

Results Made Public in Love Canal Study

For the past year and a half, cytogeneticist Michael Bender, of BNL's Medical Department, has been collaborating with the Center for Disease Control (CDC) in Atlanta, Georgia, to investigate the incidence of chromosome aberrations in residents of Love Canal and a control group from the nearby Niagara Falls area. Summarizing the results of that study, released by the CDC earlier this week, Bender said, "...there's absolutely no

sign of any difference between them. It's true all those people have aberrations in their peripheral lymphocytes, just as you and I do. But it is not true that these levels are elevated or that there is anything abnormal in Love Canal residents....All we can say now is, we found nothing."

These findings may surprise those familiar with the history of Love Canal. The inspiration of William Love, who sought to build a shipping

channel to circumvent Niagara Falls on the American side, the canal was never completed. The resulting trench became a dump where Hooker Chemicals, and perhaps other companies, deposited about 20,000 tons of chemicals between 1947 and 1952. Then the trench was covered. A school was built on top of it and surrounded by rings of houses. The new community's peace began to shatter in the mid-70's when it became apparent that chemicals were leaking into the soil around the canal. Tests done in 1978 showed chemicals present in some houses, particularly in the inner rings. Installation of a permanent drainage cap around the canal began in 1978, the same year that New York State purchased the first two rings of houses and their inhabitants moved out.

Some of the remaining residents — 36 people from the outer rings — were selected for a 1980 study of chromosome aberration conducted by Biogenics Corporation for the Environmental Protection Agency. No control group was established. "Their results showed that the residents had chromosome aberrations. But such abnormalities occur all the time spontaneously," said Bender. "Without a control group, the findings were not really significant, but they alarmed the residents a great deal. The government was upset and decided that more studies were necessary."

The government turned to the CDC, which asked Bender to collaborate in a cytogenetic test with R. Julian Preston of Oak Ridge National Laboratory (ORNL). Bender had begun working on mammalian radiation cytogenetics at ORNL in 1958 and continued in this field after coming to BNL in 1975.



Robin Leonard and Michael Bender

Cyto means cell; geneticists are concerned with biological inheritance. Cytogeneticists study cells through their inherited biology — their chromosomes. For his past work, Bender has used human chromosomes from peripheral blood samples to measure radiation exposure. "This is a well-established technology. So when people began to worry about chemical exposures, they thought about using cytogenetic techniques to check them," he said.

The CDC-designed study began in December 1981 with the sampling of 93 subjects. Of those, 29 had lived in the evacuated inner ring of houses; 16 lived in the outer rings and had been involved in the EPA test; and 48 were controls, taken from a census tract of similar people living several miles away in Niagara Falls.

(Continued on page 2)

Meanwhile... Back at the Lab

The CDC's study of chromosome aberration in people from the Love Canal area will certainly alleviate some of the questions raised by the control-deficient EPA effort of 1980. But Michael Bender pointed out that one major shortcoming remains — the lack of base line measurements in other populations, for purposes of comparison. While base line data has been developed for radiation effects in the normal population, comparable analyses of chromosome aberrations of the types of interest have never been done for chemical exposures.

But Bender is in the process of rectifying that situation. Simultaneously with his work for CDC, Bender initiated a three-year base line study supported by the National Toxicology Program (NTP), which will generate data against which the Love Canal results, and those of future studies, can be compared, and which will allow much more efficient design of such studies.

The population under study for the National Toxicology Program is a stratified random sample of BNL employees, about 120 of whom have participated since the study began in December 1981. With the cooperation of the Personnel Division, epidemiologist Robin Leonard has generated a sample of 600 more employees. Next week, those 600 will each receive a letter from Bender and Leonard, asking them to cooperate in the NTP study.

What does being a volunteer involve? Each subject will visit the clinic once, to give background information to a researcher and to

donate a 10-milliliter venous blood sample, for which the volunteer receives \$10. While individual results will be released if requested by a subject, Bender said, "We're not looking for health effects. If we do pick up anything clinically significant, which is unlikely, we will, of course, notify the responsible physician."

Blood samples will be studied under precisely the same protocols as those used for the CDC study, so the results found for Love Canal residents can later be validly compared to base line data for a normal population. The identical protocols will also be applied to another study of a population of 100 industrial workers to provide data on people who have been heavily exposed to chemicals and are presumed to be at high risk.

The NTP study, on which Bender and Leonard are assisted by Ranjini Kali, Mike Makar, Maureen Mulcox and Beatrice Pyatt, and which also involves collaboration with the ORNL group under R. Julian Preston, should be completed by the end of 1984. Until then, Bender advises caution in proceeding with cytogenetic testing of chemical exposures in any group. "Without a base line," Bender said, "it would be difficult to know what the information would allow us to conclude even if we had it. Chromosome aberrations are like a dosimeter. We know a lot about chromosomes and radiation, but we don't know the same for chemicals. What we're trying to do is to calibrate and certify the dosimeter to make it useful for this purpose."

— A.C.



Saying that he would be "happy to participate in occasions such as this any time," Lab Director Nicholas Samios (right) presented Marilyn Gibbons with the first award to be given under the newly established Employee Suggestion System. Noting that her suggestion was to improve an old procedure, he approved, saying "just because something's been that way for years, doesn't mean it has to stay that way." With them at the presentation in the Director's office were Cory Ince (left) head of the Suggestion Office, and Michael Guacchi, manager of the Supply & Materiel Division (See story, page 2).

Bethe to Speak on Nuclear Arms

Nobel laureate Hans Bethe, an outspoken critic of the nuclear arms race, will give the 27th AUI Distinguished Lecture on Tuesday, May 31, at 8 p.m. in Berkner Hall. Dr. Bethe will speak on "Nuclear Weapons and Disarmament." The lecture is open to the public.

Bethe is an eminent nuclear theoretical physicist whose most famous discovery was the carbon cycle which explains why the sun shines. For this he received the Nobel Prize in 1967.

Born in Germany, he received his Ph.D. from the University of Munich in 1928. The following five years he studied under the great physicists of Europe — Enrico Fermi in Rome, Niels Bohr in Copenhagen and Ernest Rutherford in Cambridge.

In 1935 Bethe came to Cornell University and taught there for 40 years. He was named professor emeritus in 1975. During World War II he worked at MIT on microwave radar and then at Los Alamos on the development of the first atomic bomb.

Since 1945 he has been involved in the further development of nuclear energy and has lectured and written extensively on the social and political implications of this power source. He is in favor of a nuclear weapons "freeze" but is not against nuclear power, as such. Bethe is quoted in the June 1982 issue of AF Info, a publication of the Atomic Industrial Forum, Inc., as saying "To have a fire in the kitchen stove is essential to our life, but to have a major fire consume a

city is devilish. The same is true in the case of nuclear applications. We need nuclear power and we absolutely don't want nuclear war."

Among the many government committees which Bethe has served on are the President's Science Advisory Committee from 1956-60 and the U. S. Delegation to the nuclear test ban discussions in Geneva (1958-59).

In addition to the Nobel Prize, Bethe has been honored by the Presidential Medal of Merit, the Max Planck medal, the Enrico Fermi award (AEC), and the National Medal of Science.

It is expected that Dr. Bethe will accept questions from the floor at the end of his lecture.



Hans Bethe



Berta Scharrer

Neurobiology Subject of WIS Lecture

Berta V. Scharrer, professor emerita of anatomy and medicine at the Albert Einstein College of Medicine, will lecture on the "Roles of Peptides in Neuronal Function" on Wednesday, June 1, at 3 p.m. in the large conference room, Medical Department. Her talk, sponsored by the Brookhaven Women in Science, is open to the entire Laboratory community.

A significant development in neurobiology in the last decade has been the appreciation of the diverse roles played by peptides in neurochemical communication. Peptides, short chains of amino acids, are used by nerve cells (neurons) as messenger substances. The insights gained from extensive multidisciplinary studies have yielded major changes in "firmly established" concepts.

In recognition of her scientific contributions, Prof. Scharrer has received numerous awards and honorary degrees, and has been elected to the National Academy of Sciences as well as to the Dutch and German academies.

A luncheon will be held at noon in Room C, Berkner Hall. Reservations may be made by calling the cafeteria at Ext. 3541. The price is \$7.50.

Love Canal (Cont'd)

Samples were taken over a two-week period by the CDC. Blood was drawn in the morning, then flown to LaGuardia Airport and rushed out to BNL where Bender and his colleagues — Ranjini Kale, Michael Makar and Beatrice Pyatt — began working on them by 7 p.m. For each sample, the group prepared four kinds of cultures. "On any given day, we were taking care of up to 196 cultures," said Bender.

The cultured samples were analyzed at BNL and ORNL. "Everything was done blind, with multiple samples from some subjects," Bender said. "The analysis was very elaborate, very careful, with crosschecks such as Oak Ridge scoring some of the people that we scored so comparisons could be made. And the upshot was that there's absolutely no sign of any difference between subjects and controls."

"That does not mean that the Love Canal residents were not exposed to something harmful," Bender continued. "They stopped being exposed in 1978. The effect may have gone away. It may have been too small to measure in a sample this size.... What we found is precisely what was contained in the results of the EPA study — it's just that everybody chose to be alarmed, though this was unwarranted, particularly as the study had no controls. And when we did do a careful comparison of with a carefully selected control group, there simply was not any difference."

— Anita Cohen

An Idea That Paid Off

The first person to receive an award under the Employee Suggestion System is Marilyn Gibbons, a clerk in the Supply & Materiel Division. For her suggestions to simplify and improve processing procedures for the dispensing of safety shoes and glasses, she received a certificate and an award of \$430.

It is a part of Gibbons' job to process requests for these items and, for some time, she had wondered if there wasn't a better way to do it. She made a research project out of the problem — calling other companies to see how they handled the situation and incorporating some of their ideas in her final presentation. "She really submitted a proposal," says Cory Ince, head of the Suggestion Office.

Gibbons' suggestion was in the labor-saving category and gave more responsibility to outside contractors who were already processing orders which there was no need for BNL to duplicate.

Ince says the Gibbons idea is an excellent example of an individual improving procedures in her own work area — going beyond the realm of her regular job. And Gibbons noted that the establishment of the Employee Suggestion System gave her assurance that her suggestion would receive consideration. She also cre-

ated Michael Guacci, head of the Supply & Materiel Division, for his support in helping her present her suggestion.

To date, the Suggestion Office has received about 100 suggestions, ranging from one-liners to complicated proposals, and they come from every segment of the Lab's population. Many of the ideas concern general administrative procedures such as for travel, car stickers, etc.; energy conservation — everything from putting timers on air conditioners to solar heating on a grand scale; and safety precautions.

The Suggestion Committee encourages employees to concentrate on improving procedures in their areas of work. Of course, to be eligible for an award, an employee's suggestion must be outside the scope of his or her regular job.

According to Ince, other awards are forthcoming, and notice of them will be given in the Bulletin. Some ideas take a long time to be evaluated and developed, particularly those with large scale consequences.

Forms for the submission of ideas to the Suggestion Office are available from administrative offices in the departments and divisions, and from the receptionist in Personnel.

Inside Info

Associate Director Vincent O'Leary, who has been involved in Scouting for 26 years, has received a 1983 Silver Beaver Award. He has held many posts on the Suffolk County Council of the Boy Scouts of America and is currently Vice President of Membership. Carrying on the scouting tradition are O'Leary's three sons, all of whom are Eagle Scouts.

Equipment Demo

An IBM equipment van will be in the east parking lot at Applied Math (Bldg. 515) on May 23, 24, 25. The van will feature a 4341 computer system, the IBM personal computer, and assorted peripherals.

Two different presentation/demonstrations, geared to engineering professionals, will be shown twice each day. The first is on CAD/CAM and the second is of a more general engineering nature entitled "Day in the Life of an Engineer." Show times are 9, 11, 1, and 3 and each presentation lasts about 1-1/2 hours. Seating is limited to 12 persons at each showing. For reservations call Clarence Pittenger on Ext. 4128.

Reports Available

The following reports are now available to the Laboratory staff and to affiliates of the DOE, AUI and NRC. Others may purchase the reports from the National Technical Information Service, U.S. Dept. of Commerce, 5285 Port Royal Rd., Springfield, VA 22161. Staff members should call Ext. 5068.

BNL-51432
Rev. A-6/82
BNL Computer User's Guide. Introduction to the Central Scientific Computing Facilities. K. Fuchel, Editor

BNL-51542
Health and Environmental Risk Analysis Program Workshop: Potential Public Health Impacts of Airborne Organic Combustion Products. K.M. Novak, W.H. Medeiros, E.A. Coveney, Editors

BNL-51569
Semiannual Report for the Period Oct. 1981 - Mar. 31, 1982 of work on: 1) Superconducting Power Transmission System Development. 2) Cable Insulation Development. E.B. Forsyth, et al

BNL-51578
Development of Static Feed Water Electrolysis for Large Scale Hydrogen Production. Final Report. Life Systems, Inc., K.A. Burke, F.H. Schubert

BNL-51605
Organic Air Pollutants: Setting Priorities for Long Term Research Needs. J.S. Gaffney

BNL-51571
LWR Steam Spike Phenomenology: Debris Bed Quenching Experiments. T. Ginsberg, J. Klein, J. Klages, C.E. Schwarz, J.C. Chen

NUREG/CR-2331
BNL-NUREG-51454
Vol. 2 #2
Safety Research Programs Sponsored by Office of Nuclear Regulatory Research. Quarterly Progress Report April 1 - June 30, 1982. A.J. Weiss, et al

BNL-51518
Thermal Performance of an EKOSE'A-Design Double-Envelope House. H.T. Ghaffari, R.F. Jones

BNL-51550
Brookhaven Highlights Oct. 1980 - Dec. 1981.

NUREG/CR-2944
BNL-NUREG-51586
Tornado Damage Risk Assessment. T.A. Reinhold, B. Ellingwood

NUREG/CR-2945
BNL-NUREG-51587
Characterization of Earthquake Forces for Probability-Based Design of Nuclear Structures. B.R. Ellingwood, M.E. Batts

BNL-51597
Possible Storage Sites for Disposal and Environmental Control of Atmospheric Carbon Dioxide. F.L. Horn, M. Steinberg

Arrivals & Departures

Arrivals

Cynthia A. Ling Biology
Francesco Sette NSLS
Frederick Williams Plant Eng.

Departures

This list includes all employees who have terminated from the Laboratory, including retirees:
Gennaro Pasquale Director's Ofc.
Siu W. Tong Biology
Constantinos Zervos Accel.

IBEW Meeting

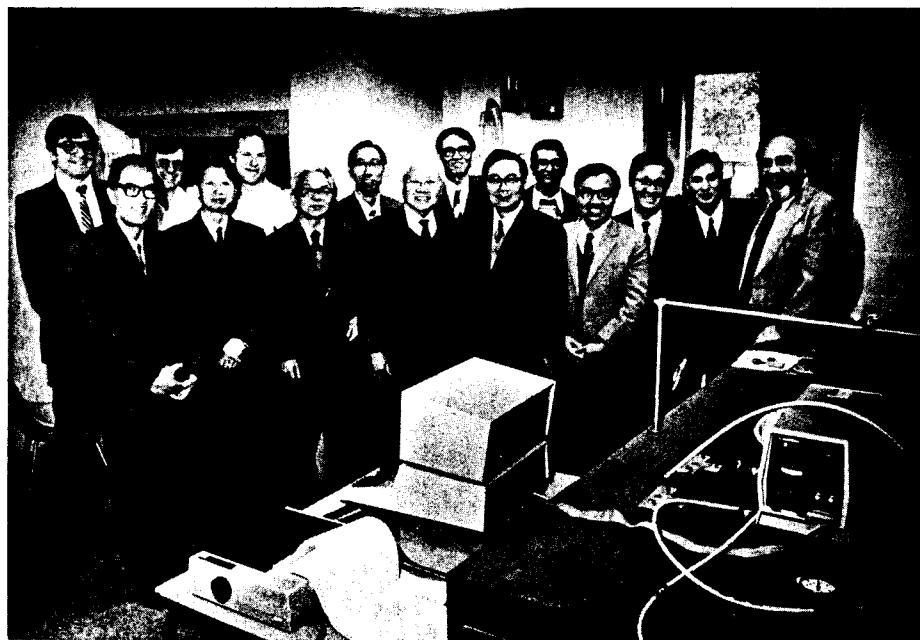
Local 2230, I.B.E.W., will hold its regular monthly meeting on May 26 at 6 p.m. in the Knights of Columbus Hall, Railroad Ave., Patchogue. There will also be an afternoon meeting at 2 p.m. for shift workers in the Union office at 31 Oak Street, Patchogue. On the agenda will be regular business, committee reports, the President's report, and a vote on the dental plan.

Micom Meeting

The next meeting of the MICOM Users' Group will be on Wednesday, May 25, at 3 p.m. in conference room 2-160 of Bldg. 510A (Physics). Ruth Stannish (MICOM representative) will explain mode define, locate and merging. For further details, call Ellen Citrolo, Ext. 4486, or Nancy White, Ext. 3793.

CREF Values

March	\$44.48	April	\$46.32
May	44.53	June	43.34
July	42.41	August	47.05
September	47.32	October	52.59
November	54.78	December	55.73
January	57.59	February	58.93
March	\$60.75		
April \$65.12			



A Coal Slurry Technology Delegation from the Chinese Academy of Sciences was on site recently to discuss trends and BNL activities in this field. The eight-member group of engineers and chemists, headed by Professor Cheng Maowei (front, second from right), met with Thomas O'Hare (rear, right), associate chairman for Technology Base Programs in the Department of Applied Science, and with members of DAS' Fuels, Catalysis and Energy Utilization Division, including (top, from left) division head Richard Sapienza, Thomas Butcher, William Sleqair, (top, fourth from right) C.R. Krishna, and (front, third from right) Luke Yuan. China, like the U.S., has a considerable quantity of coal and would like to increase coal use in the industrial, utility and transportation sectors. To facilitate this, they have been considering developing technologies, including coal-oil and coal-water mixtures. At Brookhaven, the Chinese group was introduced to the experimental facilities and to the BNL perspective on the use of lightly loaded coal-water mixtures and the problems of heavily loaded mixtures.

Roger Stoutenburg

BROOKHAVEN BULLETIN

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Camera Club

Audiovisual programs scheduled for the Camera Club meetings this summer are:

- May 26**
- An Introduction
 - Basic Photographic Techniques
 - The Beginning of Photo Composition
- June 23**
- Effective Use of Lenses
 - Processing Black and White Film
- July 28**
- Imaginative Use of Filters
 - Beginning Black and White Printing
- August 25**
- Exiting-Light Photography
 - Advancing Black and White Photography

Meetings are held in the Recreation Building and start at 5:30 p.m. Members and non-members are all encouraged to attend.

Cricket Club

The annual meeting of the Brookhaven International Cricket Club will be held on Wednesday, May 25 at noon, in Room D, Berkner Hall. All those interested in playing this summer are invited to attend.

The first match of the 1983 season will be at the BERA ball field against Staten Island Cricket Club on Saturday, June 4 at 1:30 p.m. There will be evening practices on Friday, May 27 and June 3, starting at 5:15 p.m. For further information, call John Milner at 3853, or Dave Cox at 3818.

Rifle & Pistol Club

The winter leagues for the rifle and pistol teams will end this month. The pistol team will have its first match of the outdoor season on Thursday, May 26, at 5:15 p.m., at the BNL outdoor range. Matches will be held at the same time every Thursday during the summer. The range will be open for practice and make-up matches on Tuesdays and Thursdays from noon to 1 p.m., and also after 5 p.m. on Tuesdays. New members wishing to use the range must be checked out by a club instructor. For information, call Joe Gatz, Ext. 3582, or Pat Stone, Ext. 3605.

The last club meeting of the season will be on June 8. No meetings will be held during July and August, but they will resume in the fall on September 14. All meetings are held in the large conference room of the Medical Department, Bldg. 490.

Afro-American Club

You are cordially invited to attend the Afro-American Club's Installation Dinner Dance on May 28, at the Brookhaven Center, from 8 p.m. to 2 a.m. A donation of \$10 includes dinner, open bar and continuous music. The evening's entertainment will be provided by the MJB Jazz Band and DJ "Master Mike." Tickets must be purchased by May 26. No tickets will be sold at the door. For tickets and information, call Mary Durham, Ext. 3427, or Berthel Becton, Ext. 4961.

BERA Officers

At a meeting of the BERA Executive Board last week, Nelson Tyler was elected to serve a second term as Board President. Jim Roesler was elected Vice President, and Janet Sillas, Corresponding Secretary. Other Board members are Sandi Lane, Mickey Haller and Ken Sutter. Pat Towe and Richard Eggert will continue their appointments as Recording Secretary and Treasurer, respectively.

BERA Board meetings are normally held at noon on the first Thursday of each month, and are open to anyone who wishes to attend.

Aerobic Dance

Looking for a way to stay in shape this summer? How about a regular program of Aerobic Dance and/or Stretcherize? The Aerobic Dance Club invites everyone to participate in an 8-week summer session of exercise classes to begin the first full week in June. Registration will precede the first classes, which will be taught by Linda Sandberg.

Aerobic Dance classes will meet on Tuesdays and Thursdays, beginning June 7 at 5:15 p.m. in the gym. The 16-lesson session costs \$40. Stretcherize classes will be held on eight consecutive Wednesdays and will cost \$20. The first class is scheduled for June 8 at 5:15 p.m. in the Recreation Bldg.

Nursery School

Children who are enrolled in Upton Nursery School's fall term are invited to join this year's classes on upcoming trips to local farms. They must be accompanied by a parent who provides their transportation.

On Friday, May 27, the four-year-old class will visit the Suffolk County Farm, and on Thursday, June 2, the three-year-olds will go to the Shoreham/Wading River Middle School Farm. Both trips will leave from the school at 9 a.m. New children should join the age group for which they are registered next year. For more information, call the school at 282-3033, from 8:30-11:30 a.m.

Bowling

Pink League

High games bowled by Deb Johnson 178, Sharon Moore 170, M.G. Meier 165/181, E. Kristiansen 172/173, K. Kissel 167, M. Grahn 172, J. Thiede 162, S. Long 169. Roll-offs on May 17th between the Lickety Splits and Apple Blossoms for Pink League Champions.

White League

J. Sells bowled 193, J. Petro 245, P. Manzella 191, J. Ferrante 225, S. Gushue 213, K. Vogel 180, G. Hassell made the 5-7 split and K. Asselta made the 6-7-10 split. Roll-offs on May 19th between the Pinsplitters and Clearwater for White League Champions.

Red/Green League

High games bowled by A. Lorentsen 256, J. Connelly 236, N. Tyler 228, J. Petro 224, J. Morris 222-202 for 607 scratch, H. Arnesen 222, J. Medaris 210, E. Sperry 206, R. Larsen 204, R. Wiseman 202, R. Jones 201.

Purple League

High games were bowled by K. Riker 203-586 series, G. Riker 203-500 series, L. Barberich 212, E. Sperry 201. Rolloffs between Good Times and Drafts for Purple League Champions.

Sweepstake Winners

Sweepstakes winners in the Purple League were Linda Wasson high gross series 653, Gerri Riker high gross game 243. Sweepstakes winners in the White League were Jim Petro high gross game 270, Jim Vogel high gross series 640.

Awards Dinner

Bowlers wishing tickets to the Bowling Awards Dinner and Dance on June 10, call John Connelly, Beeper 241.



BNL employees who volunteered their time to guide visitors around the site were recent guests of honor at a luncheon at which Lab Director Nicholas Samios commended their efforts. The tour guides are (standing, from left) Arlene Clay, Thelma Dawson, Evelyn Ritter, Gerry Callister, Don David, Florence O'Brien, Andy Feldman, Rick Jackimowicz, George Taylor, Peyman Mortazavi, Vince Lettieri, Vinnie LoDestro, Sol Perlstein, Dick Seebeck, Lucian Wielopolski, Ron Clipperton, Elaine Zukowsky, Peter Boyle, Janet Tempel, Y.Y. Chu; (seated, from left) Mary German, Jean Stafford, Cathy Van Noy, Madeline Kinney, Elaine Rowland, Sue Monteleone, Irene Ozols, Janet Sillas, Janice Lamb, Andrea Boccio, Jackie Mirzadeh.

Gym Schedule

Starting Saturday, May 28 and continuing through the first weekend in September, the gymnasium will be closed Saturdays and Sundays. Also, due to the Lab holiday on Memorial Day, the swimming pool and gymnasium will be closed on Monday, May 30.

Cooking Exchange

"Salads-Not Just Lettuce" will be demonstrated and enjoyed at the last meeting of the Cooking Exchange this season. The meeting will be held on Wednesday, May 25, from 12:30 to 2:30 p.m. at the Recreation Building.

The Taco Salad will be the only one with lettuce in it. The others will be a Pasta Pesto Salad, a seafood mold, a fruit salad, and a Barbeque Bowl of vegetables and cheese.

The Cooking Exchange is open to all BNL employees and their families. For the \$1 admission fee, those present receive copies of the recipes prepared and a sample of each dish along with coffee or tea. Babysitting is provided at 50¢ per child.

For information, call Nancy Nagy, 924-8160, or Adrienne Usher, 289-7658.

Cafeteria Menu

Week Ending May 27, 1983

Monday, May 23

Cream of celery soup	(cup)	.65
	(bowl)	.75
Western omelet & hash browns		1.80
Western-style chili on white rice		1.85
Hot Deli: Corned beef	(bread)	1.85
	(roll)	1.95

Tuesday, May 24

Beef barley soup	(cup)	.65
	(bowl)	.75
Top round of beef & 1 veg.		2.00
Chicken breast Parmesan & 1 veg.		2.00
Hot Deli: Pastrami	(bread)	1.85
	(roll)	1.95

Wednesday, May 25

Potato leek soup	(cup)	.65
	(bowl)	.75
BBQ spare ribs & 1 veg.		1.95
Fish & shrimp Newburg on white rice		2.00
Hot Deli: Baked ham	(bread)	1.85
	(roll)	1.95

Thursday, May 26

Turkey vegetable soup	(cup)	.65
	(bowl)	.75
Baked lasagna & 1 veg.		1.95
Old-fashioned beef stew on egg noodles		1.95
Hot Deli: Top round of beef	(bread)	1.95
	(roll)	2.05

Friday, May 27

New England clam chowder	(cup)	.65
	(bowl)	.75
Breaded fresh fish fillet & 1 veg.		1.85
Macaroni & cheese w/1 veg.		1.80
Hot Deli: Italian-style meatball hero		1.95

Volleyball

A reminder that the Volleyball End-of-Season Party will be held on June 3 at the Brookhaven Center. Trophies will be awarded at the party. Hot and cold buffet and open bar will be available. Tickets are \$3.00 per person and may be obtained from Lois Marascia, Bldg. 197C (Ext. 4904). Checks are acceptable if made payable to the BNL Volleyball League. Deadline for buying tickets is May 27.

Softball

Scores for week of May 9...

League I

Phoubars 9 — Blue Jays 7
AMD 10 — Moles 9
Ravens 20 — Ice Pops 18

For the Ravens, Jim Garrison was 5 for 6 with a home run; Ed Taylor was 4 for 6; Mac Thomas was 4 for 5; LeRoy James and Bob Rowley were 3 for 4; George Grigg was 3 for 5; Rowley, Grigg and Herbie Harris had home runs.

Six Pax 30 — Big Sticks 14

League II

Lights Out 10 — Magnuts 7

At the bottom of the 7th with a tie score, Bob Grebe hit a 3-run homer to win the game.

Medical 7 — Roga 4

Titans 10 — Dirty Sox 9

Random Errors 9 — Light Source 8

After a last season of losses, the Random Errors won this season opener. It was touch-and-go till the last of the 7th when Dave Kirby drove in the winning run. Pete McHugh went 4 for 4.

League III

No Names 21 — Mole-esters 4

E-Z Riders 6 — Nads 4

Survivors 11 — TNT 5

League IV

The Source 21 — Mudville Sluggers 12

Who Cares 23 — Spacekadets 4

September's 24 — Who's On First 9

Random Sample 13 — Underalls 12

Turkeys 18 — No Feedback 9

The Turkeys caught the No Feedbacks sleeping in the 2nd inning, scoring 12 runs. Winning pitcher was Mike Zguris.

Runners' Corner

Last Sunday saw two more BNL'ers participate in a marathon. This time it was two women who completed the 26.2 mile course of the 9th Annual National Capital Marathon, Ottawa. Jeanne Penoyar (DNE) and Joanne DeLise (S&EP) participated in their first marathon and completed the gruelling event in 5:08 and 5:07, respectively. Finishing in a time of 4:04 was Jeanne's husband, Dave. A record field of 4,250 runners were entered in the marathon.

Classified Advertisements

Placement Notices

The Laboratory's placement policy is to select the best-qualified candidate for an available position, with consideration given to candidates in the following order of priority: (1) present employees within the department, with preference to those within the immediate work group; (2) present employees within the Laboratory as a whole; and (3) outside applicants. 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 Personnel Placement Supervisor, Ext. 2882.

LABORATORY RECRUITMENT: Opportunities for present Laboratory employees.

1872. ADMINISTRATIVE POSITION - Requires AAS in a business or technical discipline. Individual will provide assistance to head of Production Engineering Group of CBA Magnet Division. Duties will include monitoring budgets and labor costs, collecting data from groups and preparing schedules, maintaining liaison with Safety and Quality Assurance groups, collecting information for special reports and following up on details. Excellent verbal and written communication skills mandatory. Accelerator Department/CBA.

1873. BUDGET ADMINISTRATOR - Individual will be responsible for the overall administration, coordination and control of assigned areas of the Laboratory budget. Primary duties include preparing and interpreting departmental and project budgets and related financial reports; review and coordination of budgetary matters with Department/Division heads, administrators, DOE and NRC personnel, and planning evaluating and making recommendations for improved budget procedures and practices. Applicants must have a BS or advanced degree in business administration as well as a minimum of 5 - 7 years' pertinent experience at the professional level. Excellent communication skills, both written and verbal are required. Director's Office.

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

1874. EXPERIMENTAL MACHINIST - Requires experience in job print interpretation, layout, and machine set-up. Candidates must demonstrate ability and imagination in all phases of machine work. Will function as all-round machinist for non-production work in research and development shop. Project assignments range from raw material work in research to final assembly. Central Shops Division.

1875. TECHNICAL POSITION - Requires AAS in electrical technology or its equivalent. Should be experienced in prototype construction, microprocessors, P.C. boards and analog circuits. Will work in the Electrical Systems Section. Accelerator Department/CBA.

1876. STAFF ENGINEER - Requires BS in mechanical engineering and a minimum of 2 - 3 years' experience with machine design and fabrication. Will be involved in the design an installation of mechanical components on CBA. Accelerator Department/CBA.

1877. SECRETARIAL POSITION - Requires AAS degree in secretarial science or equivalent, knowledge of general office procedures and the ability to take shorthand. Contracts and Procurement Division.

1878. P&G WORD PROCESSING SPECIALIST - Requires 1-2 years' experience with Daconics or other shared logic word processing system. Photography & Graphic Arts Division.

Autos & Auto Supplies

70 FORD MAVERICK - 6 cyl., 2 dr., fair cond., \$350 takes it; 1981 Ford Escort GL, 4 dr., 4 spd., excel. cond., 27,000 mi., \$4,800. Tom, Ext. 2314.

CAR RACKS - 1 pair, 5 ft., adjustable for top, \$15. Ext. 5318.

78 HONDA M/C HONDAMATIC - 400cc, low miles, good cond., \$900. John, 744-4386.

79 MAZDA 626 - 2 d/SC, excel. cond., 5 spd., met. blue, rust-proofed, 30-35 mpg, \$4,750. Larry, Ext. 4107 or 472-0721.

71 OLDS VISTA CRUISER WAGON - 455, V8, a/t, good running cond., body needs work, \$300 or best offer. Ext. 2611 or 751-4098.

80 CHEVETTE - 4 dr., hatchback, 4 cyl., 4 spd., very good cond.; (2) am/fm cassette decks, \$50-\$75. Bob Kiss, 981-6092.

SNOWPLOW - Meyer's electrolift, 6' blade, like new; (4) 950x15 highway truck tires on split rims, best offer; Jeep CJ5 ragtop, fits '55-'75; (4) 15x8 alum. rims; (4) 10x15 white rims; (4) 1200x15 Float-Tracs, best offer. 281-7230.

RIMS - (1) G.M. 14", 5 holes, \$5; (2) Ford 16", 5 holes, \$5/ea. M. Tesla, Ext. 2705.

69 BUICK WAGON - new exhaust system & brakes, excel. running cond., reasonable. Ext. 4850 or 286-8433 at 5 p.m.

61 VW - yellow, needs battery, (1) tire, \$35. Ace, 722-4469.

79 HONDA - motorcycle, CM400T, 2,000 mi., garaged, must sell, \$1,000. Ext. 7125.

82 SUZUKI - RM125, excel. cond., extras, \$1,075. 929-8520.

CAR RADIO - am/fm, pushbutton, vertical dial for K car. 924-6021.

64 CHEVY BELAIR - 8 cyl., 4 dr., runs good, needs some work, \$100. 924-6021.

TIRES - H7815, \$25; L8415, \$35, both on rims, new. Ext. 2022.

79 HONDA - 750F Super Sport motorcycle, 2,700 mi., profess. maint., polyglycoated, garaged, \$2,100. 473-7809.

77 HONDA - CB750K, plexifaring, sissy bar, clean, 11,000 mi., \$1,295. Rich, Ext. 4482 or 277-1129.

78 HONDA - Twinstar, 185cc, plexifairing, cruise control, sissy bar, luggage rack, crash bars. Ken, Ext. 5042 or 475-5694.

77 HONDA - 550 Four, plexifairing, cruise control, sissy bar, luggage rack, crash bars, great shape, must see. Ken, Ext. 5042 or 475-5694.

79 TOYOTA - pickup, SR5, long bed, cap, A1 cond., must be seen. Ext. 4291 or 363-8981.

80 HONDA HAWK - CB400T, excel. cond., low mi., extras, \$895. 286-8814 after 5:30 p.m.

71 FORD TORINO - 302 eng., new trans., 2 dr., a/c, p/s, 99,000 mi., good running, \$750. 924-6613.

80 KAWASAKI - 650, LTD, red, crash bars, helmet, excel., \$1,850. Bob Johnson, Ext. 3354.

73 PLYMOUTH STATION WAGON - 123,000 mi., orig. owner, immaculate, good running cond., good tires, \$750. Bob, 473-7377.

73 FORD GALAXIE - 500, 4 dr., a/t, p/s, p/b, am/fm, a/c, good tires, new battery, \$875. Ext. 4532.

73 CHEVY VEGA - good second car, runs well, body okay. Ext. 3596 or 821-1039.

78 DODGE ASPEN - station wagon, p/s, p/b, a/c, asking \$2,400. Ed, Ext. 2897 or 472-1734.

77 FIAT SPIDER - convertible, good cond., new brakes, canvas covering, Michelin tires, \$1,700. 757-9352.

CLASS III HITCHES - one new for 1973-1977 Chevy or GMC van, \$80; one used for 1972 Chevy Caprice, \$40. Ext. 4679.

VW PARTS - muffler assemblies, \$28; bumpers, \$27; 009 distributor, \$36; full line of new parts at discount prices, call for needs. Augie, Ext. 2419 or 289-4211 eves.

72 HONDA MOTORCYCLE FRAME - 750 cc, custom rigid frame w/ fender & seats, oil tank, many extra parts. 654-2076 eves.

76 AMC PACER - 2 dr. sedan, a/c, radio, new parts, good cond., \$1,300. Chup, Ext. 4360.

81 CHEVY CITATION - 24,000 mi., 4 spd., stereo cassette, mint cond., \$4,800. 589-4111.

81 HONDA CR80 - hardly used, excel. cond., must sell. 654-3457.

75 AMC HORNET - excel. cond., \$950. 588-6215 after 6 p.m.

73 FORD GRAN TORINO - auto., p/s, a/c, clean, \$1,100. 929-4840.

76 SUBARU - 1400 cc, good cond., \$700. 727-5912 after 6 p.m.

74 CHRYSLER NEWPORT - \$900 or best offer. 727-5912 after 6 p.m.

CAR RACK - 37" x 37", new, \$20. 744-9677.

74 TRIUMPH - TR6, excel. in & out, new top, asking \$3,400. John, 585-4741.

74 FIAT ENGINE - & transmission, new valves & rebuilt transmission, \$175. Peter, Ext. 2734 or 928-2469.

71 PONTIAC CATALINA - new exhaust system, excel. running, \$300. Ext. 2951.

73 VOLKSWAGON BUS - blue, excel. body, new battery, must see. 363-2736 after 5:30 p.m.

73 PONTIAC CATALINA - 2 dr., runs good, reliable transportation, \$400. 744 9802 eves.

74 BUICK APOLLO - p/s, p/b, a/c, \$1,200. 744-6822 eves.

CARGO CAR TOP CARRIER - 15 cu. ft., \$30. Steve, 585-8395.

71 DODGE CHARGER - radials, new carburetor, starter, water pump, fuel pump, needs minor work, \$375. 744-9802.

72 TOYOTA CORONA - 5 spd. manual, runs well, some rust, \$700. Glenn, Ext. 3336 or 472-1419.

SNOW TIRES - (2) on Chevette rims, \$50; (2) P195/75R14 steel grip, \$40. Whitey, Ext. 2913.

77 DATSUN - 200SX, good cond., 5 spd., silver, \$2,800. 454-8935.

72 PLYMOUTH WAGON - 98,000 mi., needs minor work, dependable, best offer over \$425. 821-0692 after 6 p.m.

73 FORD MACH/1 - 302, 3 spd., plus extras. 472-4711.

73 OLDS DELTA 88 - Royale, a/t, p/s, p/b, good cond. 475-4394.

Boats & Marine Supplies

35' PEMBROKE - F/B sedan, T/Chrysler V8's, sleeps 7, fully equipped, luxury, live-a-board. GR5-8710.

18' LARSEN - fiberglass, 1976 outboard, 115 Johnson eng., good cond., \$2,100. Jim, 698-2501.

80 RENKEN - 21' cuddy, 120 Volvo penta eng., I/O, many extras, full canvas, compass, 50 hrs. use, excel., \$7,000. 981-0989.

24' WINNER - cabin cruiser, sleeps 4, fiberglass hull, vinyl interiors, 165 hr., stern drive. Ext. 2173.

16' DIXIE - Bowrider, all glass, 55 HP Johnson, galvanized Cox trailer, canvas, new battery, 6 gal. gas tank, \$3,200. Ext. 2314 or 567-5131.

FIRESTONE OUTBOARD MOTOR - 10 HP, \$100; 75 lb. mushroom anchor, \$50. Steve, 585-8395.

20' WOOD BOAT - '59 Owens w/cabin, \$250. Ext. 2733 or 878-8491.

ALUMINUM CLAM RAKE HANDLE - 8' long w/2 extra 8' sections, \$20. 475-4394.

23' SAILBOAT - Crew Cut, gaff rigged. Ira, 475-8073.

12' AMF SAILBOAT - puffer, main sail, JIB excel cond.-GALV., Highlander trailer, extras, \$1,650. 757-4349 eves & weekends.

15' RUNABOUT - windshield canopy, 40 HP, '77 Merc., elec. start, Gal-trailer, depth finder, many extras, great shape, \$1,500. 727-0903.

DEPTH FINDER - Ray Jefferson, good cond., \$40. Bob Doering, Ext. 4474.

20' GARVEY - fiber glass over wood w/trailer, good work boat, \$200. Dan, Ext. 7518 or 929-3195.

Miscellaneous

LAWN MOWER - Sears Best, electric, 3 HP, 19", heavy duty fiberglass catcher, new cond., \$135; G.E. air conditioner, 5,500 BTU, very quiet, excel. cond., \$95. Tom, Ext. 5277.

CANARIES - Borders, Red Factor, Glousters, variegated, young birds, etc., wholesale prices. Ramona, 928-3088.

DOG FOOD - Purina Dog Chow, 25 lb. bag \$6.50. Ext. 4902.

BATHROOM VANITY - gray wood tone, oval medicine cabinet, gold trim. Ext. 4417.

RECORDER - Panasonic, takes cassettes, built in handle, excel. cond., \$40; softball fielder's glove, \$15; alum. bat, \$20; catcher's mask, \$15; extra balls, \$1/ea. Ext. 3876.

HAMS - Heath C.W. transceiver HW16, with V.F.O., ant. tuners, SWR meters, coax. switch, complete \$200. 589-2648.

JAPANESE LANGUAGE COURSE - linguaphone, cassettes, text books, portable case, \$150. 472-1397.

KODAK INSTAMATIC EK6 CAMERA - & case (like a Polaroid), excel., \$30; 1918 steamer trunk, \$25; Lily of Valley plants, 50 for \$2.50; fir & spruce evergreens, 20" to 40", you dig, 2 for \$7. 878-6637.

PERSONAL COMPUTER - 2 CPUs, Chinese-English display, Apple-II compatible. Ext. 7912 or 751-7180 eves.

DEEP-WELL PUMP - 1/2 HP w/42 gal. water tank, best offer. Larry, Ext. 2021 or 281-7240.

TABLE SAW - Craftsman, 8" motor, 2 extensions, rip fence & miter, \$100. 281-8274.

SOFA - 2-piece section, blue velvet, good cond., \$125. Ext. 4473 or 581-2961.

BOW WINDOW - 10'x5', \$40, you take. Carl, Ext. 4420 or 722-4644.

CONSOLE TV - Zenith b/w, excel., \$50 neg.; transistorized organ, portable, needs transistor work, \$75. 281-3149.

CHANDELIER - for dining rm., Italian provincial; (2) hanging occasional lamps, French provincial, excel. cond. Ext. 4531 or 331-3785.

MEN'S MOTORCYCLE JACKET - classic, leather, sz. 44, Heingericke, like new, \$110. Mary, Ext. 4132.

RCA WHIRLPOOL DRYER - gas, 3 cycle, \$50; Westinghouse refrigerator, 16 cu. ft., side x side, \$75. Bob Kiss, 981-6092.

BICYCLE - 20" BMX Super Goose, excel. cond., many extras, \$325; children's desk w/attached swivel seat, metal frame, excel. cond., \$35. 821-1042.

GOLF BAG - cart, and clubs, ladies irons, #'s 3, 5, 7 and 9; men's bicycle, 26", 3 spd. 821-0865.

ENGLISH COCKER SPANIEL PUPPIES - all shots, 3 black males, 1 black and tan female, reasonable. Liz, 286-1662.

PILLOW COUCH - I-shaped, dark pine frame, removable zipper covers, \$165. 473-2473.

WARM MORNING COAL STOVE - used one season, holds 100 lbs. coal, cost \$350, sell for \$150; Alaskan Malamute, w/papers, one year old, fully trained, great show or stud dog, \$150. 821-1525.

BASF BLANK TAPES - cassettes, C-90, Pro II, CrO₂, \$2.75 ea. Ext. 2521.

GE AIR CONDITIONER - 14,000 BTU, operates on any outlet; Toro 21" self propelled mower. Ext. 3392 or 475-8330.

SOFA AND CHAIR - \$150; mattress, box spring, \$20; coffee table, \$5; book shelf, \$45; stereo stand, \$5. Ext. 2626 or 689-7986.

CIGARETTE MACHINE - electric, 30 pack, \$200; water tank, 30 gal., glass lined, \$30. Ext. 2022.

R/C KRAFT SPORTSERIES - 4 servos, charger, motor, 3 planes, extras, \$325. Ext. 7189 or 981-9474.

WROUGHT IRON TABLE - w/6 chairs, \$150; wrought iron chandelier, \$75; wrought iron light, \$25; dining room chandelier, \$75; living room couch & loveseat, \$175; tricycle, \$7. 475-0331.

CHAIN SAW - Sears, 12", good cond., \$85. Joe, Ext. 4661.

ELECTRIC WATER HEATER - 82 gal., 240 volts, duel element. 588-4126 after 5 p.m.

ZENITH COLOR CONSOLE - 21", walnut, \$75; sofa bed, 5-1/2' wide, \$75. 732-3951 after 6.

POOL - 15'x30' oval, all alum., needs liner, incl. accessories, \$475 or best offer. Wait, Ext. 2907 or 698-0576.

STAMPS - large inherited collection early U.S. stamps in stock book, avail. for inspection. Liz, 286-8563.

TICKETS - Fiddler, benefit Christ church, donation \$12, June 11, 8 p.m. 924-4611 or 281-3367.

TENNIS RAQUETS - Wilson Break Point 4-5/8LT, Wilson Pro Staff 4-5/8 LT, Wilson T-2000 4-5/8 Med., all in good cond. Joe, 4477.

SNAPPERIZER - for Snapper lawn mower, used once, \$35 firm. Ext. 4837.

ORGAN - Thomas Californian #263, 2 keyboard, rhythm section, excel. cond. 472-1394.

PATIO FURNITURE - wrought iron, excel. quality, cushions need covers, 5 pcs., \$200. Bernie, Ext. 4842 or 331-2298.

Yard Sales

CRAFT & YARD SALE - May 27, 10 a.m. - 4 p.m., Greenknoll Ct. off 25A, rain date, May 28.

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

VERMONT CHALET - on large pond, with stone fireplace, 4 bdrms., newly built, available swimming, fishing, hiking, canoeing, nearby tennis, horseback riding, antiques, music festivals, lake, Alpine slide, rent weekly. 757-5599 after 4 p.m.

MT. SINAI - off Canal Rd., 3 bdrm. ranch, 2 baths, full finished basement, fully furnished, July 1st-August 31st, \$700/mo., not incl. util. Ext. 4260 or 928-5737.

BERKSHIRES CHALET - 3 hrs. from NYC, 3 bdrms., 2 baths, fully equipped kitchen, elec. heat, deck w/spectacular view, near lake, hiking, trails, near ski areas, cross country skiing on property, avail. weekends or weekly. 929-6946 after 6 p.m.

N.E. PENNSYLVANIA - lakefront cottages, heat, hot water, private docks, boats, excel. fishing; swimming & boating, 2-3 bdrms., \$220-250, utilities. incl. (201)-472-3222 or (516) 751-7140.

EASTHAM, CAPE COD - June-Sept., 4 bdrm. house, sleeps 8, 2 baths, washer/dryer, dishwasher, deck, near beaches, \$575/wk. 722-3865 eves.

For Sale

MIDDLE ISLAND - Artist Lake condo., 2 bdrms., 2 baths, upstairs, all appl., (incl. washer/dryer, central a/c), balcony, \$34,000. 924-4611 eves.

BROOKHAVEN HAMLET - custom 4 bdrm. split w/privacy on 1.25 acres, 2 car-garage, full plus 2 half baths, efficient and in excellent cond., \$125K. 286-0436.

EAST MORICHES - Newport Beach, 13 mi. from Lab., 3 bdrms., 2 1/2 baths, 2-car garage, laundry rm., fireplace, fenced back yard, 2-zone heating, 1/2 acre, deeded private beach rights, docking space/launching ramp available, near The Hamptons, \$70,000. Ext. 2733 or 878-8491.

WADING RIVER - 4 bdrms., 2 baths, d/r, eik, 2,100 sq. ft. on 175' x 600' lot, Shoreham Wading River School Dist., asking \$118,000. Ext. 4313 or 929 4551.

BAYSHORE - 3 bdrm. ranch, l/r., eik, d/r, all alum. trim & shutters, new roof, fenced yard, min. cond., gas heat, assume 7% mort., \$320 pays all or refinancing, must see to appreciate, \$41,500. Ext. 3397 or 666-4133.

SHOREHAM - contemporary ranch, 3-4 bdrms., l/r., den, 2 f/p, skylight, 2 1/2 baths, 1/2 acre, private beach, covered patio, \$83,000. Ext. 7203 or 744-7196.

HOLBROOK - 2 bdrm. house, detached garage, large property, new roof, siding, asking \$39,900. 585-4741.

ONE ACRE BLDG. PLOT - 100 x 400, fully wooded, quiet residential neighborhood, asking \$13,900, terms. 924-3236.

Car Pools

PATCHOGUE - on time pool, opening for paying rider. Alyce, Ext. 2902.

HUNTINGTON/MELVILLE - 3-man car pool, looking for a fourth. Meyer, Ext. 3036.

RONKONKOMA - driver to join 3 person pool near LIE Exit 60. Victor, Ext. 2395.

STONYBROOK - Strathmore and vicinity, 3 member carpool looking for fourth. Ex. 4192.

CORAM/BRETTON WOODS - regular carpool or occasional exchange of rides. Peter, Ext. 3535.

Lost & Found

LOST - CRC Handbook of Tables for Probability and Statistics from Nuclear Safeguards Library. Ext. 2909.

FOUND - Portable am/fm radio, at Brookhaven Center. Frank Dreil, Ext. 5039.

Wanted

SMALL HOUSE - to rent in No. Bayport area in July. T. Rowland, Ext. 2484.

COLLINS KWM-2A - or 75S-3B 32S-3 unmodified, in excel. cond. Bob, Ext. 2450 or 744-5217 eves.

WORKING WOMEN - new members for business and professional women's club, National and International Affiliations. Alyce, Ext. 2902.

FIBERGLASS BOAT - 18'-19' and galvanized trailer, reasonable. Slim, Ext. 3084.

IMPALA - 1974-1976, for parts, doesn't have to run, but must be cheap, nose must be good.