

Grand Canyon Haze: Seeking the Source

Three and a half million tourists head for the Grand Canyon each year. They go to camp, hike and ride mules. Most of all they go to enjoy the scenery. Unfortunately, the famous vistas can't always be seen.

Because of increasing air pollution in the area, reduced visibility has become a serious problem, according to Monica Mazurek, a chemist in the Department of Applied Science.

Mazurek has been studying the aerosol particles responsible for some of the haze at the Grand Canyon National Park. She works in collaboration with researchers at the California Institute of Technology in Pasadena, with funding from the National Park Service.

The goal of the project is to identify the local sources of aerosols that reduce visibility in the park.

Says Mazurek, "We are looking at both the local vegetation that emits gases and particles, and the anthropogenic sources — the human activities in and around the park. We are also considering how these natural and anthropogenic sources interact."

To many people, the word "aerosols" brings to mind pressurized cans of hair spray and insecticide. To a chemist, an aerosol is any suspension of fine solid or liquid particles in gas. Smoke, fog and mist are common aerosols.

In the Grand Canyon project, Mazurek is targeting emissions from automobiles, diesel-powered trucks and buses, wood smoke from campfires, and natural emissions such as resins and waxes from native plants.

"Plants give off vapors that react chemically with sunlight and combine with oxygen. The oxidation results in submicrometer particles that scatter light," says Mazurek. She notes that the famous blue haze in the Blue Ridge Mountains is an example of photochemical smog.

Field sampling was done in August 1989 at two locations: Hopi Point, a high-elevation site (2,137 meters) at the south rim of the canyon; and

Indian Gardens, a low-elevation site (1,158 meters), also along the south rim, but down inside the canyon.

Sampling and Analysis

For four weeks, 24-hour samples were collected daily at Hopi Point, and 72-hour samples were collected every three days at Indian Gardens. The sampling equipment included both low- and high-volume air samplers that collected fine and large particles. In addition to these atmospheric aerosol samples, local emission sources such as vehicle exhaust, wood smoke, soil dust and vegetation were sampled.

Mazurek says that fine aerosols, less than 2.1 micrometers in diameter, contribute the most toward haze.

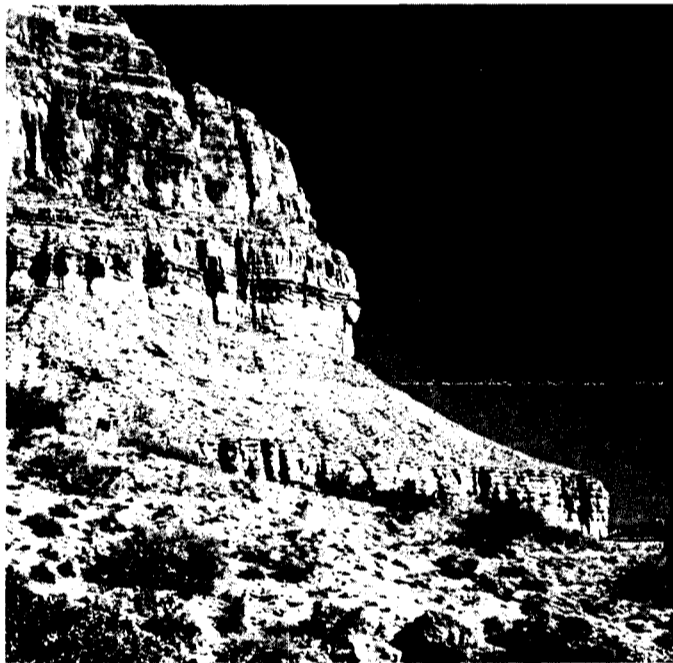
At present, most of the samples have been characterized for bulk elemental compositions, yielding a chemical mass balance — a breakdown of the concentrations of ionic,

trace metal and carbonaceous species present as aerosol. For both sampling locations, organic carbon, sulfate and crustal oxides are the fine aerosols in highest concentrations by mass.

These mass balances indicate that soil dust (crustal oxides) is an important source of fine aerosol in the park. But Mazurek points out that her bulk elemental data alone cannot identify the sources of observed organic carbon and sulfate aerosols.

That's why Mazurek is now tackling the detailed molecular analyses of these source emissions samples, which will help to pinpoint the relative contributions of these materials to the atmospheric aerosol samples. In doing so, she must identify specific organic compounds that carry the characteristics of a source.

So far, comparisons between the chemical mass balances for the local fine aerosol sources and for the fine atmospheric aerosol show an excess



Aerosol sampling equipment (bottom, center) located at the Indian Gardens site at Grand Canyon National Park.



Monica Mazurek in her analytical chemistry laboratory. — Photo by Roger Stoutenburgh

Healthline Lecture

Money Matters, Part III — Planning Your Estate

Benjamin Franklin's observation that, in this world, nothing is certain but death and taxes holds as true today as it did in his time.

To be certain that taxes don't overrun your estate after your death, attend the third part of the Money Matters series of Healthline lectures. "Planning Your Estate" will be presented by certified public accountant Franklin Federmann, who is Chief Internal Auditor of Associated Universities, Inc., and attorney Michael Goldman, who is Laboratory Counsel. The talk will take place on Tuesday, April 28, from noon to 1 p.m. in Berkner Hall. All are invited.

Goldman will discuss the legal aspects of estate planning, defining such terms as probates and trusts. Federmann will explain taxation concepts such as unified credit equivalents.

After the talks, the audience will be invited to ask questions. Federmann and Goldman will attempt to provide enough information so that the audience may be informed consumers when they seek references or professional assistance in their planning.

Back by popular demand for the third time as a Healthline speaker, Franklin Federmann earned his B.S. in accounting from Brooklyn College and his M.S. in taxation from the Graduate School of Business Administration of Long Island University. He has been a CPA in New York State since 1969, the year he came to AUI's Brookhaven office as a senior auditor. He was promoted to his present position that July.

Michael Goldman received his J.D. from Columbia University School of Law in 1969. He joined the Lab as Associate Counsel in 1977, was named General Attorney in 1982 and assumed his present title in 1986. At present, he also serves as AUI Deputy General Counsel.

To register for this Healthline lecture, return the bottom portion of the flyer that was sent to all employees by Monday, April 27, to Health Promotion Specialist Mary Wood, Bldg. 490. To learn more about the Health Promotion Program of the Occupational Medicine Clinic and its Healthline lecture series, call Ext. 5923.

of fine aerosol sulfate that cannot be accounted for by the sources sampled. Thus, other potential sources of fine sulfate particles must be considered.

In addition to vegetation, soil dust, wood smoke and vehicle exhaust in and around the canyon, other nearby sources include population centers, power plants and scattered copper smelters. Further afield are major urban areas such as Phoenix, Los Angeles, San Diego and northern Baja California (Mexico).

"In trying to identify contributors to the excess fine aerosol sulfate we've measured," says Mazurek, "we will be looking at long-range transport of urban aerosol from metropolitan Los Angeles, as well as emissions from nearby power plants."

Pointing the Finger

Once the contributions of sources are known, then pollution-control measures can be implemented.

"If we can say, for example, that vehicle emissions from local traffic are a strong factor in reducing visibility," says Mazurek, "then the Park Service might require the transportation concessions to change to a cleaner-burning fuel, or even build a mass-transit system to serve the area."

She adds that both anthropogenic sources and existing natural biological processes can interact to make things worse.

"Photochemistry may be acceler-

(continued on page 2)

Coming Up

Maurice Goldhaber, AUI Distinguished Scientist Emeritus, will draw on his own remarkable career when he delivers the 21st Pegrum Lecture Series on "A Physicist's Journey."

The three lectures describing his journey, all of which will begin at 8 p.m. in Berkner Hall, will be as follows:

- Monday, April 27 — "Reminiscences From the Cavendish Laboratory: Nuclear Photo-Effect and Slow Neutrons."

- Thursday, April 30 — "Nuclear Isomers and Neutrino Helicity."

- Thursday, May 7 — "Tests of Conservation Laws and the Search for Proton Decay."

Protecting The Laboratory Environment

Monica Mazurek's concern about environmental pollution at the Grand Canyon is mirrored by her concern about the environment at BNL. So, in planning her new analytical chemistry laboratory on site, Mazurek abandoned technology that uses potentially polluting organic solvents in favor of one that uses nontoxic carbon dioxide.

To remove organic compounds from an elemental carbon matrix, the conventional method is to extract them with solvents.

"In the past, I didn't really consider myself to be generating hazardous waste, because the amounts of solvents were so small," says Mazurek. But she requested that her department purchase what is called a supercritical fluid extractor, which uses carbon dioxide in place of solvents.

The expense of the new equipment is justified, she feels, because hazardous waste disposal costs are high and the environment must be protected — and it's faster than the old method!

— M.S.R.

Grand Canyon (cont'd)

ated because of increased emissions of nitrogen oxides that are emitted from motor vehicles," says Mazurek. "We already know that in an urban setting, increasing emissions of these important photochemical precursors accelerates the natural cycle of photochemical oxidation. It's like adding more fuel to the fire."

Mazurek's specialty is organic analytical chemistry, studying trace molecular species in order to match aerosols with sources. She says that only recently have the analytical methods been developed, methods that couple sampling techniques with mass spectral analysis and interpretation of molecular composition.

These methods have universal application, says Mazurek, who is already working on other projects that assess environmental impacts from coal combustion, particularly for new coal technologies. "Organic matter is oxidized in different ways. Which aerosols are important for regulatory purposes? We don't know the whole picture yet," she says. "But not only can we look at existing pollution problems, we can also begin to evaluate the application of new technologies."

Last summer, the owners of a 2,250-megawatt coal-burning power plant located 15 miles north of Grand



Photomicrograph of fine waxy protrusions (1-5 micrometers) on the surface of a blade of grass. These waxy particles can dislodge and become airborne. The organic compounds (molecular tracers) that comprise these surface waxes are observed as atmospheric aerosol in Grand Canyon National Park.

Canyon National Park reached an agreement with environmental groups to install more than \$400 million of pollution-control equipment. The plant generates power for millions of residences and businesses in Arizona, Nevada and California.

While BNL's Grand Canyon project is focused on one aspect of a pollution problem in that one area, it is an important part of a nationwide quest to understand environmental pollution. The stakes are high — both for the environment and for the economy. — Mona S. Rowe

In Memoriam

Jay C. Rowland Jr. who had been at BNL for 30 years when he retired in April 1978, died on February 25 at the age of 74. Rowland came to BNL on June 12, 1947, and was a senior staff assistant in the Plant Engineering Division when he left the Lab. He had resided in Patchogue, and he is survived by his wife of 52 years, Joan; two sons, Thomas and Jay III, two daughters, Joan Hoeblerlein and Patricia; five grandchildren, a brother Walter, and four sisters, Alice Cahill, Bernice Lawrence, Florence Shepherd and Muriel Ostrom.

Retiree **Rita Bulla**, who had served the Lab for over ten years as a matron, died on March 3, the day after her 77th birthday. She began her association with BNL on May 9, 1961, and retired in May 1972, from the Staff Services Division. A longtime resident of Shirley, she spent her last three years in St. Petersburg, Florida. Bulla is survived by her sister Mary Shea, and brothers Frank Shea and Patrick Shea.

August Knecht, who had retired from Central Shops in June 1964, died on March 6 at the age of 93, following a short illness. Knecht began his BNL career on January 5, 1948 as a machinist A, and he retired as a tool & instrument maker, after 16 years of service. Having resided in Lindenhurst, he is survived by his wife Elsa, and children Gloria Mathison and William Schneider.

Retiree **George T. Harrison** died at the age of 73 on March 14, following a battle with lung cancer. As a custodian in the Plant Engineering Division, he began at the Lab on December 4, 1978, and retired in June 1983. Harrison resided in Shoreham and is survived by his wife Anne.

Retiree **John Edward Rogers**, known to his friends as Ed, died of natural causes on April 1, at the age of 90. As a cabinetmaker in the Plant Engineering Division, Rogers began his 15-year association with the Lab on June 26, 1951, and retired in December 1966. A life-long resident of Patchogue, Rogers is survived by his son, Lee Rogers of the Instrumentation Division; four grandchildren; and three great grandchildren.

Reports Available

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

NUREG/CR-3444
BNL-NUREG-51699
Vol. 8

Contact: A. Lopez, Ext. 5768
The Impact of LWR Decontaminations on Solidification, Waste Disposal and Associated Occupational Exposure. (The Effects of Composition on the Strength, Swelling and Water-Immersion Properties of Cement-Solidified Ion-Exchange Resin Wastes.) P. Soon and L.W. Millian

NUREG/CR-3469
BNL-NUREG-51708

Contact: M. Beckman, Ext. 3228
Occupational Dose Reduction at Nuclear Power Plants: Annotated Bibliography of Selected Readings in Radiation Protection and ALARA. T.A. Khan, D.S. Vulin, S.G. Lane and J.W. Baum

NUREG/CR-5538
BNL-NUREG-52301
Vol. 1

Contact: K. Nasta, Ext. 2267
Influence of Organizational Factors on Performance Reliability (Overview and Detailed Methodological Development). S.B. Haber, J.N. O'Brien, D.S. Metlay and D.A. Crouch

NUREG/CR-5747
BNL-NUREG-52289

Contact: K. Roman, Ext. 3643
Estimate of Radionuclide Release Characteristics Into Containment Under Severe Accident Conditions. H.P. Nourbakhsh

BNL-52304

Contact: A. Lopez, Ext. 5768
A Comparison of Solidification Media for the Stabilization of Low-Level Radioactive Wastes. M.G. Cowgill

BNL-52314

Contact: A. Lopez, Ext. 5768
Review of the EPA's Radionuclide Release Analyses From LLW Disposal Trenches Used in Support of Proposed Dose Limits in 40 CRF 193. C. Pescatore and T.M. Sullivan

Arrivals & Departures

Arrivals

Marilyn A. Pandorf..... Personnel
Brian M. Rohena..... Plant Eng.
Richard J. Wood..... NSLS

Departures

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

David S. Johnstone..... Plant Eng.

New P.O. Boxes Ready to Rent

As a mail clerk in the BNL Mail Room, Dinorah Silva delivers intra-Laboratory and U.S. mail on site.

When it comes to getting her personal U.S. mail delivered to her, Silva now goes next door to the Mail Room, to P.O. Box 745 — one of 192 new boxes recently installed at the Upton Post Office.

The installation of P.O. Boxes 741 through 960, not all inclusive, was made possible by moving the Mail Room's entrance and counter farther down the hall in Bldg. 179. This addition brings the total up from 551 to 743 P.O. boxes, which are much in demand given the Lab's many short-term visitors who need a local address and the convenience of 10 a.m. mail delivery.

Twenty small boxes have already been taken, which eliminated the waiting list. So, anyone interested in renting an Upton P.O. box may do so, for \$7.25 per year for one of the 144 small size, \$11.25 for one of the 32 medium or \$21.50 for one of the



Roger Stoutenburg

16 large, plus a \$1 deposit per key.

Just stop by the window of the Upton Post Office any weekday, 8:30 a.m. to 4:45 p.m.

Before You Mail, Check Bldg. No.

When you put something in the intraLab mail, make sure you indicate the correct building number as well as the person to whom you are sending it. Several BNL buildings have more than one mail stop — designated by a letter tacked onto the building number, such as 510A or 134C. Before you mail, take a moment to check the Lab phone book to make sure you're sending to the right mail stop.

Student Programs Focus of Exhibit

In observance of National Science and Technology Week, which begins on April 29, the Tour Program of the Public Affairs Office has organized an exhibit on the various programs for students offered at BNL. Look for the exhibit in Berkner Hall all next week.

Artificial Neural Network Course

A four-week course on artificial neural networks will be given at BNL on Mondays and Thursdays, from 3:30 to 5:30 p.m., beginning Thursday, May 14. The instructor will be Robert Hong, chairman of the Artificial Intelligence and Artificial Neural Networks Committee of the Long Island Section of the Institute of Electrical and Electronic Engineers, which is collaborating with BNL in offering the course.

To be held in the large seminar room of the National Synchrotron Light Source (NSLS), Bldg. 725, the course will cover neural simulation, theory and modeling, with emphasis on the latest hardware and chips available, and preliminary information on expected future systems providing greatly enhanced thought. Potential BNL interests in this technology are in the fields of accelerator-beam control, physics detector logic and pattern recognition, reactor-safety analysis, and more general pattern-recognition problems.

The course fee is estimated at about \$150 per registrant, depending upon enrollment. A textbook will also be required at a cost of \$48.50. For more information about the course or to register, contact James Niederer, Computing & Communications Division, Bldg. 515, or use E-mail, jn@bnl.

Insurance Rep At TFCU Table

Jamie Harrison, a member-services representative from CUAIS Agency Insurance Services, will be at a Teachers Federal Credit Union (TFCU) information table in Berkner Hall, on Wednesday, April 29, from 11:30 a.m. to 1:30 p.m.

A subsidiary of CUNA Mutual Insurance Group, CUAIS has been meeting the insurance needs of credit-union members for years. Harrison will be providing coverage information and price comparisons, so those interested in shopping for insurance are asked to bring copies of their current auto and homeowner's insurance policies with them.

Hotel Alternative

Foreign and American scientists or students who are planning to visit New York City may be able to take advantage of the accommodations provided by International House.

Located at 500 Riverside Drive, within walking distance of Columbia University, International House has offered temporary accommodations to foreign students and scholars for almost 70 years. Guest suites range from \$58 to \$104 per night, and, in the summer, dormitory rooms are available for \$25 a night. There is no minimum-stay requirement. BNL identification will be requested of visitors who wish to stay at International House.

For more information, call International House, (212) 316-8400.

Local Users Meeting

The Upton Local Users Group (LUG) will next meet on Wednesday, April 29, at 10:30 a.m., in Berkner Hall. "The Future of Supercomputing and the Proposed QCD/Teraflop Project at BNL" will be discussed, and all computer users are encouraged to attend.

For more information, contact Zohreh Parsa, LUG Chairperson, Ext. 2085, E-mail address LUG@BNL.

IBEW Meeting

Local 2230, IBEW, will hold its regular monthly meeting on Monday, April 27, at 6 p.m., in the Knights of Columbus Hall, Railroad Avenue, Patchogue. An afternoon meeting at 2 p.m. that day will be held for shift workers, in the Union office at 31 Oak Street, Patchogue. The agenda includes regular business, committee reports, the president's report and a report on reduction of forces.

Art Bus Tomorrow

Some tickets remain for the BERA Art Society's Spring Rites Trip tomorrow, Saturday April 25. So come along, and wander under cherry blossoms in the Brooklyn Botanical Gardens — then view the magnificent paintings in the Brooklyn Art Museum next door. The bus will leave BNL at 9 a.m. and return by 6 p.m. Ticket costs are: bus, \$15; art museum, \$4 (seniors, \$1.50); gardens, \$2. To go, call Liz Seubert, Ext. 2346 or 286-8563.

Atlantic City Trip

The next BERA-sponsored, one-day trip to Atlantic City will be to Trump Plaza Hotel and Casino on the Boardwalk on Saturday, May 23. The bus will leave the Brookhaven Center promptly at 9 a.m., with an extra pickup at LIE Exit 63 park and ride, if requested. The bus is expected to return just before midnight.

Participants will initially outlay \$20, but will receive a \$5 coin return from the hotel-casino and a \$5 deferred-return voucher. Tickets are now on sale at the BERA Sales Office, Berkner Hall, weekdays from 9 a.m. to 2 p.m. For more information, call Carolann Zebrowski, Ext. 3347; Rosalie Piccione, Ext. 3160; or M. Kay Dellimore, Ext. 2873.

Amateur Radio Club

The regular monthly meeting of the Amateur Radio Club will occur on Thursday, April 30, at noon, in Room D, Berkner Hall. The upcoming Field Day on the weekend of June 20 and 21, and updates on other club projects will be discussed.

All Lab employees, guests and licensed amateur radio operators are invited to attend the meeting and the Field Day weekend. For more information, call John McNeil, Ext. 4572, or Gary Utz, Ext. 5903.

Cafeteria Menu

Luncheons

Monday, April 27

Soup: Chicken gumbo .80/1.10
Entree: Macaroni, beef and tomato, veg. 3.65
Fitness: Western Mexican chicken, veg. 3.20
Entree: Chef's choice 3.20
Carvery: Hot pastrami sandwich 2.95
Grill: Chicken salad melt 2.95

Tuesday, April 28

Soup: Onion .80/1.10
Entree: Baked potato & broccoli w/cheddar 3.65
Fitness: Spaghetti w/white clam sauce 3.20
Entree: Personal pizza 2.25
Carvery: Hot roast beef sandwich 2.95
Grill: Grilled fish sandwich 2.95

Wednesday, April 29

Festival of Lanterns

Soup: Hot & sour .80/1.10
Entree: Almond plum chicken 3.45
Entree: Chinese beef & green pepper 3.45
Entree: Sweet & sour pork 3.45
Grill: Grilled chicken teriyaki 2.95
Complete meal: Small soup, entree, veg., rice, choice of dessert 4.75

Thursday, April 30

Soup: Beef noodle .80/1.10
Entree: Southern-fried chicken w/1 veg. 3.20
Fitness: Vegetarian stuffed peppers 3.45
Entree: Chef's choice 3.20
Carvery: Hot corned beef sandwich 2.95
Grill: Tuna melt w/fries & cole slaw 2.95

Friday, May 1

Soup: Seafood chowder .80/1.10
Entree: Fresh baked fish w/1 veg. 3.45
Fitness: Baked herb chicken w/1 veg. 3.45
Entree: Chef's choice 3.20
Carvery: Hot turkey sandwich 2.95
Grill: 3-cheese melt w/fries 2.85

If You Bowl, Dance or Quilt, They Represent You



Founded in 1948, the Brookhaven Employees Recreation Association (BERA) now includes 48 clubs from A to W — from the Aerobic Dance Club to the White Water Rafting Club, with the likes of the Camera Club, Indo-American Association, Motorcycle Club, Social Club and Theater Group in between.

In addition to overseeing Lab-sponsored athletic, social and cultural activities, BERA operates the Sales Office, which is located off the lobby in Berkner Hall. Open each workday from 9 a.m. to 2 p.m., the Sales Office offers film processing, discount coupons, greeting cards and more.

BERA is run by an eight-member Executive Board, to which two new members are elected every March. Recreation Supervisor M. Kay Dellimore (seated, right), Personnel Division, is liaison to the BERA Board; Elliot Levitt (seated, left) is the Board's treasurer; and Pat Manzella (standing, right) its recording secretary.

Continuing, newly elected and outgoing Board members include: (standing, from left) Haskell Frei, newly elected; April Donegain, newly elected; Betty Pergan; Jean Ramirez, outgoing; Michelle Cummings; Richard Backofen; (seated, from left) Maryann Reynolds; Lawrence Musso, outgoing; and Rosalie Piccione. Missing: Andre Epple.

Since the BERA Board represents all BERA members — who include all BNL, AUI and on-site DOE employees and those employed by BNL's permanent on-site contractors, and their immediate family members — Board members welcome your suggestions and questions.

Toastmasters

The Brookhaven Toastmasters will hold a Special Guest Night on Tuesday, April 28, beginning at 5:30 p.m., in the dining room of the Brookhaven Center.

With a chapter on site since September 1990, Toastmasters is an international organization dedicated to improving its members' public speaking skills in a relaxed and supportive atmosphere.

Nonmembers are invited to come to the meeting to experience what Toastmasters is all about. For further details, call Darryl Kaurin, Ext. 7892, or Ronnie Evans, Ext. 2851.

Update to Update

On page 7 of the April 1 update to the 1992 BNL telephone directory, the facsimile number for the Safeguards & Security Division in Bldg. 30 should have been 5269.

Classified Advertisements

Placement Notices

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

Each week, the Personnel Division lists new placement notices. The purpose of these listings is, first, to give employees an opportunity to request consideration for themselves through Personnel, and, second, for general recruiting under open recruitment. Because of the priority policy stated above, each listing does not necessarily represent an opportunity for all people.

Except when operational needs require otherwise, positions will be open for one week after publication. For more information, contact the Employment Manager, Ext. 2882, or call the JOBLINE, Ext. 7744 (282-7744), for a complete listing of all openings.

SCIENTIFIC RECRUITMENT - Candidates may apply directly to the department representative named.

POSTDOCTORAL RESEARCH ASSOCIATE - trained in theoretical physical chemistry or chemical physics to work on quantum and mixed

Softball

A Softball safety meeting will take place on Friday, April 24, in Room B, Berkner Hall, at noon. All team captains and/or team representatives must attend. Schedules, rules and regulations will also be distributed at this time.

Bowling

Red/Green League

R. Wiseman had 244/614 scratch series, A. Warkentien 235/203/625 scratch, S. DiMaiuta 219/201, H. Dawson 209, W. Cahill 208, K. Asselta 207, G. Meinken 207, R. Eggert 205, S. Thompson 201.

White League

Dick Adams had a 220, Sharon Smith 212, Joe Mayeski 203, Norman Fewell 201, Denise Monteleone 181, Marilyn Picinich converted the 4/6 split.

Purple League

Diane Lombardi had a 243, Pat Manzella 221/180, Phil Radusewicz 215, Maryann Reynolds 184.

quantum-classical descriptions of time-dependent molecular phenomena. Knowledge of scattering theory and experience in numerical computations are desirable. Contact: James Muckerman, Chemistry Department.

POSTDOCTORAL RESEARCH ASSOCIATE - to join the Condensed Matter Theory Group. The group's specific interests include theory of high-temperature superconductors, self-organized criticality, and electronic structure of alloys and surfaces. Contact: James Davenport, Physics Department.

POSTDOCTORAL RESEARCH ASSOCIATE - trained in condensed-matter theory, with experience in computational electronic structure or molecular dynamics, to conduct collaborative research with the Analytical Sciences Division of the Department of Applied Science. Contact: James Davenport, Physics Department.

SCIENTIST/ENGINEER - for International Safeguards Project Office. Seeks candidate with doctorate or master's degree in engineering or physical sciences, and experience in international safeguards, to participate in technical project management. Several years' relevant experience required. U.S. citizens only. Contact: Ann Reisman, Department of Nuclear Energy.

LABORATORY RECRUITMENT - Opportunities for Laboratory employees.

NS 8389. DEPUTY DEPARTMENT ADMINISTRATIVE MANAGER - Requires bachelor's degree or equivalent experience and a thorough knowledge of Laboratory policy and procedures, with extensive administrative experience and supervisory background also required. Demonstrated

Let's Dance

Late registrations are being accepted by the BNL Ballroom, Latin & Swing Dance Club for its eight-week series of dance lessons, which began Wednesday, April 22.

Given by instructor Giny James of Dance Elektra, Centereach, the one-hour classes are held on Wednesdays, beginning at 5:15 p.m., in the North Room of the Brookhaven Center, unless otherwise notified.

The cost for the series is \$25; to register late, contact Marsha Belford, club vice president, Ext. 5053, before Wednesday, April 29. After registration closes, those who wish to take lessons with the club may do so at \$5 per class, payable at the door each Wednesday.



Camera Club

The Camera Club will next meet on Thursday, April 30, at 5:30 p.m. in the Recreation Building lounge. Upcoming club activities and the reopening of the club's darkrooms following electrical system modifications will be discussed. As always, nonmembers are welcome.

On Thursday, May 7, the pictures in the club's photo display in Berkner Hall will be changed at 5 p.m. Mounted photos that are ready to hang and that meet the club's display criteria are welcome from both members and nonmembers. Photographers may submit prints for the display even if they cannot come to the exhibit change.

For more information, contact Lew Jacobson, Bldg. 134C, Ext. 5193; Ripp Bowman, Bldg. 911B, Ext. 4672; or Anne Baitinger, Bldg. 134, Ext. 5055.

Volleyball

Standings as of April 16

Open League — Final			
Magnum	51-9	Phoenix	24-36
G-Team	37-23	Penetrating Volleys	16-44
Me and the Boys	36-24	Leftovers	16-44

Playoffs

League I — Final	
Upfagrabs vs. Network News	
League II — Round Two	
Night Court vs. Just Ups	
Netwits vs. Monday Nite Live	
League III — Final	
Over the Top vs. Interns	

Note to Employees:

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

experience in budget preparation, procurement and property management required; familiarity with project management systems a plus. Duties include responsibility for many of the daily administrative functions within the Department, as well as assisting in the implementation and coordination of new administrative procedures as required. Department of Nuclear Energy.

LF 0145. SEWAGE TREATMENT PLANT OPERATOR A - Under minimum supervision maintains and operates Sewage Treatment Plant. Conducts a variety of chemical quality and other tests of sewage influent and effluent, and groundwater associated with the operation of the Sewage Treatment Plant. Maintains necessary records. Plant Engineering Division.

OPEN RECRUITMENT - Opportunities for Laboratory employees and outside candidates.

DD 1034. TECHNICAL POSITION (term appointment) - Requires AAS in mechanical technology or equivalent experience, and significant experience in the use of hand and power tools used in the construction of R&D assemblies. Duties will include construction of prototype rf amplifiers and high-voltage power supplies, and the installation of similar equipment into RHIC. Knowledge of safety procedures associated with high-voltage electrical systems desirable. Accelerator Development Department.

MK 0454. PHYSICS ASSOCIATE POSITION (term appointment) - Requires a BS/MS in physics or physics instrumentation and experience in high-speed digital logic. Experience in fastbus, field-programmable arrays and data-acquisition systems for high energy physics highly desirable. Physics Department.

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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

Classified Ads (cont'd)

NS 8136. TRAINING POSITION - Requires bachelor's degree in a technical field, formal education in training or equivalent background, and experience training in the areas of health physics and general safety. Will assist in the training of health physics and radiation workers using the Instructional System Development methodology. Safety & Environmental Protection Division.

Motor Vehicles & Supplies

90 PONTIAC LE GRAND PRIX - 6-cyl., white, 4-dr., a/t, p/s, p/b, fully loaded, 16k mi., excel. cond., \$11,000. Sidney Stafford, 286-4028.

89 NISSAN 4x4 PICKUP - w/cap, 41k mi., burgundy, excel. cond., \$6,500. 325-1052 or 288-7478 after 4 p.m.

89 NISSAN SENTRA - 4-spd., 2-dr., sunroof, white, am/fm cass., 44k mi., excel. cond., asking \$4,500. George, 744-5422.

89 BRONCO EDDIE BAUR - like new, perfect inside & out, every option, 39k mi. 727-3863.

88 TERCEL - 2-dr. h/b, 5-spd., am/fm tape, 25k mi., excel. cond., \$4,500. Joel, Ext. 5038.

87 NISSAN STANZA GXE - all power, fully loaded, am/fm cass., ac, 5-spd., excel. cond. in & out, \$5,500 neg. Tim, Ext. 5277 or 744-1090 eves.

87 NISSAN MAXIMA - ac, sunroof, cruise, am/fm cass., p/seats, leather int., tilt, p/w, a/t, 78k mi., excel. cond., \$7,500. Jim, 758-0393 after 6 p.m.

87 TOYOTA MR2 - black, 64k mi., asking \$5,995; '89 Trooper II LS, 5-spd., 11k mi., warr., asking \$11,000. Roy, Ext. 7357 or 878-5886.

86 PLYMOUTH GRAND FURY SALON - p/s, p/b, ac, p/w, am/fm, new tires & brakes, 83k mi., excel. cond., \$3,600. Carol, Ext. 2673.

86 IROC CAMARO - white, low mi., loaded, full power options, new tires & service, \$5,300 neg. Matry Tardd, Ext. 4100.

86 FIREBIRD - flame red, V-8, a/t, T-top, p/w, p/l, cruise, tilt, am/fm cass., orig. owner, mint cond., \$4,950. Jim, Ext. 4026.

85 GRAND MARQUIS - all bells & whistles, 60k mi., garaged, one owner, excel. cond., \$5,000. Alyce, Ext. 5203 or 447-5377.

85 OLDS CUSTOM CRUISER - s/w, V-8, one owner, 60k mi., \$3,800. 289-0012.

85 HONDA MOTORCYCLE - Interceptor 750, v.g. cond., \$2,000 neg. John Turner, 736-7194.

85 PONTIAC GRAND AM - 2-dr., gray, high mi. all highway, a/t, ac, p/s, orig. owner, good cond., \$2,300. Gary, Ext. 3473.

84 FORD TEMPO - 73k mi., no rust, v.g. cond., \$1,300. Edward, Ext. 7502/3205.

84 RIVIERA - blue, leather int. & hardtop, all power, new brakes, battery, tires, etc., excel. cond., \$3,750. 475-8658.

84 CHEVY SILVERADO 4x4 PICKUP - cruise, a/t, am/fm cass., tilt, 305-cu.-in. eng., 72k mi., excel. cond., \$4,500. 286-3231.

83 OLDSMOBILE CUSTOM CRUISER - 8-pass., full power, overdrive, well maint., v.g. cond. in & out, must see, \$2,850. 929-8467.

83 DODGE ARIES - 4-dr., a/t, 101k mi., body excel. eng. replaced at 90k, \$1,050. Don, 286-0999.

83 SUZUKI 550 GS MOTORCYCLE - mint cond. Ext. 3496.

83 FORD F150 4x4 - am/fm cass., hitch, new 33x12.50 tires, brakes & clutch, 4-spd., 78k orig. mi., excel. cond., \$4,600. 744-7549.

82 OLDS OMEGA - gray, 4-dr., good body, tires, & transportation, 6-cyl., 95k mi., must see, located Huntington, \$1,000. Irving, Ext. 2817.

82 DODGE RAM CAMPER VAN - V-8, ac, am/fm cass., sleeps 4, stove, heater, fridge, 110k mi., runs well, excel. cond., asking \$3,800. Ext. 3235.

82 YAMAHA 400HS - 6k mi., all access., \$650 neg. Rob, 878-2702 after 6:30 p.m.

82 MUSTANG - 4-cyl., 4-spd., sunroof, mag wheels, stereo, new eng., clutch, brakes, more, \$1,750. Richie, Ext. 2216 or 734-7342 after 6 p.m.

81 CHEVY SUBURBAN - 4wd, 350 eng., body good cond., runs well, \$2,100. 878-8145.

81 PONTIAC - s/w, not running well, for parts, new gas tank, exhaust system, \$150. Ed, Ext. 7786.

81 VW RABBIT CONVERTIBLE - white, new black top, fun to drive, \$3,600. Don or Genie, 286-2267.

81 CHEVY VAN - custom, ¾-ton, capt. chairs, conv. bench seat, high mi., asking \$1,200. Frank, Ext. 7684 or 584-5933 after 6 p.m.

80 HONDA CIVIC GL - 1500 cc, hwy. mi., runs, basic transportation, \$250. Lloyd, Ext. 3163.

80 DODGE VAN - 318, a/t, new tires, HD suspension, runs well, \$1,100. 728-7644.

79 COLEMAN POP-UP TRAILER - Gettysburgh, \$900 or best offer. Ext. 3969 or 878-6580.

79 CHEVY CHEVETTE - 54k orig. mi., new batt. & starter, engine tuned-up, excel. cond., no rust, \$575. 732-1389.

77 FORD LTD II - 302 cu. in., V-8, a/t, p/s, p/b, ac, new batt., brakes, shocks, exhaust, clean, runs well, \$700. Frank, Ext. 7519 or 277-0464.

77 OLDS - am/fm, ac, new brakes, muffler & battery, 91k mi., excel. cond., \$900. Mac, Ext. 4389 or 924-2348 eves.

75 GM MIDGET - 54k orig. mi., new exhaust, excel. mech. cond., v.g. body & int., new car cover, \$2,250 neg. 385-8075.

71 HONDA 750 - fair cond., runs well, \$300; leather suits, used 3 times, \$150 ea.; good helmet, \$100. Sigg, Ext. 4360.

71 MUSTANG COUPE - gold, brown vinyl roof, 351 Cleveland, 2-V auto, HD suspension postraction, orig. papers, excel. \$3,300. Guy, Ext. 3147.

69 HONDA MOTORCYCLE - 90cc, w/helmet, \$200. Mike, Ext. 2052.

TRAILER HITCH - Drawtite for '78 & newer mid-size, GM cars, no drilling required, \$25. Brian, Ext. 2799.

HITCH - for car, truck, frame-type, cap. 3,600 lbs., 48" between center mtgs., less ball, \$50. Bill, Ext. 4312 or 281-6498.

TIRES - 2, Michelin steel-belted radials, 165SRX 15X2X, like new, \$35/both. Andy, 286-8814.

TIRES - 4, P185-14 Michelin radials, like new, \$100. Al, Ext. 2957.

RIMS - 2, Centerlines, 8", for Ford pickup; 4 Laredo 31x10.50 FE headers, heads, flywheels, '69 Mustang seats. Wayne, Ext. 3084.

BUCKET SEATS - 2, high back, for Camaro or Monza, dark blue, mint cond. must sell, leave message. Joe, 698-7347.

Boats & Marine Supplies

21' MARK TWAIN - 1981, cuddy cabin, fish well, bait well, i/o Mercruiser, 200 hrs., \$3,500. M. Tardd, Ext. 4100.

20' FIBRE - 1968, all glass construction, Volvo o.d., no motor, \$400. Kenny, Ext. 5462.

19' RHODES #69 SAILBOAT - CB, Hard sails, cockpit cover, extras, excel. cond., ideal daysailer, \$2,200. 286-0008.

19' STUERY CUDDY - 1977, w/90-h.p. 1984 Mercury ob., sink, potty, icebox, in water, fish finder, \$1,500. George, 878-8177.

17' VENTURE SAILBOAT - s/keel, extra Genoa., 3 sails, 6-h.p. Mercury motor, dinghy w/motor, cabin sleeps 4, extras. Pat, Ext. 3962 or 821-6256.

16' BOAT - fiberglass, 65-h.p., galv. tilt trailer, p/winch, \$1,400. Jim, Ext. 3372 or 821-0250.

14' CATAMARAN - jib, sail, fast & fun, excel. cond. Ryan, 878-1178.

13' BOSTON WHALER - 1984, w/40-h.p. Johnson & trailer, mint cond., \$4,200. Brian, Ext. 2799 or 757-1581.

13' BOSTON WHALER - 35-h.p., w/trailer, good cond., \$2,500. Bill, 924-7357.

13' TRI HULL - f/g, lake boat w/trailer, Minn Kota, 36 lb. thrust elect. motor w/batt., asking \$850. Joey, Ext. 2950 or 758-2938.

7' DINGHY - used 4 times, \$225. 585-8171.

CHEMICAL TOILET - good for boats or camping van, \$20. Sigg, Ext. 4360.

LOBSTER POTS - 2, new, never used, \$25 ea. Toner, 543-7065.

DOCK SPACE - Center Moriches, to 22', private, protected. George, Ext. 5288.

Furnishings & Appliances

ANTIQU SEWING MACHINE - Singer; telephone answering machine. Mike, Ext. 2050.

SHOWER DOORS - trackless, new, in box, orig. \$179, now \$80. Lou Pergola, Ext. 3499 or 732-1028.

CABINET - Col., maple, w/record player, radio, 72"x35"x23", \$200; Raytheon air cleaner, \$35; screen movie or slide, 5', \$15. Saxon, 929-4701.

COMPUTER TABLE - wood, \$30; coffee pot, \$20; anchor, \$10; exercise bike, \$25; coffee table, \$10. Kathy, 744-2203.

DESK/HUTCH - girl's, white, \$75. 472-3332.

DINING ROOM - den furn., dinette table & chairs; more household items, reas. prices. 732-1389.

DINETTE SET - 4, chrome & white Naughyde chairs, new white mica & chrome table, w/extra leaf, \$175. 475-8658.

ENTERTAINMENT CENTER - oak, 5½'H x 5'W, drawers, shelves, fits 31" TV, \$160; electric juice machine, orig. \$79, now \$35. 474-3799 p.m.

FIREPLACE INSERT - Glacier Bay, airtight, \$100. Roger, Ext. 7518 or 878-8847.

FREEZER - Amana, 18 cu. ft., upright, w/lock, key, \$100; wood lathe, 3', cast iron, w/6" swing, \$75. Mike, 941-9283.

FREEZER - 30 cu ft., v.g. cond., \$95. Tom, Ext. 5265.

TABLE - leather-top, Duncan Phyffe, \$75; oak rocker, \$165; large bookcase, w/glass doors, \$175; steamer trunk, \$40. Janet, Ext. 2345.

TEA TABLE - Oriental, w/6 seats, oval, glass top w/ivory figures, \$400; matching bar, unique, \$400. Bob, Ext. 2309 or 473-9180.

RANGE - GE, elec., self-clean, 3 yrs. old, orig. \$520, sell for \$285. Gene, Ext. 7113 or 874-4248 after 7 p.m.

SLEEPER SOFA - queen size, blue, good cond., \$250; 2 end tables, \$25/ea.; armoire, blue, \$35. Jim, Ext. 5684.

WATER BED - king-size, dual flotation mattress system, waveless, heaters, pedestal, \$200. Mike, Ext. 2052.

Tools, House & Garden

ANNUAL FLOWERS - \$10/flat, \$6/one & half flats; vegetables, \$1/pack, large selection. Ray, 727-6818 after 4 p.m.

FIREWOOD - 5 cords, \$325; 8' fiberglass cap, red but faded, \$150. 585-8171.

LAWN MOWERS - Craftsman, 22", self-drive, rear bag, \$85; Craftsman, 20", rear bag, \$75; 22" rotary, \$60, all re-cond. Dan, Ext. 4987 or 698-7322.

ORCHID - large cymbidium, yellow flowers, \$20; shutters, louvre, wood, painted white, new, 21"x74", 4 pieces, \$20/ea. 727-8631.

SPINNING MACHINE - 4 spd., gear box, 2 h.p., 18" swing, 1,100 tool, extra. Bob, Ext. 4672 or 929-4753.

WELL PUMP - & low profile tank, v.g. cond., \$200 neg. Bob, Ext. 5010.

Sports, Hobbies & Pets

BICYCLE - Colnago Master frame, w/Dura Ace headset & BB, \$400. Oscar, Ext. 3499.

BICYCLE - Hutch Expert, chrome, mint cond. Ext. 3496.

CAMERA - Nikkorex, 43 to 86mm zoom, split image range finder, exposure meter, F3.5 to 22, 1/500 second, Vivitar, flash, \$150. Saxon, 929-4701.

COCKATIEL - baby, 11 mo., yellow crown, red spots on cheeks, w/cage, orig. \$200, ask. \$150. Ext. 2582.

EXERCISE EQUIP. - DP-300 body toner, \$100; DP-20 Universal body builder, \$200; Mod-266 cycle, \$50; weights, \$50, \$275/all. Irving, Ext. 2827.

The Brookhaven Bulletin is printed on paper containing at least 50 percent recycled materials, with 10 percent post-consumer waste.



FISH TANK - 20 gallon, stand, gravel, filter, pump, heater, decorations, fish, Alonocara Mbengi Blue Regal, \$45. Roy, Ext. 7357.

GUITAR AMPLIFIER - Ampeque Portaflex, tubed, \$100. Harry, Ext. 5976.

HELMET - WW II, German steel, army issue, \$65; 2 medieval replica swords, \$20/ea., more. Bill, 924-7357.

MOUNTAIN BIKE - Schwinn, 20", 21 spd., computer, Bell helmet, new tires, pump, black chrome, ask. \$300. Linda, Ext. 7187 or 874-2675.

PEDIGREE POODLE - male, AKC registered, 1 yr. old, good w/other dogs & kids. Mike, Ext. 2050.

POOL - 24' round, filter/liner, needs work, fairly new, w/solar cover, \$350. Barbara, Ext. 3381.

POOL LADDER - for ag pool, folds up for safety, used 1 season, \$45. Frank Palmeri, 928-3189.

SURVIVAL GAME - Paint Ball equipment & access., must sell. Joe, 698-7347 leave message.

Audio, Video & Computer

ALBUMS - disco, rock, jazz, progressive rock, popular, mostly new, \$4/ea. 474-3799 afternoons.

COMPUTER DESK - w/hutch, \$25. Mark, Ext. 7978.

STEREO SYSTEM - cabinet, tuner, dual cassette, CD player, amp., turntable. Mike, Ext. 2050.

TAPE PLAYER - Stereomatic 9900, plays well, w/speakers, \$10. Pete, Ext. 4581 or 399-2813.

COLOR TV - Zenith, 24", console, good cond., \$50. Sharon, Ext. 2493.

COLOR TV - RCA, 25", \$75; telephone answering machine, \$20; stereo tape deck; Wallensak 7" reel-to-reel, \$30. Al, Ext. 5128.

Miscellaneous

AIRPLANE TICKET - one way to Ft. Meyers, Florida, South West Regional Airport, from Islip, 4/26, \$50. Gloria, 722-5740.

DESIGNER FRAGRANCES - women's parfum & men's cologne, 3.3 oz., two/\$42. Lou Pergola, Ext. 3499 or 732-1028.

ENCYCLOPEDIA AMERICANA - complete 30 vol., w/index, new cond., \$50. Saxon, 929-4701.

FASHION BOOTS - women's, leather, knee-high, size 6, 2 pairs, 1 brown, 1 black, look brand-new, orig. \$70/ea., sell for \$35. Gene, Ext. 7113.

FUR COAT - rabbit, boot length, size medium, \$150. Arleen, Ext. 4519.

GARDEN FURNITURE - sewing machine, canary, rabbit, cages, furnishings, girl's clothes 5-6X, shoes, dining room lamp. Kelly, 744-3069.

MAPLE SYRUP - from my family's farm in Vermont. Peter, Ext. 7687 or 744-1112.

THEATER TICKETS - 2, Grand Hotel, Gershwint Theatre, orchestra seats, 4/29, 8 p.m., \$60/each or best offer. Ext. 3359.

Free

AEROBIC EXERCISE STATION - Sears, you carry. Gail, Ext. 3338.

PRINTING PRESS - antique, Chandler & Price, 15"x20" letterpress, moving can be arranged. Fred, Ext. 7824.

TOY TRUCKS - Tonka & others. Barbara, Ext. 3381.

TYPEWRITER - Royal, manual, needs cleaning. Roger, Ext. 7518.

Yard & Garage Sales

PATCHOGUE - 4/25, antiques, furn., collectibles, 181 Swan Lake Dr., 2 blocks e/o Phyllis Dr. at end of Washington Place.

MANORVILLE - multifamily, 4/24-26, furniture, tools, household, cameras, large variety, more, Halsey Manor Rd. 878-6637.

Lost & Found

FOUND - keys, Snyder Seminar Room, Thursday, 4/16. Ext. 4619.

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 HAMLET - 1-bdrm. apt., l/r, kit., fully tiled bath, furn. or unfurn., cable TV, priv. ent., immaculate, no pets, mature single only, \$575/all. Fred, Ext. 4798 or 289-4798.

CENTER MORICHES - 2-bdrm. apt., full cellar, oil heat, \$600/mo. + util. Lois, Ext. 4904; Bob, Ext. 4672; or 929-4753.

CENTEREACH - 2-bdrm. bsmt. apt., l/r, full kit., full bath, priv. ent., cable, mature nonsmoker, furn./unfurn., lg. property, \$600/mo. incl. util., 1 mo. sec. Pam, Ext. 4082 or 732-6280 eves.

EAST MORICHES - 2-bdrm. apt., ground floor of Victorian house, bath, kitchen, d/r, l/r, large yard, 3 blocks to bay, shops, school, \$680/mo. plus util. Mona, Ext. 5056 or 878-9384 eves.

E. PATCHOGUE - 1 bdrm., kit., l/r, bath, sep. ent., mature nonsmoker, no children, 1 mo. sec., refs., \$500/mo. incl. util. Marilyn, 286-3508 after 6 p.m.

MASTIC - 2-3 bdrm. apt., OHWH, stove & refrig., own boiler & electric meter, patio & fenced-in yard, \$700/mo. 281-4343 or 281-7878 eves.

MASTIC - 1-bdrm. apt., kit., dinette, l/r, full bath, new carpeting & windows, good location, \$600/mo. + sec. & refs. 281-7844 eves.

MASTIC BEACH - 1-bdrm. cottage, free cable, suitable for single working person or couple, no pets, no kids, \$450/mo. + heat, 1 mo. sec. 395-4885 after 3:30 p.m.

MT. SINAI - 1-bdrm., eik, l/r, large enclosed, heated porch, oil heat, shed, wooded property. Tim, 331-1014.

OLD MASTIC - small 2-bdrm. house, 1½ baths, w/2-rm. studio w/full bath, all appl., 2 fp, screened porch, wooded setting, near water, 20 min. to Lab, \$880/mo. + util. Hans, Ext. 3737.

PORT JEFFERSON STATION - 1-bdrm. apt., ground level, ideal for single working person, \$500/mo. incl. all. 757-1973.

RIDGE - 2-bdrm. condo, 1½ baths, l/r, d/r, kit., full carpeted, w/d, \$750/mo. Kathy, Ext. 2267 or 395-6520 after 6 p.m.

RIDGE - furn. studio apt. w/fenced yard, priv. ent., 3 miles to Lab., \$480/mo. Ext. 2673 or 744-8632.

RIDGE - ground floor apt., priv. ent., util. & cable, \$625/mo., 3 mi. to Lab. 924-0577.

ROCKY POINT - m/d: upstairs, lg. l/r, bdrm., kit., d/r, encl. porch; downstairs, lg. room, kit., bath; nonsmokers, \$700/mo. + util. Wald, 744-9423.

SHOREHAM - 3 large bdrm., 2½ baths, furn./unfurn., avail. June-Dec. 744-5613.

SOUND BEACH - 2 bdrm., walk to water, new vinyl siding, carpets, bath & kit., walk-in closets, hard woodfloors, \$700/mo. Don or Sue, 473-6570 after 7 p.m.

SOUND BEACH - 1-bdrm. apt., 2 blocks from beach, \$550/mo. incl. all, 5/15 or 6/1 occupancy. 744-8504 or 744-5772 after 4:30 p.m.

STONY BROOK - 1-bdrm. apt., priv. ent., l/r, full kit., quiet area, ideal for student, \$550/mo. incl., all, + 1 mo. sec. 689-1539.

YAPHANK - room in Colonial Woods condo, share living areas w/1 other person, 5 min. to Lab., \$300/mo. + utilities Arlene, Ext. 2387.

ORLANDO, FL - timeshare, 2-bdrm. apt., fully equipped, sleeps 6, week of July 4-11, 5 min. to Disney World, \$500/neg. Ext. 2683 or 751-2469.

POCONO LAKE, PA - chalet in priv. community, sleeps 8, fully furn. & equipped, swim, tennis, golf, more, \$250/week. Bob, Ext. 4551 or 475-3612.

HILTON HEAD, SC - 2-bdrm. condo, sleeps 6, fully furn., 2 baths, tennis, beach, golf nearby, April-Sept., \$450/wk. Guy, Ext. 3147 or 689-5378.

For Sale

BROOKHAVEN HAMLET - 4-bdrm. Colonial, 2½ baths, l/r, d/r, fam. rm. w/fp, eik, laundry rm., 2-car gar., full bsmt., large screened porch, on cul-de-sac, \$265,000. 286-3372.

CENTER MORICHES - 3-bdrm. ranch, 2 baths, eik, waterview, 2-car gar., deck, 1/3 acre landscaped, extras, city water, house/shed, \$189,000. Ian, Ext. 7874.

E. SETAUKEN - 3VSD, 4-bdrm. hi-ranch, gar., 1½ baths, fenced yard, patio, deck, w/w carpet, new roof, d/w, refrig., 0.33 acre, \$129,900. 286-8814.

LAKE GROVE - 3-bdrm. hi-ranch, l/r, d/r, new eik, den, 1½ baths, 2-car gar., new carpets, remodeled bath, Andersen windows, vinyl siding, covered patio, igs, \$159,500. 588-6417.