BROOKHAVEN BULLETIN
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BROOKHAVEN NATIONAL LABORATORY

# Samios and Schoenborn Win Lawrence Award

Nicholas P. Samios, Chairman of the Physics Department, and Benno P. Schoenborn, Senior Biophysicist in the Biology Department, have been awarded the 1980 E.O. Lawrence Memorial Award for outstanding contributions in the field of atomic energy.

Winners of the award were announced earlier this week by Secretary of Energy Charles Duncan. Named with Samios and Schoenborn were Donald W. Barr, Los Alamos National Scientific Laboratory; B. Grant Logan, Lawrence Livermore National Laboratory; and Charles D. Scott, Oak Ridge National Laboratory. Each will receive a gold medal, a citation and $5,000.

Samios was cited for his leadership in the study of elementary particles, in particular for the discovery of the Omega minus particle and the first charmed baryon. These discoveries have played an important role in the disentanglement of the symmetries underlying the particle spectrum.

During his career as a high energy particle physicist, his work has led to the discovery of a number of other particles, including the phi, eta′ and f′ bosons and several cascade resonances.

Born in New York, N.Y., Samios received his B.A. and Ph.D. in physics from Columbia University. In 1956, he joined the faculty of the Physics Department at Columbia where he is currently an Adjunct Professor.

He came to Brookhaven in 1959 as an Assistant Physicist in the Physics Department. In 1964 Samios led a group which discovered the Omega minus particle predicted by Gell-Mann, but not by other contending theories. This experiment demonstrated the correctness of the SU(3) scheme of Gell-Mann and Neieman.

Mort Rosen

Nicholas P. Samios

Before becoming chairman of the department in 1975, Samios was head of the Omega Group, which was dedicated to discovering new particles and studying interactions between particles. The group used the 7-foot bubble chamber to do neutrino physics. The first charmed baryon was found in 1975, a discovery which clarified the interpretation of the psi/J particles.

Samios has served on the Program Advisory Committees of both Stanford Linear Accelerator Center (SLAC) and Fermi National Accelerator Laboratory, on the SLAC Scientific Policy Committee, and was chairman of the SLAC-Lawrence BerkeleyLaboratory Experimental Program Committee for Positron Electron Project. He is a Fellow of the American Physical Society and for the past four years has served as a member of the High Energy Physics Advisory Panel of the Department of Energy.

Benno Schoenborn was cited in his Lawrence award for his innovative development and creative application of neutron scattering and diffraction techniques to the analysis of macromolecular structure and biological organization and function. He is not only a pioneer investigator in this field, but is its world leader, and has made Brookhaven this country's center for such research.

Schoenborn is also a scientific leader in two other fields: the interaction of inert gases with proteins and the structures of large biological molecules and cellular components.

Originally from Basel, Switzerland, he received his B.A. in physics from the University of California, Los Angeles and his Ph.D. in physics from the University of New South Wales, Australia. He became a naturalized citizen of the United States in 1977.

Schoenborn joined the Brookhaven staff in 1967. During the first few years, he produced evidence that neutron protein crystallography is possible and extended this technique to membranes and protein complexes. With neutron protein crystallography, the atomic position of all atoms, including hydrogen, can be clarified in molecules made up of several thousand atoms.

He has worked to make neutron

Mort Rosen

Benno P. Schoenborn

scattering techniques and facilities available to the biochemical and biophysical community. Not only has he developed the systems at Brookhaven to the point where he could encourage collaboration with scientists from other laboratories, but his success has been largely responsible for the development of centers at the National Bureau of Standards and Oak Ridge, and the Institute Laue Langevin at Grenoble, a European lab operated jointly by Britain, France and Germany.

Since 1978, Schoenborn has been Adjunct Professor of Biochemistry at Columbia University. He is a member of the British and American Biophysical Societies and has been a member of the editorial board of the Biophysical Journal since 1977. He was also a member of the National Academy of Sciences' Panel on Low and Medium Energy Neutrons.

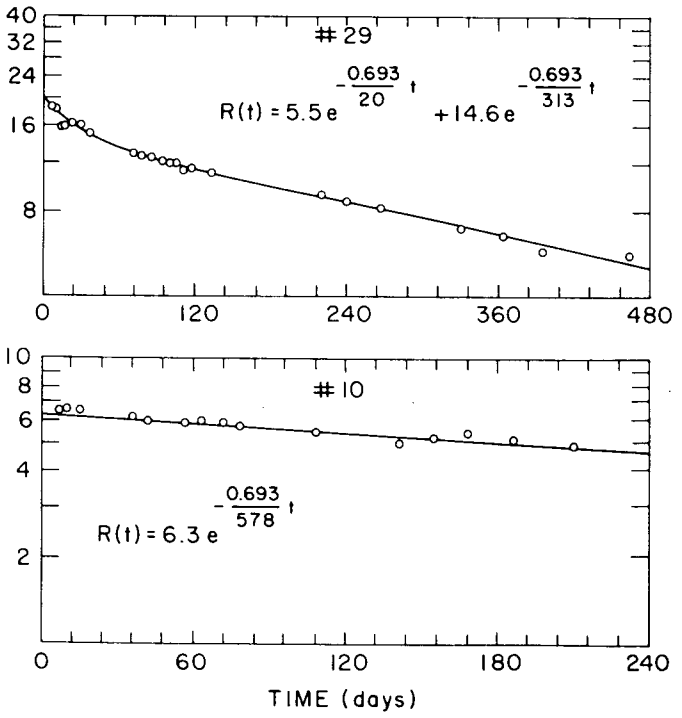
(Continued on page 2)

# Breathing: The Long And The Short Of It

An average-sized adult breathes about six liters of air a minute. Multiply that through, and the number comes out to a whopping 8,640 liters a day, which is roughly enough air to fill a room 6 by 6 by 8 feet. For the most part, we have no choice about what we breathe. These days, few populated areas are free from some kind of air pollution. And, adding insult to injury, a large percentage of Americans choose to smoke, thereby breathing in known carcinogens.

Daryl Bohning, scientist in the Medical Department, started a project two years ago to investigate how the lung gets rid of inhaled particles. It was a clinical study, measuring directly in man the function of an important defense mechanism that had never before been accurately quantified.

When particles are inhaled, they deposit along the branching airways and penetrate to the deep gas-exchanging pulmonary region of the lung. Within hours, particles in the airways are swept up and out by mucociliary action. But particles that penetrate to the pulmonary region take days and even months to clear.




These graphs show the percent retention of inhaled particles as a function of time. The top graph contains data for a healthy non-smoker and the bottom one belongs to a smoker. Notice the difference in the lines. The non-smoker shows two clearance phases, indicated by an initial rapid fall in the line, followed by a straightened downward section. In contrast, the smoker shows an almost horizonotal line – no fast phase and a slow phase clearance rate half that of the non-smoker.

The longer they stay, the greater the potential for lung disease. Bohning set out to monitor the amount of inhaled particles retained as a function of time.

### Method

He called for volunteers from the Brookhaven Lab community and built his study around 25 subjects grouped into four categories: healthy non-smokers, healthy ex-smokers, smokers, and persons with chronic obstructive lung disease (COLD).

His method was conceptually simple. A subject inhaled inert particles tagged with a small amount of strontium-85, a radioisotope with a 64-day half-life. Then the subject was repeatedly measured in the department's whole-body counter, which can detect minute amounts of radiation. The first count recorded the total amount of particles inhaled. As time went by, particles were cleared from the lungs up to the mouth and throat, swallowed, and finally excreted from the body through the gastrointestinal tract. Counting was frequent at first, but gradually tapered off to several times a week, to several times a month, and finally to once a month for as long as sufficient activity remained.

### Two-phase Clearance

The progressive decrease in counts gave the rate at which particles were cleared. Bohning discovered that for normal lungs, long term clearance of

Doug Humphrey

Daryl Bohning

the deep pulmonary region occurred in two phases – fast, with a half-time of 30 ± 23 days, and slow, with a half-time of 296 ± 98 days. He explained that for the test particles used, of those deposited in the deep lung, 25 percent were subject to the fast phase, and half of those were removed in about 30 days. About 75 percent were subject to the slow phase, and half of those were removed in about 296 days.

Both the healthy non-smokers and the healthy ex-smokers (who had not smoked in three to seven years) showed these two phases. According to Bohning, two distinct phases of long term particle clearance have been seen in animals, but never measured in man. He speculates that the two phases are

(Continued on page 2)

## Lawrence Award (Continued)

The Lawrence Award was established in December 1959 to perpetuate the memory of the late Dr. Ernest O. Lawrence, inventor of the cyclotron and director of two laboratories which bear his name, at Berkeley and Livermore, California. It is given to U.S. citizens who have made recent meritorious contributions to the development, use or control of atomic energy. The field of effort can be in any area of science related to atomic energy, including medicine and engineering.

Other staff members who won the award while at Brookhaven are Herbert J.C. Kouts (1963), Jacob Bigeleisen (1964), Joseph M. Hendrie (1970), and F. William Studier (1977). The award has had a two year hiatus since 1977.

Both Samios and Schoenborn will attend a special DOE awards ceremony on October 16 in the Forrestal Building, DOE headquarters, Washington, D.C.

## Arrivals & Departures

**Arrivals**

| | |
|---|---|
| Herbert M. Bell | Plant Engrg. |
| Grady D. Carney | Chemistry |
| Kevin M. Cosgrove | Plant Engrg. |
| Carmen T. Falkenbach | Accelerator |
| Victor O. Gutierrez | Accelerator |
| Alice A. Link | Energy & Env. |
| Robert D. McCambridge, Jr. | Reactor |
| Barbara A. Royce | Energy & Env. |
| Leslie L. Sealey | Plant Engrg. |
| Kim M. Tingley | Energy & Env. |

**Departures**

| | |
|---|---|
| Linda J. Hanlon | Supply & Materiel |
| Richard Maskiewicz | Chemistry |
| Alfred D. McInturff | Accelerator |
| Hugh S. Pratt, Jr. | Medical |
| William L. Schrack | Energy & Env. |
| Yiu-Wah Wong | Energy & Env. |
| Huong C. Wong Mac | Staff Services |

## Weekend Tour

This is the last weekend of the Lab's public tour season. Tour hours are from 10 a.m. to 3 p.m., both Saturday and Sunday. Visitors will see Brookhaven's "Quest;" take a guided bus tour of the site; and visit the Exhibit Center, which houses exhibits on BNL research.

## Policy Review On Force Reduction

A recent letter from an employee addressed to Lab Director George Vineyard has raised a question concerning the effect of a reduction in force on long-service employees who are not represented by a union. Although the Laboratory does not at this time foresee any layoffs, we are glad to respond to the question which was raised.

Whether an employee is in a Laboratory bargaining unit or not, a reduction in force affects a sub-section of a department when insufficient funding is available to support the work of that sub-section. The Department Chairman then selects the employees in that sub-section for layoff according to Laboratory policy. That Laboratory policy is stated as follows:

> "Nonbargaining unit weekly wage employees within a unit affected by the reduction in force who are equally qualified to perform the remaining available work within the unit shall be retained in order of length of continuous Laboratory service."

This policy is very similar to the seniority provision on layoff in the Laboratory bargaining unit contracts. The Laboratory policy further states:

> " Monthly employees within a unit affected by the reduction in force shall be retained on the basis of length of continuous Laboratory service, performance, and overall value to the Laboratory's program."

As you can see, there is a different emphasis in the case of monthly jobs because of the more individualized nature of many of these jobs. When a layoff occurs within a group of monthly employees who are doing similar work and performing satisfactorily, employees with the greatest seniority will be retained.

With respect to financial benefits, the Laboratory provides layoff pay of up to 52 weeks for nonbargaining unit employees affected by a reduction in force. Layoff pay is calculated on the basis of a formula that combines age and length of service at termination. Here are examples of how the formula works:

> Employees age 50 and younger receive a week's serverance pay for each full year of service, while older employees receive a higher amount for each year of service. For example, an employee 56 years of age with 20 years' service receives 46 weeks of severance pay.

In addition to severance pay, employees terminated due to a reduction in force are eligible for New York State Unemployment Insurance benfits.

— Joseph S. Washburne
Manager, Personnel and Labor Relations

## Nuclear Data Mtg.

This week, approximately 70 scientists, including 15 from Canada, Western Europe and Japan, gathered at Brookhaven National Laboratory for a "Conference on Nuclear Data Evaluation Methods and Procedures." The conference was designed to review advances in nuclear data evaluation methodology in the past ten years and to explore future directions influenced by the needs of fusion energy programs, material damage assessment, radioactive waste disposal, and biomedical applications.

The chairman was Dr. Robert Howerton of the Lawrence Livermore Laboratory, Sol Pearlstein of BNL's National Nuclear Data Center was the host. Sessions were chaired by Charles Dunford and Said Mughabghab, papers were presented by Mulki Bhat and Said Mughabghab and local arrangements were handled by Ben Magurno and Mary Rizzi, all from the NNDC.

## Safety Alert

Sears, Roebuck & Company is conducting a program to repair approximately 55,000 Craftsman Motorized Miter Saws, which may pose a laceration hazard to users. Sears is conducting the program voluntarily in cooperation with the U.S. consumer Product Safety Commission.

The saws can accommodate several types of blades, including a carbide-tipped blade often used to cut soft metals. CPSC has been informed of three instances in 1980 in which carbide-tipped blades being used on the saws disengaged while still spinning. One incident resulted in severe facial lacerations to the consumer. No injuries were reported in the other two cases. Consumers should immediately stop using carbide-tipped blades with these saws.

The repair program applies to model 315.23730 and 315.23731 "Craftsman Motorized Miter Saws." The numbers can be found on a plate on the saw motor. Sears has been selling the saws nationwide from July 1978 through June 1980 for approximately $200.

To obtain a free repair kit, complete with installation instructions, consumers should contact their local Sears retail store or call toll-free 800-845 4781. Anyone wishing to verify the brand name or the model numbers should contact CPSC's toll-free Hotline at 800-638-8326; in Maryland, 800-492-8363; and in Alaska, Hawaii, Puerto Rico and the Virgin Islands, 800-638-8333.

This information was obtained through the Safety and Environmental Protection Division.

## Sitar Concert At Berkner

Shalil Shankar, one of India's most popular and outstanding sitar players, will give a BERA-sponsored concert in Berkner Hall on Friday, October 10, at 8:30 p.m.

This young musician is following in the footsteps of the world-famous Ravi Shankar from whom he learned his art. Shalil Shankar has travelled extensively in Europe, Afica, the Middle East and Russia, where he has played to enthusiastic audiences. His skill as a performer, coupled with his understanding of western music, have made him highly successful in interpreting the highly emotional and complex classical music of India to western listerners. Described as the "Ambassador of Indian Music Abroad," he believes in music as the universal language which does not require a special knowledge, only "sensitivity, feeling and love for it."

Fashioned from a seasoned gourd and wood, the sitar is a modified version of the ancient instrument, Veena, and has existed for about 700 years with slight changes in form. It has a track of 20 metal frets with six main playing strings above them, and 13 sympathetic resonating strings placed below.

Shalil Shankar

The melody forms, called Raagas, are based on 72 parent scales. There are hundreds of Raagas, all associated with different phases of the day and night, or the seasons, and each has a principle of its own. The sitar is tuned to the Raaga being played. During the concert, Shankar will explain the Raaga he has selected.

Admission is $3.00. Tickets will be available at the door and, in advance, through the following: Jagdish Dalal, Ext. 7790; Subrata Ghoshroy, Ext. 4641, or Debu Majumdar, Ext. 7103, and the BERA Sales Office at Berkner Hall.

## How's Your Math?

Tutorial classes in basic math are conducted on Wednesdays, in the classroom of Building 179. The sessions are preparation for college math or technical courses, and textbooks are provided. Enrollment is always open, and class times depend on demand. For information, call Le Roy Jefferson, Ext. 2527 on Wednesdays from 9 a.m. to 5 p.m.

## Lung Clearance (Continued)

caused by two different clearance mechanisms removing particles from the same anatomical compartment in the lung, not a single clearance mechanism operating in two different areas, one deeper than the other.

### Impaired Clearance

Data collected on cigarette smokers told a different story. In five out of the eight smokers, the fast clearance phase was non-existent. In six out of eight, the slow phase was increased by various amounts.

Three smokers did have fast clearance phases, but two of them had stopped smoking just before the study began, and one had been a light smoker for a short time.

Bohning's data on smokers indicate that in the first few years of smoking, the slow phase of long term clearance is little affected, but begins to show signs of impairment after a few years (4.8 years here). The slow phase was retarded about 15 days for every pack-year of cigarette smoking.

Although the smokers and ex-smokers might represent different populations, the study suggests that if a person quits smoking before developing a lung disease, the fast phase will reappear almost immediately, and the slow phase will gradually return to normal.

The people with COLD suffered from different kinds of respiratory problems – allergies, bronchitis, emphysema and pulmonary fibrosis. Although generalizations are inappropriate for such a small group with diverse ailments, on the whole, they did show suppressed fast phases and lengthened slow phases.

Earlier this month, Bohning presented his research results at the Fifth International Symposium on Inhaled Particles in Wales. This meeting is held once every five years, and brings researchers together to discuss health effects of inhaled particles. Bohning hopes his study will generate further research in this area.

## Theater Buffs

The Theater Group is actively seeking new members. If you are interested in performing or in helping in any capacity back stage, please contact us. WE NEED YOU!

Our next play will be "6 Rms Riv Vu." Performance dates are January 16, 17, 23 and 24. Tryouts are Wednesday and Thursday, October 1 and 2, 8 p.m., Berkner Hall.

Please contact the following people for information on this play or the Theater Group. Sandi Lane, Ext. 7159, Director and Vice President; Liz Russell, Ext. 3940, Producer and Secretary; or Tony Fainberg, Ext. 2920, President.

## Learn FORTRAN

A course entitled Introduction To Computing Through The Use Of FORTRAN is scheduled for Monday and Wednesday mornings from 9:00-10:30 starting October 20. The course is designed to introduce the attendee to problem solving techniquies using the computers at the Central Scientific Computing Facility through the FORTRAN programming language. No previous knowledge of programming or familiarity with computers is required.

The course will be given in the AMD Seminar Room, Building 515. All interested persons are to call Ronald Wittlock at ext. 4112 to register for the course.

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## Runner's Corner

A number of entries have already been received for the October 5, Jack Baer Memorial 10 km Race. Participants are reminded that pre-registration ends on October 1st. While a late registration will take place on the day of the race, runners are urged to enter early. The race is open to the public and all runners, walkers, and joggers are cordially invited to attend. The course has been accurately-wheeled and the race will be electronically timed. Medals will be awarded to the top five finishers in each of the 16 age categories. All runners will receive accurate times, places and complete race results. Applications can be obtained from the gym locker room or by contacting Ted Landry (318), Bill Thomlinson (510B), or Gus Prince (197D). A final meeting of race committee chairmen will be held September 30 at noon in Building 318. Volunteers are asked to contact Thomlinson or Landry for assignments.

New York City Marathon preparations are heating up as the October 26 race draws near. Runners and spectators are reminded that bus (John Ferrero - 134C) and hotel reservations (Gus Prince - 197D) must be made as soon as possible. There are still seats available, but they are going fast.

## Cafeteria Menu

**Week Ending October 3, 1980**

| | | |
|---|---|---|
| **Monday, September 29** | | |
| Barley mushroom soup | (cup) | .45 |
| | (bowl) | .55 |
| Roast top round of beef & 1 veg. | | 1.50 |
| Chopstick tuna w/miniature egg roll | | 1.50 |
| Hot Deli – Hot pastrami | (on bread) | 1.50 |
| | (on roll) | 1.60 |
| **Tuesday, September 30** | | |
| Potato leek soup | (cup) | .45 |
| | (bowl) | .55 |
| Grilled liver & bacon w/sautéd onions | | 1.45 |
| Sliced London broil & 1 veg. | | 1.65 |
| Hot Deli – Ham & cheddar melt | (on bread) | 1.50 |
| | (on roll) | 1.65 |
| **Wednesday, October 1** | | |
| Cream of cauliflower | (cup) | .50 |
| | (bowl) | .60 |
| Roasted breast of turkey w/stuffing & 1 veg. | | 1.55 |
| Veal parmesan & 1 veg. | | 1.55 |
| Hot Deli – Smoked tongue | (on bread) | 1.55 |
| | (on roll) | 1.65 |
| **Thursday, October 2** | | |
| Oxtail vegetable soup | (cup) | .50 |
| | (bowl) | .60 |
| Country fried steak & gravy w/1 veg. | | 1.55 |
| Scalloped ham & potatoes | | 1.45 |
| Hot Deli – Meatball & pepper hero | (on bread) | 1.45 |
| | (on roll) | 1.55 |
| **Friday, October 3** | | |
| New England clam chowder | (cup) | .50 |
| | (bowl) | .60 |
| Seafood paella | | 1.60 |
| Sauerbraten w/gravy & & potato pancakes | | 1.55 |
| Hot Deli – Smoked baked ham | (on bread) | 1.45 |
| | (on roll) | 1.55 |

## Service Awards

The following employees will receive service awards during the month of September, 1980.

**Thirty Years**

Clara A. Bjerknes.....Biology
Richard D. Stoner.....Medical

**Twenty-Five Years**

Donald C. Borg.....Medical
Nicholas Cipolla, Jr.....Plant Engrg.
Dorothy M. Dioguardo.....Medical
Joseph P. Disparti.....Plant Engrg.
John D. Langfeldt.....Accelerator
Lawrence B. Leipuner.....Physics
Thomas W. Morris.....Accerlator
Waldemar O. Sorenson.....Plant Engrg.
Joseph M. Titmus.....Safety & Env. Prot.
Howard Vetter.....Accelerator

**Twenty Years**

Nicholas C. Combatti.....Biology
Philip L. Connolly.....Physics
Mary Kish.....Plant Engrg.
Josephine Nobile.....Safety & Env. Prot.
Joseph A. Weynand.....Admin. Systems & Data Processing

**Ten Years**

Herbert J. Bernstein.....Chemistry
Carole L. Kerr.....Medical
Frank E. Paige, Jr.....Physics
Lydia Schlichtcroll.....Medical

## Golf

The final tournament of the BGA golf season will be held on Monday, October 6 at the Riverhead, Suffolk County Golf Course. There will be a $4 greens fee and a $1 entry fee. Assigned tee off times will begin at 11:30. Send entry fee to Ron Webster, Building 526, ext. 2845 by October 1. BGA tourments are open to all employees, their spouse, and retired employees.

Thirty-two golfers took part in the fifth tournament held at the Rock Hill Country Club. George Korhut won the closest to the pin contest and low gross for 18 holes with a 80. Bob Glasmann won low net for 18 holes with a70. Other winners were: longest drive and low gross - front 9, Peter Bond (37); low net - front 9, Tom Iarocci (34); four golfers tied for low gross - back 9, Les Lawrence, Tom Romano, Eldon Schmidt and Brant Johnson (45); and two golfers tied for low net - back 9, Rick Murgatroyd and Andy Huber (37).

Mort Rosen

Pete Fennelly, Carpentry Supervisor, discusses blue prints for a new pavilion with its builders, Plant Engineering apprentices (from left) T.J. Reddick, Jr., Wayne Hulse, Bruce Laakmann and Donald Hicks.

## Shelter In The Woods

This past summer a unique training program was set up for the carpenter and cabinet maker apprentices in the Plant Engineering Division.

When BERA made plans to build a permanent outdoor pavilion at the Recreation Park, it was suggested that the apprentices take on the project, with BERA paying for building materials. Donald Hicks, Wayne Hulse and T.J. Reddick, Jr., carpenter apprentices, and Bruce Laakmann, cabinet maker apprentice, began work in June.

They used plans for a 20 by 30-foot, hip roofed pavilion drawn up by engineers in the division. Under the guidance of Pete Fennelly, Carpentry Supervisor, the apprentices worked on the pavilion off and on during the summer, between other projects. Fennelly said this one was special because it gave them practical building experience on a large-scale. They were so enthusiastic that they did some fine detailing like beveling corners of posts and cutting curves into braces.

Employees who use the park will now find a well constructed, attractive addition.

## Mountain Club

The Mountain Club is planning a backpacking trip to Mt. Marcy in the Adirondacks for the weekend of October 3-5. Anyone interested should contact Dave Crowther, Ext. 3403 or Steve Spencer, Ext. 3401.

## Islanders Tickets

Tickets for the 1980-81 regular Islanders hockey season will go on sale at the Film Service Office on Wednesday, October 1, at 8:00 a.m. BERA's 8 seats are again located in Sections 319J and 321A, and tickets are priced at $13 each (service charge included).

During the initial sale **only**, the following buying limitation will be enforced: An employee may buy a maximum of 8 tickets (either 2 tickets each for 4 games or 4 each for 2 games). After the first purchase is completed, the employee may, if he or she so desires, go to the end of the line and await another turn to buy an additional set of tickets as stated above.

**Schedule**

| | | | | | |
|---|---|---|---|---|---|
| October | | | January | | |
| Sat. | 11 | Boston | Sat. | 3 | Hartford |
| Tue. | 14 | St. Louis | Tue. | 6 | Toronto |
| Sat. | 18 | Edmonton | Sat. | 10 | Boston |
| Tue. | 21 | Vancouver | Tue. | 13 | Pittsburgh |
| Sat. | 25 | Philadelphia | Sat. | 17 | Washington |
| Tue. | 28 | Montreal | Tue. | 20 | Calgary |
| | | | Sat. | 24 | Quebec |
| November | | | Mon. | 26 | Buffalo |
| Sat. | 1 | Los Angeles | February | | |
| Tue. | 4 | Detroit | Tue. | 3 | Los Angeles |
| Sat. | 8 | Chicago | Sat. | 7 | Minnesota |
| Tue. | 11 | Minnesota | Sat. | 14 | St. Louis |
| Sat. | 15 | Buffalo | Tue. | 17 | Toronto |
| Thu. | 20 | Hartford | Sat. | 21 | Chicago |
| Sat. | 22 | Rangers | March | | |
| Tue. | 25 | Winnipeg | Tue. | | Edmonton |
| Sat. | 29 | Detroit | Sat. | 7 | Vancouver |
| | | | Sat. | 14 | Philadelphia |
| December | | | Tue. | 17 | Montreal |
| Tue. | 2 | Colorado | Sat. | 28 | Pittsburgh |
| Tue. | 16 | Winnipeg | April | | |
| Sat. | 20 | Quebec | Thu. | 2 | Rangers |
| Tue. | 23 | Calgary | Sat. | 4 | Washington |
| Tue. | 30 | Colorado | | | |

Note: At the time a purchase is made (for each 2 tickets bought) the **buyer's** name will be written in on a Master Ticket Sales Record. At the end of the regular season, if the Islanders again reach the desired playoff-championship position, only those names on the sales record will be eligible for the ticket buying drawing.

## Bowling

**Red League**

The Old Timers won 8 - 3 over the Old Timers II with W. Reams bowling (213) 608 gross. The Strangers split 6 - 5 with the 76'ers. W. Vanzweinen bowled a (239) for a 574-706 series. F. Pond had a 208, J. Petro (201) 621 gross, J. Connelly 602 gross, J. Morris 600. The Freon Loaders lost 11 to the Sparks. The Sandbaggers managed 3 against the Pinball Wizards with C. Bohnenblusch bowling a (212-210) for a 594-660 series. The Designers lost 11 to the Trouble Shooters with E. Sperry bowling a (203) 635 gross. This Isa Team lost 11 to the Blue Jays with S. Kiss grossing 604.

**Purple & White League**

Ed Meier took high game for the men with a 248 and Sharon Creveling for the women with a 196. Other good games were bowled by Ed Franz 202, Caryl MacDougall 191, Pat Manzella 190, Gail Schuman 189, Sharon Smith 189, Karen Jacobs 182.

**Green League**

The Sparks took 11 from the Freon Loaders with J. Cockrane bowling a 208. The Trouble Shooters, tied for first, took 11 from the Designers with R. Scheidet bowling a 207. The Blue Jays took 11 from This Isa Team. The Pinball Wizards took 8 from the Sandbaggers with T. Prach bowling a 215-662 gross. The Light Source took 7 from the Phoubars with N. Tyler having a 212. The Old Timers II could only salvage 3 from the Old Timers.

## Selected Reading

**Long Island Forum Vol. XLIII No. 9 September 1980**
The peripatetic Mr. Talkhouse. E. H. Shepherd 184-88+

**New Sci. 87 No. 1218, September 11, 1980**
Industrial China's expensive dirt. C. Joyce. 772-5

**Newsweek XCVI No. 11, September 15, 1980**
A tide of born-again politics. A. J. Mayer, et al. 28-9+

**U.S. News & World Rport LXXXX No. 12, September 22, 1980**
Burdens of empire: Too much for Kremlin? 28-30

# 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, with preference to those within the immediate work group; (2) present employees within the Laboratory as a whole; and (3) outside applicants.

The determination of the best-qualified candidate for available positions will be based upon education, experience and other job-related criteria. Such factors will be evaluated and measured against the demonstrable requirements of the available vacancy, as well as the Laboratory's Affirmative Action objectives.

The Laboratory is committed to a policy of Equal Opportunity in its selection and placement of personnel. Its objective is equality of opportunity in employment, training, and promotion without regard to race, color, religion, national origin, sex, age or handicap.

Each week, the Personnel Office lists new personnel placement requisitions. The purpose of these listings is, first, to provide open placement information on all nonscientific 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, as indicated below. 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 Personnel Placement Supervisor, Ext. 2882.

**POSITIONS OPEN:** Scientific. The following staff positions are open. Candidates may apply directly to the department representative named, or through the Office of Scientific Personnel, Ext. 3338.

CHEMICAL ENGINEER - Recent Ph.D. for separations research and development. Contact: Dr. F.B. Hill, Department of Energy & Environment, Bldg. 815.

BIOLOGIST - Ph.D. in mammalian or cellular physiology to join group evaluating the toxicity and mutagenicity of environmental pollutants. Contact: Dr. D.C. Borg, Chairman, Medical Department.

PHYSICAL CHEMIST - Recent Ph.D. with background in gas-phase chemical kinetics, and working knowledge of fast-flow reactors, flash photolysis techniques and vacuum ultra-violet spectroscopy. Contact: Dr. R.B. Klemm, Department of Energy & Environment, Bldg. 527.

POSTDOCTORAL RESEARCH ASSOCIATE - Ph.D. in cell physiology or related discipline to work on project developing new approaches to probing biochemistry and physiology *in vivo* using tracers labeled with positron emitting radionuclides. Contact: Dr. A.P. Wolf, Chemistry Department.

POSTDOCTORAL RESEARCH ASSOCIATE - Ph.D. in organic chemistry to work in ultra micro synthesis of new compounds. Contact: Dr. J. Hudis, Chairman, Chemistry Department.

**LABORATORY RECRUITMENT:** Opportunity, for present Laboratory employees.

1466. CLERICAL POSITION - Requires good organizational skills and previous experience in an office/clerical environment. Duties will include handling purchase orders, ILR's, warehouse contracts and stock inventory. Instrumentation Division.

1467. HEAVY EQUIPMENT MECHANIC OPERATOR (Group Leader) - Plant Engineering Division.

**OPEN RECRUITMENT:** Opportunity for present Laboratory employees and outside applicants.

1468. ELECTRONICS ENGINEER - Requires BSEE or equivalent with professional background in high voltage pulsed power techniques and in the design and test of a broad range of prototype analog and digital circuits. Accelerator Department/ISABELLE Project.

1469. STRUCTURAL DESIGN ENGINEER - Requires BSCE or AE or equivalent and substantial professional experience in structural analysis. Will be responsible for preparation of preliminary sketches, specifications, working drawings and estimates associated with the erection of, and modifications to, buildings and structures. Plant Engineering Division.

1470. HEALTH PHYSICS ASSOCIATE - Requires BS in radiation protection or health physics or equivalent with strong background in mathematics and physics. Experience should include bioassay, internal dosimetry and computer programming. **Must** be willing to travel one to two months per year. Marshall Islands Radiological Safety Programs. Safety and Environmental Protection Division.

1471. TECHNICAL POSITION - Requires AAS degree or equivalent experience in electronic technology with a good background in analog and digital circuit construction and testing. Will construct, troubleshoot and maintain particle detectors and beam control instrumentation. Accelerator Department.

1472. PATENT ATTORNEY - Patent experience is required and demonstrated management ability is desirable. Will be responsible for all phases of patent activities, including review of publications for patent potential, preparation of patent disclosures, and preparation and prosecution of patent applications. Legal Office/Director's Office.

1473. SENIOR STANDARDS INSPECTOR - Requires significant experience in all phases of mechanical inspection especially optical tooling. Proficiency with use of inspection equipment and non-destructive testing equipment and a basic knowledge of metals, machining, welding, and sheet metal fabrication is essential. Will perform all phases of in-process and acceptance inspection of purchased and Laboratory fabricated parts and equipment. Central Shops Division.

## Autos & Auto Supplies

78 HONDA XL125 - on/off road, low mileage, excel cond. $600. Ext. 2926 or 281-0268.

72 BUICK - wgn, full power, low mileage, clean inside and out, a/c. $800. 281-4242 or 399-0132.

69 ECONOLINE - "Open Road Style," porta-potti, gas stove and heat, ice box and sink, closets and fold down bed. $1,500. 281-0360.

69 HARLEY DAVIDSON - XLH, elect start. Larry, 698-6307 eves.

JUMPER CABLES - $4; car stands, $4/pr; snow chains for 78-13 tires or similar, $10. George, Ext. 3373.

77 FORD - 250 super cab w/cap, CB and am/fm 8 trk. $4,000. 475-3632.

73 CHEVY - pick up, rebuilt 350-V8, 4 spd, w/cap, excel running cond. $1,600. Tom, Ext. 2959.

68 CAMARO - 327 V8, p/s, p/b, stereo, new brakes, snows on rims, good cond. $900. Nancy, 261-2719 after 5 or Ext. 4226.

74 MAVERICK - good gas mileage, excel mechanically, 92,000 mi, must sell. Ext. 2840 or 3243 weekdays.

HOLLEY CARB - 4 bbl, model 4160. $50. Ext. 2022 or 727-9058.

TIRE - on 12" Toyota rim. $7. Ext. 4121.

CUSTOM CAP - and insert, 8' bed, includes 30 lb ice box and porta pottie. $800. 281-2186.

71 OLDS - Delta, 4 dr sedan, 92,000 mi, p/s, p/b, a/c, excel cond. $450. Dave, Ext. 7206.

74 DODGE - Charger, small V8, a/t, am/fm tape. $950. Ext. 2521 or 928-8379 eves.

75 BUICK - Le Sabre, custom landau, am/fm 8 trk, low mileage, showroom cond, must see. LeRoy, Ext. 4581 or 286-1615.

SNOW TIRES - (2) H78-15, w/w, studded. $30. Walter, Ext. 3397.

69 FORD - Falcon sta wgn, 6 cyl, p/s, p/b, economical, good running eng. $300. 727-7806 after 6 pm.

68 CHRYSLER - Newport, good cond. $350. Ext. 3031 or 7107.

TRAILER HITCH - for VW Rabbit. Cost $60; sell for $30. Bill, Ext. 2434 or 475-8710.

SNOW TIRES - (2) studded, BB, mounted on GM rims, good mileage left. $55 each. Alyce, Ext. 2902.

REAR BUMPER - 1973 pick up, step type, new. Ext. 4223.

72 VW BUS - good cond, sunroof, extras. $1,500. 286-3509.

TIRE - Goodyear radial tire w/Ford wheel ER78-14, like new. $95. Tony, 399-2816 after 6 pm.

72 VW SUPERBEETLE - reliable, some rust, otherwise very good, rebuilt engine, new battery. Ext. 7743 or 286-0252 after 6 pm.

75 CHEVY - Malibu, 4 dr, a/c, a/t, 91,000 mi, good car. $1,950. 286-8517 after 5:45 pm.

MAG WHEELS - (4) 14" chrome, 4 hole. $45/set. Bill, Ext. 3355 or 472-4684 after 6 pm.

71 PLYMOUTH - sta wgn, 318 cu in., good cond. $500. E. Edwards, Ext. 4027 or 286-1121.

WHEEL COVERS - 4 full chrome covers for 14" wheels, like new. $12. Bob, 289-0413.

73 PLYMOUTH - Fury ht, 318 auto, p/s, p/b, a/c, new brakes, very good cond. $900. 821-0695.

74 JEEP - pick up, 4 wd, auto, fm, camper model, tranny cooler. Mike, 585-8809 eves.

74 CHEVY - Impala, auto, p/s, p/b, mint cond, garaged, extras. $1,800. Ext. 3284 or 744-9429 after 6.

78 HONDA - 750K, excel cond, extras, 2400 mi. $2,000. Dave, Ext. 4597 or 286-1074.

74 FORD - truck w/large cap built on, mech good, must sell. $800. Jack, 286-0851.

SNOW TIRES - A78-13 only 3,000 mi, two for $30. Rau, Ext. 3830.

76 VEGA - high mi, good mpg. $850 or make offer. George, Ext. 3373.

56 CHRYSLER - sedan, small V8, auto, p/s, runs excel, body very solid and decent. $1050. H. Sauter, Ext. 3783.

74 CHEVY - Caprice, a/c, p/b, p/s, reg gas, 94,000 mi. $900. Ext. 3106.

73 PLYMOUTH-VALIANT Duster, 6 cyl, pls, a/t, am/fm radio. $850. Sen-Sung Tsai, Ext. 2435 or 928-4517.

69 VW BEETLE - running condition, good body, needs some work. $650. Chris, Ext. 2907

## Boats & Marine Supplies

14' BARBOUR - wooden boat, sanded, needs painting. $350. Irene, Ext. 3656.

22' HOUSEBOAT - 65 hp, ob, sleeps 2, in water Amityville. $1,750. Ext. 3654 or 735-2299 after 6 pm.

19' RENKEN - 85 hp Evinrude, motor boat 1971, motor 1976, new galv trailer. $1,800. Lou, 744-5511.

## Yard Sales

YARD SALE - group yard and garage sale, Sept 26 thru 28th. No. Halsey Manor Rd, Manorville.

YARD SALE - Sept 27 and 28. 144 Hallock Landing Rd, Rocky Pt. Moving, lots must go. Dan, 821-1268.

YARD SALE - contents of house, Sept 27 and 28. 464 Auborn Ave, Shirley. Furniture, powertools, hardware, tires, refrig, woodstove, etc.

YARD SALE - (Moving) Sept 27 and 28. Livingston Rd, Bellport. Furniture, clothes, toys, etc.

## Miscellaneous

TV - 19" b&w Sylvania, plays well, solid state. $65. Ken Asselta, Ext. 4581.

PENNIES - Indian head in rolls of 50. $25 per roll and up. Les, Ext. 4074.

COAL/WOOD STOVE - brown porcelain, American made. $40. Ted, Ext. 4163 or 281-9497.

DRUM SET - dbl snare and tom-toms, Zildjan cymbals, Ludwig heads, throne, cases, covers, many extras. $300. 589-1069 after 6 pm.

WALNUT CABINET - contemporary, holds 200 lp records or use for storage, very good cond. $125. Bill, Ext. 3848 or 698-3145.

KEROSENE HEATERS - all models, now is the time to prepare for a cold winter. 757-3178.

BROILER OVEN - elect knife, drink mixer, louver doors: (2) 79½x18, (2) 79½x20, Othello game. John, Ext. 7995.

ELECTRIC DRYER - GE program, 16-18 lbs, cap, Avacado, 6 yrs old. $100. Joe, Ext. 4661.

FIREPLACE SCREENS - black w/matching irons 38" wide 29" high, 2 sets available, like new. 567-8752 after 5 pm.

CRIB MATTRESS - $20; stroller, $5; child's carseat, $10; child's bicycle seat, $4. Paul, Ext. 4156.

BAVARIAN CHINA - 2 cups (saucer) cake plates never used; new guitar, case, strap, books, used for months. $55. 878-2591.

RUG - 4 x 12, gold acrilan, $15; plastic runner 12 ft, $3; Books of Knowledge, complete set. $25. Ann, 286-2280.

FREE - 7 yr old, spayed female beagle, adorable, excel w/children. Gary, 924-7480 eves.

MOTORCYCLE JACKET - new cond, black, European style, size 48, must sell. Paid $160, asking $125. Sheldon, Ext. 3354.

TOP COAT - men's all weather, brown, fur collar, fur lined, size 44, never worn. $25. Ext. 3771 or 878-1471.

ELECTRONICS TECHNOLOGY COURSE - Bell and Howell Schools, 10 volumes complete. $25. Dick, 878-1580.

HEATER - travel iron; roller skates; skateboard; hamburger maker; misc toys. Ext. 3027.

KEROSENE HEATER - Aladdin J280, new unit still in orig carton. Manufacturer's suggested retail price, $159.95, asking $110. Ext. 3060 or 744-4787.

LAWN MOWER - Craftsman 22" self-propelled w/grass catcher, good working cond but needs new handle. $25. 698-3856.

SHIH-TZU PUPPIES - AKC reg, Champion line. Ext. 4212 or 929-4631.

POOL COVER - for 28' round pool. $25. 581-4238.

BICYCLE - boy's 20" Schwinn Stirg Ray, excel cond. $40. 744-3744.

CANNING JARS - (glass top) quarts. Ext. 2907.

BEE-KEEPING EQUIPMENT - 2 hives of bees, (2½ story), spare supers, tools, suit, veil, books. $300. Many frames and boxes cheap. Herb, 878-2827.

WOODSTOVE - Efel airtight, 1 yr old, glass fireview door, excel cond. $295. John, Ext. 4255 or 929-4450.

POOL - upground 18' round perfect cond and access. $150. Dick, Ext. 7635 or 689-8605.

FIREWOOD - split seasoned oak 4' x 16' x 18". $110. Delivered. 924-4284 after 5:30.

ANTIQUE BUFFET - laminated front, 48" l. w/wall mirror, excel cond. $85. Pat, Ext. 2452.

BED FRAME - full size steel frame, new, never used. $10. Tom, Ext. 2959.

BICYCLE - boy's 20", 3 spd Ross Apollo, $30. Ranjit, 345-3177 Fri after 3 pm, Sat and Sun all day.

DISHES - complete service for 8 (61 pieces) Saxony Stoneware, dishwasher safe, heat resistant, excel cond. 473-8171.

SINGLE BED - w/mattress and box spring; double bed; reclining chair; sofa & matching chair; floor lamp; hassock; folding bed w/matt. G. Fales, Ext. 2971.

ANTIQUE TRUNK - large 20" x 34" x 22" w/tray inside. 475-0918.

CAMERAS - Instamatic model 48, $40; Basic Instamatic, $20. 286-3742 eves and weekends.

BEDSPREAD - Colonial blue/white print, king size, quilted w/3 pair of matching foam lined 84" draperies. $50. Ext. 4695, 744-1917.

BABY ITEMS - crib, high chair, changing table, all excel cond. 698-3856.

TYPEWRITER - Royal manual, $20; washer, Sears heavy duty, $170; dryer, $120; two love seats, $50 ea; desk, $50. Peter, Ext. 3695.

VERMONT CASTINGS - top exit, Defiant wood burning stove, 1 yr old. $500. 758-9058 after 6 pm.

BORGHESE COAT - women's size 10, fur collar, excel cond. $100. Rose, 665-6959 after 6.

SLIDE RULE - Pickett 10 in., like new, never used. Dave, Ext. 4173 or 281-6248.

HOUSE CONTENTS - clothes, books, wood packing boxes, Castro. Available Oct 1. 732-5166.

VELVET COUCH - $95; kitchen table, chairs, $20; chest, $15; many more. Sen-Sungtsai, 928-4517.

MIXER - table top, $4; artist easel, $5. Susan, Ext. 4207.

SLIDE VIEWER - $3.50; baby jumper, $2. Sue, Ext. 4267.

## Real Estate

**Real Estate advertised for sale or rent is available without regard for the race, color, creed or national origin of the applicant.**

## For Sale

SHOREHAM - 3 bdrm tri-level, 2 bath, D/R, playroom, den, beamed L/R w/fp, deck, covered patio, ¾ acre, oil HWH, low taxes. Assumable mortg. $60,000. 929-3515.

MASTIC BEACH - 3 bdrm ranch, corner lot, roofed patio, pleasant location near water. Low 30's 281-7531.

BELLPORT VILLAGE - 3 bdrm high ranch, L/R, Fam rm, den, lg. eik, att. gar., deck, 1½ baths, short walk to Kreamer St. school. $42,000. 286-8166.

WESTHAMPTON AREA - mobile home, 12'x60', 2 bdrms, eik, stove, refrig, washer/dryer, laundry rm, 2 tool sheds, porch, patio, wooded landscaped plot. $11,500. 325-1112 after 5 p.m.

SHOREHAM - Lg. 4 bdrm, 2½ bath Colonial, wooded ⅓ acre lot on quiet street, 2 car garage, eik, fam rm w/fp, excel school dist, low taxes, north of 25A. $59,900. 744-4787.

STONY BROOK - 8 rms Colonial, 2½ baths, 2 car garage, expanded kit, 3 Vill. Schools. c/a, c/v, fp, re-insulation, 6% assumable mortg. $63,000. 246-7139 or 689-9409 eves.

MT SINAI - 3 bdrm Hi-ranch, fam rm, fp, patio, eik, 1½ baths, 100x150 (⅓ acre) semi wooded lot, 20 min. from Lab, oil HW, 10 yrs. old, many extras. $35,500. Ext. 7764 or 473-0548.

SHOREHAM - 4 bdrms, 2 baths, lg patio, fenced 3/10 acre, bsmt. $45,000. 929-8685.

## For Rent

E. SETAUKET - Studio apt. in priv. house in quiet neighborhood, priv. ent, w/w carpeting, fp, central a/c, util. $275/mo. Security .751-7491 after 5.

BROOKHAVEN HAMLET - 3 bdrm ranch, garage, near bay, 10 mi. to Lab. $350/mo. plus security. Ext. 3381 or AT 6-1024.

SHOREHAM - 2 bdrm furnished house on 1 acre, 10 min. from Lab. $350/mo. Immediate. Ext. 2115.

FLORIDA - Seminole, W Coast, 2 bdrm furnished house in retirement area. Winter/yearly. 475-0002 after 6.

VERMONT CHALET - minutes to Ski Bromley, Magic, Stratton. XC priv. ski trails, ice skating, modern complete facilities, stone fp, beautifully furn., Rent: weekend, week or special alternate week season. 757-5599 after 4 p.m.

PT. JEFFERSON VILLAGE - 3 bdrm ranch, L/R, D/R, fam rm, eik, fin. bsmt, furn. beautifully, 2 yr. lease desired. Ext. 4074 or 928-0829 after 6 p.m.

YAPHANK - sublet studio apt. on lake, priv., wood burning stove, avail. Oct. 1st. $225/mo. plus elec. Debbie, Ext. 3146.

HAMPTON BAYS - 1 bdrm house, w/w, fp. 728-2104 after 6 p.m.

MIDDLE ISLAND - spacious furn. rm in quiet home & neighborhood, some priviliges. 15 min. from Lab. 698-4622.

MIDDLE ISLAND - furn. rooms, 12 min. from Lab., 1 block from Spring Lake Golf Course, priv. ent., util, refrigerator, washer/dryer, cooking facilities can be arranged. 333-2640. Ext. 225 (days), 924-7444 (after 7 p.m.).

## Car Pools

FARMINGDALE - looking to join or form car pool. Ext. 2115.

E. SETAUKET/PT. JEFFERSON - Cadillac or equiv; 5th member for existing car pool. Ext. 3327.

SAYVILLE - resident seeking car pool. Will share driving. Mike, Ext. 7652 or 589-3705.

BLUE POINT/WEST PATCHOGUE - 5th person for car pool. G. Strickland, Ext. 4091.

## Lost & Found

LOST - prescription sun glasses (bi-focal) in container marked "Gilden & Assoc." Please contact B. Rifkin, Ext. 2491.

## Wanted

HOME - for Old English Sheepdog, 10 mos old male, well trained, very affectionate, needs some space. Ext. 4157 or 929-3579.

USED BOAT - for 14 yr old, 14-16' w/motor, less than $300. 286-8521.

ELECTRONICS - old radios, TV's transceivers, etc. Wanted for parts. Ext. 2667.

HOME - for an attractive black & white cat recently abandoned by his owner. Ext. 3184 or 924-3677.

USED LAWN MOWERS - and garden equipment, need not be working. Also need used tent. 878-2454.

ADDRESS - for Pfaelzer Bros. Midwest Specialty house - meat, fish, poultry, cheese. Must contact. D. Ripperger, 286-0247.

LARGE DOG HOUSE - for large German Shepherd, will transport. Peg, Ext. 3716 or 475-0656.

HOMES - for kittens, adorable, come from a good line of mousers. 325-1298.

TV - 15" or 19" b&w, good working cond; also table range w/2 burners. Ann, Ext. 4959.

SADDLE BAGS - hard plastic bags for Honda motorcycle. Ext. 3372.

MANUAL TRANSMISSION - Plymouth or Dodge. Reasonable. Frank Rumph, Ext. 4581 or 588-3565.

DRAFTING TABLE - preferably folding type. George, Ext. 3636 or 7597.

RIDE - to Stony Brook from BNL at 8:00 am (M,W.F) and at noon (Tues, Thurs) and back in the eves. Sonali, Ext. 3090 eves.

14-17' SLOOP - for Great South Bay. Ext. 3336.

FLUTE - either Gemeinhardt or Armstrong. Chuck, Ext. 4481.

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**Ads left out of this issue due to lack of space need not be re-submitted to appear in next week's issue. Please note that ads may not be more than 15 words long and must be received in the Bulletin office by 4:30 p.m. Friday, for inclusion in the following week's Bulletin.**

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**Classified Ad Policy Deadline is 4:30 p.m. Friday for publication Friday of the next week.**