BROOKHAVEN BULLETIN
Vol. 36 - No. 20 May 21, 1982
BROOKHAVEN NATIONAL LABORATORY

Workshop On Thermal Reactors

Representing utilities, industries, universities and laboratories both here and abroad, an international group of scientists and engineers met at BNL Monday and Tuesday for a workshop on "Thermal Reactor Benchmark Calculations, Techniques, Results and Applications." The conference was sponsored by the Electric Power Research Institute (EPRI) and organized by Philip Rose, a nuclear physicist with DNE's National Nuclear Data Center (NNDC).

According to Rose, most commercial reactors today are thermal reactors. In these, fission is induced by low energy neutrons which are in substantial thermal equilibrium with the material in the core of the reactor. Neutron cross-sections help the designers of these reactors measure the probability that a given interaction will take place between a nucleus and a neutron. The accuracy of these cross-sections is tested by benchmarking. In this procedure, standard calculations are applied to the cross-sections. For comparative purposes these benchmark calculations may be done by several different parties. With benchmarking, Rose said, "You're basically trying to better your tools by calculating actual experiments."

This week's conference gave those who are active in the acquisition, benchmarking and application of basic thermal reactor physics data the opportunity to get together informally and communicate their problems, results and plans for the future. In particular, they discussed calculations and results for sets of cross-sections called Evaluated Nuclear Data Files (ENDF). The ENDF sets are issued by the NNDC and are standard throughout the United States and most foreign countries. Odelli Ozer, Program Manager of Neutronics and Core Performance in the Safety and Analysis Department of EPRI, said that one of the objectives of the conference was to resolve any remaining problems of the ENDF data in thermal reactor analysis.

Beyond that, Ozer said in his opening remarks, "This conference comes at a rather critical time from the point of view of EPRI." The Institute has produced a package of codes called RASP, for Reactor Analysis Support Package. Before this library is released for use by utilities in reactor design, Ozer explained that a number of questions must be addressed and answered to make sure there are no unresolved problems with the data. These issues formed the basis of the workshop. Over its two intensive days, 24 papers were presented to the 52 participants, with an informal panel discussion closing the conference.

Doug Humphrey

This intense discussion took place between workshop sessions during the Thermal Reactor Conference: (clockwise from front left) Judd Hardy, Jr., Bettis Atomic Power Laboratory; Phil Rose, BNL; Wolfgang Rothenstein, Technion Israel Institute of Technology; Odelli Ozer, EPRI; and Raymond L. Murray, NCSU (see "A Visitor's View").

Sci-Tech Info

A representative from the Institute for Scientific Information (ISI) will present a seminar on its various services beginning at 1 p.m. on Wednesday, May 26, in Stage II (Bldg. 184). The program will include a 45 minute slide presentation of the Science Citation Index (a multidisciplinary scientific literature index), Current Contents, ISI Search Network and other ISI products, e.g., ASCA (a current awareness search service), OATS, and Atlas of Science.

An online demonstration on three new databases will follow: ISI/BIOMED, ISI/CompuMATH and ISI/ISTP&B (Index to Scientific and Technical Proceedings and Books).

Southampton Honors Manowitz

Bernard Manowitz, chairman of the Department of Energy and Environment, will receive an honorary Doctor of Science degree from Southampton College on May 23. He will be honored at commencement exercises for his distinguished scientific career and for his commitment to science education.

Manowitz will celebrate his 35th year at BNL later this year. After receiving his M.S. in Chemical Engineering from Columbia University in 1947, he signed on in BNL's Department of Reactor Science and Engineering as a chemical engineer. His principal responsibility during this time was the design and construction of the radiochemical waste disposal system, methods that are still in use at reactor sites here and abroad. Named associate head of the Chemistry and Chemical Engineering Division in 1960, he continued research on waste processing, fuel reprocessing and nuclear reactor engineering.

Two years later, Manowitz became head of the Radiation Division of the Department of Applied Science (formerly Nuclear Engineering). In this capacity he supervised the design and construction of the High Intensity Radiation Development Laboratory. For his work he received the Radiation Industry Award of the American Nuclear Society in 1971.

As Associate Chairman for Environmental Programs, (1974-79) Manowitz was responsible for the development and direction of the department's research in atmospheric sciences, oceanography and applied ecology. Since 1979 he has been chairman of the Department of Energy and Environment, the successor to Applied Science. His concern is not only with the development of energy sources, but with the effect of such technologies on the environment. Manowitz also views science education as a valuable resource and, under his leadership, from Southampton College alone, 101 students have shared the Lab's scientific facilities.

Bernard Manowitz

A Visitor's View

Raymond L. Murray

"I am interested in the revolution in small computers," said Dr. Raymond L. Murray, who was at BNL earlier this week to share this interest with colleagues attending the Thermal Reactor Conference.

At the workshop, Dr. Murray presented a paper dealing with "Reactor Physics Using a Micro Computer." While it is largely unheard of to do complex reactor calculations on anything but a large computer, Dr. Murray has used a personal computer for this purpose. Comparing the two methods, he has concluded that computations may take longer on a personal computer, but the results are the same, with the added benefit that you can do something else in the meantime.

Dr. Murray has always had plenty to do. During his 32-year association with the Nuclear Engineering Department of North Carolina State University, he has written four college textbooks. The first edition of an Introduction to Nuclear Engineering, published in 1954, was the first text on the subject, and was followed by a second edition in 1961. He published a textbook on Nuclear Reactor Physics in 1957, Nuclear Energy was printed in 1975 and 1980, and his book on radioactive waste came out in 1982. Now as Professor emeritus at NCSU, Dr. Murray spends his time on his writing, consulting, special lectures, public service and golf, saying, "I keep about as busy as ever."

At present, his major project is revising his Nuclear Reactor Physics book. "It must be completely redone," he said, "to take account of the computer revolution." The revolution Dr. Murray refers to encompasses the technological developments that have made computer equipment ever cheaper, putting it into the hands of almost everyone. "I didn't predict that would happen," he said, "I don't think anyone could have. But having missed the boat in that prediction, I don't think I'm missing it now when I say that in the next ten years there will be even greater changes in our use of computers."

One of the changes he predicts is that students and scientists alike will have computers at their desks. "They will be like the pocket calculator of today," he said. He pointed out that some colleges have already set a goal of providing every student with direct access to a small computer within the next few years, and that many high schools now offer an introductory computer course to aspiring engineers and scientists.

But Dr. Murray doesn't think that's enough. "The schools should be providing those courses for about 90% of the students," he said, explaining, "I think the computer could be a means for intellectual stimulation for high school students to rekindle the declining interest in science and math."

Dr. Murray concluded, "It should be possible to get kids interested in doing thing on computers other than playing Pac Man or Space Invaders. We should make it possible for kids to use computers in school and even want to stay after. We should be ingenious enough to do this."

— Anita Cohen

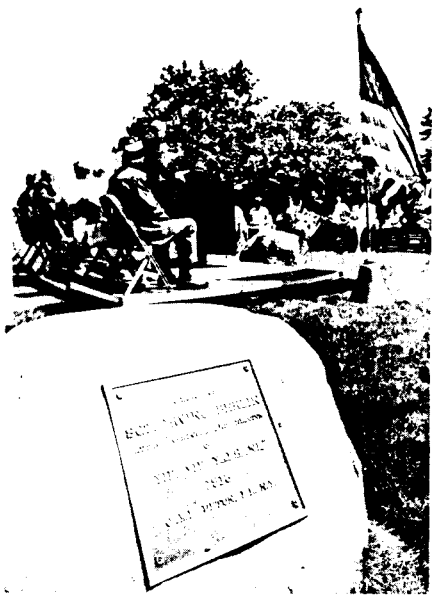
It's Cicada Time

Any time now, brood V of the periodical cicada should emerge from the soil to make its scheduled appearance in Suffolk County. According to the Cooperative Extension Association of Suffolk County the last time this happened was 17 years ago — the time required for the insect to complete its life cycle.

In 1965, cicadas were found mainly in wooded areas near Lake Panamoka in Wading River, along Sound Avenue in Calverton, in Wildwood State Park and near the Riverhead-Brookhaven Town line. Thus, this particular brood should not be widespread.

Upon emerging from the soil, the nymphs will head for upright objects, to which they will secure themselves for the laborious process of climbing out of their nymphal "skins" as adults. In a few hours they will harden and darken in color and become fully mature. The adults will mate within one week and females will begin egg laying seven to ten days later. Adults

(Continued on page 2)



On Sunday, May 16, Brookhaven Lab dedicated a plaque in honor of Irving Berlin.

BNL Associate Director Vincent O'Leary (left) with Alfred Pfeiffer, Commander of the 77th Division Association, which presented the Laboratory with a New York State historical highway sign, marking the Lab as the site of Camp Upton.

Yip, Yip, Yaphank

It was a morning of ceremony and song in front of the Brookhaven Center this past Sunday, May 16, when Brookhaven Lab dedicated a bronze plaque honoring Irving Berlin. The occasion was sponsored by the Town of Brookhaven in cooperation with the Lab, to celebrate Berlin's 94th birthday.

Songwriter Berlin was a young recruit at Camp Upton, which predated the Lab at this site. In 1918 Berlin wrote "Yip, Yip, Yaphank," a military musical based on his life at the camp. BNL's Associate Director Vincent O'Leary addressed the crowd of local officials, veterans and their families, and dedicated the plaque in honor of Sgt. Irving Berlin.

An Honorary Life Membership to Veterans of WWI of the U.S.A., Patchogue Barracks 2981, was also awarded to Irving Berlin by Raymond Burns, Commander and National Chief of Staff, and by Francis Guidera, Judge Advocate. Although Berlin was unable to attend the ceremony, his office had conveyed by letter his acceptance and appreciation of this honor.

A New York State historical highway sign was presented to the Laboratory by Alfred Pfeiffer, Commander of the 77th Division Association. The Association had arranged for the historical sign to mark BNL as the site of Camp Upton, where Army recruits trained during WWI and where a camp and hospital were set up during WWII. The marker will be installed near the Lab's entrance on William Floyd Parkway.

Brookhaven Town Councilman Donald Zimmer, who also served as Master of Ceremonies for the event, presented a Purple Heart to Carl Vail, Sr., for wounds and gassing suffered in Meuse-Argonne, France, in 1918. After locating lost records, the government had recently approved awarding the medal to Vail.

Other participants in the ceremonies were Henrietta Acampora, Brookhaven Town Supervisor; Mario Shortino for Representative William Carney (1st Congressional District); and Marion Pond, Adjutant of Veterans of WWI of the U.S.A. Patchogue Barracks 2981. Musical selections were sung by Buddy Burth and Robert Hughes, former Brookhaven Town Councilman.

Trees Fight Pests

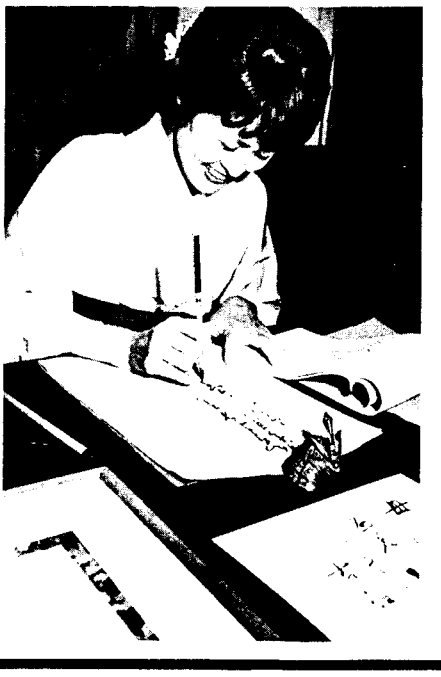
Despite the gypsy moths that have plagued Long Island's trees in recent summers, such outbreaks of pest insects are really quite unusual. According to Dr. Jack C. Schultz, a research assistant professor at Dartmouth College, "This suggests that something — or things — regulate these insects normally and that these regulating factors somehow change or break down when epidemics occur."

Schultz's research on sugar maple trees indicates that one of these regulating factors may be the chemical composition of tree leaves. Through a sophisticated defense mechanism, Schultz says trees may vary the composition of their leaves daily in response to chewing by insects. This forces the bugs to hustle about their host trees in search of high quality leaves, increasing their death rate by making the insects more conspicuous to predators such as birds.

Tannins or tannic acids are known to interfere with food digestion in plant pests. Schultz measured their concentration in sugar maples and found that it varied from leaf to leaf. Similar variables were such pest nutrients as nitrogen and water. Thus, in search of a decent meal, insects may be forced to eat those leaves that will increase their susceptibility to their natural enemies. Dr. Schultz also found that tannin is highly concentrated in oak leaves that have grown back in areas that have been defoliated by pests, thereby discouraging further defoliation.

The theme of this year's Spring Tea and Sherry Party, sponsored by BNL's Hospitality Committee, was "Spring in Japan." In the Brookhaven Center, decorated with giant paper and cloth fish, women employees, wives of employees, and guests were treated to exhibits of Japanese dolls, toys, folk crafts, cooking utensils, paintings and pictures. Demonstrations were done of Japanese cooking, quilting, caligraphy, flower arranging and origami. The program also featured a performance of Japanese songs, a demonstration of a traditional Japanese tea ceremony, and a modeling of Japanese kimonos.

—Photos this page by Humphrey



Power Pinch Survey Results

In early March a program on the issue of sexual harassment in the workplace was offered to employees. Questionnaires were distributed to the approximately 450 employees who attended the program. The questionnaires were intended to indicate employees' opinions and the incidence of sexual harassment at BNL. About 15% of program participants subsequently completed questionnaires the contents of which have now been tabulated.

It was found that the incidence of sexual harassment at Brookhaven is no different from the national experience — surveys have shown that more than 40% of women in the workforce have been sexually harassed on the job, as have 15% of men. Moreover, almost all the respondents believed that sexual harassment occurs at the Laboratory. Males tended to minimize the extent and type of behavior, while females described a broad range of perceptions about the extent and level of severity. A large majority of the respondents believed that sexual harassment in the workplace is an issue which warrants inclusion in training programs at the Laboratory; this is now under advisement.

Did you know?

Nicholas Samios and Robert Palmer led the team that announced the discovery of baryon charm on April 28, 1975.

Did you know?

The first announcement of the encouraging results achieved in using L-Dopa to treat Parkinson's disease was made on May 7, 1968, by a BNL team led by George Cotzias.

Pump Your Own Gas

In 1979, the General Service Administration (GSA) suggested that when government vehicles needed refueling at commercial service stations, drivers use the self-service pumps. The price differential between full-service and self-service was significant. It still is and, because of the cost savings to be realized, the GSA suggestion has now become a regulation which is effective immediately.

So, from now on, drivers of government vehicles should keep in mind that they are to use the self-service pumps when buying gas. The only exemptions to this policy are if the driver is physically unable to comply; the weather is severe; or there is no self-service pump at the station in question.

Cicada (Cont'd)

will live five to six weeks, posing little problem to home owners. Though they will occasionally suck juice from tree bark, this is not injurious to the tree. The adults cannot bite or sting. Females use a saw-like apparatus at the end of their abdomen to make slits in twigs to lay eggs, but this seldom has more effect than a light pruning. The only exception is where injury occurs on fruit trees. Once the eggs hatch, nymphs will drop to the ground and burrow into the soil to spend the next 17 years feeding on sap in tree roots.

The Cooperative Extension needs specimens of this brood for research on the periodical cicada. If you spot an emergence of the insect, contact Tom Kowalsick at 727-7850 from 8:30 a.m. to 1:00 p.m.

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Service Awards

The following employees received service award certificates during the month of May:

Thirty-Five Years

Wesley L. Howell ..... P. Engrg.
Gasper R. Perry ..... Instrumentation

Thirty Years

Borge G. Espensen ..... Physics
Robert J. Isler ..... E. & Environ.
Charles J. Lyons .... Supply & Materiel
Glenn A. Price ..... Director's Office
Robert E. Wayte ..... Reactor

Twenty-Five Years

Arnold V. Feltman ..... Accelerator
Jacob Pruzansky ..... E. & Environ.

Twenty Years

Richard D. Baulch, Jr. ..... S&EP
Jean C. Byrne ..... Staff Services
Robert Carciello ..... Chemistry
Robert A. Larson ..... Accelerator
Stanley W. Mars ..... Supply & Materiel
Eleanor M. Mitchell ... Nuclear Energy
James R. Nelson ..... Reactor
Morris Reich ..... Nuclear Energy
Robert C. Terwilliger, Jr. .. P. Engrg.
T. Laurence Trueman ..... Physics
Dudley K. Vail ..... Accelerator

Ten Years

Francis R. Martin ..... Accelerator
Cheryl Williams ..... Instrumentation

PSI News

The Installation Night for the Upton Chapter of Professional Secretaries International will be held on Tuesday, June 1 at 5:30 p.m. in the South Room of the Brookhaven Center.

The Installation of the Chapter and members will be organized and hosted by members of the Queen Anne Chapter, PSI. Those wishing to attend should forward a check for $9.50, made payable to Saga Foods to Membership Chairman Susan Carlsen, Bldg. 535 by May 26. Non-members are welcome.

Arrivals & Departures

Arrivals

None

Departures

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

Thomas C. Cromer ..... Accelerator
Patti J. Siemen ..... Nuclear Energy
Gary E. Struve ..... Chemistry

Pick A Petal

Pick old flowers from geranium plants suggests the Cooperative Extension Association of Suffolk County. A plant will produce seeds and then stop flowering if old blossoms remain on it. So, if the plant is to continue blooming, old flowers must be removed.

This practice is also good disease prevention. Over-mature or dead flower parts become a haven for some fungi or molds. On a healthy green leaf, these would cause no damage at all, but once the mold or fungus gets started in dead flower parts, it can progress to a point where it invades the plant. Such infection can start in a tiny piece of dead petal or even one of the anthers of the flower. Black, target-like spots on otherwise healthy leaves may indicate the presence of a secondary type of infection.

The MSG Syndrome

Usually called MSG, monosodium glutamate is a common flavor enhancer. Because of its extensive use in Chinese cooking, MSG has been implicated as the culprit in a set of symptoms called the "Chinese Restaurant Syndrome."

The syndrome's symptoms usually occur approximately 20 minutes after the responsible food has been eaten. These symptoms are characterized by a strange feeling of tightness or numbness in the face and neck and may be accompanied by a burning sensation, headache, sweating, tightness in the chest, throbbing, backache and generalized weakness. The symptoms gradually disappear within one or two hours after onset.

Some peoople are more sensitive to MSG than others. If you suffer from this syndrome, you should know that most restaurants will honor your request that MSG not be added to your food.

— Caroline Kramer, R.N.
Occupational Medicine Clinic

Theater Group

The Theater Group will meet at 8 p.m. on Wednesday, May 26 in the North Room of the Brookhaven Center. Nominations for officers will be announced, plans for vaudeville and the group picnic will be discussed, and scenes from some plays of general interest will be read. Anyone interested in any aspect of the theater is invited to attend. The annual election will be held at the meeting of June 23.

Cricket Club

The Brookhaven International Cricket Club will start the 1982 season with a couple of practice sessions at the recreation field on Friday, May 21 and May 28 at 5:15 p.m. The first match will be at home against Staten Island Cricket Club on Saturday, June 5 at 1:30 p.m. Matches have also been arranged against the British Veterans Club on Sunday, June 20 at Oyster Bay and Sunday, September 19 at Brookhaven. Anyone interested in playing (or learning) is invited to the practice sessions. For further details, contact Dave Cox, Ext. 3818, or John Millener, Ext. 3853.

Softball

Scores for week of May 10

Leagues I and II

Blue Jays 9 — Ravens 8

Good defense by the Jays earned the win. For the Ravens, Leroy James was 3 for 4; Bob Brown was 3 for 4 with a home run. For the Jays, Juan Alvarez was 3 for 4 with a home run.

Six Pax 17 - Phoubars 11

The Six Pax overcame an eight run first inning by the Phoubars and went on to win 17 to 11. For the Phoubars, Jim Rowehl and Dave Hansen had home runs. For the Six Pax, John Usher and Walt Reams were 3 for 4; Wayne Rambo was 2 for 3 with a home run.

Ice Pops 24 — Roga 8

Big Sticks 9 — Moles 5

The Big Sticks had a big 6th inning, starting out with a 3-run homer by Steve Bennett.

Leagues III and IV

AMD 22 — Titans 12
Magnuts 13 — Dirty Sox 7
Medical 16 — Random Errors 5
Electric Co. 22 — Lights Out 6

League V

Survivors 28 — Nads 15
No Names 16 — Turkeys 8
E-Z Riders 13 — TNT 8

League VI

Who Cares 22 — The Source 9
Random Sample 8 — Underalls 7
Mudville Sluggers 22 — No Feedback 16
Molesters 23 — Who's On First 19

Mort Rosen

The BNL Radio Controlled Model Aircraft Club held its third annual exhibit at Berkner Hall last week. Among the 14 planes on display was this precision aerobatic aircraft with retractable landing gear, built by Joe Buzzeo (at left). With him are club members Pat Gilleeny and Stan Sajnacki. In general, the model builders fly their craft in spring, summer and fall and construct them in the winter. Now is flying time.

I.B.E.W. Meeting

Local 2230, I.B.E.W. will hold its regular monthly meeting on May 27, 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 and the President's report.

Reserve A Court

Two tennis court reservation systems will go into effect Tuesday, June 1. The rules for court use are posted at courtside and in the BERA Sales Office in Berkner Hall.

Under the advance reservation system (A), three of the courts may be reserved for weekday play the day before play (thus Friday for Monday play). On-court scheduling (system B) offers the three remaining courts on a first come-first served basis to players who sign the blackboard at courtside at the time of play.

Reservation sheets for system A are held at the BERA Sales Office from noon to 1:00 p.m. on the day preceding play. Reservation sheets for the day's play will be posted at courtside in the morning, where players may reserve any courts that remain open. Only group 1 from the priority players list below may use system A. Only groups 1 and 2 may use system B.

1. Laboratory employees, including Visiting & Guest appointees.
2. Laboratory employees playing with family members or personal guests.
3. Immediate family members of Laboratory employees.
4. Personal guests of Laboratory employees.

Note: It is against Laboratory policy for anyone to use Lab facilities for profit. This includes use of the tennis courts for conducting paid, private tennis lessons.

Cooking Exchange

The International Cooking Exchange will feature "a little of this and a little of that" at the next meeting on Wednesday, May 26. Dishes from such countries as China, Japan and India will be presented.

Meetings are held from 12:30 to 2:30 p.m. and are open to employees and their family members. There is a charge of $1.00 per person at each meeting and babysitting is provided at 50¢ for each child.

For information call Ruth Fernow, 928-8465.

CREF Values

May	52.56	June	51.94
July	51.19	August	48.26
September	45.89	October	47.61
November	49.61	December	48.33
January	47.49	February	44.88
March	44.48		

April $46.32

Bowling

Pink League

High games were bowled by D. Johnson 190, C. Beckner 181, R. Rosati 177, M. Larsen 176, F. Briening 169/170, J. Thiede 161, H. Keeley 173.

White League

The Portsiders are the winners of the second half and will bowl against the Dips in the rolloffs. Good games were bowled by P. Manzella 179, V. Manzella 214, C. Jacobs 190/180, J. Petro 213, B. Belligan 200, F. VanDervoort 197, N. Tyler 215/207, K. Asselta 213, S. Gushue 198, J. Ferrante 204, N. Carter 210, J. Griffin 240/191/236/667 scratch, S. Long 655 gross series and also converted the 5/7 split.

Purple League

The Draftecs are the winners of the second half and will bowl against the Pen Macs in the rolloffs. High games were bowled by T. Romano 245/621 scratch series, W. Milian 217, C. MacDougall 196.

Red & Green League

D. Wiseman rolled games of 223/212 for a 620 scratch series, B. Medaris 253/611 scratch, B. Kristiansen 254, B. Sells 212, J. Ferrante 202, L. Schairer 202.

Cafeteria Menu

Week Ending May 28, 1982

Monday, May 24		
Spinach egg drop soup	(cup)	.55
	(bowl)	.65
Beef liver & onions /1 veg.		1.70
Ham and broccoli crepes & 1 veg		1.75
Hot Deli: Baked ham	(bread)	1.75
	(roll)	1.85
Tuesday, May 25		
Chicken & rice soup	(cup)	.55
	(bowl)	.65
Meatloaf & 1 veg		1.75
Spaghetti & sausages w garlic bread		1.75
Hot Deli: Knockwurst & kraut on rye		1.75
Wednesday, May 26		
Navy bean soup	(cup)	.55
	(bowl)	.65
Western-style chili on rice		1.75
Batter fried steak & 1 veg.		1.90
Hot Deli: Top round of beef	(bread)	1.85
	(roll)	1.95
Thursday, May 27		
Minestrone soup	(cup)	.55
	(bowl)	.65
Beef Stroganoff over egg noodles		1.90
Breaded pork chop & 1 veg.		1.85
Hot Deli: Monte Cristo		1.80
Friday, May 28		
Manhattan clam chowder	(cup)	.60
	(bowl)	.70
Tuna noodle casserole		1.70
Sweet and sour pork on rice		1.80
Hot Deli: Veal pattie & pepper hero		1.85

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.

The vacancies listed below have been exempted by the Director's Office from the current freeze on open requisitions.

LABORATORY RECRUITMENT: Opportunities for present Laboratory employees.

1698 TOOL AND INSTRUMENT MAKER - Central Shops Division.

Autos & Auto Supplies

73 BUICK - rebuilt engine & transmission, 2 new tires, rear-end body damage, $375. 981-5993.

78 TRANSAM - gold, beige, p/s, p/b, DE, new brakes, 6.6 LT engine, am/fm-8 track, t-top, 4 spd., $5,195. Roy, Ext. 4664 or 744-8779.

81 TORNADO - diesel, mint cond., white/red int., 20,000 mi., $9,200. 654-8622 days or 286-0898 after 5 p.m.

73 HONDA - CB750, excel. cond., custom seat, quartz light, sissy bar, asking $1,000. Ext. 5385 or 654-2076.

72 OLDS - all power, a/c, good running cond., $600. Frank, Ext. 4113.

VOLKS FRONT AXLE - ball joint torsion bar, other VW parts. Brian, 744-2169.

71 VOLKS CONVERTIBLE - runs, needs major body work, best offer. Brian, 744-2169.

VOLKS TIRES - brand new Goodyear steel radials for bug, 4/$120. Brian, 744-2169.

77 KAWASAKI - 750, twin V, fully dressed, am/fm radio, 6500 mi., many extras, $1,395. 475-0331.

79 HONDA HAWK - 400cc, almost new, asking $1,200. 588-0805 eves.

74 FIAT 124 - sports convertible, good cond., $2,000. 928-0787 after 6 p.m.

77 OLDS CUTLASS SUPREME - 4 dr., loaded, mint cond., asking $2,050. 887-1806 eves.

TIRES - (2) Firestone 721's, used P.195/75 R14, make offer. Ext. 2139.

69 DODGE CHARGER BODY - excel. cond., primed, $450, negot. 473-5890 after 5.

75 GRANADA GHIA - 2 dr., 6 cyl., p/s, p/b, auto, 70,000 mi., $1,650. Ext. 2518 or 744-8894.

69 PLYMOUTH SATELLITE - 70,000 true miles, 318 engine, body poor, good local transp., $250. 286-2265.

78 YAHAMA - XS 400 Special, black, 4600 mi., elec. start, windshield, lug. rack, (2) Arais helmets, service manual, $1,300. 929-8204 after 5 p.m.

76 CHEVY - 1/2 ton pickup, 350 eng., 3 spd., two-tone color, 8 ft. bed cap, white, slat wheels, $3,400. Ext. 4297 or 929-6877 after 5 p.m.

76 VW DASHER - 4 dr., auto, am/fm, $2,800 or best offer. Marj, Ext. 3396.

64 VALIANT - 2 dr., std. trans., 6 cyl., 13,000 mi. on rebuilt engine, avail. mid. June. Steve, Ext. 4475.

62 MERCURY METEOR - ss, banged rear, runs, extra auto trans., $125. 475-3792 after 6 p.m.

76 HONDA CIVIC - hatchback, 4 spd., $1,200. Ext. 4159 or 472-1518 after 6:30 p.m.

71 DODGE SWINGER - 6 cyl., dependable, new tires, new parts, $800 firm. David, 924-3476 after 5 p.m.

76 HONDA - CB550, fairing, custom seat, backrest, trunk, new battery, 12,000 easy miles. Ext. 3319 or 369-3024.

74 CHEVY STEP-VAN - V-8, 4 spd., refrigerated, insulated, fiberglassed, heavy duty front and rear, $4,000. 654-5169.

78 HONDA - 550K, halogen headlight, 2 helmets, sissy bar. 472-0499 after 5 p.m.

SHOCKS - rear load levellers. Ext. 3919.

RADIAL TIRE - 165x13, new, mounted on Datsun 1978 F10 wheel, asking $30; G78x14 tires, reasonable cond., $10 each or 2 for $18. John, Ext. 3292 or 286-1348.

AUTOBODY PARTS - for late model Chevy Blazer, have 2 rear quarter panels, tailgate w/glass, fiberglas cap, no rot. 286-1522.

TIRES - (4) 14.35x15 Groundhawg tires, very good cond., low mi., $275. 286-1522, eves. only.

81 YAMAHA - 650cc, Special II. 981-3831.

80 AUDI - 5000S diesel, 5 spd., red metallic, full pwr., a/c, cruise control, am/fm cassette, like new, 19,000 mi., $11,900. 941-4999.

69 TOYOTA CORONA - red, rebuilt eng., new starter and voltage regulator, new paint, very good cond., $900. 751-7140.

70 FORD MAVERICK - 2 dr., body rusty, mechanically good, a/t, 7 wheels, 83,000 mi., $300. 727-4884 after 6 p.m.

76 FORD VAN - 6 cyl., new clutch, muffler, paneled, insulated, am/fm cassette, good condition, $2,300. Ext. 5385 or 654-2076.

CAR COMPONENT - Pioneer AD-50 amplifier/equalizer, 1 year old, list for $200, will sell $120. 744-8063 (days).

72 FORD GALAXIE - a/c, snow tires, many new parts, vg milage, runs well; also tire, JR-78-15, radial, almost new, $10. 924-4991.

Boats & Marine Supplies

8' SEA HORSE HYDRO PLANE - fiberglass, used twice, kept inside, excel. cond., $275. 286-8868.

8' DINGHY - strong, beautifully built fiberglass, flotation, stowage, flat floorboards, teak trim, bronze fittings, $450. Ext. 4745.

TRAILER FOR SUNFISH SAILBOAT - usable condition, cheap. Georgia, Ext. 2772 or 286-8869.

12' FIBERGLASS BOAT - 10 HP motor, 1979 trailer, best offer over $600. Brian, 744-2169.

16' ALUM. VEE BOTTOM OPEN BOAT - 40 HP elec. start, mfg. trailer pkg., $900. 924-6751 eves.

Yard Sales

MOVING SALE - furniture & contents of house. 924-7349.

GIANT YARD SALE - May 29 & 30, 10:00 - 4:00, 2 Bay Road, E. Patchogue, end of Woodacres Road.

YARD SALE - 12 Chapel Ave., Brookhaven, 10 to 3 on May 22 & 23. 286-0436.

MOVING SALE - Tappan microwave oven, $275; Sears top of line VCR, with tapes, $1,000; Stereo Realistic w/speakers, $600. 727-6449.

Miscellaneous

LIVING ROOM COUCH - black vinyl; hairdryer w/hood. 924-4991.

TENNIS RACKET - Dunlop Volley II, midsized, 3L, strung w/staylite nylon, asking $40. Ext. 2671.

GIRL'S BICYCLE - new condition, $35; Baldwin organ, one octave, foot pedals, $350; chess set, hand carved onyx, onyx inlaid board, $30. Lou, Ext. 3506.

BATHROOM VANITY - 24" walnut, cut out for round sink, $20. Duke, Ext. 4278 or 289-3586.

SBE OPTI-SCAN - HF, UHF, VHF scanner, $195. Carl, Ext. 5329 or 281-7627 after 5 p.m.

G.E. PORTABLE DISHWASHER - w/power scrub & china crystal setting, butcher block top, asking $50. Ext. 2231.

MOUTON LAMB JACKET - brown, excel. cond., fits szs. 14-16, $75. 475-0144 after 6 p.m.

POOL - 24'x4' w/all equip., $175; Deming water pump w/30 gal. tank, $75; buffet; medicine chests. ExHt. 4532.

WOOD HOOP - $10; G.E. portable dishwasher, wood top, $25; rabbit hutch, $5; tricycles, $5/ea. 286-8554.

G.E. AIR CONDITIONER - 14,500 BTU V115, 7½ amps. Ext. 3392 or 475-8330.

14 KT GOLD "S" CHAIN NECKLACE - w/three diamonds, 28" long, $125; large framed wall mirror, approx. 5'x3', only $15; prom gown, sz. 9/10, lt. blue, worn once only for a few hours, like new, $30. Ext. 7745.

POOL - 18'x48" w/liner, cover, filter, $75. Frank, Ext. 4113.

LILY OF THE VALLEY PLANTS - 100 for $5; fir & spruce trees, u-dig, 2/$7, month of May only. 727-1617.

BOY'S SCHWINN BICYCLE - w/basket, good cond., $15, barber's hair clippers/trimmer, new $20. 472-1397.

AQUARIUM - 29 gal., full fluorescent hood, underground filter unit, $40. Ray, Ext. 7509.

MINOLTA CAMERA - SRT 102, 35mm, 50mm 1:17 lens, shutter 0-1000, good cond., $125 firm. 281-0360 eves.

DEEPWELL PUMP - 1 HP, 2 stage, 110-220 volt, $95; bathroom sink, faucet-legs, very good cond., $35. 924-3565.

DUAL MINI 3 WAY SPEAKER - 2-Speco, model #DMS-3, never used, in cabinet, $100 or 2/$75. Al, Ext. 3992 or 331-1003.

LOVE SEATS - (2), dining room set, dressers, desk, end tables, full mattress, reasonable. 924-7349.

COAL STOVE - negotiable. 286-0422 after 6.

300 WATT BI AMPLIFIER - for ham radio use, illegal for CB use. 751-6418.

DISHWASHER - white, portable, Hotpoint, good cond., $85. 929-4886 after 5 p.m.

TV RECLINING CHAIR - new condition. Ext. 3392 or 475-8330.

BBQ COOKING UTENSIL SET - s/s with teak handles, never used, $15; boxspring, twin size, $15. Ext. 4695 or 744-1917.

SLEEPING BAGS - Alpine design, down backpackers, light, warm, cleaned, zip together, $90 pr. Dave, Ext. 5211.

BED - full size, ex. cond., $75; stereo, Scott, 70 amp, Garrard turntable, maple cabinet, $75. Ext. 7197 or 821-9483.

MOTORCYCLE HELMET - new, blk., full face; Sears lawn mower assy for riding tractor; Skil saw; pool pump, 1/2 HP; formica counter top, white, s/s sink. Ron, Ext. 7101 or 2D89-1003.

BICYCLE - 20" high, Motorcross, totally re-built, excel. cond., 654-3479 after 5 p.m.

MINIBIKE - Rupp, 4 HP, $100. 581-7656.

GO-KART - good running cond., $150. Joe, Ext. 4630 or 751-2117.

MATTRESS & BOX SPRING - full size, excel. cond., reasonable. 727-0661 after 5:00 p.m.

CASUAL FURNITURE - grey quilt covered foam, 2 corner seats, love seat, chair & ottoman, converts to 4 beds, $150. Ext. 7683.

POTTER'S KICK WHEEL - w/built-in bench, $50; light box for growing plants, $25. Lee, Ext. 7629 or 929-3023.

GIRL'S BICYCLE - 24", 2-wheeler, $12; heavy duty training wheels, $10. 281-7844.

KITCHEN TABLE - formica, good cond., $20; baby walker, deluxe, 3 wks. old, $16. Louise, 924-0794.

NIKON FM - w/50mm F1.8 E., Sigma Tele 135mm F2.8 U.V filters, lens hoods, gadget bag, best offer. Edward, Ext. 3403 or 751-1826 after 6 p.m.

MINIBIKE - needs work, doesn't run, asking $35. John, Ext. 3292 or 286-1348.

TOYS - used but good cond., cheap, in Shirley area. Helen, 281-8848.

WHIRLPOOL WASHER - 2 speed, 5 cycles, $100. Ext. 4440 or 929-4865.

FRESH FISH - bass, weaks, blues, wholesale prices. Leave phone number. Roger, Ext. 2107.

JALOUSIES - 5 windows, 42x80, 1 door 36x84, storms/screens, excel. cond., enclose a breezeway, $300. Ext. 2069.

SMALL STEREO - record player, 3-speed, automatic changer, good cond., $40. Marian, Ext. 3552.

BICYCLE - woman's, 26" Schwinn, coaster brake, $75. David, Ext. 7646 or 286-8229.

G.E. CHEST FREEZER - 11 cu. ft., good cond., $100. Ext. 7100.

SLIDE CAROUSELS - for Airquipt projector, $2.50 ea., or 3 for $6.50. Joe, Ext. 4069 or 261-7825.

77 KOUNTRY AIRE TRAILER - 35', 5th wheel, rear bath, like new, must see. 589-6151.

RECLINER CHAIR - $80; Sealy Posturepedic mattress set, queen, $85; sofa, high back, perfect, $250. 265-3612.

TAPE RECORDER - Sears cassette, portable, good cond., $20. 744-9677.

SOFA - queen size, convert., good cond., $150 or best offer. 698-6437 after 6:00 p.m.

COLOR TV - 14" Bohsei, 1½ years old, excel cond., leaving country so must sell $150. Also assorted Chinese artwork, handicrafts and other items. Zhuang, Ext. 4375.

Real Estate

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

For Sale

STONY BROOK - 5 bdrms., 3 baths, large recreation/garden room, C/A, 2½ car garage, ½ acre on cul-de-sac, luxury features throughout, excel. financing, $96,500. 689-8585.

PORT MALABAR - ¼ acre property on Florida's east coast, a General Development Corp. community just 1 hr. from Disney World & Orlando. Ed, 585-2088 after 4 p.m.

RIDGE - 3 bdrm. ranch, l/r, fp, 1½ bath, kitchen, d/r, den, attached garage, full basement, oil heat, beautifully landscaped, many extras, $45,000. 924-8297.

MIDDLE ISLAND - 2-3 bdrm., l/r, kitchen, bath, 1 car garage on ½ acre, north of Rt. 25, $35,900. Joann, 744-2821 or 473-8670.

MASTIC BEACH - 4 bdrm. cape, d/r, eik, lrg. l/r, gas hot water, 160x100 prop., low taxes, shed & full porch, near stores & bay, 8% Farmers mort., $28,000. 281-0360 after 6 p.m.

SETAUKET - near SUNY, custom ranch, private treed 1/2 acre, finished bsmt. with separate study, cathedral ceiling, fam. rm., f/p and skylite, many extras. Assumable 7½% mtge, $117,000. 751-6508.

BELLPORT VILLAGE - 7 rm. cape, lg. l/r, fireplace, sunny eik, 2 baths, full bsmt., 2 car garage, excel. cond., asking $63,000. Owner, 286-8972.

SHOREHAM/WADING RIVER SD - 4 bdrm. colonial on acre, Axeman-Anderson boiler, 12" insulation, deck, quiet location. $89,000 Assumable 10% mtge. Lee, Ext. 7629 or 929-3023.

CONDOMINIUM - Birchwood at Blue Ridge, 15 min. from Lab., 3 bdrms., many extras, facing golf-course, low 60's. 698-7213.

WADING RIVER - secluded, 4 bdrm. colonial, 2 baths, d/r, den, fireplace, 2 car garage, full basement, private beach. Ext. 7727 or 929-4631.

HOLBROOK - 1½ story, 3 bdrms., 2 baths, full bsmt., 2 car garage, 3/4 acre. Owner may hold mort, mid $60s. 588-5833.

For Rent

BROOKHAVEN HAMLET - 2 bdrm. house, completely remodeled, fireplace in living room, $450/mo. 472-4148.

SOUND BEACH - furnished room, share 2 bdrm apt., kitchen, l/r, bath, room has full size bed, phone & TV, walk to pvt. beach, great for summer, $200/mo. incl. util., male pref. Roy, Ext. 4464 or 744-8779.

CORAM - 1 bdrm. garden apartment, sublet. Available June 25, lease up, Sept. 27, swimming pool, $415/month. Ext. 7577 or 473-7720.

WADING RIVER - lovely house on wooded area, 3 bdrms., 2 baths, l/r, d/r, eik, den, study rm, 2 car garage, deck, all appl. energy efficient, 12 min. to Lab., SWR schools, avail. Aug. Ext. 3642/4391 or 929-6964 after 6:00 p.m.

VERMONT CHALET - beautifully furnished, stone fireplace, woodland trails, hiking, pond, lake, swim, fish, canoe, nearby tennis, golf, riding, antiques, music and theatre festivals, weekly rates. 757-5599 after 4 p.m.

ROCKY POINT - 2 bdrm. apt., l/r, w/w carpet, kitchen, bath, patio, garage. Owner, 751-9561 after 4 p.m.

SOUTHAMPTON - summer/vacation rental, new, spacious, 3 bdrm. ranch, minutes from ocean and bays, adjacent to golf, all appl., sun deck, fireplace, rent includes use of boat. Summer season, $6,200; monthly/weekly also avail. 283-0223.

N. PATCHOGUE - ranch, 3 bdrms., l/r, eik, attached garage, full basement, big yard, unfurnished. Available early June, $400/mo. plus util. 589-1286.

ROCKY POINT - 3 bdrms. ranch, eik, garage, private beach, $450/mo. 744-6910 after 6:00 p.m.

STONY BROOK/OLD FIELD - fully furnished 3 bdrms., central air, 2½ secluded acres, walk to beach. Available July 1 - Dec. 31. 751-4942.

Car Pools

FORT SALONGA - Kings Park, route 25A, driver to join 2 person pool. Eva, Ext. 7772.

EAST ISLIP - 3-man pool desires other rider/driver. Jake, Ext. 4532.

RONKONKOMA - driver to join 3 person pool, LIE exits 59, 60 & 61. Victor, Ext. 2395.

Lost & Found

FOUND - pair half-reading glasses w/tortoise rims, in conf. room 1-189, Bldg. 510A. S. Smith, Ext. 3995.

Wanted

PROPELLER - 3 blade, 14x18, 14x20 for Omc outdrive. 722-4679.

GIRL'S BIKE - 3 or 10 speed, reasonable. Sandie, 654-8058 after 5 p.m.

FIESTA DISHES - wooden kitchen chairs, "antique" headboard for double bed, wooden wardrobe. Ext. 3636 or 369-2151.

VW BUS - good body, with/without engine. Ext. 5385 or 654-2076.

WRINGER WASHING MACHINE - in working condition. 286-8554.

FRONT SEATS - for 1973 VW, prefer black; also need a rear bumper. Ext. 6363.

FURNISHED ONE BEDROOM APT. - for June-Aug or longer. Koka, Ext. 3293 or 924-4965.

VENDORS FOR CHURCH FLEA MARKET - Exit 70, Manorville, $5/space, May 29, rain date June 5. 727-1617 or 727-1067.

HOMES FOR CATS & KITTENS - from local humane society. JoAnn, 744-2821 or 928-9537.

AMBITIOUS PERSON - $200-$300/mo., 6-8 hrs/week. 698-5861 after 7:30 p.m.

MOTHER'S HELPER - speaks English/French, seeks summer job w/French family. Carla, Ext. 2934 or 744-2816.

LAWNMOWER - in good cond., elec. start, self propelled, reasonable. 286-0422 after 6.

HOME - for female French highschool student, 16 yr. old., for month of Aug., in exchange for a month for American student in France. 878-9592.

TWO BEDROOM APT. - or house needed to rent in Patchogue Village Area. T. Roland, Ext. 2484.

ROOMMATE - M/F to share $415/mo. spacious home, Port Jefferson Village. Jack, Ext. 3433.

HAVE YOUR OWN BUSINESS - with no investment, p/t, f/t training, management potential. Lorraine, 698-9130.

FREEZER - 19 cu. ft., or larger. 298-4398.

MATURE WOMAN - to babysit 8 year old boy, Moriches Elementary area. Kathy Ext. 4615 or 399-6585.

ELECTRIC WASHER - good to excellent cond. Boyce, Ext. 3734 or 744-7849.

TENNIS PARTNER - lower intermed. singles. Roman, Ext. 3751 or 399-3659 eves.

TIRES - good to fair cond., reasonable, C78-13 or 650-13. Susan, Ext. 4267.

CB - for car, 23 or 40 channel, good cond. and CB car antenna; 8mm projector in good working cond.; 28mm lens for Minolta Bayonet mount, reasonable price. John, Ext. 3292 or 286-1348.

BABYSITTER - 1 p.m. to 10:30 p.m., mature person w/own transportation preferred, Westhampton Beach area. 288-6367, mornings.

3 BDRM. HOUSE TO RENT - Patchogue area or close to BNL, reasonable rent, responsible person, w/refs. 288-6367, mornings.

MATURE WOMAN - child care (16 mos baby), our home, Port Jefferson. 331-3611.

TRADE - 74 Honda Civic, rebuilt eng., v/g running cond. for 6-cyl., American-made van, v/g running cond. Sharon, Ext. 3755 or 878-9571.

HOUSE TO RENT - Manorville School District, 3-4 bdrms., 2 car garage. Ext. 3057 or 878-0357.

APARTMENT - 1 or 2 bdrm. on North Shore for visiting scientist. Ext. 5334 or 928-3653.

HOUSE - to buy or rent, South Bellport or Brookhaven, 1/1/83 or before. Ext. 4388 or 286-5879.

Services

Services are listed as a courtesy to BNL employees. They are neither screened nor recommended by the **Bulletin.**

HOUSE SITTING - free, experienced, caring, any period after June 1, plan your vacation now. J. Allentuck, Ext. 2412.

KAYAK LESSONS - basic, thru Eskimo rolls, local bays, and rivers, $10/lesson. Tim, 281-7873.

PLUMBING AND HEATING - Lab discount. John, 654-8189.

VERTICAL BLINDS - mini-blinds, wovenwood shades, discount prices, completely installed. Tony, 928-9241.

ASPHALT PAVING & SEALING - Bob, 475-4382.

LIMO SERVICE - luxury chauffered Caddy, for proms, weddings, airport, & night out. Roy, Ext. 4664 or 744-8779.

HOUSE PAINTING - experienced college student, professional results at fraction of cost, interior/exterior, references. John, 929-4450.

ART INSTRUCTION - reservations being taken now for persons interested in prescribed course in drawing & composition. Also figure drawing. Adam, Ext. 7737 or 286-8611, after 6 p.m.

STEVE'S AUTO CLEANING - compounding and waxing. Ext. 4297 or 929-6877, after 5 p.m.

CUSTOM UPHOLSTERY - classic cars, planes, boats, furniture. Ernie, 654-8670.

HOUSE PAINTING - interior/exterior, professional, quality materials, insured. Bob, 289-7657, after 6 p.m.

EXTERMINATING - licensed professionals, all phases of pest control, termite specialists, no job too small. Free estimates, 281-5445.

LAWN MAINTENANCE - grass cutting, shrub pruning, general landscape up-keep, Bellport Village area. Joe, 286-9390, after 6 p.m.

SPACKLING TAPING - anytime, anywhere, free estimate. Bill, Ext. 3277 or 286-8185, after 5:30 p.m.

SMALL APPLIANCE REPAIR - vacuums, all small appliances, No. Patchogue. 654-3900.

ELECTRICAL WORK - reliable, reasonable. Joe, 399-0864.

SPRING CLEAN-UP - yard work, landscaping, also light auto repairs, lowest rates possible. 289-9811 or 289-4868.

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