

## To Study Brown-Tide Algae: BNL Offers Loan of Instruments

To assist Suffolk County with its research into the "brown tide" algae that has bloomed in Peconic Bay since 1985, BNL has proposed the loan of two state-of-the-art oceanographic instruments.

If the loan is accepted, the instruments could be deployed to monitor the spring bloom, which begins in March.

Paul Falkowski, head of BNL's Oceanographic Sciences Division (OSD), Department of Applied Science, has offered the use of two devices called fluorometers. These instruments determine the abundance of algae in a bloom, a measurement important to the understanding of brown tide.

These instruments work by measuring the amount of chlorophyll, the green pigment in algae and other plants.

Each fluorometer uses a strong, blue light to add energy to the algae's chlorophyll. In losing that energy, the algae's chlorophyll emits a red light, the intensity of which is measured by the fluorometer. Because the red light's intensity is proportional to the concentration of chlorophyll in the water, the fluorometer can determine the abundance of algae in the water.

Each fluorometer runs on conventional flashlight batteries and can be moored for up to six months to collect data. The data can be transmitted to shore or can be recorded on magnetic tape within each fluorometer.

BNL's fluorometers are not available commercially: The two offered for loan to Suffolk County were among 31 such instruments designed and built for the OSD's Shelf Edge Exchange Project, funded by the Department of Energy, and would each cost \$50,000 to replace.

The fluorometers can be used along with other devices to study the occurrence of the brown-tide alga — a heretofore unknown genus and species called *Aureococcus anophagefferens*.

Though a very small and nontoxic miniature plant, *A. anophagefferens* in a brown-tide bloom causes destruction of sea grasses by blocking the amount of light that reaches the sea floor.

While this algal species is new to marine scientists, algal blooms are not new in the marine world: The first bloom reported in a scientific journal was a red tide in Narragansett Bay, Rhode Island, in 1898. However, algal blooms are described in ships' logs and explorers' diaries that are dated much earlier.

Algae have overgrown bodies of water as geographically separate as the North Sea, the Baltic Sea and the Black Sea, as well as coastal waters off Europe, Japan and the United States. While the specific organisms causing each bloom may be different, the results all over the world are generally the same: Blooms cause fish kills, shellfish poisoning and noxious odors.

In 1985, brown-colored blooms simultaneously occurred in three geographically separate regions in the U.S.: Narragansett Bay; Barnegat Inlet, New Jersey; and the Peconic



Paul Falkowski

Bay of Long Island, New York. In 1986, while the brown tide had disappeared from the Peconic, it showed up in the Great South Bay, where it has been a cause for concern since.

What causes *A. anophagefferens* to bloom into brown tides and other unusual blooms concerned Falkowski and other marine scientists at an international symposium, held last fall at the State University of New York at Stony Brook.

During the two-day conference, the scientists reported that the causes of the geographically separate brown tides were the same: the ocean disposal of sewage and the runoff of fertilizers and stormwater, which contain the necessary algal nutrients, combined with large-scale ocean circulation features that brought new organisms into coastal areas. The organism then could grow freely within areas having restricted circulation.

"Despite publicity to the contrary in the popular press, not one scientist at this meeting concluded that low-level radioactive waste was a cause, nor did any scientist implicate Brookhaven as being responsible for the brown tide in the Peconic and Great South Bays," says Falkowski.

— Marsha Belford

## Bush's Choice for Energy Secretary: James Watkins

Admiral James Watkins was named to head the U.S. Department of Energy (DOE) by George Bush, as president-elect, on January 12. If confirmed by the Senate, the 61-year-old prospective Energy Secretary will bring an extensive technical background to the job of overseeing DOE, with its \$13.9 billion budget for this fiscal year.

BNL receives most of its funding from DOE, as do the other national laboratories. DOE is also responsible for long-term research and development of energy technology; the marketing of federal power; energy conservation; the nuclear weapons program; energy regulatory programs and a central energy data collection and analysis program.

Former Chief of Naval Operations, Watkins retired from the Navy as an admiral in 1986. In 1987, he headed President Ronald Reagan's AIDS study commission.

Watkins' military career began at the U.S. Naval Academy in Annapolis, from which he was graduated in 1949. Nine years later, he earned a master's degree in mechanical engineering from the U.S. Naval Postgraduate School, Monterey, California.

In the late 1950's, as a part of the Navy's nuclear propulsion program, Watkins studied nuclear engineering and technology at the Atomic Energy Commission's Oak Ridge School of Reactor Technology, Tennessee. In 1962, after an assignment at the Naval Nuclear Power Training Unit in West Milton, New York, he joined the staff of Admiral Hyman Rickover, as an administrative assistant.

Watkins left Washington for the sea in 1964, when he took command of the nuclear-powered submarine the *Snook*. Three years later, the *Long Beach*, the first nuclear-powered cruiser, came under his command.

Watkins' naval career continued over the next 15 years, with such increasingly important positions as Commander of the Sixth Fleet, Commander of the U.S. Pacific Fleet, and, in 1982, Chief of Naval Operations, a post he held until his retirement.

## BNL Lecture: The Unseen Resource — Groundwater

As long as people have lived on Long Island (LI), their activities have had an impact on the groundwater. In general, however, most of the wastes were easily diluted and rendered

harmless over time, leaving the water as pristine as it started out.

As population density increased and as Long Islanders began to use hundreds of previously unheard of

substances, this began to change. The subsequent barrage has had an immense impact upon the Island's groundwater. And, as the groundwater rises to the surface polluted rather than pristine, it is clear that we have come full circle — the groundwater is having an impact on people and their daily activities.

BNL's impact on the groundwater beneath the Lab site, as well as the impact the groundwater is now having on BNL, will be discussed by Janakiram Naidu in the 249th Brookhaven Lecture. An ecologist in the Safety & Environmental Protection (S&EP) Division, Naidu will talk about "Groundwater: Protecting the Unseen Resource," on Wednesday, January 25, at 4 p.m., in Berkner Hall. He will be introduced by W. Robert Casey, head of S&EP.

Naidu will begin his talk by discussing the role of water on LI. Though humans need only about one gallon of water per day to survive, Long Islanders use some 80 gallons per day in their daily lives. Adding on industrial use makes water usage skyrocket to an average of 400 gallons per day for each LI resident.

Thanks to the hydrological cycle, the huge amount of water used is con-

stantly replenished. The problem is that the cycle is being disrupted because water is being consumed in such a manner that it returns to the ground in a contaminated state.

Many contaminants entered the groundwater when then-existing regulations did not treat them as hazardous. Such was the case at BNL, Naidu will explain, where, despite strict adherence to any existing codes, small amounts of chemical and radioactive pollutants began to seep into the groundwater well before the advent of restrictive county, state and federal regulations that have arisen to address this problem.

These pollutants are of concern not only in relation to the Lab, but also because the BNL site is located on a prime recharge area, where water filters down to refill the three layers of

(Continued on page 2)



Jan Naidu (left) holds a soil sample from one of the 51 wells now being installed on site for groundwater monitoring. He is talking to one of the geohydrologists supervising the drilling

### Lecture at 4

The time of the Brookhaven Lectures has been changed to 4 p.m., effective with Janakiram Naidu's talk on January 25.

## BNL Lecture

(Cont'd)

aquifers that underlie LI. Naidu will describe the aquifer system and show that BNL's presence has not affected the recharge system. Because of droughts, however, the level of the upper aquifer has dropped four feet since 1932, causing pollutants to have greater potential for contaminating lower aquifer levels.

Naidu will list the sources of pollution from BNL and describe what the Lab has done to eliminate or control them. He will also summarize what Lab personnel have learned about groundwater hydrology from these problems and how that knowledge is being applied to prevent future occurrences.

Recognizing that BNL is not alone in needing to deal with the effects of groundwater pollution, Naidu will end his talk with advice to home owners on such topics as where to go for water testing and how to address contamination in a well used for drinking water.

Janakiram Naidu received his bachelor of science degree in chemistry and zoology from the University of Bombay, India, in 1955; his master's of science in radiological science from the University of Washington, in 1963; and his Ph.D. in marine and terrestrial radioecology from Oregon State University, in 1974.

His career proceeded along with his education. From 1955-59, he worked in India's Forest Research Institute, studying the effect of marine wood borers on indigenous species of wood. For the next ten years, Naidu was with the BHABHA Atomic Research Center in India, where he served as scientific officer in the Health Physics Division of the Atomic Energy Commission, involved in such projects as oceanographic studies around Bombay Harbor Bay and geohydrological investigation of nuclear power reactor sites.

After taking time off to work on his doctorate, Naidu joined Dames and Moore Consulting Engineers in Los Angeles, from 1974-75, where he was responsible for oceanographic studies concerning off-shore nuclear power stations.

Naidu came to BNL in 1975. Here, he is responsible for the Lab's environmental monitoring effort.

He is a plenary member of the Health Physics Society. He is also a member of the Marine Biological Association of the United Kingdom and the National Well Water Association.

All those interested in getting together with the lecturer are invited to go to a restaurant for dinner. To be part of this group, call Leslie Fishbone, Ext. 5180.

## Dental Plan Deadline Nearing

Employees are reminded that the deadline for enrollment for the Dental Assistance Plan is Friday, January 27, with coverage effective February 1, 1989.

Employees currently enrolled in the dental plan will have their coverage automatically continued unless they complete a termination form. Employees wishing to enroll must complete application and payroll deduction forms. All forms are available from Personnel Services, Bldg. 185, Ext. 2877 or 7516. Completed forms must be returned to Personnel Services by January 27.



The new year is going well for the Team Safety program. Week three is almost history, and players have suffered no lost-time injuries in 1989. Even the weather is cooperating.

This week, there are two more double winners up for a luncheon. The winning date for the Central Shops Division's Staff Shops team is January 19, and Plant Engineering's Carpenter Shop team could be a winner January 20. Congratulations to both teams on a great job!

Keep up the safe work.

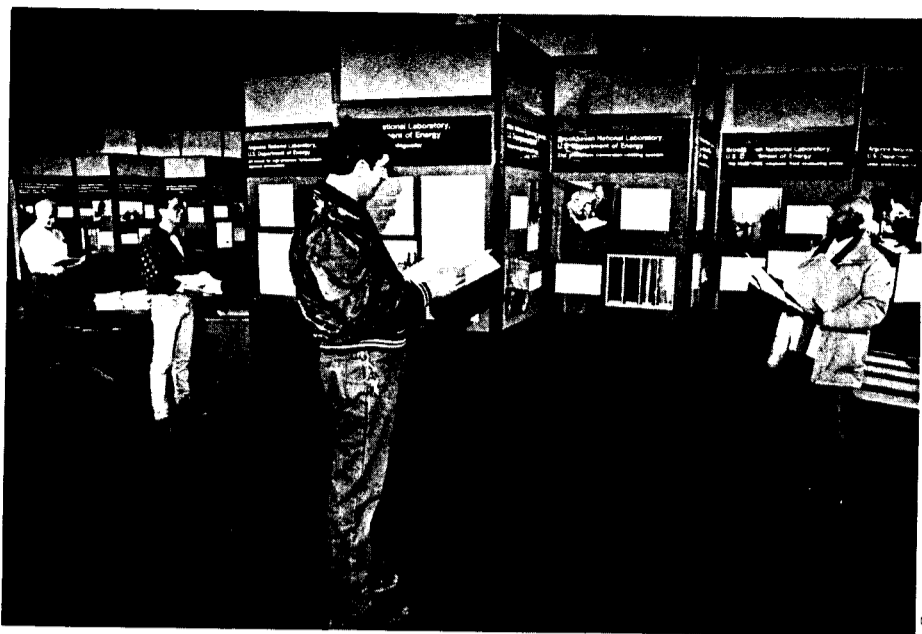
## English Courses Offered on Site

Beginning in February, the English as a Second Language course will again be offered on site to employees, guests and their spouses. The free course is designed for adults who would like instruction in conversational English, as well as reading and writing the language.

Registration and orientation will take place on Tuesday, January 31, beginning at 7 p.m. in the Personnel Training Room, Bldg. 459. Evaluation and assessment testing for placement in beginner and intermediate level classes will be done at this time. Classes for beginners will be held on Tuesdays, beginning February 7, while intermediate classes will be held on Mondays, beginning February 6.

Anyone interested in participating should come to the orientation and registration on January 31; no appointment is necessary. For more information, call Pat Knisely, Ext. 7631.

## R&D 100 Winners on View



Thirty-four examples — three of them from BNL — of "Excellence in science... Excellence in innovation" make interesting viewing in the lobby of Berkner Hall from now until February 3. Featured in a traveling exhibition are the 34 Department of Energy winners of *Research & Development* magazine's 1987 competition to find the 100 most significant technological developments of the year. The search is now on for the next R&D 100 winners among new technical products first marketed in 1988. The Lab will pay all entry fees, as well as associated expenses for winners. Applications are available from the Office of Research and Technology Applications (ORTA), Ext. 2103, Bldg. 475. Entries must be received by ORTA by February 15.

**In Stormy Weather:  
Dial 282-INFO**

## On Site

Installation of the underground piping for the Central Chilled Water Facility will be heading north along Pennsylvania Street. As work progresses toward Cornell Avenue next week, Pennsylvania Street and the parking lot on Pennsylvania, across the street from Physics, Bldg. 510, will be closed. As well, there will be no access to the parking lot between Technical Photography, Bldg. 118, and the Computing & Communications Division, Bldg. 515. Those who usually park in these lots are asked to use the lots between Physics and the National Synchrotron Light Source, Bldg. 725.

Traffic along Brookhaven Avenue will continue to be detoured until the street is restored, which is expected sometime within the next two weeks. The parking lot for Personnel, Bldg. 185, should be opened early next week, while the Contracts & Procurement, Bldg. 355, parking lot will open soon after.

## Software Demo

If you write anything from memos to formal papers for publication, then you'll want to know about desktop publishing. You can learn about one of the leading desktop publishing applications — Quark Xpress — at a presentation by a representative from Quark, on Tuesday, January 24. The demonstration, which will begin at 10 a.m. in the seminar room of Bldg. 515, C&CD, will be followed by a question-and-answer session.

## To Your Health

Everyone has it, it's just that some know how to manage it better than others. It is stress — and if you are under stress, and the strain of it is getting you down, get yourself to the next Stress Management Workshop.

The three-session workshop begins on Thursday, January 26, and will continue for the two following Thursdays, February 2 and 9, from 5:15-6:45 p.m., in the North Room of the Brookhaven Center. The workshop leader is clinical psychologist Jerry Friedman, a local, private practitioner.

To register, send your name, Lab address and extension, and a check for \$20, made payable to Jerry Friedman, to Health Promotion Specialist Elaine Friedman, Bldg. 490, by Tuesday, January 24. Enrollment is limited to the first 25 registrants.

## BWIS Meeting

Anne-Marie Fauchet will speak on the "Development of a Coherent Ultraviolet Radiation Source at the NSLS" at the next meeting of Brookhaven Women in Science on Thursday, January 26, in Room A, Berkner Hall, at noon. She will discuss production of laser-like ultraviolet radiation using electron beams.

An assistant physicist with the National Synchrotron Light Source (NSLS) Department since 1984, Fauchet did her undergraduate work at École des Mines in Paris and received a Ph.D. in electrical engineering from Stanford University. Her current NSLS project, a collaboration with Bell Labs and Lawrence Berkeley Laboratory, reflects her interest in accelerator physics and coherent radiation sources.

Everyone is invited; please bring your lunch.

## Marking Service Milestones in ADD



Assembling at the Collider Center, Bldg. 1005S, to celebrate BNL service landmarks that were attained in 1988 are these members of the Accelerator Development Department (ADD): (front, from left) Frank DiMaggio, 10 years; Dieter Zantopp, 25; Darlene Reeves, 10; Melanie Covitz, 10; Karen Cestra, 10; Anne Flood, 25; ADD Chairman Eric Forsyth; Barbara Smith, 25; Arnold Kreisburg, 25; Erno Ostheimer, 25; Eva Emmerich, 10; William Harrison Jr., 25; Robert Meier, 10; (back, from left) Philip Stattel, 10; Dale Norden, 25; Erich Willen, 25; William

Kollmer Jr., 25; William Sandhoff, 10; Thomas Dilgen, 10; Daniel Wilson, 10; James Briggs, 10; Gregory Bagley, 20; George Ganetis, 10; Kenneth Rogers, 10; Hugh McNeill, 25; Eugene Rogers, 30; Paul Ribaud, 10; James Cullen Jr., 10; Warren Hirzel, 20; Edward Sperry IV, 10; George Parzen, 25; John Sondericker (behind), 30; Arnold Sandberg, 10; and William Stokes Jr., 10. Not pictured: Per Dahl, 25; Eugene Kelly, 10; Brian Vogt, 30; and Kuo-Chen Wu, 10.

—photo by Roger Stoutenburgh

## BERA Constitution: Changes Proposed

The BERA Board is proposing a change in the constitution of the Brookhaven Employees Recreation Association (BERA). This amendment would:

- Increase the number of Executive Board members to eight from the current number of six.
- Change the term of each Executive Board member from a three-year term to a four-year one.
- Stipulate that a Board member may not serve more than one consecutive term.

The BERA Board is recommending these changes for several reasons:

- New Board members cannot be adequately informed and totally familiar with their duties and the workings of the Board until they have served at least one full year. So, when they are more knowledgeable, they could be more effective by serving the extra year.
- The two new, uninformed members will have a better chance of learning about BERA from six senior members who can share their expertise, rather than four.
- Having eight Board members would mean more ideas and input, as the additional members would represent a broader scope of employee needs and suggestions. It would also ensure a quorum when votes are held.

To put the proposed system into operation, a vote by all BERA members must be taken. Shortly, a ballot will be mailed to all employees for their vote. If accepted, the change will take effect to coincide with the upcoming March election.

The formal resolution will read:

**Be it resolved that Article IV, Section 1 of the BERA Constitution be changed from:**

*The affairs of the Association shall be conducted by a Board of six voting Trustees elected by the voting members for a term of three years. Trustees who have served more than two years may not succeed themselves.*

**to:**

*The affairs of the Association shall be conducted by a Board of eight voting Executive Board Members elected by the voting members for a term of four years. Executive Board Members may not serve more than one consecutive term.*

## January Food Drive Next Week



Roger Stoutenburgh

All over the Lab, cartoon ducks are glued to their posts, drawing attention to the Lab's food drive, now about to enter its third month.

Next week is the January pickup, when BNL employees can donate canned and dry goods for hungry families in the area. Pictured above, before the ducks joined the food drive, are some of the BNL volunteers who collect the donations and deliver them to a distribution center in Rocky Point:

(From left) Timothy Dwyer, Robert DiLello, Jerry Quigley, Joseph Mazzarella, Food Drive Chair Carole Kerr, David Woodson and Rita Kito. Not shown are Frank De Rosa, Bob Jansson and Georgia Irving.

"The generous amount of food given by Lab employees has been terrific so far," said Kerr. "We collected 1,680 pounds in November, and 1,306 pounds in December. But food is needed just as much throughout the year. Please keep giving."

The goal of the food drive is 2,000 pounds of food a month. Donations can be deposited in the large gray bins that stand at the collection areas listed below. Helpers in each collection area will gather daily contributions and can answer any questions about the food drive.

### Collection Areas

- 902A, ADD
- 1005S, ADD
- 911, AGS
- 463, Bio.
- 515, C&CD
- 488, Cafe.
- 555, Chem.
- 134, Cash.
- 475, DAS

### Helpers:

- Cynthia Fridrich
- Harvey Lotko
- Charlie Bohnenblusch
- Frank Kito
- Joanne Laforte
- Louisa Barone
- David Comstock
- Cathy Osiecki
- Arlean Vanslyke

### Collection Areas

- 197, GA
- 535B, Inst.
- 725, NSLS
- 185, Pers.
- 510, Phys.
- 179, SSD
- T-87, SMD
- 477, TID

### Helpers:

- Dolores Janes
- Cheryl Williams
- Lynette Finlay
- Frances Scesney
- Lisa Allen
- Betty Pergan
- Bob DiLello
- Pat Campbell



## Cooking Exchange Back on Schedule

A notice in last week's Bulletin announced the cancellation of all future meetings of the International Cooking Exchange. However, the meeting previously scheduled for Wednesday, January 25, will be held as

originally planned, at 12:30 p.m., in the Recreation Building. The theme will be International Pasta and European Day.

If there is enough interest shown at this meeting, more meetings will be scheduled. New members are welcome. For more information, call M. Kay Dellimore, Ext. 2873.

## Camera Club

The next meeting of the Camera Club will take place on Thursday, January 26, at 5:30 p.m., in the Recreation Building.

Bring mounted photos to replace the pictures in the Berkner Hall exhibit. The use of darkrooms and photography classes will also be discussed.

All members are urged to attend. New members and visitors are welcome.

## Bowling

### Pink League

Sandy Asselta bowled a 203. Maria Apelskog 172.

### Purple League

Caryl MacDougall had a 188/182, Karen Vogel converted the 6/7/10 split.

### White League

Ted Erickson bowled a 221, Sharon Smith 218, Gerry Riker 201, Joe Ferrante 201, Marilyn Picinich 193, Pat Manzella 192.

### Red/Green League

T. Prach rolled a 224, R. Mulderig 220, L. Schairer 209. The Designers are the first-half winners.

## Volleyball

### Standings - Week of January 9

League I		League II	
Uptagrabs	31-2	Fossils	26-7
Dinkers	23-10	Set-Ups	26-7
Xrayted	20-13	Krush	22-11
Cannonballs	16-17	Nuts & Bolts	21-12
Phoubars	6-27	Ziegfield Vollies	12-21
Netminders	3-30	Slammers	10-23
		Chunga's	
		Revenge	8-25
		Upton-Ups	7-26
League III		Open League	
Frazzled	32-1	Meriem's Team	24-3
High Volley'em	20-13	Phoenix	24-6
MISfits	20-13	Dig Your Lips	23-7
Printouts	18-15	Magnum	18-12
Sourceers	18-15	Tom's Mutants	18-12
Spikes	12-21	Vollies	11-19
Good Timers	7-26	Rowdy Radicals	8-22
Renegades	5-28	Pi Chu	6-24
		Constables	0-27

## New Quarters for Credit Union



Roger Stoutenburgh

As members have been discovering this week, the Teachers Federal Credit Union (TFCU) has just been relocated. Still in Bldg. 179, its new, larger quarters are now next to the Post Office. Soon, Credit Union officers Cathy Mahan (left) and Lisa Goodenough will be joined by a teller, who will take over telecommunication responsibilities, giving them more time for the other financial services provided by the TFCU. The extra space includes the teller's window and a small room that can be used for confidential transactions. All BNL employees are eligible to become TFCU members.

### Note to Employees:

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

## Arrivals & Departures

### Arrivals

John J. Cupolo ..... Accel. Dev.  
 John P. Duggan ..... Reactor  
 Jeffrey B. Gillow ..... DAS  
 William B. Higinbotham ..... C&CD  
 Raymond V. Moore ..... Plant Eng.  
 Arthur E. Veprovsky ..... Plant Eng.  
 Sharon H. Yen ..... Accel. Dev.

### Departures

This list includes all employees who have terminated from the Laboratory, including retirees:  
 Charles R. Wilson ..... Accel. Dev.

## BERA to Sell Valentine Bouquets

Why not treat yourself or someone sweet

To a Valentine gift that's really neat. You can buy a lovely creation — A bouquet of pretty carnations — When you make a \$5 donation To your Heart Association.

This year, BERA will sell valentine bouquets for \$5 each, and all monies collected will be donated to the American Heart Association. To ensure that all who wish to purchase flowers are accommodated, prepaid orders will be taken at the BERA Sales Office in Berkner Hall, Monday-Friday, 9 a.m. to 2 p.m. Order as many bouquets as you wish, but the deadline is Friday, February 3.

The bouquets can be picked up at the Sales Office on Tuesday, February 14, Valentine's Day.

If you have any questions, call Louisa Barone, Ext. 3347, or M. Kay Dellimore, Ext. 2873.

# BROOKHAVEN BULLETIN

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