

Nuclear Waste Focus of New Division

Charged by the Nuclear Regulatory Commission to assist in the development of criteria and standards for the best method of isolating nuclear waste, BNL has formed a Nuclear Waste Management Division within DNE, which will have this task as its sole responsibility. The announcement was made last week by DNE Associate, Chairman, Walter Kato.

Chief of the new division is Donald G. Schweitzer, a chemist who comes to his

Cooled Reactor Safety Division of DNE.

Replacing Schweitzer in the latter capacity is Cesar Sastre, who also joined the BNL scientific staff in 1955 and is highly experienced in the HTGR Safety field.

The new division will assist the NRC in the management of low level wastes, and in a new program dealing with high level nuclear wastes, with emphasis on what is known as multi-barrier management. This consists of developing the best materials for the several levels of the containment package, quality assurance and testing the integrity of the waste package. According to Schweitzer, the intensive effort to be made in this direction represents an anticipated trend from the geologic site as the main barrier, to a multi-barrier approach.

Staffing the division will be a multi-disciplinary group consisting of chemists, physicists, engineers, heat transfer specialists, a bacteriologist and metallurgists. "Materials science will be a very important aspect of the whole program," says Schweitzer. A good part of the staff will be drawn from DNE and DEE, augmented by other people from around the country who are experienced in nuclear waste management.

It is anticipated that building 830 will soon house the entire staff. It is currently occupied only by the Nuclear Waste Management Research Group, headed by Peter Colombo, which will continue its studies of low level radioactive wastes under the newly created division.



Donald Schweitzer

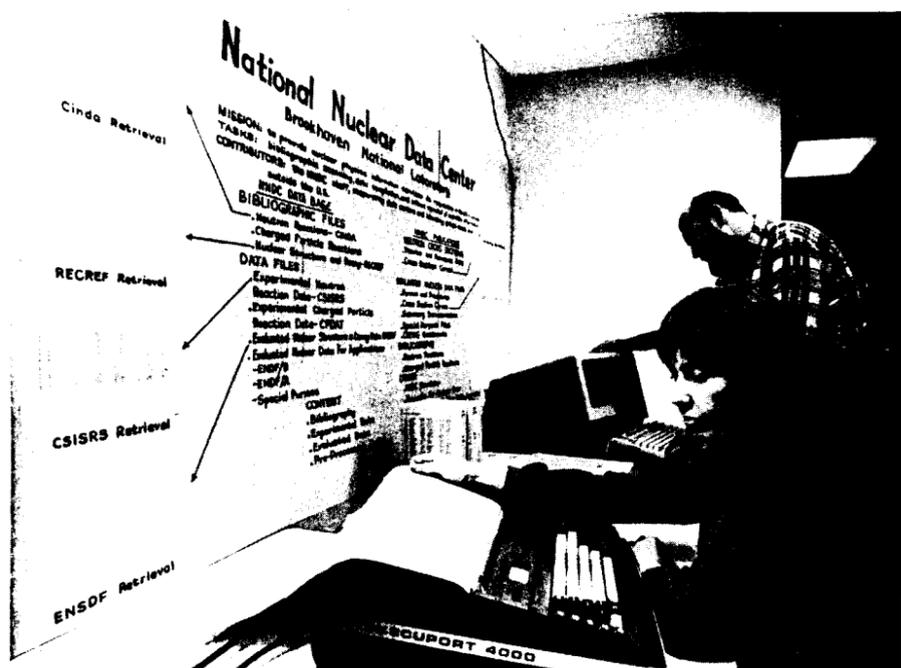
Doug Humphrey

new post with a wide range of research experience. Schweitzer, whose Ph.D. is in photochemistry, came to Brookhaven in 1955 and started off in corrosion studies for the then Nuclear Engineering Dept. He went from there to radiation damage in graphite, and progressed to developing annealing procedures for air-cooled reactors, research which resulted in extending the lifetime of these reactors indefinitely. He then did some work in demography, followed by five or six years devoted to the study of superconductivity. Since 1974 he has headed the High Temperature Gas-

Scholarships Increased

Parents and students will be pleased to learn that at their recent meeting, the AUI Trustees voted an increase in amount of the AUI scholarships. Beginning with the 1980-81 academic year, the scholarship awards will be increased from \$1,250 to \$1,500 per year. The increase will apply not only to the winners of the 1980 scholarships, but also to previous winners who have not yet completed their approved programs.

NNDC At A Glance



—photo by Humphrey

Before leaving for the University of Tennessee in Knoxville, Vicki McLane and Bob Kinsley of DNE's National Nuclear Data Center checked the exhibit which was displayed this week at the International Conference on Nuclear Cross Sections for Technology. Included in the exhibit were examples of the Center's publications, and a remote terminal to the Center's computer located at BNL to permit on-line queries of their data bases by scientists attending the meeting. Others from the Center who participated in the conference were: Sol Pearlstein, Director, Charles Dunford, Tom Burrows, Mike

Fanelli, Norman Holden, Gus Prince, and Gail Waite.

The Center supplies nuclear reaction and nuclear structure information to the scientific and engineering community. This information is used for nuclear power reactor design, waste management and safety studies, as well as in such other fields as medicine, geology, and space exploration. The data is collected by the Data Center from its own compilation and evaluation activities and via international exchange agreements with other nuclear data centers.



Sam Morris

—photo by Humphrey

Working With The Odds

A newspaper headline reads: "Record number of 437 women hired this year by General Manufacturing." Do you say hurrah for the cause of women? Or do you wonder about the types of jobs they filled, their salary rate, or percentage of women in the company's total work force?

Statistics is the science of assembling, classifying and tabulating data. Numbers can be very persuasive. They can also be misleading.

Sam Morris is a scientist in the National Center for Analysis of Energy Systems, under Leonard Hamilton's Biomedical Environmental Assessment Division, BEAD. He studies health impacts of energy and makes predictions about health effects.

All the work done by BEAD is channeled into the U.S. Department of Energy and provides it with information to consider when making decisions on energy. "We tell DOE what is known and what is not known," said Morris. "We also give the range of scientific judgment on a particular health effects question."

Morris does not go out and gather numbers, but uses other people's data in his analyses. He even takes other people's analyses and links them together. Because statistics are so important to his work, Morris is keenly aware of how they can be misused and misinterpreted.

Why are statistics not straightforward?

"First, let's take a classical NIH study based on good data," said Morris. In a study of coke oven workers on health effects of coal, scientists were able to show that these people have a higher cancer rate. "In fact, coke oven workers have a cancer rate seven times above average. Seven times! If they were only twice as high, it would be difficult to make such a definitive statement," he said.

"That is why studies on health effects of air pollution are so controversial," said Morris. "With air pollution, we are talking about a relatively small increase in mortality rate - on the order of a few percent at most. How can we be sure that the observable effect is not due to random variation, chance?"

According to Morris, some air pollution studies show a health effect. Others, similar in nature, show no effect. "So it is possible that if we observe an effect, it might have been due to something other than air pollution," said Morris. "For example, differences in smoking habits and errors in measurements. The best we can do is take into account all the information we are aware of and try to estimate the odds. What is the probability of no effect? What is the probability of a big effect?"

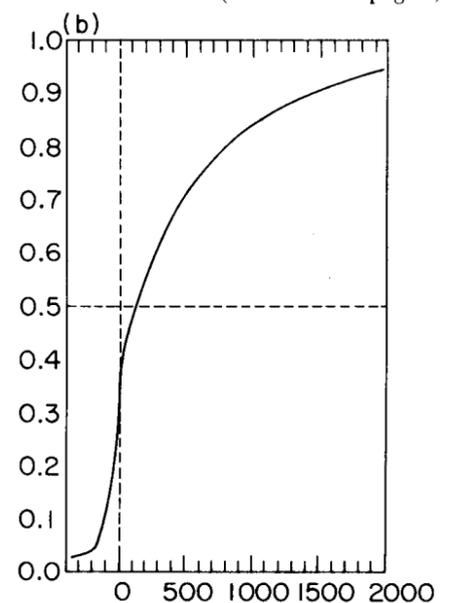
It is important that the full range of scientific judgment gets factored in. So when Morris makes predictions, he always speaks about a range. "Sometimes, that range is very large. Sometimes it even includes zero. But it takes into account uncertainty."

Most people like single number answers, since it is easier to base a decision on a "best" answer. Morris says that "best" ans-

wers do not convey to the decision maker a range of error. For example, compare these two statements: 1) "Brookhaven scientists estimate that 50,000 deaths will result from an increased use of coal." 2) "Increased use of coal might lead to health impacts reflected in the mortality rate, and that might be anywhere from zero to 80,000." According to Morris, the first statement uses the midpoint number in a range of numbers. One might argue that it is therefore a fair number. But the second statement conveys the range of uncertainty and is a truer statement.

When data is controversial, as in the case of air pollution studies, Morris tries to find out why different investigators have reached different conclusions. "We try to backtrack these different judgments and find out why this scientist has concluded something different from that scientist." If Morris discov-

(Continued on page 2)



Graph showing health impacts of billion watt coal-fired power plant. This is from a 1978 BNL analysis of potential health impacts within 80 kilometers of a plant with particulate air pollution controls but with no sulfur controls. The vertical axis is a probability scale (0% to 100%). The horizontal axis represents the number of person-years lost annually. (For example, the average life span of an American male is 72 years. If a man dies at age 60, 12 person-years are lost.) To read the graph, pick any point on the curve. Where the curve intersects the horizontal dotted line, there is a 50% probability that fewer than 150 annual person-years are lost. Higher up on the curve, one can see that there is an 85% probability that fewer than 1000 annual person-years are lost. Negative values, that portion of the curve to the left of the vertical dotted line, reflect the possibility that air pollution may have no health impact. Even if Morris were asked, "is air pollution beneficial?" he could not say, in a statistical sense, "absolutely not." He would reply, "not very probable."

Graph from M.G. Morgan, S.C. Morris, A.K. Meier, D.L. Shenk, *Energy Systems and Policy*, 2:287-309, 1978 (BNL 23581).



Last year, a Director's Award was established to honor the department or division which obtains the highest number of contributors to the United Way. In 1978, Contracts and Procurement and the Fiscal Division topped the list with 100% participation. With Associate Director Vincent O'Leary and Director George Vineyard, are the United Way Coordinators who worked hard to achieve this distinction - Rosalie Piccione (DCP) and Josephine Gazzola (Fiscal). Each year the names of department or division winners will be inscribed on the plaque which hangs in Berkner Hall. —photo by Humphrey

Give Today To United Way

Today is the start of the 1979 BNL United Way campaign. A memorandum from the Director and pledge cards are in the mail. Your contribution will go toward the support of over 100 services, including day care centers for children of working parents, rehabilitation and employment for handicapped persons, foster and institutional care for youngsters from broken homes, neighborhood centers with diversified adult and youth programs and activities, and emergency aid in times of community-wide or personal disasters.

Last year, Brookhaven received a United Way award of Achievement, which recognizes those employee groups which have significantly increased their participation and support during the campaign. Let's do even better this year.

Rosalie Piccione has been selected as the 1979 campaign chairman, and following is a list of department/division coordinators who will be arranging for the showing of the 1979 United Way film, and will be glad to answer your questions.

Department	Coordinator	Ext.
Accelerator (incl. ISA and NSLS)	Helen Keeley	4719
AMD	Mary Kosak	4132
ASDP	Bob Moore	7784
AUI	Josephine Gazzola	2456
Biology	Ben Scala	3392
Chemistry	Elaine Rowland	4357
DCP	Roseann Chiuchiolo	7794
DEE	Betty Pergan	2937
Director's Office	Sherry Ince	7992
DNE	Larry Fuller	2923
Fiscal	Josephine Gazzola	2456
Instrumentation	Cheryl Williams	4228
Medical	Ken Mohring	3564
Personnel	Diane Grady	2871
Photo & G.A.	Ella McLean	2388
Plant Engineering	Lou Harson	2472
Physics	Robin Maragioglio	3872
Reactors	Robert Fuchs	4400
S & EP	Jerry Levine	4212
Shops	Ernest Jochen	3357
S & M	Louis DiCarlo	2302
Staff Services	Joan Perullo	2525
Tech. Info.	Audrey Blake	3489

Speakers Bureau October

James Guppy (DNE), Rotary Club of Moriches, "Nuclear Power: Its Benefits and Risks in Perspective," October 4.

Meyer Steinberg (DEE), Business Action Group of Suffolk County, "The Energy Problem and Some R&D Solutions," October 8.

Irwin Lewis (AMD), Long Island Computer Users Society, "Microcomputers as an Adjunct to a Large Computing Center," October 9.

R.C. Anderson (DO), Great Neck Chapter of Hadassah, "Everything You Wanted to Know about Energy but Were Afraid to Ask," October 9.

R.C. Anderson (DO), William Casey (S&EP), Vance Sailor (DEE), Old South Haven Presbyterian Church, Forum on Nuclear Energy, October 14.

Walter Kato (DNE), Nuclear Club of Wall Street, "Lessons Learned at Three Mile Island," October 19.

Walter Kato (DNE), Chemistry Teachers' Club of New York, "Nuclear Accident at Three Mile Island," October 19.

William Graves (DEE), Town of Islip Energy Conservation Fair, "Long Island Solar Energy," October 19.

Call For Needlecraft

Just a reminder that the BNL Hospital-ity Committee is looking for various items illustrating different types of needlecraft (crewel, embroidery, needlepoint, applique, etc.) to display at their fall Tea and Sherry Party, which will be held Thursday, November 15, at the Brookhaven Center. If you have any items you would like to lend the Committee, please call Jane Love, 286-1136, or Leah Gasser, 744-8334. It will be greatly appreciated.

AUI Business

W. Donald Cooke, Vice President for Research, Cornell University, was elected last week to a two-year term as Chairman of the AUI Board of Trustees. He has been a member of the Board since October 1974.

Cooke replaces Robert G. Jahn, Dean of the School of Engineering and Applied Science at Princeton, who has served as chairman since October 1977. Jahn will continue as a University Trustee.

Newly elected as a University Trustee was Robert H. Dicke, Albert Einstein University Professor of Science at Princeton University.

At the Trustees' dinner, October 17, Dr. Jahn presented a 20 year service award to William H. Sweet, University Trustee from Harvard, and a 30-year award to Maurice Goldhaber, AUI Distinguished Scientist. Jahn also presented Princeton commemorative plates to two people whom, he said, "really run the offices." - to Lois Chew, Administrative Assistant, at the AUI Washington headquarters, and to Carol Roberts, Executive Secretary at the BNL office of AUI.

Preschoolers Wanted

The Upton Nursery School has openings for 3-year-olds and 4-year-olds. The Nursery School is a cooperative, run by BNL employees, and has classes two or three mornings per week at the Recreation Building. For information, contact Kassie Ruth, 744-2444, or Diedre Trondle, 878-1280.

The regular monthly meeting of the Nursery School Board will take place on Wednesday, November 7th, at 8:00 p.m. in the Lounge of the Recreation Building. All parents are invited to attend.

Statistics

(Cont'd)

ers that they are looking at different kinds of data, then he evaluates the relative weight of the data and decides if it is appropriate for the question at hand. "Maybe we should weigh one set of data over the other. Or maybe it's just a different way to look at a problem. All of this defines the range."

Occasionally, Morris encounters researchers who have reached different conclusions, but based on the same set of data. "This happens, for example, in studies on radon emissions from mill tailings," said Morris. "Some studies say it is not a problem, while some say it is the major cause of cancer in the nuclear fuel cycle. What's happened here is that one researcher considers effects over the next 100 years, while the other extrapolates over infinity."

In statistics, nothing says how far out into the future one should project. "I think that is a philosophical problem," said Morris. "It's silly to have one scientist talk about negligible effects and another talk about a tremendous effect and then ask a decision maker to choose one over the other. In a case like this, we make our health effects predictions on a per year basis and let the decision maker choose how far out into the future he or she wants to worry about." Morris feels that he should provide only analytical and technical information. Political and social decisions are made by politicians.

Another kind of problem occurs when combining two different statistical analyses. "With the big push on energy conservation," said Morris, "We have started to see problems of air pollution associated with conservation."

Morris said that a few years ago, a typical house might have had two or three air changes an hour. From an engineering point of view, it is possible to seal up a house almost totally. Certainly, that is desirable for energy conservation.

"But you probably would create some harmful health effects," said Morris. In houses with gas ranges, high levels of carbon monoxide and nitrogen oxide can build up. These numbers have been measured both in experimental kitchens and in real houses, and they are higher than the EPA short term ambient air standards set for outdoors.

"Does that bring the air quality standards into question?" said Morris. "Either we should be concerned about these high indoor levels, or we should not be as much concerned with high outdoor levels." This does not mean that you should not seal up your house. It means that there is a trade-off. Morris advises that as people tighten up their homes, they should be careful about venting major sources of pollution.

In Morris's work, classical statistical methods rarely apply. "People usually don't arrange themselves neatly in ways that allow for good data gathering. We work with pieces of information and are required to make the jump from narrow issues that the data addresses to the broader issues in which the policy maker is interested."

"The classical statistical approach is to take a normally distributed set of data, estimate the mean of the data, then calculate the confidence interval," said Morris. "But since we work mostly with incomplete data, we have to fill in the holes by interpretation and extrapolation. That involves making judgments, but as much as possible, we go back to the scientists closest to the original data, the people who actually collected the numbers. We ask them to fill in the gaps."

Sociologists have studied how pollsters can influence answers by how they ask questions and even how the questions are worded. Most of these studies, however, are geared to approaching the man on the street for an answer off the top of his head. "What about scientists?" said Morris. "When they are asked questions, can they, too, be influenced by the form of the question and the manner in which it is asked? How does this affect their judgment, which is supposedly based on sound, objective thinking. Are scientists people, too?"

Scientists are accustomed to being asked for a "best estimate." But when Morris asks a scientist for an opinion, he asks instead for a range and an estimate of probabilities for each number in that range. Then he graphs the scientist's response on a curve that represents the range and probabilities. When shown a graph, the scientist may revise his or her answer. Morris also confronts

the scientist with opposing viewpoints. Again the scientist rethinks his or her position. "This is our current method for eliciting responses from scientists, while guarding against biasing their answers," he said.

Once Morris has the opinions of experts, he integrates and consolidates their judgments. "The people in BEAD are themselves knowledgeable in various fields and are qualified to make those evaluations," he said.

All policy makers must make decisions. "Even if they take no action," noted Morris, "That is a decision." Morris tries to provide the decision-maker with as much scientific information as possible, along with scientific judgment on this information. "But again, we only provide scientific and technical information," said Morris. "The political, social and philosophical choices are made by the decision maker."

So the next time you see a flashy number in a headline, think twice about its true meaning. In mathematics, two plus two always equals four. But in statistics, there is never a single answer.

Retiring



William F. Elasiak, a Master Welder in Central Shops, who has been with the Laboratory for 22 years, will retire on October 31. In his job as Master Welder, he has welded everything from pipe joints to heavy equipment anywhere on site. Now, he and his wife are relocating to Florida where they plan to do a lot of square dancing, golfing and fishing. —photo by Rosen

Service Awards

The following employees will receive service awards during the month of October.

Thirty Years

Irving J. Polk.....Accelerator
Robert R. Wessel.....Accelerator

Twenty-Five Years

Eugene P. Cronkite.....Medical
Albert G. Holtz.....Energy & Env.
David C. Rahm.....Physics

Twenty Years

Mieczyslaw J. Koson.....Accelerator
Ruth Petit.....Fiscal
Alice S. Trubisz.....Fiscal

Ten Years

Bernice W. Armstrong.....Medical
Gerard M. Blackford.....Director's Ofc.
Donald M. Lazarus.....Accelerator
Roger C. Lee.....Physics
David T. McGrath.....Plant Engrg.
Ronald R. Picinich.....Accelerator
Rose E. Woodson.....Staff Services

Arrivals & Departures

Arrivals

Jay W. Adams.....Nuclear Energy
Clarence S. Campbell.....Accelerator
Wickham F. Case, Jr......Physics
Ralph N. McDowall.....Plant Engrg.
Sherie Michale.....Accelerator
Iona Moore.....Ph. & Gr. Arts
Lucian Wielopolski.....Medical

Departures

Adelaide Faljoni-Alario.....Biology
Stephen G. Hausrath.....Biology
Cheryl A. Namy.....Biology

BROOKHAVEN BULLETIN

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CARL R. THIEN, Public Relations Officer

Cafeteria Menu Week Ending November 2

Monday, October 29	
Corn chowder	(cup) .45 (bowl) .55
Beef chop sucy on rice	1.35
Scrambled eggs, sausages & fr. fr.	1.25
Hot Deli - Roasted turkey breast	(on bread) 1.40 (on roll) 1.50
Tuesday, October 30	
Beef noodle soup	(cup) .35 (bowl) .45
Grilled ham steak w/raisin sauce & 1 veg.	1.35
Chicken cacciatore w/noodles	1.35
Hot Deli - Veal pattie & peppers hero	1.35
Wednesday, October 31	
Cream of potato soup	(cup) .45 (bowl) .55
Braised meatballs à la mode w/buttered noodles	1.40
Broiled fillet w/fr. fr.	1.35
Hot Deli - Roast sirloin of beef	(on bread) 1.45 (on roll) 1.55
Thursday, November 1	
Chicken noodle soup	(cup) .35 (bowl) .45
Cheese ravioli & 1 veg.	1.20
Sauerbraten and potato pancake	1.45
Hot Deli - Smoked baked ham	(on bread) 1.35 (on roll) 1.45
Friday, November 2	
Fish chowder	(cup) .45 (bowl) .55
Spaghetti w/clam sauce & garlic bread	1.25
Breaded pork chop w/apple sauce & 1 veg.	1.50
Hot Deli - Grilled reuben	1.40

Booo!

Halloween may be an unfamiliar custom to some on-site foreign visitors. On Wednesday, October 31, many children will dress in costume and go from door to door asking for treats.

If you live on site in the housing area and want children to come to your door, please turn on your porch light. Some of the children may also be carrying orange boxes, collecting money for the United Nations Children's Fund. If you have children who want to participate in the collection, they can get boxes from Eve or Michael, Apartment 28D, Ext. 2011.

At 7:00 p.m., on-site children and their parents are invited to conclude their trick or treat routes at Apartment 28D for cider, donuts and popcorn.

Halloween has its roots in the religious rites of the Druids, an order of priests in ancient Gaul and Britain. The Druids celebrated a harvest festival called Samhain, or summer's end. Bonfires were lit to scare away ghosts of the dead. From the Druids, comes the present-day use of witches, ghosts

Indoor Tennis

Commencing November 4, tennis players may reserve the gymnasium court for the following periods:

Tuesday	5 p.m. to 9:30 p.m.
Sunday	1 p.m. to 5:30 p.m.

Reservations can be made at the gymnasium no earlier than a week before play.

Some local indoor tennis clubs are offering special memberships to BNL employees. Check at the BERA Sales Office for details.

Make "Otherwise Engaged" One Of Your Engagements



Dave (Dennis Weygand), looking at Davina (Bonnie Biittner), looking at Simon (Tony Fainberg) arguing with wife Beth (Carrol Lasker). On the sidelines and out of it, is Simon's brother Stephen (Josh Kopp) lamenting his own problems. Come see them all in "Otherwise Engaged," a contemporary adult story of British society which is alternately hilarious and

poignant. The BERA Theatre Group will give four performances of its new production; November 2, 3, 9 and 10, at 8 p.m. in Berkner Hall. Tickets (\$3 general admission, \$2 students and senior citizens) are available at lunchtime at the cafeteria, and at the door. Reservations may be made by calling Ext. 2924.

—photos by Humphrey

Hockey Tickets

Tickets for the Islanders home games are still available for sale at the BERA Film Service Office. They include:

December 4	Vancouver
18	Colorado
22	Washington
January 5	St. Louis
8	Vancouver
12	Washington
15	Winnipeg
26	Hartford
29	Minnesota
February 9	Quebec
12	Winnipeg
21	Minnesota
March 4	Edmonton
11	Colorado
15	St. Louis
22	Chicago

Fall Back

Set your clocks back one hour, at 2 a.m., Sunday, October 28.

Soccer

Indoor soccer will start on Friday, November 2, at 5:00 p.m. in the gymnasium. This first meeting will consist of pick-up games and anyone interested in participating need only show up or call Ralph Fairchild, Ext. 3649, for information.



and cats in Halloween festivities.

In the ninth century, Christians set aside November 1 as All Saints' Day, to honor all saints. The evening before was called All Hallows Eve, which means "holy evening." This was eventually shortened to Halloween.

Halloween customs were brought to the United States by Irish and Scottish immigrants. The first jack-o-lanterns were carved by Irish from large potatoes or turnips.

Today, Halloween has lost its religious and supernatural symbolism. It is now a time of merrymaking and treats for children.

Badminton

It's almost time for the feathers to fly. The annual badminton ladder tournament will begin in early November. A sign up sheet will be posted in the gym on the badminton bulletin board.

Ladders are planned for singles and doubles. If there is enough response, an additional ladder will be arranged for mixed doubles.

Check the gym bulletin board for further information.

Volleyball

At a captains' meeting this past week, officers for the coming year were elected as follows:

President - Ken Sutter, Ext. 4514
Vice-President - Tom Owens, Ext. 2963
Secretary - John Nagy, Ext. 2667
Treasurer - Pat Oster, Ext. 4763

During the meeting, league structures were discussed. It was decided the Mixed League format of last year will be continued. Changes in the Employees' League will be:

- 1) renamed the Open League;
- 2) open to employees' spouses as well as employees;
- 3) split into divisions A & B. (Division A will be more competitive.) Both divisions will play under USVBA rules.

Rosters for all teams are due Friday, November 2. Send Mixed League rosters to Ken Sutter, Bldg. 703, and Open League rosters to Tom Owens, Bldg. 318. League play will begin on Monday, November 12.

The next captains' meeting is scheduled for Friday, November 2. Call Ken Sutter for time and place.

New York Train Trip

The Hospitality Committee is planning a group railroad trip to the city on Wednesday, November 7. Departure will be at 7:55 a.m. from the Patchogue LIRR station. Round-trip fare for adults is \$2.45, children under six years ride free.

Reserve a ticket by sending your fare through the U.S. mail to P.O. Box 322, Upton, New York 11973, no later than Thursday, November 1. Make checks payable to "Brookhaven National Laboratory." Your tickets will be given to you on the train. Refunds will be made only if cancellations are received by the Friday preceding the scheduled trip.

Bowling

Red League

The Old Timers skunked the Designers 11-0. J. Roesler had a 226/635 gross, W. Reams 221/629 gross and E. Hassell 612 gross. This Isa Team won 8-3 over the Freon Loaders. R. Barberich (187 average) had a 211/610 gross, A. White 203/624 gross, F. Hohmann 626 gross. The Strangers lost 4-7 to the Trouble Shooters. T. Romano grossed 605. The 76'ers only managed 3 against the Sparks. J. Connelly had a 609 gross. The Sandbaggers managed to split a game (1 1/2 pts.) with the Blue Jays, who knocked down 3152 sticks. E. Meier grossed 651 and A. Dick 648.

Pink League

The Pinsplitters destroyed the Lickety Splits. Maria Apelskog led the onslaught by bowling 158 pins over her average. She had help from Renie Rosati with a 471 series, Ellie Adams 160, and Sue Dougherty 154. Other good games were bowled by Fran Nusz 182, Pat Jencius 168, Pat Lebitski 167, Audrey Blake 155, Ginny Walker 154 and Joyce Nicholens 150. Thanks to the Pinsplitters, the Stars & Strikes are in first place by four points.

Green League

The Blue Jays took 9 1/2 points from the Sandbaggers having games of 1013, 1014 and 1125 for a 3152 gross series. M. Iarocci

Gymnasium Schedule

Effective Monday, October 29, 1979:

Monday	Mixed League Volleyball	5:00 - 9:30 p.m.
Tuesday	Tennis (per scheduled signup sheet)	5:00 - 9:30 p.m.
Wednesday	Open League Volleyball	5:00 - 9:30 p.m.
Thursday	Basketball League	5:00 - 9:30 p.m.
Friday	Indoor Soccer League	5:00 - 7:30 p.m.
	Karate Club	7:30 - 9:30 p.m.
Saturday	Badminton & Volleyball	10:00 a.m. - 1:00 p.m.
	Organized BERA Activity	1:00 - 5:30 p.m.
Sunday	Tennis (per scheduled signup sheet)	1:00 - 5:30 pm

The weight and exercise rooms are open for use Monday through Saturday during scheduled gym hours when there is an attendant on duty.

The weeknight closing at 9:30 p.m. and the Saturday and Sunday closing at 5:30 p.m. will be strictly enforced except on those rare occasions when there is an unavoidable delay in league play.

One guest per on-site employee is permitted at the gymnasium. Advance arrangements for additional guests (but not more than five at any one time) may be made at the Recreation Office.

Bridge

The Duplicate Bridge Club is becoming more active as more players join its Thursday evening games. Last week's winners were: David and Lillian Jellinger, Bob Whisker and Bill Sherry, Debu Majumdar and Sachi Dhar, and Bob and Judy Mills.

A Christmas Tournament is planned, so come and practice for the event. People at all levels of expertise are welcome.

had a 211, N. Parrinello 215, H. Marshall 210/205 for a 579 series and 687 gross. The Trouble Shooters moved into second as they took 7 from the Strangers. M. Angelone had a 204. The Light Source and Pinball Wizards split 6-5. The Sparks ousted the 76'ers for 8. W. Kristiansen had a 201. The Phoubars took the Old Timers II for 11.

Blue & Gold League

The Aquanauts held on to first place by sweeping all 7 points with Tom Romano rolling a 230 gross game and 623 gross series. Double Trouble took 7 to clinch the number two slot. Dick Adams had high game with a 196-527 series. Other nice games were bowled by Bob Bergoffen with a 219 gross game - 615 gross series. Joe Sheehan 226 gross game - 611 gross series and Walt Milian with a 495 scratch series. The ladies had a great night with Barbara Murgatroyd rolling a 220 gross game - 638 gross series and Mary Scheidet with a 601 gross series.

Purple & White League

The Good Times won all 7 moving them into first by 1 point. Ed Meier rolled a 592 series with high game of 229. Pat Lebitski's 205 was high game for the ladies. Other good games were Bob Jones 213/206, Gene Hassell 202, Bob Brown 200, Jim Griffin 200, Pat Manzella 199, Betty Jellett 197, Mary Autin 177.

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.

SCIENTIST - Ph.D. to work on optical problems in instrumentation for research with synchrotron radiation. Experience with diffraction grating optics desirable. Contact: Dr. Veljko Radeka, Head, Instrumentation Division.

POSTDOCTORAL RESEARCH ASSOCIATE - Three positions open in Chemistry Department: Radiation/photochemist to study conductivity and ionization in liquids; inorganic chemist to study reactions of transition metal complexes in aqueous solution; physical chemist to study electron transfer reactions using picosecond lasers. Contact: Dr. Jerome Hudis, Chairman, Chemistry Department.

LABORATORY RECRUITMENT: Opportunity for present Laboratory employees.

1137. CLERK TYPIST - Supply and Materiel Division.

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

1138. TECHNICAL POSITION (electro-mechanical) - Requires ability to work on public address amplifiers, telephone systems, motor controls and related equipment. Also 3-phase high current power experience is desirable. Accelerator Department.

Autos and Auto Supplies

77 CHEVY PU - 4 w/d, ps/pb, a/t, fully loaded, many extras, must be seen. 751-8608.

74 CHEVY IMPALA - white, 2 dr, all pwr. \$1500. J. Soler, 234-7225.

67 JEEP WAGONEER - 4 w/d, 6 cyl, good cond all around. \$650. Chuck, 585-6902, 8-10 p.m.

72 VW SQB - rebuilt eng, 23,000 mi, rebuilt a/t 3000 mi, excel cond, body very good, 25 mpg. \$1800. 472-1397.

TIRES - (4) Mich radial 185x14, good cond, \$25 ea; (1) 175x14, \$20. Warren, Ext. 3464, 399-2420.

67 OLDS VISTA CRUISER - a/t, ps/pb, clean, 2 snows on rims, runs well. \$250. Vinnie, 744-9429.

76 CHEVY BLAZER K5-350 - 4x4, spokes, all terrains, brush bar, roof rack, lights, stereo, extras. \$5395/ negotiable. 399-2070.

78 PINTO STA WGN - low mi, 2300cc, tinted glass, 4 spd stick, wsw, excel. \$3350. Gene, 744-4550 after 5:30.

72 MERC STA WGN - 351 ci, ps/pg, a/c, tow pkg, roof rack. \$300. 821-0695.

75 VW RABBIT - 60,000 orig mi. \$2350. Kurt, Ext. 4116.

SNOW TIRES - Goodyear G78-14 on Chevy rims, like new. \$50/pr. Ext. 3376.

TIRES - (2) Firestone Town & Country snows, used 2 winters, for Datsun, A78-13. \$24. Ext. 4046.

73 NOVA - 4 dr, 63,500 mi, ps/pb, AM/FM, a/t, 305 eng. Asking \$2050. Ext. 4058, 286-0436.

74 VW - like new, totally rebuilt, new paint, AM/FM stereo, must see. Ext. 2311, 325-9580.

CAR STEREO - "Solar" combination 8 trk & cassette. \$30. 924-6021 after 7.

65 FORD GALAXIE - 4 dr, 6 cyl, very good running cond, good tires + 2 practically new snows w/rims. Asking \$350 or best offer. Noreen, Ext. 2815, 727-9016.

76 HONDA - Super Sport 400, 4 cyl, new chain & continental tires, many extras, mint cond, \$1300; 2 Premium steel radial snow tires FR70-14, balanced on Ford wheels, \$60. 473-1456.

69 DODGE VAN - Sportsman A-100, 71 eng slant 6, a/t, windows, 4 new Firestone 500 tires + 2 snows, insulated, good cond. \$850. 744-1429.

74 DASHER - yellow, 2 dr, std, good cond, 100,00 mi. \$2000. Marj, Ext. 3396.

78 BMW - 320i, sunroof, AM/FM stereo cassette, 4 spd, 11,000 mi, 27 mpg, showroom cond. \$9750. John, Ext. 4255, 929-4450.

TIRES - (1) Goodrich belted G78-15, \$8; (1) Uniroyal steel belted radial L78-15, \$8. 331-2779.

72 DUSTER - good eng, tires, rear collision damage. \$200. Ext. 2493, 661-6078.

75 FIAT X19 - 4 spd, good on gas, 42,000 mi. \$2600/ flexible. Arlene, Ext. 7901.

74 AMC MATADOR - p/s, a/c, good cond, excel body, 54,000 mi. \$1300. G. Dioguardo, 654-1796 after 6.

71 AMC MATADOR - 117,000 mi, new trans, needs radiator repair & some body work on grill & hood, runs. \$100. Gail, 878-4664 after 5.

68 PONTIAC CATALINA - p/s, runs well. \$195. Ext. 7666, 724-3826 eves.

69 TRIUMPH SPITFIRE - h/tp, much recent work. \$400. Tony, Ext. 4126, 878-0653.

69 FORD CLUB WGN - 302 V8, 60,000 mi, new paint job, new trans, excel cond. Fred, 289-1085.

67 CAMARO - 3 spd a/t, 327-2 bbl, eng & trans excel cond. \$700. 928-7678.

4 WHEELS - 15"x6" wide, 6-hole on 5 1/2" BC w/3 1/2" center hole, fits GMC trucks, etc. \$12 ea, all 4/\$45. Bob, Ext. 4688, 744-5098.

70 OPEL GT - runs excel, new tires, exhaust. \$1300. Peter, 588-0424.

77 PINTO WGN - ps/pb, a/c, a/t. Asking \$3000. Ext. 2982, 363-6845.

74 PONTIAC CATALINA WGN - roof rack, a/t, ps/pb, a/c, pwr tailgate, AM/FM, rear spkrs, new tires, mounted snows, reg gas, excel. \$2150. Bruce, Ext. 3362, 924-4097.

76 PLYMOUTH VOLARE - Premier Sport Coupe, mint, low mi, a/t, ps/pb. \$2600. McGeary, Ext. 4662, 363-2796.

73 BUICK CENTURY - a/t, p/s, a/c, needs exhaust sys & some body work. \$500. Ext. 2626.

2 SNOW TIRES - C78-13 mounted on Toyota rims, used less than 1000 mi. Ext. 2423.

73 SUPER BEETLE VW - AM/FM, good cond but needs crankshaft. \$1100. 475-4258 after 6.

74 DATSUN 260Z - It green, radials, 4 spd, very good cond. \$3400. Ext. 4752, 669-0549.

71 OPEL 1900 WGN - rebuilt eng, good cond. Dave, Ext. 3403, 286-0703.

CUSHMAN MOTOR SCOOTER - registered same class as a moped, needs minor work, excel for around town use. \$100. Rick, Ext. 4437.

2 TIRES - L60-14, Indy profile, Mickey Thompson super wide. \$20. Vinnie, Ext. 3664.

SHOP MANUALS - 71 Pontiac Catalina, compl-eng, trans, elec & chassis. \$15. Bill, Ext. 2022.

79 FORD E150 - 124 Cargo Van, 351-V8, p/s, a/t, h.d. trailer tow, ext warr, extras, 540 mi. Ext. 2474, 924-7655 after 6.

76 CHEVY BLAZER K5-350 - 4x4 spokes, all-terrains, brush bar, roof rack, lights, stereo, extras. \$4900/ negotiable. 399-2070.

71 CHEVY CAPRICE - 4 dr, a/c, ps/pb, 2 new tires, 84,000 mi, excel cond. \$1600. Andy, Ext. 2424, 751-0453.

72 VW - new tires & snow, FM stereo, yellow/blk int, excel cond. \$1795. Barbara, 924-4298 after 6.

TIMING LIGHT - A-1 cond. \$20. Dinos, Ext. 4666.

70 PLYMOUTH - Sportabout Satellite sta wgn, low mi, immac cond, 18 mpg, boat carrying roof, new tires. \$650. Tien, 821-1296.

TIRE - Delta belted H78-14 tubeless w/w, very good, on Dodge rim. \$25. 744-1429.

SNOW TIRES - 78HR-15 w/w, Lee Magnagrip on GM wheels, used one season. \$60/pr. Ext. 2492.

72 EL CAMINO - 350ci, air shocks, good cond. Ext. 4278, 981-6092.

73 PANTHER SNOWMOBILE - very good shape, \$800; Meyers snow plow, elec/hyd, good shape, \$600. Ext. 281-6535.

72 LTD - avail now, ps/pb, a/c, radio. \$550. Ext. 4395, 653-4195.

72 PONTIAC STA WGN - excel cond, many new parts, a/c, p/s, p/d/b. \$1500. Steve, Ext. 4297, 924-8011.

68 AMERICAN MOTORS REBEL - needs some work. Best offer over \$150. Ext. 7755, 744-2558.

71 DODGE POLARA - new batt & tune-up, good trans. \$450. Kenny, 744-0764 after 6.

SNOW TIRES - new Michelin 165SR15. 2/\$90. Ext. 4727.

Boats & Marine Supplies

SAILFISH - mahog & fiberglass. \$250. Sue, 286-0407.

17' GRADY-WHITE - 1976, 85 hp Johnson, galv trailer, CB radio, all extras, will demo. 734-7584 after 6.

Miscellaneous

LIV RM SET - 3 pc sectional. \$100. 475-1548 after 6.

KING SIZE MATT - spring & frame, used but in good cond. Ext. 3570, 744-9746.

REFRIG - bottom drawer freezer, good cond. Ext. 4278, 981-6092.

ALUM DOOR - 36" wide w/storm windows & screens. \$12. Ext. 4341, 475-4005.

FURNACE - American Standard 725 ft radiation, oil or coal (needs grates), ret head burner. \$150. 286-0682 after 5:30.

MOUTON LAMB COAT - size 16, \$45; 1/2 size violin, \$30; new guitar, \$12; 18-cup drip pot, \$8. 472-1585.

FRUITWOOD COFFEE TABLE - end table, excel cond, \$25/set; rattan end table, excel cond, \$10; walnut end table, \$10. Judy, 698-4882 after 5:30.

SNOW BLOWER - & lawnmower combo, Toro pwr handle, good cond. Asking \$160. Joe, Ext. 4069.

SNOW BLOWER - 18" pwr drive, 2 1/2 hp, 4 cycle gas motor; 10 gal shop vac, \$10; air compressor, all compressor, all controls, \$35. Pete, GR5-0831.

RADIO & STEREO - Silvertone hi fi. \$50. Ext. 3082, 281-6535.

WROUGHT IRON KITCHEN SET - marble formica-top table, 4 hi-back chairs, \$75; steamer trunk, \$30. Karen, Ext. 3626, 286-0428.

CB POWER MIKE - Shure desk. \$40. Ext. 4289.

STATE OF THE ART - Sansui G-3000 stereo rcvr, still under warranty. \$180. Jim, Ext. 4605.

HOCKEY SKATES - Bauer men's size 10, like new, w/guards. Peter, Ext. 4340, 698-2088.

WOODEN OFFICE DESK - Ext. 3841, 286-9450.

METROPOLITAN OPERA TICKETS - Carmen (2) 11/15; Rosenkavalier (2) 12/13. Wilson, Ext. 4742.

LIV RM SET - excel cond, leaving country, must sell. \$400. Ext. 4457, 924-7079.

LAWN SWEEPER - Parker 30" for riding mowers, like new. Cost \$140, sell \$90. Bob, Ext. 4434.

WATER TANK - glass-lined, 30-gal cap, never used, \$30; (2) pressure cookers, 12 qt cap, h.d. alum, \$20 ea. Ext. 2265, 289-0567 after 6.

TYPEWRITER - old Underwood in good cond, needs ribbon, make offer. Ann, 286-2280.

PEERLESS GAS HEATER - 23"x12"x21", \$20; h.d. stone grinder w/8 stones, asking \$50. 751-2867.

DRESSER - w/mirror & matching night table, genuine wood, excel. \$70/negotiable. 698-7212.

1 HALF FARE COUPON - AA. \$30. Ext. 7635.

BEAUTIFUL TENOR SAX - plus case, good sound, good key action; JVC recorder/player; Sony stereo. Ext. 4514.

CB - 40 channel SSB/AM Courier Gladiator w/extras. \$175. Bill, Ext. 4605, 281-0557.

REFRIG/FREEZER - Hotpoint, 2 dr, runs well. \$50. 289-0413.

ALUM STORM WINDOWS - var sizes, \$10 ea; humidifier, used 1 season, \$50. Ext. 2497, 281-2767 eves.

FM ANTENNA - new. \$25. Walt, Ext. 3006, 821-9223.

CRAIG 6x9 CAR SPKRS - orig discount price, \$80; sale price \$40; 1 yr old. Ext. 7537.

Deadline Change

Beginning Friday, November 2, the deadline for submission of classified ads will be changed from Mondays at noon, to Fridays at 4:30 p.m., for inclusion in the following week's Bulletin. The current procedure concerning "space permitting" will still apply. If your ad does not appear, please do not resubmit as it will be published in the subsequent issue.

BEDRM SET - queen/full headboard, triple dresser w/mirror & chest, \$120; Zenith 25" console TV, excel cond, \$250. 924-0581.

TYPEWRITER - Smith Corona manual, wide carriage. \$35. G. Raynor, Ext. 2268, 727-5194.

DBL WINDOW - 6/6, 67 1/2"x38 1/2", excel cond. \$125. Bob, Ext. 3309, 289-1568 after 6.

PROFESSIONAL ROLLERS - for 10 spd bicycle, sealed bearings, speedometer, stand, excel. Asking \$75. John, Ext. 2461.

(1) HALF FARE TICKET - United Airlines. Ext. 2523.

STEREO SPKR SYSTEM - Leslie Plus-2, Model 430, \$650; Sansui AU 505 TU 505, \$350. George, Ext. 4837.

MAPLE TABLE - extends to 62", w/4 chairs, very sturdy, heavy, has 1 coat of paint. \$45. 727-1617.

26" BICYCLE - men's 10 spd Iverson, like new, \$60; 2 typewriters, good cond, \$40 ea. Smith, 588-3999.

PIANO - Yamaha grand, 6', walnut. Ext. 2621, 744-8334.

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 - 4 bedrm colonial, 2 1/2 baths, full bsmt, 2-car gar, 1 fenced acre. \$56,500. Jack, Ext. 3040, 744-2821.

ROCKY POINT - The Tides, ranch on treed 1/2 acre, newly reinsulated, 3 bedrms, L/R, D/R, den w/fp, eik, oak floors pine fin full bsmt, gar, patio, prvt beach, assumable 8 1/2% mtg. \$45,900. Ext. 2967, 821-9072.

MASTIC ACRES - countrified 3 bedrm ranch, L/R, D/R, eik, full bsmt, 24x24 att gar, approx 1 acre, landscaped, low taxes & overhead. \$34,990. Ext. 4328, 281-7085.

NO PATCHOGUE - 3 bedrm hi-ranch, fenced yard, improved ceiling insulation, patio, established landscaping, fam rm, D/R, all appl. \$40,000. Ext. 4442, 289-3399.

MASTIC BEACH - 1 bedrm house, ideal for business couple, lg L/R, kit & bathrm, sunporch, oversize gar, gas heat, low taxes. 281-7502.

MASTIC BEACH - Vet's specia, \$500 total cash to move in, squeaky clean, 6 rm ranch, treed plot, tons of extras. Ext. 2547, 281-5498.

ROCKY POINT - Ranch in the Tides, 3 bedrms, L/R, D/R, den w/fp, fin bsmt, gar, 1/2 acre, prvt beach, near shopping ctr, bank & school, many extras. Ext. 3911, 821-1810.

CORAM - Tanglewood Hills, 4 bedrms, 15x20 den w/fp, L/R, D/R w/w, eik, 2 baths, 2-car gar, fenced, 4 appl, 1/2 acre, gas heat, SD #12. Reduced to \$34,000. Ext. 3404, 698-4966.

BELLPORT - charming older home, prime loc, 4-5 bedrms, 3 baths, den, country kit, lg D/R, ent hall, fp, back staircase, front porch econ gas heat, 2-car gar, .6acre, walk to shops, beach, dock, golf, tennis. Mid 50's. Anne, Ext. 3404, 286-3764.

For Rent

ST JAMES - unfurn 2 bedrm house, kit, L/R, near shopping area, elec heat, individual rm thermostats. \$350/mo. Ext. 3826, 584-7958 eves.

WESTHAMPTON - furn rm for rent, incl util, share bath, kit, etc. \$35 security, \$35/wk. G. Privitera, Ext. 4590.

ROCKY POINT - 3 bedrm cape, 2 baths, full bsmt, 1 1/2-car gar, 1/2 acre, 2 appl. \$350 + util. Walt, Ext. 3006, 821-9223.

CORAM AREA - 1 bedrm apt, lg L/R, D/R, eik, avail Dec 1, 1979. Rent \$315. Ext. 2486.

MILLER PLACE - furn 2 bedrm apt, fp, prvt ent. \$375 incl all util, cable, central vac. Don, Ext. 3284, 928-3756 after 6.

WESTHAMPTON BEACH - 4 bedrm cape, att gar, fully furn, immed occupancy until 5/80. \$190/mo + util & security. Ext. 2352, 878-8967 after 6.

MANORVILLE - 1 bedrm, w/w, fp, a/c, storage shed, free country club facilities (tennis, pools, golf), avail Dec 1 or Jan 1. \$279/mo. Ext. 3431, 878-8874.

PATCHOGUE - 2 bedrm apt, gar, near shopping, etc. Ext. 4421, 289-0012.

CORAM - 1 bedrm apt in La Bonne Vie, assume present lease \$310/mo, perfect cond, excel opportunity at low cost. Ext. 2145, 736-2511.

Wanted

WOMAN'S BICYCLE - 3 spd, good cond. Tim, Ext. 7788, 698-9109.

JARS - wide mouth peanut butter, w/lids, 3 lb size or larger. George, Ext. 4191.

RESPONSIBLE BABYSITTER - in 3-Village area, will love & care for 2-yr old boy, full-time. Ext. 7591, 689-8548 after 6.

TRAILER - for 2000 lb 22' sailboat w/2' draft. Don, Ext. 4417, 286-1205.

HOUSEMATE - share lg unfurn house in Coram. \$155/mo + share util. 928-8379 after 6.

HIKING EQUIPMENT - backpack, tent, stove, etc. Bill, Ext. 3066.

BONSAI POT - any size, reasonable. Ext. 2616, 751-5868 eves.

CONV COUCH - or folding bed. Sandro, Ext. 4382/3111.

GLASS FIREPLACE DOORS - & bottle gas kit stove. Van, Ext. 2897.

NEW SURPLUS ROOF SHINGLES - to cover shed, 80 sq ft, reasonable please. W. Sanchez, Ext. 3848, 698-3145.

TOYOTA'S - 1968-72, any cond, reasonable. Bob, Ext. 2819, 289-0357.

VOICE LESSONS - for intermediate-level singer. Paul, Ext. 3553.

HOUSE - 2-3 bedrms, wooded area, buy or rent. 369-2151 after 6.

Car Pools

EAST PATCHOGUE - 8:30-5. Duke, Ext. 2012/2005.

WEST ISLIP - driver-rider opening in on-time car pool, 8:30-5. Ext. 2043.

MATTITUCK - driver/rider wanted to join existing 3-man car pool, normal hrs. Paul, Ext. 3277; Joe, Ext. 4863.

COMMACK - East Northport-Huntington areas, 8:30-5, drivers wanted. Ted, Ext. 4030.