BROOKHAVEN BULLETIN
Vol. 40 - No. 11 March 14, 1986
BROOKHAVEN NATIONAL LABORATORY

BNL Lecture
Shelf Life

During 1984, between February and April, Gil Rowe and other oceanographers spent time on a research vessel plying the waters between Martha's Vineyard and Long Island. It was no pleasure cruise. The weather was bitter and they were there to find out what happens to the phytoplankton produced during the spring bloom on the continental shelf.

On Wednesday, March 19, at 4:30 p.m., Gil Rowe, Department of Applied Science, will describe the experiment and what the oceanographers learned, in the next Brookhaven Lecture "Life and Death on the Continental Shelf." His talk will be illustrated with slides.

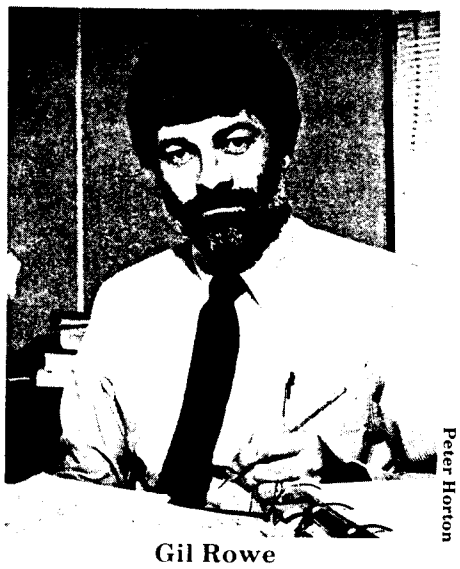
The original hypothesis, says Rowe, was that most of the phytoplankton went out to the deep ocean. Instead, the oceanographers discovered that a large percentage is eaten directly by zooplankton, or by bacteria and other microorganisms, after it settles in the mud on the shelf.

Their findings are actually related to a bigger issue: how do coastal shelves around the world absorb the byproducts of energy-related activities along the shores. For carbon, specifically, there has been a lot of controversy about where it comes from and where it goes, with terrestrial, atmospheric and oceanographic scientists all involved in the debate. While Rowe feels that the continental shelf is where substantial carbon dioxide is being consumed as the phytoplankton grow during the spring, the question now centers on whether intermittent winter storms blow the phytoplankton offshore to the deep sea, or whether the plant material is recycled in prolific continental shelf food chains.

Gil Rowe joined Brookhaven Lab in 1979, after spending ten years at the Woods Hole Oceanographic Institution. In the Division of Oceanographic Sciences at Brookhaven, he has been studying most recently the dynamics of benthos, organisms that live on or in the ocean bottom, with special emphasis on fluxes of carbon and nitrogen within the whole ocean ecosystem.

Because of the nature of his research, Rowe has had extensive experience on many oceanographic vessels. He has been all over the world on field expeditions, exploring the waters off such exotic locales as Peru, Africa and Alaska, as well as probing the depths in the Deep Submersible ALVIN.

He has served on the editorial boards of numerous marine journals and recently completed editing Volume 8 of The Sea. The volume summarizes recent ecological research in the deep sea. Rowe wrote chapters on instrumentation, biomass and zonation.


Peter Horton

Gil Rowe

Compact Synchrotron Technology Workshop

More Photons for the Factory

The target date of 1991 for the delivery of the first superconducting, compact light source dedicated to the production of integrated circuits was set at the Compact Synchrotron Technology Workshop at BNL on March 4-5. Sixty-six representatives of U.S. semiconductor and computer manufacturers, along with accelerator physicists from the National Synchrotron Light Source (NSLS) and elsewhere, came up with this deadline and organized a committee to agree to definite specifications for a scaled-down storage ring. The ring would be dedicated to mass producing advanced chips that are used in, among other things, the so-called super computers.

The meeting, the first of its kind in the United States, was BNL's response to the concern that individual U.S. semiconductor manufacturers would not be able to develop the compact synchrotron technology necessary to remain competitive in the world computer chip market without the help of the storage-ring design experts at the national laboratories. Cooperation is necessary, however, if U.S. semiconductor makers are to meet the challenge presented by the Japanese and West Germans, who are developing their own compact rings for x-ray lithography through governmental-industrial partnerships.

"We have to decide what the role of the national laboratories is," states NSLS Department Chairman Michael Knotek, "given that the NSLS is a national trust of expertise and equipment, and that we can act as a catalyst." The NSLS has one big advantage: Its existing linac-booster system could be used to inject electrons with energies from 50 to 750 million electron volts (MeV) into a compact ring under development. This injection system is busy only 30% of the time now that both NSLS rings are running well.

Some Rough Specs

Two working groups, one composed of machine designers and the other of users, separately came up with rough specifications for a superconducting storage ring six-meters in circumference, having a 600 MeV beam energy, five tesla magnetic field and a peak light output of ten angstroms wavelength. Their back-of-an-envelope calculations will be used by the workshop steering committee, whose final recommendations will be put before the U.S. Department of Energy (DOE).

"The lack of U.S. research and development in the fields of compact synchrotron technology and x-ray lithography has caused a near national emergency," explains NSLS Physicist Gwyn Williams, who had the idea for the workshop.

Semiconductor manufacturers are decreasing the size of the components

(Continued on page 2)

A Visitor's View
Alan Wilson, IBM

The Compact Synchrotron Technology Workshop, held at BNL last week, attracted U.S. computer and semiconductor manufacturers wanting to determine if the use of small storage rings in the manufacture of integrated circuits would make them more competitive in the world market. Such industrial giants as AT&T, Texas Instruments, Hewlett Packard and IBM sent representatives who discussed their wish lists for such a yet-to-be-built compact synchrotron that would be exclusively utilized for x-ray lithography. This is a process to replicate circuit patterns on silicon wafers, at present used only experimentally.

IBM's Alan Wilson, Manager of Chip Lithography of IBM's Research Division in Yorktown Heights, N.Y., raised the initial question, "Can x-ray lithography be justified?" and answered it with a qualified yes. IBM and Wilson are no strangers to the field of x-ray lithography and its potential use to make computer chips: IBM conducts and Wilson oversees x-ray lithography research on the U-6 beam line using soft x-rays from the vacuum ultraviolet (VUV) ring at the NSLS. According to Wilson, IBM is looking at x-ray lithography as a potential future manufacturing method.

"There may well be a need for x-ray lithography because optical lithography presents technical problems when we want to get below 0.5 microns in the size of the smallest component on a chip," says Wilson. As do other integrated circuit manufacturers, IBM mass produces its chips using standard optical lithography. To lower costs, increase resolution and make integrated circuits smaller, "Big Blue" is looking into lithographic methods using optics, electron beams, plasma x-ray or conventional and compact synchrotrons as their sources of light.

IBM cannot buy a compact ring at present because compact storage rings only exist on paper. Says Wilson, "IBM has developed many manufacturing tools, but though we have donated them to academic institutions, we have never sold them — we only sell computers and other business machines. We might build our own ring, if it is not otherwise available." That such rings might become available from nationally supported industrial consortia in Germany and Japan concerns Wilson. "I think it worries everyone in the semiconductor industry — all of us worry about losing the technology edge."

Peter Horton

(Left) Alan Wilson discusses IBM's x-ray lithography research at NSLS beam line U-6 with (center) Jerry Silverman and John Warlaumont.

"Even if we were not part of a national program, IBM would have an interest in the scientific community in accelerator physics at Brookhaven. We might use them as consultants or engage them in some proprietary way if we were to build our own compact ring," adds Wilson. Though an existing ring, such as the 51-meter in circumference VUV at the NSLS, could be duplicated at a cost of about $15 million now, instead of waiting until the projected date of 1990 for a six-meter compact ring, Wilson feels that the time it takes to develop compact storage ring technology will be worth the wait.

"If the ring is too large, it is very difficult to have installed," explains Wilson. "And because x-ray lithography is in the developmental stage, we would only need one or two exposure stations for several years. So we would be wasting a tremendous amount of space, and space is expensive in a semiconductor plant."

In addition, Wilson would prefer a ring that could be delivered already setup, aligned and tested, and that is not possible with large rings. A small ring could also be moved practically, if need be. "Lastly, if we had only one conventional synchrotron ring with, say, 32 beam lines for manufacturing, it would be undesirable from the standpoint of reliability. We would prefer four compact rings with eight lines each, so if one ring failed, we would lose only 25% of production, not all of it."

Wilson, along with Jerry Silverman, an IBM Research Staff Member working on U-6, and John Warlaumont, IBM Research Division Manager of X-Ray Lithography Exposures, participated in the users group, "to listen to the discussions of other potential users, like Texas Instruments and Bell Labs, to hear how they think and approach the problems involved in the technology. As IBM has invested quite substantially in our U-6 beam line, we participated in these technical discussions to be a good citizen. Everything we have said is essentially what we have published.

"The users group tried to formulate what a compact ring should look like from an x-ray lithographer's point of view," continues Wilson. The users wish list included that the ring provide a certain amount of flux, be of a manageable size, modular, and made from standardized parts, have fast recovery from failures, and be conservatively designed using well-proven technology. "Now that we have told the machine designers in what spectral range we want so many watts per centimeter squared on a silicon wafer, I feel we should let the accelerator physicists pick their best parameters to achieve the results we want."

— Marsha Belford

Workshop (Cont'd)

of integrated circuits used in computers to increase their speed and capability. As the dimensions of capacitors, resistors, diodes and transistors shrink below 0.5 microns, the use of ultraviolet light in a process called optical lithography to mass produce chips becomes more difficult. To make chips with more than 64 megabits of memory, shorter wavelength light, such as soft x-rays, must be used in the lithography process.

Such soft x-rays are produced by the vacuum ultraviolet (VUV) storage ring at the NSLS. One corporation, IBM, is using them to determine the capabilities of x-ray lithography in the replication of circuit patterns on silicon wafers. Only one other U.S. manufacturer of computer chips is conducting similar research, at the VUV ring at the University of Wisconsin-Madison, in collaboration with Solid State Physicist Franco Cerrina, who chaired the workshop's users group.

Foreign Efforts

Continues Williams, "In Japan and West Germany, the governments are sponsoring much of the x-ray lithography research and the compact synchrotron development. In addition, they are becoming partners with semiconductor corporations in companies that will manufacture, market and purchase compact synchrotrons."

According to Williams, though there is a market for about 100 compact light sources in this country, Japanese and West German compact synchrotron makers will first fill the demand within their own countries. This will leave U.S. semiconductor corporations standing on line while their Japanese and German counterparts become more competitive in the world market. And since the Japanese and West German semiconductor manufacturers are collaborating with the machine designers in their respective countries, the compact storage rings will be built to their specifications, not to those of U.S. corporations.

"The real question is: Does the U.S. want this technology to be based outside of this country?" says Williams. The answer is no.

It is essential that the U.S. not lose compact synchrotron technology since the chips that can be produced by x-ray lithography are used in the super computers which, among other things, control national defense systems. As Norman Kreisman, Technology Transfer Program Manager of the DOE Office of Energy Research, states, "The present condition of the super computer industry is a national risk: We do not have self-sufficiency. For example, at present there are no domestic suppliers of the most advanced dynamic random-access memory for our super computers: We are dependent upon Japan for these. Japan is emerging as a competitor in super computers, and we know we are not getting the best microcircuitry components from Japan."

Concludes Kreisman, "The outcome of the integrated circuit technology race will determine which country leads the science and technology world into the next generation."

Either/Or

While 1991 was the agreed delivery date for an industrial compact synchrotron, participants were not at all in agreement that a compact model was necessary and, if one were, that it require superconducting magnets. Superconducting magnets do not require the high beam energy that conventional magnets do to produce high-energy x-rays, like ten-angstrom soft x-rays. By using them, a ring can also be made smaller. Such magnets are not now used in conventional light sources, and developing the superconducting magnet technology alone was estimated to add three and a half years to the delivery date.

As NSLS Assistant Scientist Ben Craft, who chaired the machine designers group, flatly states, "A superconducting ring is a risk. I do not understand why a conventional-magnet ring, such as the 51-meter-in-circumference VUV ring, is too large for industry because it can be built today with considerable assurance that it will perform as expected. A conventional magnet for a conventional synchrotron can be obtained in 12 to 18 months, while the design alone for a superconducting magnet could take the same amount of time."

Users rebutted that conventional storage rings would be "overkill" for the industry because of their large size, large number of beam lines, sophisticated operating systems and unreliability. Craft pointed out, however, "Before a compact synchrotron can be designed, the demands of the x-ray lithographers have to stabilize."

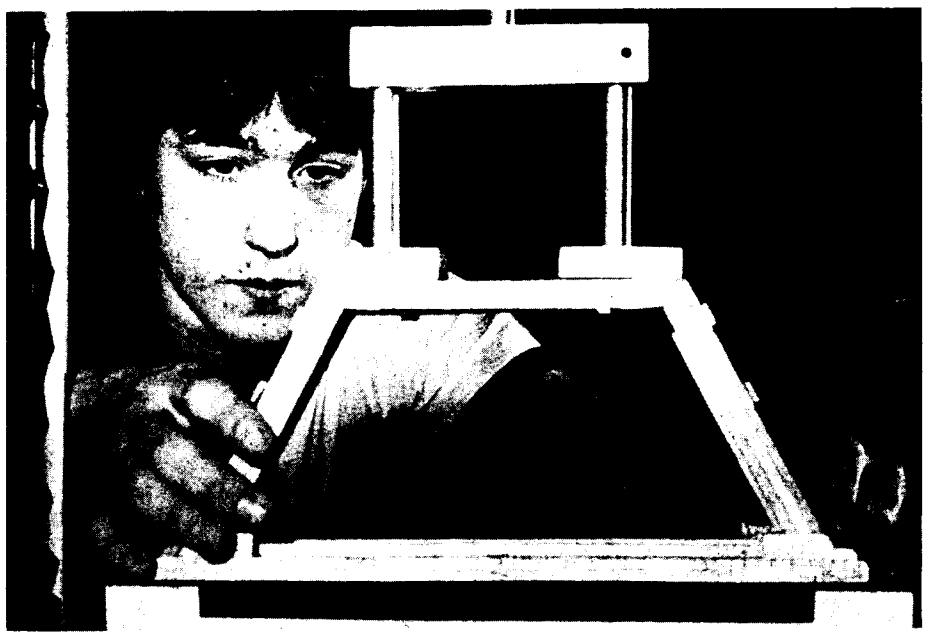
NSLS Department Chairman Michael Knotek concurred with Craft. "I think the semiconductor companies are holding themselves up by years by insisting only on a compact ring. And in doing so, they are putting themselves in a live-or-die situation with regard to the Germans and Japanese. While we are trying to catch up to the Germans and Japanese in developing a compact ring, why don't the x-ray lithographers build a conventional synchrotron now and get some photons in the factory?"

The workshop was organized by the NSLS and BNL's Office of Research & Technology Applications, and it was sponsored by the DOE.

— Marsha Belford

Peter Horton

Compact Synchrotron Technology Workshop organizers (from top) Michael Knotek, NSLS Department Chairman; William Marcuse, Head of BNL's Office of Research & Technology Applications (ORTA); Frank Salzano, ORTA; Physicist Gwyn Williams; Dorie Tooker, ORTA; and Sharon Zuhoski, Department of Applied Science.



Peter Horton

And the Winner Is

Steve Tiberg, a junior at Berner High School in Massapequa, was the winner of BNL's Model Bridge Building Contest held this past Saturday, March 1. This is the sixth year of the contest, sponsored to generate interest in science and engineering.

In all, 247 bridges were entered by 9-12th grade students from the New York region. The students were required to design and build small model bridges out of balsa wood and glue, working within specifications provided by Laboratory engineers. The goal was to design a bridge that would support the most weight in proportion to its own weight. Tiberg's bridge weighed 1.88 ounces and, as determined by a stress tester, supported a load of 1,887 pounds.

Contest coordinators were Janet Tempel and Jackie Mirzadeh, Public Relations. Doing the judging, operating the stress tester and providing engineering and technical expertise were Bill McGahern, AGS; Jim Cullen, ADB; Don Horne, DAS; and Carl Klamut, DAS.

Love a Quitter

Last Tuesday night, 39 BNL'ers threw away their cigarettes. Some crumpled them first. Others tossed them into the paper bag without a backward glance. But they all contributed to a sizeable sack of discarded cigarettes during Quit Night at the Freedom From Smoking workshop offered by the BNL's Health Promotion Program. The program will continue for a few more weeks, to provide support for the participants during this difficult post-quitting period. But they may need more support in the office. If you know any of these quitters, give him or her a carrot or a hug, instead of a cigarette.

TeX Users Meeting

The first meeting of the TeX Users Group will be on Wednesday, March 19, at 12:30 p.m. in Berkner Hall, room C. TeX is a computer program for typesetting and printing mathematical formulae. Anyone interested in TeX is welcome to attend, or to contact Eric Myers at Ext. 3856.

A Research Recipe

Freeze a slice of pizza, some cooked steak, French fries, spinach, eggs and other staples of the American diet. Mix it all in a large blender with some water, whisky, beer and other commonly consumed beverages, and what have you got? An accurate composite of the average daily food intake of a 25- to 30-year-old U.S. male.

This mixture is a research recipe — roughly 15 coffee cups full (about 3,075 grams) blended from 201 different breakfast, lunch and dinner foods. It is one of 11 such mixtures being concocted as part of an elaborate study of diets of different countries, including Brazil, Canada, China, Iran, Italy, Spain, Sudan, Sweden, Thailand and Turkey. The nutrition study is being carried out by three U.S. agencies: the National Bureau of Standards, the Food and Drug Administration and the Department of Agriculture.

Tax Info

There are still a lot of loan interest statements at the onsite branch of Barclay's Bank that have not yet been claimed. If you itemize your income tax deductions, you will need to know how much interest you paid on your bank loan. So drop by the bank and pick up your statement.

Medication Rx

Ask your physician or pharmacist these questions about your prescription drugs: What is the name of the drug and what is it supposed to do? How and when do I take it — and for how long? What food, beverages, other drugs or activities should I avoid while taking this drug? Are there any side effects, and what do I do if they occur? Is there any written information about the drug? The more you know about the medicines you take, the better they will help take care of you.

Equipment Demos

Racal Redac will demonstrate their schematic capture and printed circuit board design system on the IBM PC on Tuesday, March 18, from 10 a.m. until noon in the lobby of Berkner Hall.

CDC-Case Technology will demonstrate their schematic entry and printed circuit board design package on the IBM PC on Thursday, March 20, from 9:30 a.m. until noon in the lobby of Berkner Hall.

Arrivals & Departures

Arrivals

Joseph M. Brennan ..... AD
Mahmoud L. Firouzbak .... Chemistry
Scott D. Priebe ..... Biology
Arthur A. Bamonte Jr. ..... Sfgds/Sec
Colleen E. Daily ..... Sfgds/Sec
Matthias A. Harrington .... Sfgds/Sec
Michael G. Johnson ..... Sfgds/Sec
Jack P. Sadousky Jr. ..... Sfgds/Sec

Departures

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

Barry G. Cunningham ..... Sfgds/Sec
Clarence A. Duncavage ... Cent. Shops

Aerobic Dance

Want to shape up for summer? How about signing up for the next ten-week session of aerobic dance and/or stretch classes!

Classes in aerobic dance are held on Tuesdays and Thursdays, and stretch classes are held on Wednesdays. All classes are held after work, from 5:15 to 6:15 p.m. The fee for each ten-week session (T, W or Th) is $30, due at registration.

Registration and the first classes for the next session will be held in the North Room of the Brookhaven Center, as follows:

- Aerobic Dance — Thursday, March 20, and Tuesday, March 25.
- Stretch — Wednesday, March 19.

For more information, call Anita Cohen, Ext. 5054, or Bill Leonhardt, Ext. 2378.

Financial Planning

The Cooperative Extension of Suffolk County has compiled a series on savings and investments and will mail a topic each week, for nine weeks, to those interested. The series will give advice on such things as "how to develop a financial plan," "savings routines that work," "investment basics," and other money matters. To receive this material, send your name and address and a check for $4.00 (payable to Cooperative Extension) by March 21 to: Savings and Investment Series, Cooperative Extension of Suffolk County, 246 Griffing Avenue, Riverhead, New York 11901.

Cafeteria Menu

Week of March 17

Monday, March 17
Happy St. Patrick's Day

Split pea soup	(cup)	.65
	(bowl)	.85
Corned beef & cabbage w/ boiled potato		2.50
Chicken finger basket		2.45
Hot Deli: Turkey	(bread)	2.35
	(roll)	2.50

Tuesday, March 18

Turkey noodle soup	(cup)	.65
	(bowl)	.85
Seafood Newburg over rice		2.50
Pepper steak over rice		2.45
Hot Deli: Baked ham	(bread)	2.25
	(roll)	2.40

Wednesday, March 19

Cream of mushroom soup	(cup)	.65
	(bowl)	.85
Ham & noodle au gratin w/ choice of 1 veg.		2.45
Broiled fish w/ choice of 1 veg.		2.55
Hot Deli: Meatball hero		2.40

Thursday, March 20

Chicken gumbo soup	(cup)	.65
	(bowl)	.85
Super sausage pizza		2.25
Salisbury steak w/ choice of 1 veg.		2.45
Top your own baked potato w/ choice of topping		1.50
Hot Deli: Roast pork	(bread)	2.35
	(roll)	2.50

Friday, March 21

Seafood gumbo	(cup)	.65
	(bowl)	.85
Broiled flank steak w/ choice of 1 veg.		2.55
Baked red snapper w/ choice of 1 veg.		2.75
Hot Deli: Corned beef	(bread)	2.35
	(roll)	2.50

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Published weekly
for the employees of
BROOKHAVEN NATIONAL LABORATORY

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BERA News

BERA Election

During the week of March 17-21, employees are asked to cast their votes in the 1986 BERA Board election. Two candidates from a slate of four will be selected to serve on the BERA Executive Board for a three-year period, starting May 1.

Voting Schedule:

Cafeteria

Monday, March 17	11:45 a.m.-1:15 p.m.
Tuesday, March 18	" "
Wednesday, March 19	" "

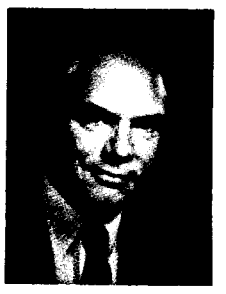
Bank

Thursday, March 20	1:30-3:00 p.m.
Friday, March 21	9:00 a.m.-2:30 p.m.

Absentee votes, from those who are planning to be off site during election week, will be accepted by sending a signed memo with candidate selections to the Recreation Office, Building 185. To be valid, memos must be received no later than noon, Friday, March 21.

Haskell Frei

Rosalie Piccione



George Sintchak

Doris Terry

—photos by Rosen

About the Candidates:

Haskell (Skelly) Frei is a Nuclear Reactor Operator in the Reactor Division. During his 30 years at BNL, Skelly has played on softball, basketball, bowling, golf, football and volleyball teams. He also served as manager of a softball team, vice-president of the Bowling League, vice-president of the Golf League, player on a winning BNL doubles entry in an Industrial League Tennis Tournament, and a member of a four-man team representing BNL in an Industrial League East Coast Bridge Championship, which was held in Washington, D.C.

Rosalie Piccione, a Buyer in the Contracts & Procurement Division, was elected a BERA Board member in 1980, and served as vice-president during her third year in office. She has been chairman of the BERA Special Events Committee for the past six years, and under her leadership, the committee organized and ran an employees' family picnic, two dinner/theater events, and, in 1982, the big BNL 35th Anniversary Celebration. Her sports activities have included bowling and softball.

George Sintchak is a Project Engineer in the Instrumentation Division. His BERA interests include membership in the Amateur Radio Club and the BNL Microcomputer Club. Three years ago, Sintchak became founder and president of the BNL Commodore Computer Users Club, and is the current corresponding secretary. His most recent BERA undertaking was working on the Emergency Generator Group Sales Committee.

Dorris Terry, an Assistant Staff Specialist in the Department of Nuclear Energy, is president of the BNL Singles Club and a member of the softball and volleyball leagues. Terry served on the BERA Nominating Committee for this year's election.

Swim Club

The BNL Swim Team finished fourth among sixteen teams competing at the Mid Island YM-YWHA Masters Swim Meet on Saturday, March 1. The ten BNL swimmers brought home a total of 23 individual age-group and three relay team ribbons. As well, Toshi Sugama finished first overall in the 200-meter breaststroke and third overall in the 100-meter breaststroke, and Ron Wittlock placed second overall in the 100- and 200-meter backstroke and third overall in the 50-meter backstroke. Marsha Belford finished first among women in the 100-meter breaststroke and third woman overall in the 50-meter breaststroke.

50-meter Freestyle

Peter Heotis	27.9	1st men 35-39
Mark Catan	31.1	4th men 25-29
Paul Michael	34.6	4th men 55-59
Don Makowiecki	46.0	5th men 40-45

100-meter Freestyle

Mark Catan	1:10.0	4th men 25-29
Don Makowiecki	1:46.7	3rd men 40-45

200-meter Freestyle

Peter Cameron	2:39.6	2nd men 35-39

50-meter Butterfly

Peter Heotis	31.0	2nd men 35-39
Marsha Belford	43.6	2nd women 25-29

100-meter Butterfly

Peter Heotis	1:11.2	2nd men 35-39

50-meter Backstroke

Ron Wittlock	37.1	2nd men 50-54
Marsha Belford	47.9	2nd women 25-29

100-meter Backstroke

Ron Wittlock	1:23.1	1st men 50-54

200-meter Backstroke

Ron Wittlock	3:06.5	1st men 50-54

50-meter Breaststroke

Toshi Sugama	38.6	1st men 35-39
Peter Cameron	42.1	3rd men 35-39
Marsha Belford	48.2	2nd women 25-29
Laurie Hastings	48.0	1st women 30-34
Peggy Micca	56.2	2nd women 40-45

100-meter Breaststroke

Toshi Sugama	1:24.8	1st men 35-39
Peter Cameron	1:32.4	2nd men 35-39
Marsha Belford	1:44.7	1st women 25-29
Laurie Hastings	1:45.8	1st women 30-34
Peggy Micca	2:03.2	1st women 40-45

200-meter Breaststroke

Toshi Sugama	3:08.9	1st men 35-39

100-meter Individual Medley

Peter Cameron	1:28.3	4th men 35-39
Ron Wittlock	1:33.9	5th men 50-54
Marsha Belford	1:37.0	2nd women 25-29
Laurie Hastings	1:41.4	3rd women 30-34

200-meter Men's Freestyle Relay
2:07.5 - 2nd 160 years

Paul Michael, Peter Cameron
Mark Catan, Peter Heotis

200-meter Men's Medley Relay
2:16.3 - 1st 140 years

Ron Wittlock ..... backstroke
Toshi Sugama ..... breaststroke
Peter Heotis ..... butterfly
Mark Catan ..... freestyle

200-meter Mixed Medley Relay
2:45.1 - 2nd 140 years

Ron Wittlock ..... backstroke
Toshi Sugama ..... breaststroke
Marsha Belford ..... butterfly
Laurie Hastings ..... freestyle

Bowling

White League

High games were bowled by Ed Sperry IV 210, Ben Belligan 201, Terry Skelaney 184, Ellie Adams 181, Nancy Roesler 176, Maryanne Rignola 174.

Red/Green League

H. Arnesen rolled a 232, D. Jesaitis 220, K. Asselta 211, R. Eggert 208, E. Meier 204.

Purple League

Rich Larsen had games of 256/228/676 scratch, Joe Ferrante 238/212/629 scratch, Gene Hassell 201, Lee Barberich 194/180, Mary Grace Meier 187, Marge Stoeckel 177, Sharon Smith 176/176/171.

Pink League

Kathy Kissel rolled a 188.

Afro-American Culture Club

On Wednesday and Thursday, March 26 and 27, the Afro-American Culture Club will hold an election for the offices of president and treasurer.

The candidates are Robert Mosley and Bruce Penn for president; and Rose Lawrence and Abass Wessen for treasurer. They will replace April Donegain, the current president, and Bruce Penn, who served out the unexpired term of treasurer Fred Nesbitt.

Balloting will be held in the lobby of Berkner Hall from 11:30 a.m. until 1 p.m. on both days.

Theater Group

The BERA Theater Group will hold its March meeting in the North Room of the Brookhaven Center on Wednesday, March 19. Socializing starts at 7:30 p.m., and the business meeting begins at 8 p.m.

Selections from several one-act plays that are being considered for Theater Group productions will be read. Interested persons from the Lab community are invited to attend. Anyone with suggestions for the program should contact Karl Swyler, Ext. 7171.

Softball

An organizational meeting of the BERA Slo-Pitch Softball Association will be held on Friday, March 28 at noon in Room B of Berkner Hall. One representative from each team in the Employee's and Mixed Leagues should attend, preferably the team captain, as well as league representatives and the softball board. Among the topics on the agenda will be the 1986 league structure, rules changes, schedule, rosters and dues. Each team should submit a preliminary roster at this time.

Basketball

Game #1

Runaways — 84		Coasters — 71	
J. Ripka	14	P. Ratzke	22
T. James	14	R. Rowley	12
J. Desmond	16	G. Grigg	15
R. Moran	10	J. Gaeta	18
G. Smith	4	L. Lawrence	4
P. Johnson	22		
A. Stillman	4		

Game #2

Longshots — 61		Hollywood — 56	
L. James	3	G. Mack	12
J. Garrison	4	R. Domenech	8
R. Seymore	15	E. Meier Jr.	17
L. Walcott	10	R. Kowalski	2
M. Colon	15	B. Jasper	2
B. Johnson	4	D. Nordstrum	15
P. Brown	4		
A. Anderson	6		

Volleyball

League I	W-L
Dinkers	40-4
Up FaGrabs	33-11
X-Rayted	21-23
Bumpers	19-25
Net Results	11-33
TNT	8-36
League II	
Phoubars	44-0
Nuts & Bolts	24-20
Fossils	24-20
Chungas Revenge	20-24
Cannonballs	16-28
Upton-Ups	4-40
League III	
Print-Outs	32-16
Foul-Ups	30-18
Screwballs	27-21
Buddys	24-24
Light 'n Lively	16-32
Couples	15-33
Open League	
Odds & Sods	37-5
Dakota	35-7
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Classified Advertisements

Placement Notices

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

Each week, the Personnel Office lists new personnel placement requisitions. The purpose of these listings is, first, to provide open placement information on all non-scientific staff positions; second, to give employees an opportunity to request consideration for themselves through Personnel; and, finally, for general recruiting purposes. Because of the priority preference policy stated above, each listing does not necessarily represent an opportunity for all candidates. As a guide to readers, the listings are grouped according to the anticipated area of recruitment.

Except when operational needs require otherwise, positions will remain open for one week following publication date.

For further information regarding a placement listing, contact the Employment Manager, Ext. 2882.

THE VACANCY LISTED BELOW HAS BEEN EXEMPTED BY THE DIRECTOR'S OFFICE FROM THE CURRENT FREEZE ON OPEN REQUISITIONS.

OPEN RECRUITMENT - Opportunities for Laboratory employees and outside applicants.

2409. SECURITY ENGINEER - Requires BS in electrical engineering or equivalent work experience and 3-5 years of technical and supervisory level experience in the application of government security regulations for technical security areas and programs. Will provide technical and physical security engineering support for security areas at BNL. Will develop and manage audit programs to ensure compliance with BNL/DOE policy and provide support for special security projects. Requires ability to obtain DOE "Q" clearance. Safeguards and Security Division.

Autos & Auto Supplies

RIMS - GM 15", 5 bolt. Jay, Ext. 4994.

70 NOVA - a/t, new brakes, exhaust, battery, new red paint, $900. 331-2646 after 6 p.m.

72 OLDS CUTLASS SUPREME - good cond. 924-0582 eves.

CHROME RIMS - extra wide, 15", Ford, $50. Tony, Ext. 4605.

70 VW BUG - good cond., 4 spd., $550. Chris, 289-6407, 9-12, Sun.; 6-7 pm, Tues., Sat.

84 PLYMOUTH DUSTER TURISMO - a/t, p/s, p/b, a/c, am/fm cassette, extended warranty, low mi., $6,500. 924-0110.

37 CHEVY PICKUP - prof. restored, over $12k invested 200 miles ago, $11,000. Bill, 929-3079.

74 OPEL SW - standard, $400. 929-3662 eves.

84 HONDA SPREE - excel. cond., low mi., $300. Jerry, Ext. 7427 or 475-5591 after 4 p.m.

84 CJ7 JEEP SPECIAL EDITION - blue & white, chrome wheels, bumpers, stereo cassette, sunroof, all extras, $9,500. 924-6613 or 924-1056.

78 TOYOTA CORONA - a/t, 71k mi., runs well, good reliable transp., $1,600. Paul, Ext. 2872.

78 DATSUN 510 - sta. wagon excel. running cond., a/c, 4 spd., stand. trans., $1,800. Lew, Ext. 5193 or 928-4863.

75 FORD GRANADA - 2 dr., stick shift, rel., low mi., $650. Ext. 2455.

78 SAAB - 99 GL, 3 dr., h/b, stick shift, 4 spd., excel. driving, depend., $2,100. Ext. 2455.

80 BUICK CENTURY - Sport Coupe, a/t, a/c, 40k mi., $3,500. Ken, Ext. 4421 or 744-0722.

78 FORD F-100 - pickup, 83k mi., 6 cyl., cap, standard, extras. Phillips, Ext. 4235.

TIRES - (1) A78-13 snow, excel. cond.; (1) A78-14 w/rim, good for spare, cheap. Janet, Ext. 2345 or 929-8152.

78 CADILLAC FLEETWOOD BROUGHAM - a classic like new, $3,995. 475-4596.

CHEVY CITATION - Sports Coupe II, new eng., low mi., m/t, a/c, p/s, p/b, stereo, 4 speakers, very good cond., $2,500. Mary, Ext. 3440.

74 CHEVY PICKUP - 1/2 ton, cap, good mech. cond., some rust. Ext. 3841 or 286-9450.

78 CHEVY MONZA - a/t, needs engine, 2 dr. h/b, best offer. 727-2058.

75 MERCURY MONARCH - 4 dr. hardtop, red with silver top, runs well, tires good, $400. Ext. 2050 or 473-6432.

84 HONDA SPREE - excel. cond., low mi., $300. Jerry, Ext. 7427 or 475-5591 after 5 p.m.

TRAVEL TRAILER - 18', sleeps 6, self-contained, new tires and brakes, priced to sell, $2,500. Artie, Ext. 2697 or 325-0743.

79 MONTE CARLO - new drive train, needs front fenders, best offer. 234-0538.

84 MONTE CARLO CL - loaded, must sell, $6,800 neg. Paul, 475-7243.

77 DODGE EXTENSION VAN - p/s, p/b, c/c, a/t, paneled, carpeted, roof rack. 281-9172.

75 VW BEETLE - good cond. in and out, good heat, runs well, best offer. 589-5490 eves.

73 DATSUN 1200 - B110, good cond., also spare eng. and trans., all for $450. Ext. 5177 or 698-6120.

80 CITATION SPORTS COUPE II - new eng., low mi., manual, p/s, a/c, stereo, (4) speakers, extras, $2,750. Marv, Ext. 3440.

74 DUSTER - a/t, p/s, new starter, $500 or best offer. Dave, Ext. 4360 or 269-5319.

73 CADILLAC - Coupe DeVille, 2 dr., a/c, p/s, p/w, extras, reg. gas, white/red int., best offer over $1,800. 399-1985 eves.

82 SUZUKI GS750T - 5,500 mi., bought new in 1983, sissy bar, rack, cover, $1,500 neg. Paul, 475-7243.

BACKREST - for 1977 Harley Sportster, $40; black Harley helmet, short type, $40; Harley oil, (1) case 60W, $30, (4) quarts 20W/50W, $5. Tony, Ext. 4605.

74 MONTE CARLO - some body damage, runs well, $600. Bill, 924-6971.

85 SUZUKI DS80 - dirt bike, new cond., still under warranty, $575. Richie, Ext. 2175 or 734-7342.

82 HONDA ACCORD - 4 dr., 5 spd., 63k mi., silver, excel. cond., $6,200. Russ, Ext. 3059 or 698-9364.

80 AMC SPIRIT - 4 cyl., 4 spd., new muffler, battery, shocks and more, $1,500. 543-2294 after 3 p.m.

AUTO RADIO - am only, like new, $15. Les, Ext. 2920.

750 HONDA - runs well, good for parts, $750; 1967 CHEVY MALIBU 327, vinyl top, $2,700. Ext. 4612.

82 SUZUKI RM125 - very good cond., reb. eng., new tires, spare parts, $625. 722-4821.

73 VW FASTBACK - a/t, excel. cond., $1,200; squareback standard, dependable, $725. Ext. 4463/2400 or 751-2422.

74 MUSTANG II - 4 spd., some rust, runs well, clean, stereo cassette, $625. Kelly, 981-8751 after 6 p.m.

85 YAMAHA 250 CC - 3 wheel trike, mint cond., will trade for small boat and motor or sell. Ext. 4081 or 874-3844.

70 FORD LTD WAGON - 9 pass., mech. sound, body good, reliable trans., $695. 475-2598 after 5 p.m.

79 CADILLAC DEVILLE - sedan, V8, cream, tan leather, spokes, cruise, all access., $5,000. 698-5046 after 7 p.m.

79 OLDS DELTA 88 - a/t, p/s, p/b, a/c, cruise, stereo, excel. cond., $3,000. Ray, 289-0883.

76 HONDA CIVIC - good runnning cond., 74k mi., body fair, $750. 744-5096.

77 & 78 HONDA PARTS - Accord, body, interior, tires, wheels, glass, doors. Ext. 4081 or 874-3844.

74 BUICK APOLLO - a/t, p/s, p/b, a/c, am/fm, 4 dr., 90k mi., very good cond., $900. Ext. 3701 or 751-8128 eves.

74 LINCOLN TOWNE CAR - loaded, 40k mi., reb. eng., $2,500 neg. 751-6303 after 5 p.m.

74 CHEVY NOVA - good eng., $200; 1976 HONDA CIVIC CVCC, needs work, $500. Jory, Ext. 5508 or 929-6941.

72 VOLVO WAGON - needs eng. work, good tires, best offer. Dick, Ext. 4255 or 744-6794.

74 JEEP WAGONEER - 360 V8, a/t, quadtrac, fully loaded, low mi., eng. perfect, $1,800 firm. 924-4541.

76 TOYOTA CORONA - MK II, running, good for parts, best offer. Jon, Ext. 4682 or 689-8740.

85 BUICK REGAL LIMITED - loaded, 9,500 mi., orig. owner. Mary Ann, 736-7260.

80 MAZDA RX-7 - excel. cond. in/out, 5 spd., a/c, am/fm cass. and more, $5,000. Ext. 7774.

78 SUZUKI GS1000E - good cond., 23k mi., black and chrome, $1,000. Ext. 4027 or 286-1121.

68 CHEVY MALIBU - station wagon, a/c, V6, 62k mi., engine knock, $1,000. Frank, 736-2575 eves.

75 HARLEY DAVIDSON - show bike, 1200cc, full race motor, trans., best offer; 1973 CHEVY LUV, new drive train, good transp., best offer. 234-0538.

74 PLYMOUTH SCAMP - a/t, needs work, $200. 751-3551.

82 MAZDA 626 - 4 dr., am/fm, a/t, a/c, excel. cond., best offer over $4,700. Ext. 3067.

79 MERCURY ZEPHYR - 6 cyl., 4 dr. sedan, a/t, a/c, p/s, p/b, am/fm, 71k mi., $1,500. 473-7739.

81 SUBARU - stand., hatch, 4 spd., sunroof, well maint., $2,500. Tom, Ext. 7916.

79 COUGAR XR7 - full power, am/fm cass., elec. roof, 85k mi., $2,800. 289-7186 after 6 p.m.

73 CHEVY PICKUP - 4x4, V8, a/t, p/s, p/b, a/c, rally wheels, 31-10x15 tires, running boards, anti-slip rear and more, $3,800. 269-9510.

CHEVY STEP VAN - 6 cyl., 4 spd., grill, steam table, cooler, in Rockland County, $4,500. Joe Yelk, Ext. 3464 or 914-786-3810 after 5 p.m. or wknds.

76 CHEVY LUV TRUCK - new exhaust, tool boxes, am/fm cass., new clutch. 563-2751.

73 CHEVY MALIBU - 4 dr., a/c, runs, $300. Tom, Ext. 7916.

73/74 BLAZER - fiberglass top complete with glass, $200. Ext. 2171 or 957-7159.

TIRES - assorted 13's, 14's and 15's, singles, pairs, sets. Ext. 4514 or 289-8212 eves.

78 FORD VAN E150 - service truck, heavy duty susp., $1,500. Rod, 751-7023.

75 CHEVY MONZA - 2 dr., 4 cyl., h/b, $550. Ext. 3187 or 4510.

75 CHEVY MALIBU - 4 dr., a/t, a/c, p/s, p/b, runs well, $400. Ext. 7128.

65 MUSTANG - 90% restored, best offer over $2,000; 1973 VW Thing, low mi., $1,200. Dick, Ext. 3499 or 589-9103.

79 MERCURY ZEPHYR - 6 cyl., a/t, a/c, excel. in and out, needs some eng. work, $1,300. Mike, 669-9482 eves.

85 CHEVY - 8' pickup bed, Fleetside, bronze color. Ext. 4446.

75 BUICK LESABRE - 65k mi., 2 dr., loaded, mint cond., $3,000. 924-3236.

78 SAAB 99GL - 4 spd., 2 dr., am/fm radio, good cond., $1,700. Ext. 2411.

80 AMC SPIRIT - squareback, very good cond., stand., extra wheels w/snows, 65k mi., $2,300. 286-3374.

74 TORINO - 77k mi., a/t, p/s, am/fm cass., good cond., $850. Beeper 266 or 281-0360 after 6 p.m.

77 BUICK REGAL - sunroof, mags, TIA tires, some body work, $1,000 neg. Pat, Ext. 4500

80 FORD COURIER PICKUP - 4 cyl., 4 spd. w/cap, am/fm stereo, good cond., $2,000. Bill, Ext. 2022 or 727-4228.

Boats & Marine Supplies

EVINRUDE - commercial model with tiller, 55 HP, good for parts, $100. John, 283-8774.

18' GLASTRON - fiberglass boat, 115 HP elec. Evinrude, galv. trailer, very good, $4,800. 269-9510.

23' O'DAY - 1980, 7.5 HP Honda, 6 sails, full race equip., keel ctr. bd., electronics, extras, excel., $15,400. Lloyd, Ext. 3381 or 286-1024.

17' AQUAVEE - 40 HP Johnson, elec. start, Little Dude trailer, all from mid '60s, reasonable. Joe Yelk, Ext. 3464 or 281-7683.

30' CATALINA SLOOP - 1983 T.G., diesel, 3 sails, canvas, radio, wheel, instruments, compass, many extras, $41,000. Ext. 2015.

OUTBOARD MOTOR - 65 HP, 4 cyl., OMC new water pump, lower unit resealed, $325. 475-8504 after 5 p.m.

16' V HULL BOWRIDER - 1983 4 Winns, 120 HP Merc. cruiser, 15 hrs., full canvases, galv. trailer, power winch, garaged, $7,800 firm. 286-8797.

MOORING CHAIN - 1/2 inch galv. proof coil, new, $2.25 per ft. Bob, Ext. 7197 or 399-1679.

Miscellaneous

END TABLES - (2), maple, 29x20x22, excel. cond., $50 ea. 924-6430 after 5 p.m.

BATHROOM SINK - 18"x20", beige ceramic, $20. Les, Ext. 2920.

BED - full size, $100; ski & hiking boots, size 7, $20 ea.; pot-belly stove, $50; drop-leaf table; vintage tape deck, make offer. Ext. 3578 or 878-4864.

PRINTER - Radio Shack LP-7, dot matrix, serial/parallel, graphics, $75. 744-9677.

BABY ITEMS - bassinet w/skirt, $25; Kangarockaroo, $10; walker, $10; infant seat, $7. Paul, 924-8143.

WEIGHT TRAINING RACK LEGS - Sears, chest, tricep can be worked, no weights, $125; Latin percussion conga's, L/P's, excel. cond., $325. Tony, Ext. 4605.

COMPUTER MONITOR - color, RGB TOMI for Commodore C128, IBM PC ECT. Roy, Ext. 4664 or (212) 691-4396.

DESK - 48x72, wood w/brass trim, needs refinishing, $100. 744-2821.

GREENHOUSE - poly-type, 22'x100', boiler, whole-house heat & vent sys., sprinkler sys., heavy duty const., $3,000. Jim, Ext. 4040 or 289-0876.

MINI DRYER - apt. size, 115 VAC, excel. cond., $100. Victor, Ext. 2395.

COUCH - gold, very good to excel. cond. Ext. 4192 or 751-7787.

DIAMOND HEART NECKLACE - 3/4K, cost $1,000, sell for $600; gold heart link bracelet, 3 links have diamonds, cost $500, sell for $200. Barbara, Ext. 2882.

ADDING MACHINE - Commodore, excel. cond., $10; B&D 7-14" circular saw, $10. Bob, Ext. 4551.

BUMPER POOL - Coleco, 2 cue sticks, 10 balls, good cond., $15. 286-3679.

CHAIRS - (2), fireside, harp shape back, crushed cut velvet, lamp, Capodi Monte, 35 years old. 281-6699.

CASTRO COUCH - good cond., $125. Ext. 2877 or 289-8428.

DOBBIE PUP - male, purebred, black, unclipped ears and tail. 821-3570 early a.m. or eves.

BAY WINDOWS - Anderson, 4' picture, 2' casement, side units at 45:, Thermopane, incl. screens, excel., $450. Lloyd, Ext. 3381 or 286-1024.

PORTABLE TYPEWRITER - $25; powder blue bib ski pants, size 5 jr., $8; large f/p screen, $10; Maxell disks, 5-1/4", ds/dd, new 10/$10. Jim, Ext. 3372.

TRANSFER SWITCHES - for motor generators. Joe, Ext. 7636 or 654-3472.

FURNITURE - antique oak buffet, $150; old school desk, corner cabinet, more. Ext. 2066/7283 or 744-1898 eves.

WEIGHT LIFTING BENCH - $25; 1 HP waterpump, works, $25; folding bed spring with legs, no mattress, $25. Tony, Ext. 4605.

BMX RACING BICYCLE - Diamond Back, Formula 1, excel. cond., w/pads, $170. 722-4821.

FLUE HEAT RECOVER DEVICE - Air-O space, 4K, $30; wallpaper, new, brown; personal file box, metal, w/lock & key, $4. Susan, Ext. 4267.

HOT WATER HEATER - elec., 82 gal., Rheem type, good cond., best offer. Bob, Ext. 2350

FIREWOOD - split, seasoned, oak, 4'x16'x20-22" pieces, $110 delivered. 732-2849

CABER SKI BOOTS - man's, size 12, $75; size 8-1/2, $50. Annamarie, Ext. 2352 or 473-9016.

WORLD BOOK ENCYC. - latest ed., new, cost $585, sell for $300. Barbara Nichols, Ext. 2882.

RUGS - 3 shades brown, 12'9x19', 2 yrs. old., new $650, sell for $200; 3 shades green, 12x16, 2 yrs. old., $100. Ext. 5165.

VCR/CAMERA - Quasar, with access., 18 mos. old, w/guarantee, cost over $2,000, sell for $1,300. Ext. 3199 or 475-6622 eves.

ELECTRIC TYPEWRITER - Smith-Corona, 2200 portable, excel. cond., $125. Ext. 5125.

RADIO - Grundig Majestic, highly polished, 35 yrs. old, w/phono, record cabinet, excel. cond. 281-6699.

KITCHEN SET - butcher block-style table, (4) swivel chairs, 6 mo. old., $200. Ray, 289-0883.

X-COUNTRY SKIS - Jarvinen, waxless, 190 cm, Fisher metal edged, 190 cm or 200 cm. Ext. 4203.

WEIGHT BENCH - 3-position incline, scott curl, dip station, squat station, custom-made, welded steel. 878-2233 eves.

ENTERTAINMENT CTR - w/speakers, oak, $200; oak kitchen set, wrt. iron & blk. chairs w/matching light, $175; queen size Med. bdrm. set, $500. 751-6303 after 5 p.m.

SIAMESE KITTENS - reg. CFA, 8 wks. old, 2 males; older seal male, excel. lines. Ramona, 928-3088.

REFRIGERATOR - 17.7 cu. ft., ice maker, dk. brown, Sears, excel. cond., $300; 1920's bed, iron, single, sturdy, $25. Frances, Ext. 5088.

SANSUI STEREO - rack system, w/extras, $100; 10 gal. fish tank, $60. Mark, Ext. 5350.

COMPUTER - Radio Shack model 4P, double disk drive, excel. cond., lots of software, $500. Tom, 736-6691.

GO-KARTS - (2), excel. cond., best offer. 234-0538.

MICROWAVE OVEN - Kenmore, 1.4 cu. ft., almost new, good for large family, new $360, sell for $260. Ext. 2154 or 757-3178.

COLONIAL BED - $25; queen size mattress, $30; Chandelier, $20; large bookshelf, $15. Ext. 3136.

MICROWAVE COOKING CENTER - 1977 G.E., white, 30 in., s.c. oven, best offer. George, Ext. 5125 or 759-1328.

WINDOW - double wide, double hung, wood, 48"H x 68"W, $50; corner t.v. cabinet, pine, excel. cond., $70. Sue, Ext. 2050.

LOVESEAT - country-style, blue/beige pattern, excel. cond., orig. $600, now $175; matching coffee table, orig. $300, now $95; both, $260. 286-4652 after 7 p.m.

ANTIQUE CAST IRON STOVE - Quality, circa 1907, 6-burners, 2-ovens, broiler and warming bin. 588-7744.

Free

CLOTHES WASHER - large Kenmore, working cond., you pickup. Victor, Ext. 2395.

Lost & Found

FOUND - leather gloves, in Bulletin office. Ext. 2345.

LOST - brown sports bag containing dirty laundry. K. Fuchel, Ext. 4116.

Car Pools

STONY BROOK - Strathmore, rider/driver wishes to join or merge small existing pool with yours. Ext. 4192.

PLAINVIEW/HICKSVILLE/BETHPAGE - join existing pool, non-smokers, 8:30 a.m. to 5:00 p.m., on time. Walter, Ext. 4605.

HAMPTON BAYS - non-smoking. Joe, Ext. 2898.

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 Rent

PORT JEFF. - Harbor Hills, 3 bdrms., 2-1/2 baths, l/r, d/r, f/r, patio, gas heat, central a/c, near beach/country club, partially furn. or unfurn., $900 mo. 928-0466.

BELLPORT VILLAGE - furn. 2-1/2 rm. apt., full kit. facil., cable t.v. outlet, w/w carpet, shower stall, priv. ent., non-smoking working person preferred, $450 mo. incl. all util. 286-9705.

BELLPORT - 2 bdrms., l/r, eik, bath, in 1 fam. house, no pets, $550 mo. plus util. 286-2005 after 12 a.m. or 698-0576 after 9 a.m.

HILTON HEAD, S.C. - 2 bdrm. condo., tennis, golf, $300 wk. until Apr. 15th, $400 wk. after Apr. 15th. 585-9149.

N. PATCHOGUE - priv. 3 bdrm. apt. in home, kitchen, l/r, fenced in yard, $750 plus 3/4 util., 15 min. to Lab., no pets. Carol, 289-3917.

MEDFORD - studio apt., full kit., l/r bdrm. combo., large bath, deck, priv. ent., brand-new, 1 mo. sec., $450 incl. util., no pets. Ext. 3082.

CATSKILLS - 3 bdrm. chalet, sleeping loft, near Hunter and Windham Mts., fully furn. Judy or Kay, Ext. 3595 or Bea, Ext. 3642.

RONKONKOMA - near LIE, beach, recreational facil., secluded, 3 bdrms., l/r, d/r, eik, w/w, storage room, $700 mo. plus 2 mo. sec., avail. May 1. Ext. 2676 or 543-0487.

For Sale

VERO BEACH, FL. - condo. on golf course, 2 bdrms., 2 baths, Florida rm., many extras, active clubhouse, pools, tennis courts, hobby and crafts center, $62,000. 698-5046 after 7 p.m. weekdays, all day weekends.

PORT JEFF. - Harbor Hills, 3 bdrms., 2-1/2 baths, l/r, d/r, eik, 1 car garage, lg. den, basement, multi-level, 1/3 landscaped acre, beach rights, $159,000, flexible finance. 928-2803.

FT. MYERS, FL. - 3 bdrm. stilt home, 4 yrs. old., wooded lot, fenced, all major appl., $92/year taxes, $46,500. Ext. 4007.

YAPHANK- condo., Colonial Woods, 2 bdrms., 2 baths, full bsmt., central air, storms and screens, extras, $95,000. 269-9510 after 7 p.m.

PORT JEFF. STA. - condo./townhouse, 2 bdrms., 1-1/2 baths, central air, appl., pool, tennis, club house, $104,000. 928-8522.

AQUEBOGUE - lg. 3 bdrm. ranch, 1-1/2 baths, gar., f/p, d/r, finished bsmt., town water, 20 min. to Lab., $127,000. 722-4644.

Wanted

CASSETTE TAPES - high quality Maxell or comparable, prefer blank or gently used. 928-2803.

ALTO SAX - good cond., reas., w/case. Ext. 4669 or 744-9429 after 6 p.m.

MARX TRAINS - access., toys, pre-1960, any cond. Steve, Ext. 4612 or 928-6469 after 6 p.m.

TRAINS - Lionel, American Flyer, access., any cond. brings good price. Carole, Ext. 3362 or 924-4097 eves.

ORCHARDIST - to prune (35) semi-dwarf fruit trees. Ken, 722-8168.

MATURE WOMAN - to help w/toddler and newborn, full or part time hrs. 751-1462.

STUDENT DESK - and wood chair. Stan, 475-0532.

SMALL BOAT TRAILER - Bill, 475-8710.

HOUSE - to share, prefer So. Shore, non-smokers. Larry, 475-2844 eves.

CAR - late model Toyota Corolla or Corona sedan or wagon. Al, Ext. 2043.

INVERTER - 12 Vdc to 110 Vac at 500 watts. Ext. 5400 or 3096.

HOUSE - to rent, 2 bdrm. min., near Bellport schools, bsmt. desirable. Bill, Ext. 2378.

LAWN TRACTOR - 8 HP or bigger, even if not running or no mower deck, reason. Ext. 4081.

LIGHT BULBS - standard 3-way w/burned out filaments. Victor, Ext. 2395.

APARTMENT - E. of Hauppauge, for young couple by May 1st. 588-7744.

RADIOS - old wood, tabletop, working or not. Jim, Ext. 4446.

Ads left out of this issue due to lack of space need not be re-submitted to appear in the next issue.

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