speak English, the need for both organizations seems as strong as ever. Here we explore the ways they hope to meet today's challenges and remain vital groups at BNL.

### Hospitality Committee

*"Our ideal is the same as it has always been — to welcome new families to BNL and help them get settled, especially those who live on site. But it's becoming harder. . .*

*. . . So many wives go outside the home to work. That's what's different now. People who used to have time to help are often too busy. . .*

*. . . We need volunteers, of all cultures and all languages, for whatever time they can spare. We understand how hard it is, we're as busy as they are!"*

This conversation underscores the challenges that the 30-plus-year-old Hospitality Committee is facing as it strives to find its place in a changing world.

It took place last week at an impromptu gathering, which included Milica Stevanovic, chair of the committee since August 1987; committee member Brenda Watson, here from Vancouver for two years; committee member Kazuko Kuno, originally from Japan and here for the second of her family's two years at BNL; Marie Steinart, who came six months ago from Sweden, and Dorothy Marelli of the Personnel Department.

"We seem to be rushing from one way of life to another," said Stevanovic, who believes that the difficulties can be overcome. "It is a matter of adjustment," she explained. "We can still arrange meetings and trips as we have always done, getting people together to share ideas and experiences and join new ventures — we need new

ideas as to how this can be done in a more fluid way that changes to match the time we have available."

One thing that has not changed is the strong support given to the Hospitality Committee by the Personnel Department. Marelli has worked with the committee for 20 years, and her knowledge of past procedures provides valuable continuity to the organization.

But the Hospitality Committee needs more help and more ideas. "You put in some time, and you get out a sense of community, shared experiences and closer international relationships," said Stevanovic. "Anybody who is interested in joining us will be very welcome." — Liz Seubert

*The next Hospitality Committee meeting will be at the Brookhaven Center on Tuesday, April 4, at 9:30 a.m. For more information, contact Stevanovic at 821-6916, or Marelli, Ext. 2885.*

*The Hospitality Committee is involved with a Play Group for children in the apartment area, which meets every Thursday from 2 to 3 p.m. in the Recreation Building. During this play group, Janet De Angelis, a student from the State University of New York at Stony Brook, who will be doing her graduate work in child development and education, conducts a special reading of American stories for the children. For more information, contact Marelli, Ext. 2885.*



(From left) Milica Stevanovic, Brenda Watson and Kazuko Kuno discuss plans for the Hospitality Committee.

All photos on this page by Roger Stoutenburgh.

### Stony Brook Event: WUSB Radiothon '89

Since June 1977, WUSB, the radio station at the State University of New York at Stony Brook, has been providing Long Island and Connecticut with commercial-free radio. Now, WUSB needs to replace its aging transmitter, to assure that the station can continue to broadcast and to improve the station's signal and listeners' reception.

Towards this end, WUSB, 90.1 FM, will be having Radiothon '89 — eight days of special fund-raising programming, from Saturday, March 18, through Saturday, March 25. Though WUSB's operating funds come from the students at Stony Brook, those funds cannot cover the major expense of a new transmitter. So the station is turning to listeners for help.

For more information about the Radiothon and WUSB's special programming, call 632-6498. Contributions are tax-deductible and may be sent to WUSB, Stony Brook, NY 11790.

### Equipment Demos

The laptop portable computers manufactured by GRiD Systems Corporation will be featured in a product demonstration on Tuesday, March 21, in Berkner Hall, from 10 a.m. to 3 p.m.

GRiD Systems markets the battery-powered Tempest 286 and 388 laptop portables, which each weigh just 12 pounds. The systems support MS-DOS and UNIX operating systems, 3-Com and Novel networks, standard PC cards and application programs.

Digital Equipment Corporation (DEC) will host a seminar on workstation and PC integration, on Wednesday, March 22, at 1 p.m., in Berkner Hall, Room B.

The presentation will focus on DEC's recently announced workstations, including the DS3100 12-MIP RISC-based Ultrix workstation, and the PC LAN/Server 2000, a packaged PC-server system. Demonstrations of this equipment will follow the presentation.



Sandy Weber demonstrated bread-making at the last Cooking Exchange meeting.

## Cooking Exchange

"Food, glorious food — there's nothing quite like it," sings Oliver Twist in the modern, musical version of Charles Dickens's novel.

At Brookhaven, the International Cooking Exchange, a BERA club founded in 1965, has reflected this sentiment. At each monthly meeting in the Recreation Building, a particular dish or style of cooking is demonstrated, and everyone gets to taste the results. A charge of \$2 covers the cost of ingredients and babysitting is provided at 50¢ per child.

"In the past, there have been many people attending," said Kazuko Kuno, who has just become chair of the Cooking Exchange. Kuno's permanent home is near Tokyo, but she is now living in a Lab apartment with her husband, Yoshitaka, who has a two-year appointment in the Physics Department.

"There used to be many people exchanging different ways to prepare meals," Kuno said, "and how to substitute ingredients for some that are hard to get in the U.S."

That was the way it was. "But last year, when I first came, and for some time before that," continued Kuno, "there seemed to be less interest. The organizers found it very hard to get people to help on the committee. Some months, very few people came to the meetings."

Early this year, Kuno and the few people who were trying to keep interest alive decided to cancel all future meetings. "But," she said, "we found that this was a disappointment for many people, after all. We are trying again, and at the last meeting, many women attended. Sandy Weber, (see photograph) showed us how to make some festive breads."

Encouraged by this renewed enthusiasm, Kuno said: "I am hoping that some new people will help with the organization. It does not take much time, if there are enough members on the committee, and it is an interesting way to learn some delicious international recipes."

To join or share your ideas, call Kuno at Ext. 3222, or leave your name with M. Kay Dellimore at Ext. 2873.

— Liz Seubert

*Far Eastern Cooking will be featured at the next Cooking Exchange meeting to be held on Wednesday, March 22, in the Recreation Building, from 12:30 to 2:30 p.m.*

#### Note to Employees:

Attendance at lectures, meetings and other special programs held during normal working hours is subject to supervisory concurrence.

## BROOKHAVEN BULLETIN

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## Softball

An organizational meeting for the 1989 softball season will be held on Thursday, March 23, at noon in Room B, Berkner Hall. One representative from each team should attend. The agenda will include league finances, structure and playoffs. This meeting will be the deadline for submission of preliminary rosters.

## Tennis: Bus Trip To U.S. Open

Reservations for the September 5 bus trip to the U.S. Open at the National Tennis Center may be made now at the BERA Sales Office. The \$28 per person cost includes round-trip bus fare and admission to the day matches. Prepaid reservations only; sign up now to reserve your seat.

## Bowling

### White League

High games for the past two weeks were bowled by Ron Picinich 255, Ed Sperry IV 244/202, Andy Warkentien 226/202, Sharon Smith 204/180, Ed Meier 204, Marilyn Picinich 186, Joe Ferrante converted the 8/10 split.

### Purple League

Jim Petro had a 236/202, Ed MacDougall 217, Frank Gaetan 215, Clem Auguste 214/202, Maria Apelskog 210, Ed Beadle 207, Paul Calligari 203, Caryl MacDougall 199/185/185, Marge Belligan 188, Marsha Kipperman 184, Ellie Adams 180.

### Red/Green League

A. Warkentien had games of 246/222/205 for a 673 scratch series, H. Dawson 206, N. Combatti 202, F. Griswold 202.

### Scotch Doubles Tournament

The Scotch Doubles Tournament will be held on Sunday, April 2, at 1:30 p.m., at the Port Jeff Bowl. The cost of \$24 per couple includes bowling, food and prizes. Each team consists of two people, one male and one female, and at least one team member must be a BNL employee. Applications are available at the BERA Sales Office. If you need a partner or have any questions, contact Donna Cunningham, Ext. 4599, or Maria Apelskog, Ext. 7665.

### L.I. Industrial Tournament

The team representing BNL placed eighth out of sixteen teams after the second week of bowling. High games were rolled by Ron Mulderig 211/200, Mike Guacci 205.

## Cafeteria Menu

### Week of March 20

#### Luncheons

##### Monday, March 20

Soup: Vegetable	(cup) .75
	(bowl) .95
Creamed chicken & vegetables over rice	3.10
Ham & cheese quiche w/veg.	3.00
Lite-line: Broiled chicken w/veg.	3.00
Hot deli: Sloppy Joe sandwich	2.85

##### Tuesday, March 21

Soup: Broccoli supreme	(cup) .75
	(bowl) .95
Meateakes w/ gravy & veg.	3.10
Pork Polynesian over rice	3.10
Lite-line: Salad plate	2.25
Hot deli: Chicken Parmesan sandwich	2.85

##### Wednesday, March 22

Soup: Turkey noodle	(cup) .75
	(bowl) .95
Roast beef w/ brown gravy & veg.	3.10
Shrimp & seafood primavera w/veg.	3.10
Lite-line: Roast beef au jus w/veg.	3.10
Hot deli: Knockwurst & sauerkraut	2.85

##### Thursday, March 23

Soup: Chicken gumbo	(cup) .75
	(bowl) .95
BBQ beef over rice	3.10
Turkey & broccoli crepes w/veg.	3.10
Lite-line: Broiled turkey w/veg.	3.00
Hot deli: Pastrami	2.85

##### Friday, March 24

Soup: Manhattan clam chowder	(cup) .75
	(bowl) .95
Baked stuffed peppers w/veg.	3.10
Fish Florentine w/veg.	3.10
Lite-line: Broiled fish w/veg.	3.00
Hot deli: Ham	2.85

#### Breakfast specials

Monday:	Two eggs w/ bacon & toast	1.20
Tuesday:	Sausage & egg on roll	1.50
Wednesday:	Pancakes & sausage patty	1.10
Thursday:	Western omelet & toast	1.45
Friday:	French toast & bacon	1.00

## Arrivals & Departures

### Arrivals

David M. Dietz ..... Plant Eng.  
Robert L. Eger ..... Plant Eng.  
Theodore G. Heuer ..... DNE  
Allan Kolker ..... DAS  
Edward J. Ulrich ..... Accel. Dev.

### Departures

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

Youwen Xu ..... DAS

## Volleyball

There will be a Volleyball League captains' meeting on Monday, March 20, at noon, in Room A, Berkner Hall. Discussion and voting on the constitution will take place at this time. Each team's captain or a team representative must attend.

### Standings — Week of March 6

League I	League II	
Upfagrabs 42-9	Fossils 40-11	
Dinkers 35-16	Set Ups 39-12	
Xrayted 34-17	Krush 36-15	
Cannonballs 25-26	Nuts & Bolts 31-20	
Phoubars 13-38	Ziegfield VOLLIES 22-19	
Netminders 4-47	Slammers 14-37	
	Chunga's Revenge 12-39	
	Upton-Ups 10-41	

League III	Open League	
Frazzled 51-6	Meriem's Team 44-7	
MISfits 36-21	Dig Your Lips 40-11	
High Volley'em 34-23	Phoenix 40-11	
Printouts 32-25	Tom's Mutants 31-20	
Sourcerers 30-27	Magnum 27-24	
Spikes 18-39	VOLLIES 19-32	
Good Timers 14-43	Pi Chu 14-37	
Renegades 13-44	Rowdy Radicals 13-38	
	Constables 0-48	

## 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.

3099. SECRETARIAL POSITION - Requires AAS in secretarial science or equivalent and a thorough knowledge of Laboratory policies and procedures. Previous word processing experience on MICOM or a PC is necessary. Responsibilities will include preparation of technical manuscripts, arranging travel and housing, processing purchase orders, ILRs and vouchers, and maintaining group files. Physics Department

4000. SECRETARIAL POSITION - Requires AAS in secretarial science or equivalent and a thorough knowledge of Laboratory policies and procedures. Proficiency in the use of TeX for typing technical manuscripts involving mathematical equations and Greek symbols is desired; training will be provided. Additional responsibilities will include typing, arranging travel and housing, preparing vouchers and maintaining group files. Will assist department librarian and act as replacement as needed. Physics Department.

### OPEN RECRUITMENT - Opportunities for Laboratory employees and outside applicants.

4001. MAIN CONTROL ROOM OPERATOR - Requires BS or equivalent in physics or electrical engineering, computer programming experience and excellent communication skills. Background in computer controls, high-power pulsed power supplies and digital electronics desirable. Primary duties, as part of a rotating shift team, will be the operation and troubleshooting of the AGS accelerator complex for the experimental physics program. Alternating Gradient Synchrotron Department.

4002. TECHNICAL POSITION - Requires AAS degree in mechanical technology or equivalent and experience in the following areas: helium leak testing, operation and maintenance of high speed rotating equipment, high pressure gases, vacuum and cryogenics, and a working knowledge of electronics. Must be able to qualify for and maintain facility operating qualification through written exams and be able to obtain and maintain a security clearance. Reactor Division.

### Motor Vehicles & Supplies

87 HYUNDAI GL - SM, h/b, 5-spd., 5-dr., brown, elect. sunroof, Alpine am/fm cass., \$4,600. Ted, 286-0239 or 286-1477.

87 MAZDA 626 - 2-dr., 33k mi., a/c, am/fm cass., excel. cond. Ext. 3123 or 283-4948.

87 DODGE COLT - h/b, 2-dr., excel. cond., \$3,500. 874-2807 after 6 p.m.

87 TOYOTA COROLLA - a/t, radio, a/c, 14k mi., ultra-seal package, warr., \$9,500. 589-7429.

86 HYUNDAI EXCEL GL - 4-dr., white, 36k mi., power sunroof, am/fm cass., 5-spd., excel. gas mileage, \$4,000 or best offer. Ken, 395-6235.

86 FORD MUSTANG GT - am/fm cass., p/s, p/b, 40k mi., good cond., \$8,000. John B. Ext. 4028.

80 RABBIT - diesel, excel. body, high mi., 40 mpg, \$400 or best offer. Bill, Ext. 4967.

80 JEEP J/10 PICKUP - 6-cyl., 4x4, excel. cond., asking \$3,000. 878-0516 or 728-0844.

80 CHEVY CHEVETTE - 4-dr., 4-spd., \$400. Walter, Ext. 4028 or 4958.

80 FORD F100 - truck parts, 300 motor, 3-spd., w/overdrive, rear, more. Dick, Ext. 3457 or 589-9103.

80 DODGE OMNI - a/t, p/s, p/b, a/c, excel. in/out, \$950; 15" Dodge van or LT rims, \$10 ea. 585-6518 between 8 a.m. & 5 p.m.

79 MERCURY - 4-dr., new brakes, tires, battery, needs muffler, \$500. M. Blevins, 286-3508.

79 RABBIT - 2-dr., 4-spd., fuel injection, sunroof, \$900. Bob, Ext. 5286.

### Boats & Marine Supplies

31' CHRIS CRAFT - comm. sport sedan, repowered 4 yrs. ago, low hrs., lots of goodies in closet, \$40,000. Phil, Ext. 7527.

28' UHLRICKSON CABIN CRUISER - brand-new motor, many extras, must see, \$21,000 neg. Tom, 874-3169.

20' CENTURY 3000 - 1984, cuddly cabin, 170 h.p. I/O, \$8,000. Walter, Ext. 4028 or 4958.

20' CRUISE CRAFT - glass, deep V, Shoreline tandem trailer, 150 h.p. Merc., full canvas, \$5,000. 878-1934.

17' SPORTCRAFT BOWRIDER - 1984, 50 h.p. Mercury, depth finder, compass, dual battery, extras, rigged for fishing, \$3,400 neg. 929-8641.

14' SAILBOAT - 420, \$400; 12' Seagull sailboat, \$250, moving, prices negotiable. 744-6059.

12' ACHILLES - inflatable, 1988, \$1,900; 15 h.p. Evinrude, 1988, short-shaft w/tank, \$1,100; Shoreline trailer, galvanized, \$300. Jim, Ext. 7971.

### Furnishings & Appliances

SOFA & LOVE SEAT - Early American, good cond., must sell, \$200 for both. Vita, 277-0464.

STOVE - Tappan, gas, top & bottom ovens, good cond., \$100. Jim, Ext. 4696.

SOFA - including custom-made slipcovers, \$125; swivel rocker w/cover, \$50, excel. cond. Carol, Ext. 2896 or 475-7454 after 6 p.m.

PASTA MACHINE - Simac, brand-new, all attach., \$125; food prep, ctr., Sunbeam, \$100; food processor, Sunbeam Oster, \$50. 585-6518, 8 a.m.-5 p.m.

SOFA - full-size; love seat, soil-free material, earthtones, Drexel Heritage modern Oriental w/brass inlay, new, \$800 for both. 758-3204.

FREEZER - 10 cu. ft., G.E., excel. cond., \$175. 399-0537 eves.

DESK - black metal, chrome legs, 5' executive, walnut top, matching credenza, file cabinet, typing table, chair. Bea, Ext. 3642 or 732-2472.

DISHWASHER - Kitchen Aid, gold, \$50; maple table, \$45; 24" wicker hamper, \$20. Ext. 5200.

DINING ROOM SET - country honey pine, oval table, 2 leaves, 4 chairs, china closet, excel. cond., \$550. Ext. 4262.

CARPET VACUUM - Hoover; large, 2-sided wood bookcase, best offers. 744-6059.

SHELVING UNIT - oak w/smoked glass, 2 shelves, great TV stand/room divider, 32"hx29 1/2"wx, excel. cond., \$40. Linda, 874-2675.

WATER BED - super twin w/6 drawers, uses full size sheets, \$250. Jerry, Ext. 7427 or 475-5591.

WASHER & DRYER - Whirlpool, portable, excel. cond., \$325. 369-1065 after 6 p.m.

WICKER CHAIRS - 3, white, w/seat & back cushions, in batik print, unique, antique. Carol, Ext. 4398.

VERTICAL BLINDS - for 6' sliding glass door, beige & ivory, like new, \$100. 473-8292 or 928-0297 eves.

### Tools, House & Garden

TOPSOIL - delivered, \$19 per yard, also sand & gravel delivered, 924-9427 anytime.

COAL STOVE - Surdiac, Southport model, 38k Btu rated, heats 11k cu. ft., includes accessories, best offer. Joe, Ext. 5139.

TUNE-UP CENTER - Snap-on, 3-meter, \$250; Snap-on power brake bleeder, \$125; 20-ton air-powered hydraulic jack, \$250, must sell. 474-5715.

WOOD STOVE - Vermont casting, Defiant, nice cond., \$400. Ron, Ext. 4715 or 289-1003.

FIREWOOD - seasoned oak, full-cord, \$130, delivered. 732-2849.

SNOW PLOW - complete, Myers, 7' w/power angle, Electrotouch unit, 1-yr-old. Pete, 399-2813.

HUMIDIFIER - large, 2'hx2 1/2'wx1'd, wood grain cabinet, large capacity, 3-spd. blower, excel. cond., \$40. Dan, Ext. 4987 or 698-7322.

### Sports, Hobbies & Pets

DRUMS - Ludwig, 4-pc., \$125; Computer TR-80, Radio Shack, w/games, \$150. 399-0537 eves.

POSEIDON DRYSUIT - man's large, good cond., cost \$1,500, must sell, \$500. 474-5715.

SKI RACK - truck rack for large car, \$30. Bea, Ext. 3642 or 732-2472.

BUNNIES - dwarf & regular, raised outdoors, \$6. John, Ext. 3675 or 924-3528.

PIANO - Lester Betsy Ross spinet, light wood, includes bench. \$700. Tony, Ext. 3658 or 3637.

### Audio, Video & Computers

DESK - computer desk w/hutch, walnut wood. Bea, Ext. 3642 or 732-2472.

AUDIO TAPES - 8-track, w/2 rotating storage racks, \$15. Tony, Ext. 2050.

COMPUTER - Aquarius, 17k, complete system, printer, data-recorder, file & fin form, games, like new. \$90. Ernie, 588-4987.

TV - giant screen projection, must see, \$950. 345-5681.

COMPUTER SYSTEM - new, IBM compatible keyboard, color monitor screen, double disk-drive, printer, Wordstar program. Viola, Ext. 5169.

TURNTABLE - dual 1226 w/Grado cartridge, \$60. 744-6059.

COMPUTER GAMES - Arcade, Trivia, Money Makers, cost \$3,000 ea., asking \$2,000 ea. Peter, Ext. 5105 or 399-2813.

TAPE DECK - Teac, reel-to-reel, 3 motor, 3 head, excel. cond., \$300. Brian, Ext. 2799.

PC COMPATIBLE - 256k, CGA, MON, 2 FDD + spare, par/ser. DOS, Basic, Wordstar, comm. software, \$500. 473-3604.

### Miscellaneous

RESORT ACCOMMODATIONS - first-class, 5 days for up to 5 people in Fla., Calif., Hawaii, Mexico and Colo., \$98.75. Ady, Ext. 4531 or 331-3785.

CRAFTS/GIFTS - decorative country hanging hats, Easter baskets, photo albums, photo frames, ready for Easter. Lois, Ext. 4904 or Karen, Ext. 3513.

SKI JACKET - goose down, woman's extra small, red, good cond., \$20. Ext. 2733.

ENCYCLOPEDIA BRITANNICA - complete set, 1953 edition, \$20. 473-2473.

### Free

HUMIDIFIER - belt-driven, works well. Peter, Ext. 4094 or 751-6575 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

BROOKHAVEN - 3-bdrm. furn. house, eik, l/r, d/r, den, 2 1/2 baths, screened porch, washer, dryer, dish-washer, 1-acre wooded lot, avail. mid-Aug. for 1 yr., \$1,000/mo. excluding util. + 1-mo. sec., references. 286-0263 eves.

EAST MORICHES - 2-bdrm. apt., ground floor of Victorian house, unfurn., 1 block from school, 3 blocks to bay and public dock, \$680/mo. + util. Mona, Ext. 5056, or Michael, Ext. 2081 or 878-9384.

WADING RIVER - 3-bdrm. Hi-ranch, eik, d/r, l/r, 2 baths, fin. bsmt., 2-car garage, all appliances, 10 min. to Lab, energy efficient, SWSD, 2-mo. sec., 6/1/89 occupancy. Shiue. Ext. 4395/3372 or 751-8224.

WADING RIVER - 1 bdrm. apt., large l/r, eik, full bath, one block to LI Sound, 10 min. to Lab, \$575 mo. incl. util. 929-3419 after 6 p.m.

### For Sale

CORAM - 9-rm. Colonial, 4-bdrm., 2 1/2 baths, family rm., f/p, eik, d/r, l/r, cul-de-sac, in-ground pool, sprinklers, 2-car garage, mud room, \$195,000. Ext. 2303 or 732-3902 after 5 p.m.

EAST SETAUKET - 4-bdrm. Colonial, 2 1/2 baths, eik, l/r, d/r, family rm., f/p, screened porch, finished bsmt., 2-car garage, 0.52 acre, new vinyl siding. Shiue. Ext. 4395/3372 or 751-8224.

EAST SETAUKET - 4-bdrm. ranch, 2 baths, eik, l/r, d/r, finished bsmt., 1/3 fenced acre, 3-Village schools, excel. cond., \$139,900. 473-4338 eves.

MATTITUCK - 4-bdrm. Gambrel, 2 baths, formal d/r, eik, l/r, f/p, deck, enclosed breezeway, 2-car gar., playground, on cul-de-sac. Ext. 7544.

RIDGE - 5-bdrm. Cape, 2-baths, 2-car gar., l/r, w/coal/wood stove, country kit., lg. priv. yard, porch, deck, poss. M/D, 5 min. to Lab, asking \$145,000. 924-4749.

ROCKY POINT - Tides, 1-yr.-old, custom-built home, 3 bdrms., 2 baths, l/r, d/r, eik, large family room, cathedral ceilings, skylight, more, \$209,000. John, Ext. 4498 or 744-8762 after 6 p.m.

SETAUKET - 3-bdrms., 2 baths, eik, l/r, d/r, rec. rm., wood floors, patio, full bsmt., 2-car garage, c/a/c, 1/3 acre, 3-Village schools, \$220,000. Thomas Nolan, Ext. 5265 or 584-8339 after 6 p.m.

SHIRLEY - 3-bdrm. Cape, 2 baths, full bsmt., maintenance free, vinyl siding, newly remodeled, nice area, 117x117 plus lot, \$112,900. Mark, Ext. 2024 or 281-5060.

STONY BROOK - 8 rm., 4 bdrm., 3 1/2 baths, large family rm., d/r, eik, wood floor, 2-car gar., mint cond., Ext. 4635 or 751-2860.

WADING RIVER - new 4-bdrm. Cape, gourmet kitchen, Jacuzzi, cent. vac., oak floors, Italian ceramic tile, 8' bsmt., walk-out entrance, 2-car gar., \$160,000. Robin, 929-8699.

WADING RIVER - 4-bdrm. large Cape, 1/2+ acre, 2 baths, d/r, l/r, family rm. w/fp, full fin. bsmt., SWR schools, \$230,000. 929-6748 after 3 p.m..