BROOKHAVEN BULLETIN
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BROOKHAVEN NATIONAL LABORATORY

AGS Gets a Boost

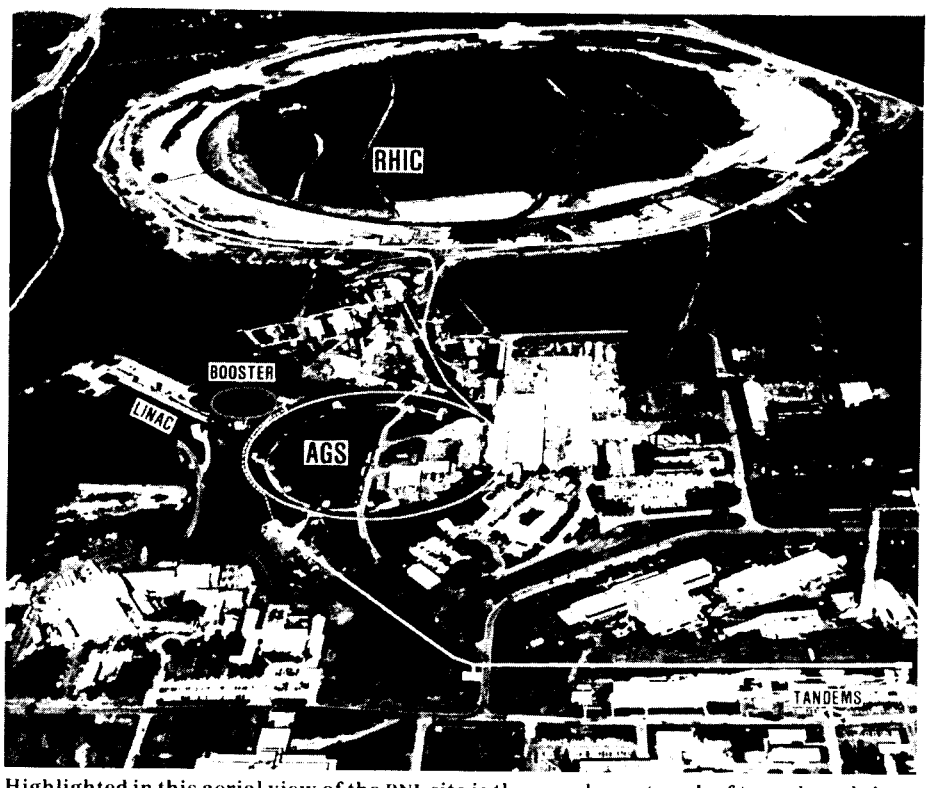
The usual approach to satisfying high energy and heavy ion physicists' desires for new facilities is to build ever larger accelerators. But at BNL, a new accelerator with a circumference only one-quarter the size of the Alternating Gradient Synchrotron (AGS) had been proposed and has just received approval. When completed and coupled to the AGS, this Booster will assume a power disproportionate to its size, because it will increase every aspect of the AGS physics program many times over and make possible the Lab's proposal for a Relativistic Heavy Ion Collider (RHIC).

The Booster, which is budgeted at $25.9 million, received an initial allocation of $2 million on November 1, when President Reagan signed the Federal Energy and Water Development Bill for 1986. With that, it became an independent project under High Energy Facilities. In order to reach fruition, it will require the talents of several groups, in particular the AGS Department, Advanced Projects, the National Synchrotron Light Source Department and the Physics Department.

The AGS Booster design was begun by AGS Accelerator Physicist Y.Y. Lee. AGS Department Chairman Derek Lowenstein says, "Early in 1983, Y.Y. Lee began singlehandledly looking at various designs for a booster machine, and, until recently, he has been doing all the work on accelerator physics questions."

The answers to those questions have yielded a design for a Booster that Lowenstein calls "the linchpin of the future high energy physics/heavy ion physics program at BNL," because it will do three things for the AGS program:

1. Increase proton intensity by a factor of four. Today, the AGS accelerates 1.5×10^{13} protons per pulse (p/p); with the Booster, intensity is expected to reach $5\text{-}6 \times 10^{13}$ p/p. The increase will come about because the Booster will literally give protons a boost before they go into the AGS, and thus overcome the intensity limits due to space charge effects at injection.



Highlighted in this aerial view of the BNL site is the complex network of tunnels and rings that the new Booster will be able to connect. For high energy physics research, protons will be generated in the Linac, injected into the Booster and accelerated to 1 Gev, then injected into the AGS. For polarized proton studies, particles will accumulate in the Booster before injection into the AGS ring. For heavy ion experiments at the AGS, heavy ions generated in the Tandem will travel through the transfer line, around the AGS ring to the Booster, to be accelerated, then fully stripped of electrons before being injected into the AGS. If RHIC is approved, heavy ions will leave the AGS and travel in opposite directions in the collider's two rings, where they will collide in six experimental areas.

Now, particles come out of the Linac at an energy of 200 million electron volts, then must leap to 30 billion electron volts (GeV) in the AGS, a process during which many protons drop out along the way. The Booster provides an intermediate stage between the Linac and the AGS, where protons will be brought to 1 GeV, enough to keep many more protons in the beam. "This is essential to the present high energy physics program," says Lowenstein, who describes that program as "proton-starved," because physicists need ever greater numbers of protons to measure such phenomena as rare kaon decays and neutrino oscillations.

2. Increase the intensity of polarized protons by a factor of 20. AGS experimenters who now work with protons that have their spin vector aligned in the same direction can count on 2×10^{10} p/p. With the Booster, that will rise to 4×10^{11} p/p. This will be achieved because the Booster can also function as an accumulator. The Linac generates particles in bursts, or pulses, which are individually injected into the AGS. When the Booster is available, those pulses will be injected into the Booster. Instead of being immediately reinjected into the AGS, the polarized protons will circulate and accumulate in the Booster until 20 pulses have come from the Linac. The combined effect of 20 Linac pulses injected together into the AGS will be a polarized proton beam 20 times more intense than now obtainable.

3. Allow the AGS to accelerate all the heavy ion species the Tandem Van de Graaff accelerator can generate. Now under construction is a transfer line to link the AGS with the Tandem, so physicists can begin to experiment at the AGS with heavy ions, atoms that have been stripped of all their electrons. This project is moving along on schedule and within budget, and Lowenstein says, "We expect to have heavy ions ready for injection into the AGS in late winter."

These heavy ions, however, will be limited to species with masses no higher than sulfur, mass 32. That's because, in order to accelerate in the AGS, ions must be fully stripped, having no stray, negatively-charged electrons circulating around the nucleus, which could be stripped during the AGS acceleration cycle. The acceleration of partially stripped heavy ions requires a very high vacuum. At 10^{-7} Torr, the vacuum system in the AGS cannot handle partially stripped ion species heavier than sulfur. At 10^{-10} Torr, the Booster's vacuum system will allow the acceleration of heavy ion species as massive as uranium (238) and gold (197), before fully stripping them and injecting them into the AGS.

While this should provide physicists at the AGS with many fascinating fields to pursue, it is also a first step towards BNL's proposed RHIC, where experimenters would look for signs of things such as the quark-gluon plasma that is assumed to have existed at the beginning moments of the universe.

With the Booster's initial funding, Lowenstein says, "A fair amount of engineering and physics design will be done, plus some conventional construction." Given the expected levels of funding over the next few years, the Booster should be completed by 1989. This will involve building the ring, and making the connections and interfaces to the Linac, the AGS/Tan-

(Continued on page 2)

Molecular Biologist To Give Pegram Lectures

David Baltimore, Nobel laureate and Director of the Whitehead Institute for Biomedical Research, will present the 16th Pegram Lectures on December 4 and 5, at 8 p.m. in Berkner Hall. On December 4, he will discuss "Regulation of Antibody Synthesis," and on December 5, the "Saga of an Oncogene." The lectures are open to the public.

Baltimore says he has always had a "passion for science." In a New York Times interview, he said, "It involves a kind of obsessiveness. Unless you are obsessed with scientific questions you are not going to get anywhere with them." This obsession led him, at the age of 37, to the Nobel Prize in Physiology or Medicine, which he shared with Howard Temin and Renato Dulbecco, in 1975, for "discoveries concerning the interaction between tumor viruses and the genetic material of the cell." In 1970, simultaneously with Dr. Temin, he had discovered reverse transcriptase, an enzyme that enables RNA viruses to replicate within the host organism, a discovery that made possible much of the genetic research that was to follow.

Currently, his work at the Institute covers three areas: cancer-inducing viruses, the immune system and poliovirus. In each of these fields, his research group is seeking to define the biochemical events underlying changes in gene expression and gene structure in the mammalian cell.

Baltimore received his Ph.D. in biology from Rockefeller University and held postdoctoral appointments at MIT, the Albert Einstein College of Medicine and the Salk Institute. He joined the MIT faculty in 1968. He became Professor of Biology in 1972 and was appointed American Cancer Society Research Professor in 1973. In 1974 he joined the staff of the MIT Center for Cancer Research, where he remained until he was named director of the Whitehead Institute.

Ten years ago, Baltimore turned his attention to how genetic engineering experiments were being conducted. With Paul Berg he organized the Asilomar Conference, a meeting of the top scientists in the field. He told the group, "We're here because a new technology of molecular biology appears to have allowed us to abort the standard events of evolution by making combinations of genes that could be unique in natural history. These pose special hazards while they offer enormous benefits."

David Baltimore

The meeting led to a set of voluntary guidelines, and Baltimore later became a member of the NIH Recombinant DNA Advisory Committee, which applied the guidelines to genetic research being done under government contracts. The Nobel laureate continues to speak on many issues, including genetic research, priorities for national research, biological warfare and the regulation of science.

Baltimore's work has brought him many honors, among them, the Gustav Stern Award in Virology, Warren Triennial Prize from Massachusetts General Hospital, Eli Lilly and Company Award in Microbiology and Immunology and the National Academy of Sciences/United States Steel Foundation Award in Molecular Biology. He is a member of the National Academy of Sciences, the American Academy of Arts and Sciences, and the Pontifical Academy of Sciences, an international body of distinguished scientists.

The lectures are named in honor of George B. Pegram who spent nearly his entire career at Columbia University, where he was a Professor of Physics, Dean and Vice President. In 1946, he headed the Initiatory University Group, which proposed that a regional center for research in the nuclear sciences be established in the New York area. He played a key role in the founding of Brookhaven and was an active trustee for ten years. Some other Pegram lecturers have been René Dubos, J. Robert Oppenheimer, Barbara Tuchman, Richard Hofstadter, Louis S. B. Leakey and André Maurois.

Another Way To Help United Way

When we think about giving to the United Way, we usually think about giving money. But there's something else the United Way needs — time, from people willing and able to help in various aspects of the program.

For help in launching annual campaigns, for example, the United Way of Long Island asks organizations throughout the area for Loaned Executives. This year, Georgia Irving is filling that role for BNL.

Normally, Irving is found in the Administrative Office of the Director's Office. But for the past few months, she has been found at a desk in the Melville offices of United Way. If she can be found in one location at all, that is, since much of her time is spent on the road, visiting one of the accounts in the division with which she is working. This division includes all school districts, as well as town, county and village offices, in Nassau and Suffolk Counties.

Irving's basic three-month assignment, which ends at Thanksgiving, is to help her accounts get their campaigns going. Among other things, this can involve training new campaign coordinators, making sure campaign material is available, showing tapes and films, addressing large groups and lots of driving.

For Irving, who had no previous experience with United Way, "This has become a personal thing," she said. "Seeing it so closely, you get the feeling of an old-fashioned community chest. Sometimes I go along on tours of a United Way agency, and I get a good feeling seeing the important ways the money is being used.

"Another impressive thing is that almost everything is done by volunteers. I'm one of about 35 Loaned Executives this year. The allocation committee, which determines what agencies will get funds from the United Way, is made up of 120 volunteers from the community. And many of those agencies are staffed by volunteers because part of the criteria for getting money from the United Way is for an agency to have low overhead. The United Way itself only spends 12 cents of every dollar on overhead, and I've seen how they do it."

Peter Horton

As Loaned Executive to United Way, Georgia Irving helped get campaigns started in locales as far apart as Southampton and Garden City. Here, she checks in at BNL between appointments.

Being a Loaned Executive has also given Irving some unexpected benefits, such as opportunities to address large groups. "I thought it would help me and it has," she says. "I spoke before 200 people last Monday. I didn't sleep well Sunday night, but it went just fine, and that gives me a shot of adrenalin. Right after a successful presentation is the best time to go out and start new campaigns."

And Irving has had other learning experiences. "I've learned where the Meadowbrook Parkway goes!" she says. "I've learned more about Nassau County than I had in all my 30 years on Long Island. Before this, there was Suffolk County and Manhattan. Now I can find my way around anywhere." In addition, she has learned to have sympathy for commuters, as well as how to operate and fix a 16mm movie projector.

But mostly, she has learned about United Way, from the inside out. And, she says, "I may have given some of my time, but I've gotten much more in return."

United Way Representatives

Dept./ Div.	Representative	Ext.	Bldg.
AUI	Monique Toler	5174	134A
AGS/	Bill Fritz	3278	911A
HEF	Jim Briggs	7518	902A
AMD	Ed McFadden	4188	515
DAS	Jean Petterson	4224	475
Bio.	Sydell Lamb	3389	463
Cent. Shops	Deidre Seymore	5037	462
Chem.	Lucy Sanchez	4399	555A
C&P	D.J. Greco	7643	355
DO	Rita Kito	3320	460
Fisc.	Marge Stoeckel	2459	134A
Inst.	Barbara Kponou	4231	535B
MIS	Helen Jones	7791	459
Med.	Betty Heldman	3699	490
NSLS	Kim Holschuh	2839	510E
DNE	Jean Ramirez	2119	197C
Pers.	Frances Scesny	7516	185
P&GA	Carol Sokolow	2907	197B
Phys.	Sherry Reeve	2414	510A
PE	Arnold Benson	3256	422
	Tony Calligeros	2462	134C
Reactor	Lisa Seymore	4432	750
S&S	Linda Hanlon	2439	50
Staff Serv.	Garfield Hawthorne	2340	97
S&M	Lou DiCarlo	2302	211
S&EP	Jim Gilmartin	4215	535A
TID	Mary DaCosta	7692	477B

Lecture on Artificial Intelligence

Pamela Surko, a member of the Artificial Intelligence Systems Department at Bell Laboratories, New Jersey, will speak on "Artificial Intelligence: Snake Oil, 2001's HAL, or Points In-Between" on Tuesday, November 19, at 4 p.m. in the Applied Mathematics Department seminar room. The talk, which is sponsored by Brookhaven Women in Science, is open to the Laboratory community.

Surko will survey the field of artificial intelligence today and talk about what is upcoming in the field over the next decade. She is an industrial software engineer and currently president of the national Association for Women in Science. Before joining Bell Labs in 1980, Surko was on the physics faculty at Princeton University and performed high energy physics experiments at Brookhaven, Fermilab and CERN.

A dinner in her honor will be held in Room A of Berkner Hall at 5:30 p.m. Afterwards, Surko will speak informally about the role of organizations of women scientists and how these various groups can together work more effectively. The dinner cost is $10, and reservations may be made by calling Ext. 3541.

Pamela Surko

String Quartet at BNL, Nov. 22

The Concord String Quartet will perform at Berkner Hall on Friday, November 22, at 8:30 p.m. The concert is open to the public.

The quartet has been delighting both critics and audiences across the country for over a decade. The ensemble was formed in 1971 and a year later captured the Naumberg Award for Chamber Music. In New York, the group is especially noted for its performances of the complete Beethoven Quartets, which have become an annual event in New York's Alice Tully Hall.

Concertgoers at BNL will hear Beethoven's String Quartet in F Major, Op. 135; Mozart's String Quartet in A Major, K. 464; and Hans Werner Henze's String Quartet No. 5, one in a set of three quartets composed for the Concord in 1976-77.

Tickets may be purchased at the door. Prices are $9 for general admission, $6 for students and those over 65, and $5 for those under 18.

The Concord String Quartet

New Fruit Varieties Available

What's new? Two grapes, a raspberry and a strawberry, says the Cooperative Extension Association of Suffolk County, which recently announced that the following four new varieties have been released from the fruit breeding program of the New York State Agricultural Experiment Station at Geneva:

- **Einset Seedless Grape** (NY 63.878.1) — table grape, bright red, seedless, medium size, oval; skin — adherent, resistant to cracking; flavor — fruity, mildly strawberry-like; vine — vigorous, moderately winter hardy, resistant to botrytis; susceptible to powdery mildew.
- **Melody Grape** (NY 65.444.4) — wine grape; wine characteristics — slightly floral, excellent quality, vinifera-type, neutral fruitiness, good body and balance; vine — productive, vigorous, moderately winter hardy, apparently resistant to both powdery mildew and botrytis.
- **Titan Red Raspberry** (NY 883) — very large, firm, long-conic in shape, large cavity; flavor — very mild; plants — have good vigor; primocanes — very smooth, few and small prickles; fruiting canes —productive, and weight of crop makes trellising desirable; strength — appears partially resistant to raspberry aphid and — *Amphorophora agathonica*, the vector of mosaic virus.
- **Jewel Strawberry** (NY 1324) — exceptional, all-around berry; fruit — large, bright red, glossy, attractive, blunt wedge-conic in shape; flavor — slightly reminiscent of Holiday; freezing quality — good; health — low incidence of fruit rots and foliar diseases; plants — hardy, moderate vigor and runner production.

Plants of all four new fruits are available for delivery in spring 1986 from the New York State Fruit Testing Cooperative Association, Inc. (FTA), Geneva, NY 14456, which propagates and sells a wide variety of fruits adapted to N.Y.S. A free catalog is available on request.

Booster

(Continued)

dem transfer line, and the AGS. In addition, Lowenstein says, "We must do a substantial amount of work on such AGS systems as RF and vacuum, to support the additional current that increased intensities will generate." Horst Foelsche and Theo Sluyters are in charge of that effort.

This is not the first time the 25-year-old AGS has been asked to increase its output. "It was designed to accelerate 10^{10} protons," says Lowenstein. "Today it is accelerating 1,700 times the initial design, and now we are asking for another factor of four. And we'll get it, because it's a remarkably versatile machine. It's going to be another exciting 20 years for the AGS."

— Anita Cohen

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BERA News

Swim Club

At their first U.S. Masters swim meet of the indoor season, the BNL Swim Team won two races and collected ten medals for age-group finishes. Toshi Sugama was first in the 100-yard breastroke in 1:12.99, also placing first among men age 35 to 39, and he took first overall and first in his age group in the 200-yard breaststroke with a time of 2:47.66.

In the 100-yard freestyle, Mark Catan finished in 1:05.14, placing seventh among men 25 to 29; Laurie Hastings took a gold medal for women 30 to 34 in 1:19.54; and Marsha Belford had a time of 1:20.47 to finish fourth among women 25 to 29.

For the 50-yard butterfly event, Wlodek Guryn completed the distance in 30.74 to place fifth of men 35 to 39, and Belford earned a silver medal for women 25 to 29 with a time of 39.56. In the 50-yard breaststroke, Sugama finished fifth overall and took the bronze for men 35 to 39 in 33.94, and Peggy Micca took fourth of women 40 to 45 with a time of 54.13.

In the 100-yard breaststroke, in addition to Sugama's win, Belford won the gold of women 25 to 29 with a time of 1:36.80; Hastings took the silver for women 30 to 34 in 1:36.82; and Micca earned the bronze for women 40 to 44 in 2:01.03. In the 50-yard freestyle, Catan had a time of 28.90.

For the 100-yard individual medley event, Guryn won the bronze for men 35 to 39 in 1:10.60; Belford placed fourth of women 25 to 29 with a time of 1:29.83; and Hastings won the silver for women 30 to 34 in 1:32.08. Guryn earned a silver medal for men 35 to 39 in the 50-yard backstroke with a time of 34.68.

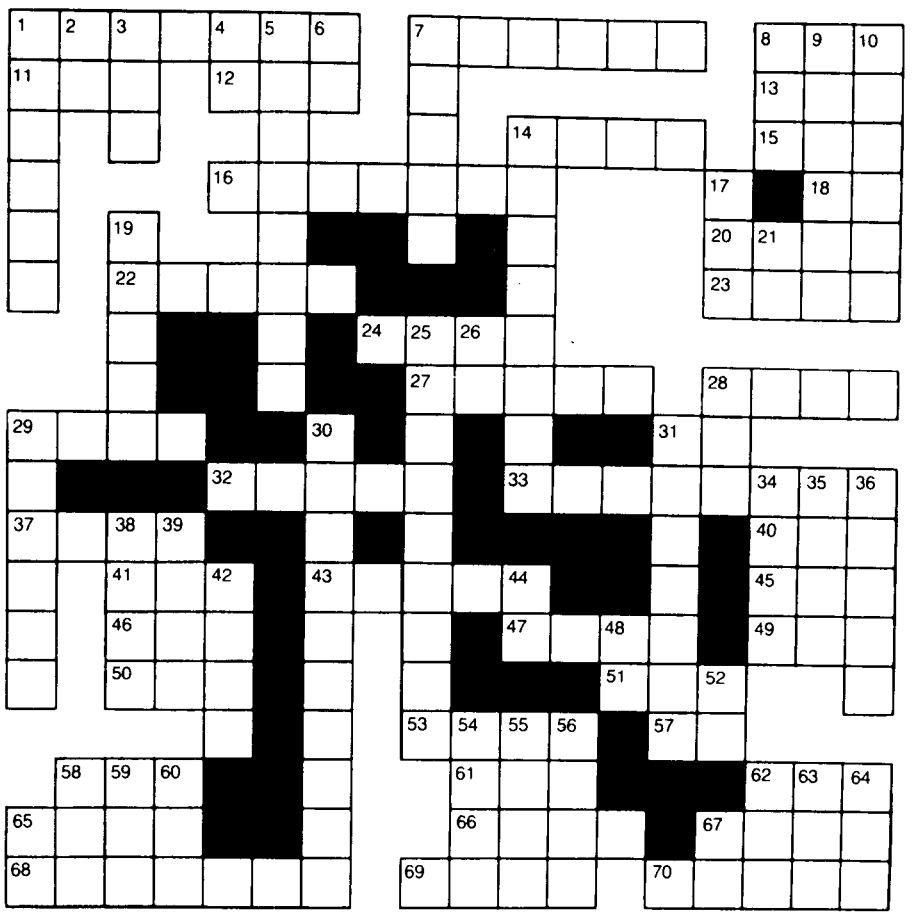
The BNL Swim Club will meet on Thursday, November 21, at 5:15 p.m. at the BNL pool. A half-mile to one-mile graduated workout will be held, with an optional time trial afterwards. Those who can swim at least two laps of the pool using the crawl stroke are invited to attend. For more information, call Marsha Belford, Ext. 3327, or Mark Catan, Ext. 5060.

Basketball

There has been a great deal of interest in adding a Slow-Break Basketball League. In slow-break basketball, once a team has established possession of the ball in the back court, the player with the ball must wait four seconds before allowing the ball to cross the half court line into the front court in one pass. This rule allows the team not having the ball time to get on the defense, and it slows the game down a bit without reducing the intensity of play.

If you are interested in playing in either the new Slow-Break or the regular Fast-Break League, sign up on sheets posted in the gym or contact Mac Thomas, Ext. 7102, Bldg. 318. League play will start around the second week in December and continue through April.

BREAK THE HABIT



ACROSS

1. The habit many want to break
7. Foul; putrid
8. Not good
11. Tall, flightless bird
12. Some people do this to powdered tobacco
13. Actress Lupino
14. _____ a hand to a smoker on Smokeout day
15. "King Kong" director's monogram
16. Some people dip it or chew it
18. Chicago's home (abbr.)
20. Ancient South American Indian race
22. What a smoker wants to break
23. Little people
24. Government agency which deals with farming
27. Cindy Lauper says this "changes everything"
28. Some even do this to tobacco
29. Flip side of Bruce Springsteen hit: "_____ Cadillac"
31. That is (abbr.)
32. A _____ of gum may be a helpful cigarette substitute
33. M.D.'s who often cut it out
37. Elvis was one, Valentino, too
40. Tariff in England
41. _____ and don'ts
43. On Smokeout Day you may want to _____ a smoker
45. Pending constitutional addition for women
46. Mouths; orifices
47. Give up, as smoking
49. Fed. agency concerned with carcinogens
50. Sts., Hwys., Lns.
51. Number of fingers and toes
53. _____ pop
57. _____ what?
58. Stop-smoking event's initials
61. _____ and Pop
62. Well known NY Department store (initials)
65. What a cigarette gives off
66. Black, in France
67. Short for December holiday
68. 1985 Oscar-winning film
69. Cigarettes often cause this
70. Smoking can cause this

DOWN

1. Smoking can dull these (taste, e.g.)
2. Famous actress' monogram
3. The Great American Smoke _____
4. Source of both ego and libido
5. An addictive ingredient in tobacco
6. Family doctor, for short
7. Broad, fast-paced comedy
8. What bridge players do
9. One who's hooked on smoking
10. Larry Hagman is its star
14. Former smoker and 1984 Olympic diving champ
17. To _____; namely
19. A type of smoker
21. _____ smoking
25. The American Cancer Society sponsors these every November
26. Perform, execute
28. Between bee and dee
29. The "Purple Rain" man
30. What millions put aside for Smokeout Day
31. Lights up
34. What you bake in
35. Short for government drug agent
36. What a tooth often gets from smoking
38. Cigarettes can give this to your hair and clothes
39. British title
42. Back talk
44. Monogram of noted Chinese diplomat (1889-1952)
48. Neuter pronoun
52. Not yes
54. Prefix meaning all, everywhere
55. You open it
56. Parisian girlfriend
58. Sometimes a diversion from smoking
59. Medical group, initials
60. Short for a deposit of dirt or tea leaves
62. Dallas inst. of higher learning
63. Sometimes a cigarette (slang)
64. Cigarette leftover
65. Monogram of '60s pop singer of "Why" and "Venus"
67. National social sorority, initials

AMERICAN CANCER SOCIETY®

See answers below.

Theater Group

The Theater Group will meet on Thursday, November 21, in Berkner Hall. Socializing will begin at 7:30 p.m., and the business meeting at 8 p.m.

Following the meeting, plays under consideration for performance will be read, including John Brown's Body by Stephen Vincent Benet. Members and other interested Laboratory community members are invited to attend. For more information, contact Karl Swyler, Theater Group program chairman, at Ext. 7171.

Singles Club

The second ski trip sponsored by the Singles Club will be February 21 to 23 at Mount Snow. This no frills excursion includes roundtrip motorcoach ride and two nights accommodation in a Best Western Hotel. The cost is $89 per person with four people per room, $104 with three per room and $113 with two per room. The bus leaves BNL at 4 p.m. on Friday, February 21. For reservations for this or the deluxe Lake Placid ski trip on January 24 to 26, call Doris Terry, Ext. 2228.

Bowling

Purple League

During the week of October 31, Gene Fales rolled a 238, Gene Hassell 225, Sharon Smith 216/195, Ken Asselta 213, Ed Meier 205/200, and Betty Jellett 190.

Red/Green League

R. Larsen bowled a 210, R. Eggert 208, L. Jacobson 207, J. Ferrante 205, E. Sperry 202/201, and J. Medaris 202.

White League

High games were bowled by Ed Sperry IV 212, Ted Erickson 211, Dick Adams 196/194, Kathy Griffin 185, Karen Vogel 185, Mary Scheidet 180, and Annamarie Spira 178.

Runners Corner

Two personal bests were recorded at one of the two marathons attended by five members of the Runners Club on November 4. Despite rain and high winds at the Marine Corps Marathon in Washington, D.C., Lou Addessi and Frank Marotta ran the 26.2-mile race in the personal record times of 3:20 and 3:27 respectively. Also representing the club in this race were Skip Medeiros, who had a time of 3:16, and Wen Shi Yu, who finished in 3:25.

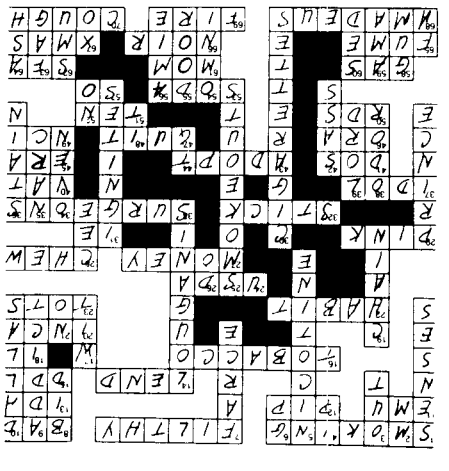
Dennis Nordstrom was the sole Runners Club representative at the Ocean State Marathon in Newport, Rhode Island, and he completed the triple loop course in 3:16.

Anyone who wants more information about the club or wishes to participate in an upcoming five-mile team race on December 1 may call Medeiros at Ext. 2665.

Note to Diners

The Cafeteria will be closed on Saturday, November 16. On that day, snack bar service will be available from 9 a.m. to 2 p.m. at the Brookhaven Center.

PUZZLE ANSWERS



Cafeteria Menu

Week of November 18

Monday, November 18		
Beef barley soup	(cup)	.65
	(bowl)	.85
Chicken breast teriyaki over rice		2.45
French bread pizza w/sausages		1.65
Hot Deli: Grilled Reubens		2.45
Tuesday, November 19		
Chicken noodle soup	(cup)	.65
	(bowl)	.85
Corned beef brisket & cabbage		2.40
Beef & broccoli stir fry		2.40
Hot Deli: Smoked turkey	(bread)	2.30
	(roll)	2.45
Wednesday, November 20		
Cream of mushroom soup	(cup)	.65
	(bowl)	.85
Chili Releno casserole		2.35
Beef Stroganoff over noodles		2.40
Hot Deli: Hot pastrami	(bread)	2.20
	(roll)	2.35
Thursday, November 21		
Cream of chunky vegetable soup	(cup)	.65
	(bowl)	.85
Baked lasagna w/garlic bread		2.40
Braised liver & onion		2.40
Hot Deli: Hot roast beef	(bread)	2.35
	(roll)	2.50
Friday, November 22		
Rhode Island broth chowder	(cup)	.65
	(bowl)	.85
Fish & chip plate		2.35
Fresh breaded filet of sole		2.40
Hot Deli: Cold submarine sandwiches		2.40

Arrivals & Departures

Arrivals

Gregory W. Bostic ..... Staff Services
Michael B. Coulthart ..... Biology
John C. Hunt ..... Sfgds. & Sec.
Sorin Pop ..... NSLS
Mihai Radulescu ..... NSLS

Departures

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

Prem L. Bhalla ..... Biology
Charles L. Harmon ..... Sfgds. & Sec.
Lynn E. Maelia ..... Biology
Alexander F. Richardson, Jr. ... MIS

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.

LABORATORY RECRUITMENT - Opportunities for Laboratory employees only.

2366. HELPER A - Requires a substantial knowledge of the electrical trade, however, skills need not be up to the level of a jouneyman. Will provide assistance in the electrical shop area including handling minor assignments and assisting journeymen with their assignments. Plant Engineering Division.

2367. CLERICAL POSITION - Requires excellent communication and clerical skills and previous employment that included work which required accuracy, precision and flexibility. Previous security experience is a plus. Ability to obtain "Q" clearance is necessary. Safeguards and Security Division.

OPEN RECRUITMENT - Opportunities for Laboratory employees and outside applicants.

2368. ELECTRICIAN A - Under minimum supervision lays out, constructs, installs, maintains, repairs and operates electrical systems, equipment, controls and related devices. Requires minimum of five years' industrial electrician experience. Plant Engineering Division.

2369. TECHNICAL POSITION - Requires AAS in engineering science or physical science or equivalent. Responsibilities include the monitoring of radiation and contamination, accurate record keeping of personnel exposure, industrial hygiene and other safety concerns. Prior training or experience in health physics is very desirable. "Q" clearance required. Safety and Environmental Protection Division.

2370. RESEARCH ENGINEER - Requires a BS/MS in science or engineering or equivalent plus a minimum of five years' experience in one or more of the following areas: commercial nuclear power plant design, systems, operations, equipment testing and maintenance, materials and welding. Candidate will be involved in plant systems and equipment analysis projects such as impact on maintenance requirements of plant aging, nuclear vendor inspections, post-fire shutdown analysis and technical reviews of preoperational and operating reactors. Department of Nuclear Energy.

2371. EMPLOYEES ASSISTANCE PROGRAM MANAGER - Requires PhD in clinical psychology or related field, clinical experience in diagnosis, intervention and referral and training experience. Experience functioning in an EAP environment highly desirable. Will provide short term therapy for the full range of mental health problems. Medical Department.

2372. ADMINISTRATIVE/CONTRACTS POSITION - Requires BA degree in a technical field, business administration, accounting or equivalent and a minimum of two years experience in a professional level procurement and/or contracting environment. Will provide support within all areas of the division. Contracts and Procurement Division.

Autos & Auto Supplies

60 PONTIAC VENTURA - 4 dr., white, good cond., $1,500; 80 Omega, excel. cond., 2 dr., h/t, a/c, $3,700. Ext. 2050 or 473-6432.

80 OLDS OMEGA - 4 dr., sedan, 4 cyl., p/s, a/t, 85k mi., $1,500. Randy, 751-2634 after 6 p.m.

77 PONTIAC FIREBIRD - a/t, a/c, p/s, p/b, am/fm, orig. owner, $1,995. Tony, 654-0877.

RIMS - (2), Volvo, 15", $25. Ext. 3369 or 929-6442.

79 CHEVROLET CAMARO - white, a/c, p/s, p/b, cruise, spoiler, low mi., mint cond. Ext. 4432 or 727-1367 eves.

75 FORD LTD - station wagon. 924-7262 after 6 p.m.

73 NOVA SS - very good cond., Edlebrook manifold, Holley 850 dbl./pumper, accel. ignition/super coil, headers, performance trans. (reblt.), Jetson tires, sunroof, $1,800. John, 286-8904.

57 HARLEY DAVIDSON - 900cc Sportster, must see, $2,500. 588-8492.

72 TRAILER - sleeps 6. Tandem wheels, good cond., was $2,100, now $1,500; 73 Camaro, good cond., recently tuned, new carb., $700. Bob, Ext. 2964.

72 VOLVO - wagon, runs well, some body rust, 178k mi., needs ball joints, best offer above $300. Ext. 2008 or 928-5875 eves.

81 CAMARO - a/t, p/s, p/b, T-top, am/fm stereo cassette, 30k mi., excel. cond., $6,000. Ext. 4962.

84 CHRYSLER - Town & Country wagon, fully loaded, mint cond., 30k mi. 477-2262 after 6 p.m.

78 MUSTANG - Mach I, runs perf., 4 spd., new exhaust, $2,300. 281-0463.

82 BUICK SKYLARK - a/t, a/c, p/b, p/s, am/fm stereo cass., cruise, 39k mi., excel. cond., $5,995. Bill, Ext. 2047 or 472-4684 after 6 p.m.

77 PACER - 2 dr., a/t, 85k mi., runs well, $700. L. Snead, 286-8166.

RADIALS - Firestone steel belted, 14", $5 ea. Rich, 744-8910 after 5 p.m.

70 NOVA - a/t, p/s, new suspension and exhaust systems, reliable eng. and trans. Walt, Ext. 2907 or 698-0576.

TIRES - (4), 195 75R14, $40. 475-4596.

70 DODGE DART - runs, needs work, good tires, $75. 589-6803.

79 CORVETTE - red, a/t, a/c, p/s, p/b, p/w, am/fm, T-top, alarm, 29k mi., $11,500. 289-7650.

80 MAZDA RX7 - excel. cond. Ext. 2537

78 BLAZER - Cheyenne package, new motor, a/t, a/c, am/fm, $5,000. 286-9274 after 6 p.m.

73 CHEVY PICKUP - 4 wd, 350 V8, a/t, p/s, p/b, a/c, rally wheels, 10-15 tires, stereo, $3,000. 269-9510 after 7 p.m.

79 MERCURY ZEPHYR - 4 dr., a/c, p/s, p/b, 69k mi., must see. 473-7739.

76 TOYOTA - hatchback, body OK, needs eng., $150; Toyota truck cap, fiberglass, custom, cream, 60"x72" excel., $375. Jack, Ext. 4411 or 929-8287.

84 PLYMOUTH RELIANT - 4 cyl., 4 dr., a/t, p/b, am/fm radio, 49k mi., excel. cond. $4,650. Ext. 5624 or 727-5956.

82 CHEVY - Malibu Classic sw, very good cond., $4,900; 78 Cadillac Fleetwood Brougham, 4 dr., like new, $4,900. 475-4596.

73 PINTO - excel. cond., clean, 4 spd., am/fm stereo, new tires, parts. 226-1828 after 5 p.m.

76 AMC HORNET - a/t, hatchback, white, 2 dr., 80k mi., good running cond., $600. Ext. 3850.

83 HONDA - 650cc, Nighthawk, like new, low mi., best offer. Bob, Ext. 3145.

75 PLYMOUTH VALIANT - 6 cyl., rebuilt, a/t, a/c, p/b, p/s, good cond., $850. Ext. 2733 or 475-5448.

79 FIAT - sport, 81k mi., many spare parts, 4 spd., $500. Ext. 3978 or 3226 after 6 p.m.

80 CHEVY MONZA - 2 + 2, many new parts, 4 cyl., 4 spd., reliable, 25 mpg, excel., $1,295. 751-4822.

74 FORD - Country Squire, sw, a/t, a/c, new exhaust/brakes, good cond., $1,150. Don, Ext. 2050 or 289-7813.

76 OLDS - 4 dr., white, low mi., a/c, p/b, 350, $1,000. Kevin, 563-1189.

77 OLDS - Cutlass Salon, low mi., a/c, p/s, p/b, am/fm tape, sport rims, $2,200. Richie, 231-5749.

TIRES - new, Firestone P-235x15, all terrain, Ford wheels and hub caps. 924-9212 after 6 p.m.

78 DATSUN B210 - a/t, hatchback, new tires/brakes, good cond., $1,350. 862-6970 eves.

79 SUZUKI - 425cc, 7K mi., new tires/battery, excel. cond., $850. 331-9732.

72 YAMAHA 650 - windscreen, saddle bags, new tubes and tires, crash bar, $500. tony, Ext. 4095.

73 DODGE VAN - rebuilt, 6 cyl., fully carpeted, (4) capt. chairs asking, $850. 878-8964.

70 DODGE WAGON - a/c, p/s, p/b, reg. gas, clean, asking $550 neg. 475-8710.

76 FORD GRANADA - clean in/out, $1,000. Frank Perez, Ext. 3531.

83 FORD ESCORT L - hatchback, 38k mi., exc. cond., 4 cyl., 5 spd., am/fm cassette, $4,600. 758-7693 after 6 p.m.

74 BUICK APOLLO - V8, 4 dr., p/s, p/b, am/fm, very good cond., $950; (2) snow tires, new, w/r balanced, for VW Super Beetle, $75. Ext. 3701 or 7771.

TRUCK CAP - 8' bed, good cond. Tony, Ext. 2462 or 269-9510.

APPLIANCE ALUMINUM WHEELS - for Datsun Z, complete set, $50. Ext. 4318.

73 VW BEETLE - am/fm stereo, $400 neg. Ext. 7772 or 744-8581 after 5 p.m.

67 DODGE DART - 6 cyl., manual, runs well, asking $250. Ext. 7531 or 929-3550.

76 FORD VAN - 351-V8, a/t, p/s, p/b, flares, spoiler, refrig., toilet, sunroof, must see, excel. cond. Ray, Ext. 3536 or 289-7615.

73 AMBASSADOR WAGON - p/b, p/s, roof rack, 3rd seat, 360 eng., $500. Ext. 3846 or 924-3158.

DUNLOP SP-ELITE TIRES - (4), AA175-14, orig. equip., Volvo only, 17k mi., $80. 822-6665.

80 DATSUN 310GX - excel. cond., new tires, shocks, exhaust, $2,300. Greg, 369-1841 after 6.

77 MERCURY WAGON - 9 passenger, loaded, good cond., good tow vehicle, $1,700. 286-0505.

67 CHRY. CONVERTIBLE - new top, p/s, p/b, p/w, a/t, 383 V8. Tony, 698-9274.

75 CHEVY VEGA - good transport, $600 neg. Ext. 3423 or 924-5549.

PICKUP BED - for Dodge, 8' stepside, good cond., 8.25-14 snows on Chevy wheels. Ken, 289-8212 eves.

79 HONDA CIVIC - 4 cyl., 5 spd., 2 dr., new muffler, good cond., w/stereo, $1,200. Alfonso, Ext. 3790.

FAIRING - Quicksilver model, w/mounting hardware, brand-new, $1000. Frank, Ext. 3210.

79 DODGE ASPEN - 4 dr., a/c, p/b, p/s, V6, 54k mi., excel. cond., $2,100. Joe, Ext. 4139 or 467-2422.

SNOW TIRES - Sears Tractionex, H78x15, w/w, on Ford rims, like new, $50 ea. Frank, Ext. 5107 or 277-0464.

74 PLYMOUTH SATELLITE - 6 passenger, V8, p/s, p/b, a/t, a/c, 150k mi., runs well, $750. Steve, Ext. 3100 or 878-4880.

Boats & Marine Supplies

9' DINGHY - plywood, w/British Seagull Mark II motor, $650. Don, Ext. 4009.

15' FIBERGLASS RUNABOUT - new seats, 50 HP Evinrude, trailer, extras, $1,700. 821-1042.

BOAT TRAILER BED - rusted, axle, wheels, spring OK, $75. Ext. 3861 or 286-1975.

26' SAILBOAT - Peason 1972, 15 HP engine, 5 sail, DF. Ext. 3921 or 689-9214.

22' O'DAY - 1982, (3) sails, VHF, elec. start, 7.5 Mercury, many extras, $15,000. 698-8158.

Miscellaneous

PUPS - half-breed Doberman, 7 weeks old, $40. Ext. 3254.

FOLDING BED - 2" mattress, $20; Manning-Bowman floor heater, $9; 55 lb. weight bar, $30. 265-0501.

CHANDELIER - (8) crystal cut glass lights, prisms. 924-4093.

GUITAR - Gibson, pre 1965, semihollow, excel. cond., $350. Joe, Ext. 4661.

BABY CARRIAGE - good cond., $15; timing light, $10. 567-9025 eves.

TV - (2) black & white, 19", both excel. cond. perf. for computer. $40, $75. Ext. 4935.

STORM WINDOW - white alum., 33x40, fits opening 31x39, 3-piece combo, brand new, $35. Ext. 4238 or 286-3509.

BEDROOM SET - light pine, triple dresser, queen head & footboard, mattress, (2) night stands, double oval mirror, best offer. Ext. 2877 or 289-8428.

CHILD'S TOYS - Big Wheel, good cond., $10; small 2-wheel bike. $5. 929-6442.

BABY CHANGER - Cum dresser, like new, wicker design, folding drawers, $30; large angle table w/formica top, $10. 751-1884.

TABLE - Colonial, pine, large 71"x33", very good cond., $50. 286-9510.

PLAYPEN - w/pad, colored ballon pattern, mint cond., $35. E. Kelly, 744-3069.

CABINET - kitchen utility, camping, $35; Jensen co-axial speaker & cabinet, $20; Shetland floor scrubber, $15. 265-0501.

ELECTRIC RANGE - GE, self cleaning, white, needs oven thermostat. $75; closed caption TV converter for the hearing impaired, brand new, $180. 727-4859.

CARPETING - red, 11'x18'. Jute back, less than 1 yr. old, $125. 369-0864.

BABY ITEMS - white wicker bassinet; Lull-a-bye crib w/mattress & bumpers; swing-o-matic; plaid carriage, all very good cond. 281-0360 after 6 p.m.

VACUUM - Hoover Celebrity 4, canister, 2 speed, w/attach., good cond., $75. 744-9677.

TOASTER OVEN - GE, excel. cond., $15; Sears automatic rotisserie, $20. 924-3236.

REFRIGERATOR/FREEZER - GE, side-by-side, self defrosting, 18 cu. ft., very good cond. 286-1214 after 5 p.m.

CAR SEAT - Century 300, used for 9 months, $30 or best offer. Peggy, 286-9388.

BEE EQUIPMENT - hive, bodies, supers, misc. supplies, $100; Mission oak couch, 75 yr. old, $50; double bed matt./boxsp., $50; catalytic gas heater, hardly used, $150. R. ince, 286-0682.

COMPUTER - 8086 Multibus, 10 mbyte, Winchester, 8" floppy disk, Televideo 950, adds viewpoint terminals. 246-5048 or 929-4068.

BED - dresser, mirror, Sealy mattress & box spring, old but excel. cond., $200. Ext. 2981.

SKI BOOTS - asst. sizes, child/adult, $15-$20; antique canopy bed, $65. Jim, Ext. 3372.

EXERCYCLE - like new, w/odometer, timer, speed-ometer, was $120 sell for $80. 722-4821.

HOSPITAL BED - works excel. Rich, 744-8910 after 5:30 p.m.

EARTH STOVE - coal/wood, used one season, w/stack kit, $375. 588-4703 after 5 p.m.

DRUMS - trio, blue sparkle, for beginner, $100. Ext. 7235 or 399-1736.

VENTILATOR - 14" air driven, 2 roof vents, 2 soffit vents, $35; 46" diameter plate glass table top, some scratches, $40. 472-9789.

TENNIS RACQUET - Borg, graphite ash, regular size, nylon strings, new cond., $45. 751-4822.

REFRIGERATOR - top freezer, GE, 19 cu. ft., good cond., $75; playpen, $15; highchair, $7. Ext. 7505 or 689-8605.

NECKLACE - 14 kt. gold, flat chain, $125. Carol, Ext. 2907.

ELECTRIC RANGE - double oven, 30" Okeefe Merritt, good cond., $75. Ext. 2180.

SIAMESE CATS - excel. modern type, angular heads, nice disposition. Ramona, 928-3088.

FOLDING BED - $20. Wick, 924-0582.

VCR - GE, model 3001, $50. Rich, 744-8910 after 5 p.m.

MELNOR WALKING SPRINKLER - w/75' of hose, $30. Victor, Ext. 2395.

CAMERA - Pentex, model SP, 35 mm, w/carrying case, 50 mm, F1.4 and 135 mm, F3.5 lenses, $120. Ext. 2823 or 4510.

JUICE EXTRACTOR DELUXE - Oster, new, $50; electric rotary lawn mower, $20; large clothes washer, $25. Victor, Ext. 2395.

LAMPS - (2) marble columns, 27" high, with shades, $25/pr.; dinnerware, Jyoto fine china, service for (12), white w/platinum & pale green border, $100. I. Brown, 423-8384 after 6 p.m.

FURNITURE - sofa, $250; chairs, $100, good cond., 4 years old. Don Schuette, 929-4818 after 6 p.m.

STROLLER - Luv-Buggy, excel. cond., $45. Jeanne, Ext. 7742 or 281-7568.

LEATHER JACKET - imported, bomber style, size 48, butter soft, fully lined, $180. Tony, 288-9077.

TOILET & SINK - American standard, sea-green, no chips, excel. cond., all hardware, $100. 727-6481.

LAFAYETTE TELSAT SSB-140 - side band base station, c.b., 40 channel, $150. Bill, Ext. 2050 or 281-0557.

OPERA TICKETS - Metropolitan Opera, dress circle, front fow, two tickets, $35 ea., 11/27/85, Cavalleria/Pagliacci. 286-1165.

KITCHEN CABINETS - birch, top & bottom, formica counter and sink, like new, $200; exhaust fan, $40; sliding closet doors, bedroom, hollow, 1 pr., excel. cond.,, $20 ea. M. Haller, Ext. 3173.

COLONIAL FURNITURE - sofa, rocking chair, ottoman, pine frames, coffee table, two end tables, excel. cond., $1,200. Margaret, 588-7989.

TV ANTENNA - Radio Shack, 1 yr. old., very good cond., $15. Ext. 7505 or 689-8605.

TREES - locally grown, evergreens, maples, dogwood, you dig., reasonable. 924-6582.

Free

CLOCK - for kitchen wall, a/c. Ext. 4144.

PLANTS - Dahlia, Iris, Monarda, pick-up in Pt. Jefferson. 473-3792.

ROWBOAT - 14', plywood, heavy, needs paint. Ext. 2177 or 298-4985.

DOG - Boxer, for adoption, neutered, 2 yrs. old., good watch dog, needs love. Sandy, 698-0573 after 5 p.m.

OAK FIREWOOD - trimmed trunks, some already cut. 821-1953.

Car Pools

SOUTHOLD - rider wanted. Ed, Ext. 3293 or 477-2880.

MATTITUCK - 3 drivers want fourth. Ext. 3140.

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

MARCO ISLAND FL.- on Gulf Beach, 2 bdrms., 2 baths, condo., large pool, 10 hartru cts., golf & boating avail. 473-6432.

ROCKY POINT - apt., mint cond., priv. home & yard, 2 bdrms. upstairs apt., $500. + util., security; 2 bdrm 1st. fl. apt., $600 + util., sec. 261-7711.

E. PATCHOGUE - S. of S. Country Rd., 1st fl. apt., 2 bdrm., l/r, eik, priv. ent., avail. Dec. 1, $420 mo. + util., no pets. Walt, Ext. 2907 or 698-0576.

N. SHIRLEY - large studio, furn., w/kit., priv. ent., 1 person only, non smoker, no pets, 5 min. to Lab & stores, $400 mo. + security pays all. 281-8044.

E. SETAUKET - 3 to 4 bdrm. house on water, avail. 1/86 to 6/86, $900 + util. Ext. 2051 or 689-8685.

C. MORICHES S. - 3-1/2 lg. rooms, priv. ent., full kit., full bath, refrig., no children/pets, 1 mo. security, $550 mo. pays all. 878-0480 eves.

VERMONT - ski, 1/4/86 to 1/11/86, 2 bdrms., 2 baths, condo., sleeps 6, mountainside resort at Stowe, $600. Mark, 924-0848.

POCONOS - ski, 2/8/86 to 2/15/86, 2 bdrms., 2 baths, condo., sleeps 6, resort at Shawnee on the Delaware, $500. Mark, 924-0848.

ROCKY POINT - attractive 3 bdrm. house, large l/r, eik, well landscaped, fenced property, $750 mo. plus util. Sue, Ext. 3675 or 473-6570.

BROOKHAVEN HAMLET - furn. house, 9 rooms, 2 baths, for at least one year starting Mar. 1, 1985, $800 mo. Ext. 3861 or 286-1975.

SOUTH CAROLINA - Hilton Head, two bdrm., tennis, golf, (tournaments w/top pros.) winter rates, $300/week, 585-9149 after 5 p.m.

MASTIC BEACH - studio apt., fully furn., kit., priv. ent., quiet, 15 min. from BNL, $350 incl. util. & cable, avail. 1/1/86. Ext. 7144.

For Sale

BAITING HOLLOW - 1/2 acre, wooded, very private building lot w/beach rights, $46,500. Ken, Ext. 2008 or 928-5875 eves.

WADING RIVER - new contemp. cape on 3/4 + wooded acre, l/r, d/r, eik, 3 bdrms., study, 2 baths, 2 car garage, porch, 8' basement, f/p, sky lights, cedar siding, 6" walls, quality construction & materials, $169,000. Ext. 7627 or 929-3847.

PT. CHARLOTTE, FL - W. Coast, property 120'x125', high-dry land, near Peace River w/access to Gulf, $20,000. 732-8216 after 5 p.m.

AQUEBOGUE - 20 min. to Lab., 3 bdrm. ranch, f/p, 1/3 acre, full bsmt., 1-1/2 car garage, game rm., wet bar, $125,000. 722-4644.

RONKONKOMA - 3 bdrm. ranch, lg. eik, full bsmt., 1/4+ acre, $115,000. 585-3417.

PORT JEFFERSON VILLAGE - Harbor Hills, 3 bdrms., 2 1/2 baths, 1 car garage, lg. den, l/r w/cathedral ceiling, d/r, eik, bsmt., secluded patio, 1/3 landscaped acre, pvt. beach rights, $160,000 w/some financing flexibility. 928-2803.

Wanted

CLEAN FILL - approx. 50 cy, delivered, reasonably priced. Ext. 2492 or 475-8658 after 7 p.m.

HOUSE TO SIT - going away on vacation or business, I will stay with your house. Ext. 3671 or 736-2131 eves.

TRAINS - Lionel, American Flyer, accessories, any condition brings good price. Carol, Ext. 3362 or 924-4097 eves.

APT OR HOUSE - Dec., Jan., Feb. Ext. 4494.

CAR - driver avail. to transport your auto cross country to California. Ext. 4494.

BOXING CARTRIDGE - for Atari 2600. Bill, Ext. 4988.

TRUMPET - in good cond. Ramona 928-6930.

SNAPPER LAWN MOWER - w/leaf shredder attachment, engine need not work, reason. Victor, Ext. 2395.

GUITAR - good quality, electric, reason., Fred Kuehl, Ext. 7947, 4823 or beep 792.

Lost & Found

$25 REWARD - for info. leading to recovery of new Irish Fisherman crewneck, belonging to a 13 yr. old child, off white, woman's small, tag says Collars Knitwear, taken from Biology between 2 and 3 p.m. Fri. Nov. 8. Dory, Ext. 3389.

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