BROOKHAVEN BULLETIN
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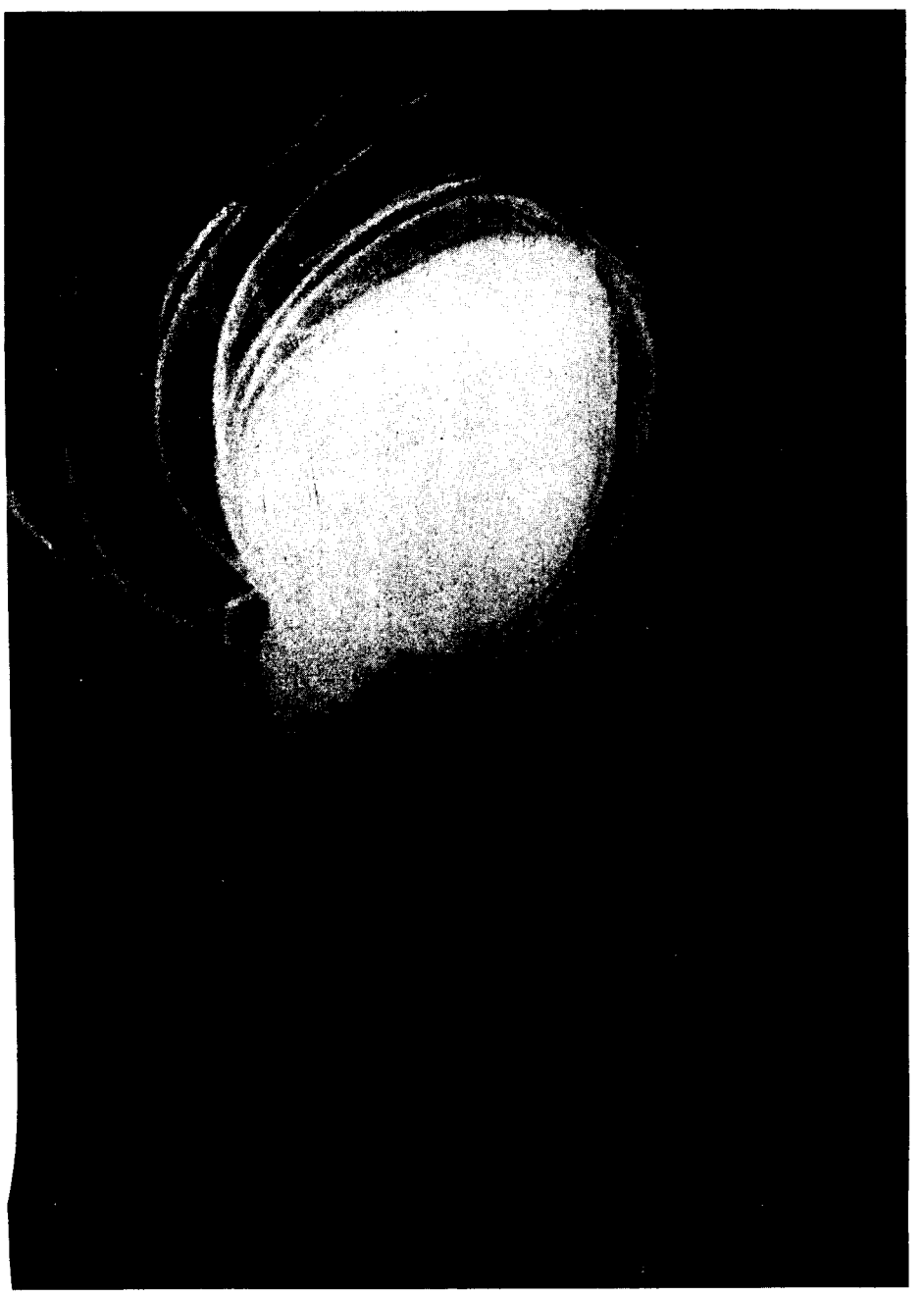
BROOKHAVEN NATIONAL LABORATORY



Neutron radiograph of a rose

A Rose Is Still A Rose

Does this look like an X-ray of a rose? Close, but not correct. This is a neutron radiograph of a rose.

Neutron radiography is a non-destructive way to look at the internal structure of an object. For example, it can be used to look for defects in reactor fuel elements or flaws in airplane parts.

The technique is similar to X-ray photography. Using the Medical Reactor, an object, in this case a rose, is placed in a neutron beam. Certain parts of the object absorb more neutrons than others, so neutrons that do pass through emerge in a pattern. But neutrons do not expose photographic film. They have to be converted to beta particles that will. This is done by placing a metal converter plate behind the object. The metal absorbs neutrons and gives off beta particles, which exposes the film and results in a radiograph.

Ordinarily, neutron radiographs have more clarity than this one of a rose. This was made with the rose behind a lead brick. Like a porcelain globe over a bulb, the lead diffused the neutrons. So the rose has a softer look about it, as if it were photographed through a filter.

The radiograph was taken as part of an on-site training program for students in nuclear engineering.

Patent Award

U.S. Patent No. 4,172,236 has recently been issued to Alfred W. Maschke for inventing a loss-free method of charging accumulator rings. This method produces high current pulses of heavy ions having an atomic weight greater than 100. Maschke also developed a linear accelerator based apparatus for carrying out the method. Pulses formed are suitable for storage in a storage ring, and accumulated pulses may be used in inertial fusion apparatus.

Per Diem Increased

Travelers on Lab business will now be able to stretch their dollars a little further. Effective as of January 1, 1980, AUI has adopted increased per diem rates. Those on domestic travel will receive $22 per day. Employees asked to go abroad will receive $33 per day, except in Japan and Switzerland, where the per diem has been set at $40. Reimbursement for mileage will remain at 18¢ per mile.

Harpsichord Recital

For an evening of delightful harpsichord music, plan on coming to the BERA concert on Monday, January 14, at 8:30 p.m. in Berkner Hall. Fernando Valenti, internationally known harpsichordist, will perform a program of Handel, Bach and Domenico Scarlatti. Tickets are $5 general admission, $3 students and senior citizens, and $2 for those under 18.

Yes Or No On Social Security

A recommendation that the Laboratory investigate the advantages of self-insuring its employees, instead of continuing its participation in Social Security and Medicare, was made at the Director's meeting of management employees in November.

The Teachers Insurance and Annuity Association (TIAA) addressed this question in 1976 when it issued a report entitled "Continuing Participation in Social Security." TIAA's conclusion at that time was as follows:

"TIAA believes that an institution giving careful consideration to the economic security of both present and future employees, to its needs in recruiting and retaining staff, and to the limits of its own financial resources, will recognize the considerable value of social security as a base for its staff benefits' program."

Last month, the Personnel Office asked TIAA for its current position, and was advised that they still subscribe to the views expressed in the 1976 publication. (Copies of this special report are available on request from Personnel).

A recent letter from a TIAA official to Mr. Washburne states that it is TIAA's belief that Brookhaven could not duplicate all of the benefits provided by Social Security, at a cost lower than that now shared by employer and employee in paying Social Security taxes. The TIAA official cites the following principal reasons:

- The Employee Retirement Income Security Act of 1974 limits the contributions which an employer can make to a retirement program. For many of your employees, the combination of your regular retirement plan plus Social Security retirement benefits exceeds this maximum.
- There is no other system in the United States which is as truly portable as the Social Security System. Currently, the only major employers not offering full social security participation to all their employees are the Federal Government and five state governments.
- A person definitely could lose already accrued Social Security benefits if his/her employer dropped out of Social Security. For example: a person reaching retirement at some future date with less than 10 years of Social Security coverage would not be entitled to *any* Social Security retirement benefits. Even the person with 10 or more years of Social Security coverage at the time of retirement would have to include years of low or no Social Security earnings in computing his/her Averaged Indexed Monthly Earnings. . . producing a significant reduction in benefits for the years under which his/her employer was not covered by Social Security. Further, regardless of how long a person was covered under Social Security he/she would not be eligible for disability benefits from Social Security after having been out of the System for more than five years.
- It would be virtually impossible for Brookhaven to estimate the cost of replacing a person's future Social Security benefits since these benefits are based upon many variables over which Brookhaven has no control: future salaries, inflation, medical costs, and the like. Further, Congress has, in the past, (and could again in the future), added completely new benefits to the system – or improved existing benefits retroactively. I do not believe that it would be wise to subject Brookhaven to these potentially very substantial and unknown future liabilities.
- Finally, there have been a number of proposals in the Congress in recent years to finance Social Security benefits from some source other than Social Security taxes. These have included having benefits paid (at least in part) from general revenues, gasoline taxes, or a new Value Added Tax.

(Continued on page 2)

bnl Lecture

TMI Aftermath

Walter Kato, Associate Chairman for Reactor Safety in the Department of Nuclear Energy, will discuss "Lessons Learned from TMI" in the 170th Brookhaven Lecture. The lecture will be given at Berkner Hall, at 8 p.m., on Wednesday, January 23.

Kato will base his lecture on various reports, including the Kemeny Commission Report which describes events surrounding the nuclear power plant accident at Three Mile Island Unit 2. He will discuss the immediate causes of the accident and the physical equipment changes which are being introduced into reactor power plant operation to improve safety. Kato will also examine the impact of the recommendations of the NRC Lessons Learned Task Force and the Kemeny Commission on nuclear power plant operation and safety research in the United States.

In his present position, Kato is responsible for reactor safety programs within DNE for the Nuclear Regulatory Commission. He came to Brookhaven in the fall of 1975 after a distinguished 22-year career at Argonne National Laboratory in fast reactor physics and reactor safety. In addition to his extensive knowledge of reactor safety in the U.S., Kato has kept abreast of these activities in many other countries. Representing the Director of the Office of Nuclear Regulatory Research, he conducted negotiations in the mid-70's with representatives of Japan and a number of European countries which led to the implementation of technical information exchange agreements. A Fellow of the American Nuclear Society, Kato is a former member of the Board of Directors and past chairman of the Society's Reactor Physics Division.

Doug Humphrey

Walter Kato

A buffet supper is served at 6:30 p.m. at the Brookhaven Center before the lecture. Many find it convenient and it is a pleasant way to meet members of other departments. Reservations for the buffet should be made in advance by calling Ext. 3541 before 5 p.m. on the day of the lecture.

Arrivals & Departures

Arrivals

Bahman Atefi	Nuclear Energy
Trevor J. Aggus	Physics
Shu-Chen Dang	Nuclear Energy
John B. King	Contr. & Proc.
Theodore W. King	Accelerator
Gregory B. Mack	Adm. Sys. & Data Proc.
Jean V. Muller	Nuclear Energy
R. Kenneth Reece	Accelerator
Daniela Sciaky	Biology
Phyllis L. Tinsley	Biology
Coles J. Williams	Plant Engrg.
David S. Wise	Biology
Gary M. Zukas	Safety & Env. Prot.

Departures

Karen Bey	Nuclear Energy
Janet S. Cimino	Biology
Alcides Echevarria	Energy & Env.
Sharon R. Gendell	Biology
Francine A. Hinton	Plant Engrg.
Joseph R. Jahelka	Accelerator
David C. Judkins	Energy & Env.
Christine King	Accelerator
James B.A. Mitchell	Chemistry
James J. Mosca	Physics
Loretta A. Santasier	Biology
Helen M. Stern	Medical

Retiring Today

Mort Rosen

Herman De Castro, painter and group leader in Plant Engineering, retires today after 24 years at the Lab. He and his wife plan to move to Florida, where it is "nice and warm."

Social Security (Continued)

If, of course, Brookhaven were to drop out of Social Security (and under current statutes Brookhaven could not then opt to be covered again) and benefits were financed from some source in addition to Social Security taxes, Brookhaven employees would be paying for benefits which they would not be eligible to receive.

In view of this advice, which has been given careful consideration by the Laboratory administration, it would seem that, at the present time, Brookhaven employees would best be served by remaining within the Social Security System.

In Appreciation

During Dave's 28 years at the Laboratory, he was associated with many projects. Each was special to him; each seemed almost to live. More importantly though, Dave enjoyed the people with whom he worked. He respected and esteemed their professionalism and friendship.

We are particularly grateful for the efforts of the Fire Department on Dave's behalf. It gives us great comfort realizing they did all that was humanly possible.

We would also like to thank all Dave's friends for their kindness towards us during this difficult time.

Sincerely,
Marjorie Kassner and family

We'd Love To Take Tony To Lunch

In a November 7 letter to the editor of The New York Times, Barry Childers of Oxford, Ohio, wrote that most major decisions facing us now in the nuclear field are moral choices. He maintained that these decisions should not be made by scientists, because they are trained to be unemotional, to exclude feelings from their judgmental process. Childers said that although science does require a certain kind of imagination, he does not think that scientists, because of their training, have the moral imagination necessary to foresee the consequences of their actions. This attitude fired up physicist Tony Fainberg of DNE, and he dispatched the following letter to the Times which was published on November 17:

I am appalled by Barry Childers's Nov. 7 letter, wherein scientists are, as a class, accused of having "been trained to exclude feelings from their judgmental process." This kind of bigoted rhetoric, clearly recognized as racist when applied to ethnic groups or sexist when applied to one gender or the other, is evidently still considered fair play when one is referring to scientists.

Childers's assumption of the "unemotional" nature of scientists is similar nonsense. Neutrality in analyzing scientific data has, of course, nothing to do with neutrality in ethics or a lack of emotional sensitivity.

Is it really necessary to point out that there are (often quite emotional) scientists on both sides of the nuclear power issue, which is what seems to exercise Childers? Is it necessary to remind people that the Soviet human-rights movement, for example, has a very large representation of scientists, perhaps larger than any comparable group? Or that nuclear scientists are in the forefront of the battle for arms control and nuclear disarmament? These are pointed out as only a few examples for Childers's consideration.

Is it that Childers's attitude is engendered by a fear of the esoteric and the unknown? Perhaps, since scientists seem to understand rather complicated things which he may not, he feels a need to try to reduce them in stature by claiming that they lack human virtues or qualities.

This feeling is unfortunately rather widespread. More contact between scientists and lay persons seems to be needed, if only to assure the rest of the world that we scientists actually are as human as those who are not technically inclined. As a start, could I suggest a "Take a Scientist to Lunch Week"?

ANTHONY FAINBERG

Phys Rev Opening

A part-time position is available in the Editorial Office of the Physical Review. The job entails a careful examination of all manuscripts intended for publication in Physical Review B to ensure that they meet the stylistic and notational standards of the journal. A good knowledge of physics and of the use of the English language is required. Preference will be given to candidates with a background in condensed-matter physics, up to the Ph.D. level.

For further information contact P.D. Adams, Extension 2540.

Cafeteria Menu

Week Ending January 18, 1980

Monday, January 14		
Tomato vegetable soup	(cup)	.35
	(bowl)	.40
Cheese omelet & zucchini w/tomato		1.30
Spaghetti & Italian sausage w/garlic bread		1.45
Hot Deli – Pastrami	(on bread)	1.40
	(on roll)	1.50
Tuesday, January 15		
French onion soup	(cup)	.35
	(bowl)	.45
Macaroni & cheese & 1 veg.		1.25
Meatloaf w/mushroom sauce & hot German potato salad		1.45
Hot Deli – Corned beef	(on bread)	1.40
	(on roll)	1.50
Wednesday, January 16		
Pepper pot soup w/spaetzle	(cup)	.45
	(bowl)	.55
Seafood crepes w/1 veg.		1.45
Southern fried chicken w/corn fritter		1.35
Hot Deli – Veal pattie & peppers hero		1.35
Thursday, January 17		
Chicken noodle soup	(cup)	.35
	(bowl)	.45
Pork & cabbage crisp		1.45
Eggplant parmesan w/meat sauce		1.30
Hot Deli – Baked Virginia ham	(on bread)	1.35
	(on roll)	1.45
Friday, January 18		
Manhattan clam chowder	(cup)	.45
	(bowl)	.55
Fish fillet cheese melt w/1 veg.		1.45
Beef hash w/1 veg.		1.40
Hot Deli – Sandwich steak	(on bread)	1.45
	(on roll)	1.55

Selected Reading

BioScience 29, December 1979
The double helix: Science and myth in the act of creation. C. Manwell and C.M.A. Baker. 742-6

Food Technol. (Chicago) 33, December 1979
Food as a factor in the etiology of certain human cancers. G.B. Gori. 48-56

Nat. Rev. 32, January 4, 1980
The CIA and the KGB. M. Copeland. 24-7

New Sci. 84, December 20/27, 1979
Take a cool turn for pleasure. R. Wilde. 936-8

Oceans 12, November-December 1979
Five days on a dory in the land of fog and ice. D. Wilkinson. 3-8

Sci. Am. 242, January 1980
The next generation of particle accelerators. R.R. Wilson. 42-57

Bring In The Bikes

Last spring the Laboratory purchased many bicycles to enable employees and visitors to get around site by using leg power, rather than gas. A concerned employee has brought to our attention that a number of these bikes can now be found rusting away outside the dorms and other buildings. This is obviously not the place for them. In the next few months snow and rain will probably be the order of the day, and those venturing forth on bicycles will be few.

But spring is not so far away. When it comes time to take out the bikes, it will be more pleasant for everybody if the machines are in good working order. As the departments obtained these bikes at some expense, it would be smart to see that they are rounded up and stored indoors for the winter months. Waste not, want not.

For Community Service

Carl Thien (PR)-center, and Tony Salvo (C&P)-right, were cited recently for their outstanding work in fund raising activities for the Woodhull District of the Boy Scouts of America. The Woodhull District comprises the north section of Brookhaven Town. Thien headed the Bowlathon and Salvo the Phonathon activities for this area. Making the presentation is Associate Director Vincent O'Leary, who serves as financial chairman of the Woodhull District.

—photo by Humphrey

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for the employees of
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Lab Policy On King's Birthday

This notice is in response to questions concerning the Laboratory's policy on employee observation of Martin Luther King, Jr.'s birthday on January 15.

Since January 15 is not an established Laboratory holiday, employees who do not wish to work should charge their absence to vacation or to leave without pay. As is always the case under Laboratory policy, such an absence requires the prior approval of the supervisor, subject to the department's work schedule.

Service Awards

The following employees will receive awards during the month of January, 1980.

Twenty-Five Years

Kurt Jellett.....Accelerator
Dysart A. Ravenhall.....Applied Math

Twenty Years

Alice Alberico.....Medical
Robert H. Browne.....Accelerator
John J. Hennessy.....Plant Engrg.
Frances B. Scesny.....Personnel
Harvey E. Wegner.....Physics

Ten Years

Clarence A. Hicks.....Plant Engrg.
Karin I. Karlstrom.....Chemistry
Robert H. Whisker.....Director's Office

Umpires Wanted

The Brookhaven Town Division of the United States Slo-Pitch Softball Association will be conducting a Softball Clinic on January 17 at 7:00 p.m. at the New York Avenue Junior High School Library (26 New York Avenue, Smithtown) to train prospective officials on rules and mechanics of slo-pitch softball.

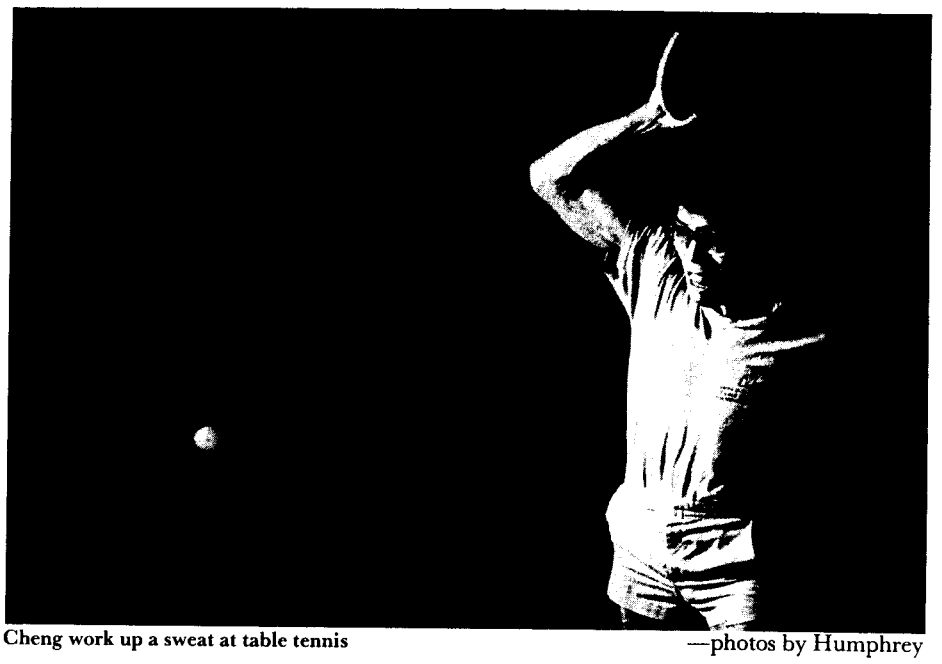
Umpires of the Association officiate at the BNL Softball League games which are played at the Lab starting at 5:30 p.m. during the week-days of the season.

Lab employees who may be interested in becoming umpires and earning some extra money after working hours, should contact Marty Maningo, Brookhaven Director, telephone number 588-4208, after 4:00 p.m.

It should be noted that as registered USSSA umpires, employees would be qualified to work other games for the Association as well as those played at the Laboratory.

Golf

In a three-way race for president of the BNL Golf Association in 1980, Bob Mills was elected to his second term. He was opposed by Ron Webster and Rich Mobley. Mills says that other BGA officers will be selected later in the year when the league roster is determined.



Zein and Cheng work up a sweat at table tennis —photos by Humphrey

The Ping And The Pong Of It

These days, the name of the game is not ping pong. It's table tennis.

Ping pong is the casual game played by people in their basements. If you are serious about the sport, you call it table tennis. So say Charlie Zein, Physics, and Sam Cheng, DNE, two active table tennis players at the Lab. According to them, that is part of the problem with the sport in this country. For years, Americans have not been very serious about it, and their attitude is reflected in the world rankings of table tennis players. The highest ranked U.S. player is number 37.

Table tennis will not even be played in the 1980 Olympics in Moscow. "But it will be there in 1984," said Cheng.

Zein and Cheng are members of a fast-growing BNL table tennis club, which has close to 30 members. Both fooled around with ping pong when they were younger, but didn't start serious table tennis until four years ago.

They practice about an hour a day, and Cheng even plays in U.S. Table Tennis Association tournaments to test and improve his game.

What makes a good player? They think that good reflexes, coordination and agility are prime ingredients. Beyond that, everyone develops a personal style.

"Take me, for example," said Zein. "I'm a defensive player. I undercut most of my shots to give them an underspin. That means the ball kind of floats through the air."

Cheng plays an offensive game. He prefers to put top spin on his ball, which causes it to kick up. Speed and spins are very important in table tennis. "In fact, the Europeans have developed a new stroke called the loop, which puts a severe top spin on the ball. The loop is done with an almost vertical swing," said Cheng.

With different playing styles, go different types of rackets. A table tennis racket averages $40-50 (again, we are not talking about the basement player). It consists of a wooden paddle with a layer of rubber covering the playing surface. The wood comes in different layers of lamination, ranging from one to seven plies. The rubber comes backed with different thicknesses of sponge. Type of wood, number of plies and type of rubber all have an effect on your game. The serious player seeks out a particular combination of all three components to suit his or her style.

Even the ball comes in different classes. Cheaper balls are too light and not balanced. "If you play with a cheap ball, you can really tell," said Cheng. "They wiggle in flight."

Besides a racket and ball, the game also requires a table and net. Tables range from $150-300, but if you play at the Lab, the club has three tables set up in Building 184, where players generally meet everyday at lunchtime.

Zein and Cheng are very enthusiastic about the game and eager to teach new players. "Right now, we are in the middle of a handicap tournament, complete with prizes," said Zein. "But we also plan on running some clinics to share playing tips with people."

Winter is a good time to play. "With all the sweat we work up, we are glad for the cold weather," said Cheng. Playing serious table tennis is a good way to exercise.

But don't feel too badly if you think of yourself as a ping pong player. The Chinese still call it that, and they are some of the best players in the world.

Motorcycle Club

Mark on your calendar Monday, January 14 for a meeting at 5:15 p.m. at the Recreation Building. On the agenda is a report from the by-laws committee and a proposal for a new riders program.

Mountain Club

The Nassau Hiking and Outdoor Club has invited the BNL Mountain Club to join in a hike at Harriman State Park on Saturday, January 19th. This will be a day hike, weather permitting, with carpooling from the Nassau/City line. For further information contact Barry Lovett at 752-3468.

Bowling

Purple & White League

The Bippies won all 7 and moved into second place and now trail the first place team, The Good Times, by 5. Bob Brown had a 228/219/603 series and Caryl Mac Dougall had a 218/598 series. Other good games were bowled by Helen Keeley 215, Pat Manzella 202, Sharon Smith 199, Betty Jellett 197, Mary Grace Meier 185, Gail Schuman 181, Jim Petro 212/202, Jim Griffin 210. Pat Manzella converted the 4-7-9 split.

NYIT MBA Courses

This spring, credit courses toward a Master of Business Administration degree will be offered to BNL employees by the New York Institute of Technology. Classes will be held on site, from 5:30-9:30 p.m. on alternate Tuesdays, beginning February 5, 1980.

The following courses are scheduled:

0108 03	Marketing Management
0121 03	Quantitative Methods

Both courses are $255 each, plus related school fees. Employees may take advantage of the Lab's Tuition Refund Program, or may be eligible for Veteran's assistance. Information on both may be obtained from the Personnel Office, Ext. 4262.

The mail registration deadline is January 24, 1980. For more information and registration materials, contact Renee Flack, Ext. 3316.

Camera Club

The BERA Camera Club will meet in the Recreation Building on Wednesday, January 16, at 7:30 p.m. Officers will be elected. All members are urged to attend and new members are also invited.

Bera Ticket Service

The following Islanders hockey and Metropolitan opera tickets may be purchased at the BERA Film Service Office between the hours of 9:00 a.m. and 1:00 p.m., Monday through Friday.

Islanders (priced at $12.00 each)

Jan.	Tue.	15	Winnipeg
	Sat.	26	Hartford
	Tue.	29	Minnesota
Feb.	Thu.	7	Los Angeles
	Sat.	9	Quebec
	Tue.	12	Winnipeg
	Thu.	21	Minnesota
Mar.	Tue.	4	Edmonton
	Tue.	11	Colorado
	Sat.	15	St. Louis
	Sat.	22	Chicago

Metropolitan (priced at $7.50 each)

Jan.	Fri.	11	La Giaconda
	Thu.	17	Tosca
	Wed.	23	Rigoletto
	Fri.	25	Fidelio
Feb.	Mon.	11	Fidelio
	Thu.	28	Don Pasquale
Mar.	Mon.	10	Don Carlo
	Thu.	20	Don Carlo
Apr.	Mon.	7	Billy Budd
	Wed.	9	Manon Lescaut

During the remainder of this opera and hockey season, the limitation of **only** pairs of tickets being sold has been lifted.

Classified Advertisements

Placement Notices

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

The determination of the best-qualified candidate for available positions will be based upon education, experience and other job-related criteria. Such factors will be evaluated and measured against the demonstrable requirements of the available vacancy, as well as the Laboratory's Affirmative Action objectives.

The Laboratory is committed to a policy of Equal Opportunity in its selection and placement of personnel. Its objective is equality of opportunity in employment, training, and promotion without regard to race, color, religion, national origin, sex, age or handicap.

Each week, the Personnel Office lists new personnel placement requisitions. The purpose of these listings is, first, to provide open placement information on all nonscientific staff positions; second, to give employees an opportunity to request consideration for themselves through Personnel; and, finally, for general recruiting purposes. Because of the priority preference policy stated above, each listing does not necessarily represent an opportunity for all candidates. As a guide to readers, the listings are grouped according to the anticipated area of recruitment, as indicated below. Except when operational needs require otherwise, positions will remain open for one week following publication date.

For further information regarding a placement listing, contact the Personnel Placement Supervisor, Ext. 2882.

POSITIONS OPEN: Scientific. The following staff positions are open. Candidates may apply directly to the department representative named, or through the Office of Scientific Personnel, Ext. 3338.

STAFF POSITION - biologist with Ph.D. in mammalian or cellular physiology, with experience in cytogenetics and cell culture. Contact: Dr. Donald C. Borg, Chairman, Medical Department.

POSTDOCTORAL RESEARCH ASSOCIATE - Two positions, structural chemistry program. Seek persons with background in synthesis of organometallic compounds or crystallography. Contact: Dr. Thomas F. Koetzle, Chemistry Department.

NUCLEAR CHEMIST - Research areas include nuclear reaction studies, especially with heavy ions and pions, spectroscopy of nuclei far from stability, and radiochemical detection of solar neutrinos. Contact: Dr. Jerome Hudis, Chairman, Chemistry Department.

LABORATORY RECRUITMENT: Opportunity for present Laboratory employees.

1211. SECRETARIAL POSITION - Requires AAS degree in secretarial science or equivalent experience performing diverse secretarial duties. Knowledge of word processing is desirable. Will operate magnetic card and disk word processing equipment, type technical manuscripts, and process reports and travel vouchers. Biology Department.

1212. SECRETARIAL POSITION - Requires excellent typing skills. Knowledge of word processing is desirable. Will process technical reports using MICOM equipment. Biology Department.

1213. SECRETARIAL POSITION - Requires AAS degree in secretarial science or equivalent experience performing diverse secretarial duties. Will have responsibility for general office jobs including typing of general correspondence, ordering of supplies, and processing of ILR's, requisitions, and travel arrangements. Department of Energy and Environment.

1214. CHEMISTRY ASSOCIATE - Requires a BS in chemistry or its equivalent. Experience in organic, inorganic or organometallic chemical laboratory techniques is desirable. Term appointment of one year. Department of Energy and Environment.

1215. STOCK CLERK (three positions) - Supply and Materiel Division.

1216. STORES CLERK (three positions) - Supply and Materiel Division.

1217. DRIVER (Light) - Supply and Materiel Division.

1218. S&M CLERK - Supply and Materiel Division.

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

1219. TECHNICAL POSITION - Requires AAS or equivalent in mechanical technology with electrical experience. Background in x-ray and/or optical instrumentation highly desirable. Physics Department.

1220. BIOLOGY ASSOCIATE - Requires BS in biology or environmental science or equivalent with working knowledge of basic scientific programming routines. Familiarity with aquatic ecology/limnology and routine chemical analyses is essential. Will conduct field and laboratory experiments of ecological systems. Will process and analyze data utilizing in-house mini-computer system. Department of Energy and Environment.

1221. OCEANOGRAPHY ASSOCIATE - Requires BS in bilogy or equivalent with ability to identify zooplankton. Experience with conducting research aboard ship utilizing computerized equipment is highly desirable. Will participate in field and laboratory experiments which involve sorting zooplankton and determining salinity, dissolved oxygen, and chlorophyll a. Department of Energy and Environment.

Autos & Auto Supplies

79 DATSUN PICKUP - 5 spd, a/c, cap, snow tires, 15,000 mi. $4700. 473-9124.

GAS TANK - for pickup truck. Best offer. Ext. 3431, 744-9677.

72 MERCURY MONTEGO STA WGN, 302 V8, 70,000 mi, a/c, p/s, p/b, auto trans rebuilt. B. Style, Ext. 2953.

72 AMC SPORTABOUT - extra snows, new seat covers, runs well. 286-0626.

73 FORD GALAXIE 500 - V8, 4 dr, ps/pb, a/c, low mi, very good cond. 929-6836.

75 BUICK CENTURY CUSTOM - ps/pb, p/w, 5 radials, a/c, tinted glass, AM/FM stereo, new batt & exhaust, very good cond. Howard, Ext. 4615.

SNOW TIRES - (2) H78x15 mounted on Chrysler rims; (2) F78x14; (1) A78x13; (1) F78x14 & A78x13 reg tires. 924-4685.

TIRES - (2) snows L78-15 w/w; (1) snow 5-60-16 on rim; (1) reg w/w A78-13, new; $20 ea. George, Ext. 3399.

(4) STEEL RIMS - 15x8, fit Ford & Jeep, new. $80. Ext. 4008, 744-1846.

SNOW TIRES - 205-15X Michelin steel belted w/w, mounted Ford, like new. 2/$90. Ext. 4008, 821-0686.

SNOW TIRES - 6.00x13, $5/pr; 5hole VW rims, $4 ea; 64-67 Caddy eng gasket set, $4 (save 90%). Ext. 4463, 929-4923.

72 DODGE DART SWINGER - 2 dr, ps/pb, a/t, a/c, V6, vinyl top, snows, clean in & out, excel cond, low mi. $1575. Ext. 3403, Ext. 3079 eves.

73 HORNET - 2 dr, 49,000 mi, orig owner, good cond. Trigg, 286-1262 eves.

70 FORD MAVERICK - gas saver, 2 dr, a/c, snows. 472-1872 after 3.

70 DUSTER - 6 cyl, std trans. $250. Ext. 2972, 924-8547 after 6.

71 FORD PICKUP - 6 cyl, 3 spd std, good running cond. $600. Ext. 3274, 298-8537.

73 MALIBU - 350 a/t, ps/pb, clean. $1200. Jim, 286-9700.

75 GRAN TORINO WGN - 59,000 mi, a/c, ps/pb, a/t, 10 psgr, good cond. 399-0676 eves.

67 FALCON - 6 cyl, runs, new batt, good rubber. $200. 331-2762.

69 CHRYSLER 300 - good cond. $400. 546-1885.

14" WHEELS - (2) 5-hole, from Duster. Ext. 2493.

CARBURETOR - Holley 650 Spreadbore, 2 mos old. $85. Louis, Ext. 4046/4087.

(4) KLEBER SNOW TIRES - size 14, used only 1 season. $100. Ext. 7747, 751-2709 eves.

75 CHEVY IMPALA - Sta wgn, pb/ps/at/ac, 47,000, excel cond.$1800. Ext. 3403, 345-3079 eves.

72 CADDIE - AM/FM stereo, $1600; 74 Dodge pickup, AM/FM, a/c, dual gas tanks, club cab, 8' bed w/cap. 732-1913 after 5.

68 PONTIAC SEDAN - new tires, muff, batt, runs well. $300. 924-4826.

78 OMNI - 12,000 mi, good mpg, many extras. Ext. 4528, 654-3661 after 6.

78 SUBARU - 4 dr sedan, 33-38 mpg, reg gas, 5 spd, 23,000 mi, rustproof. $4000. Ext. 4607, 368-0452.

INSULATED "RANGER" CAP - for pickup, int light, jalousies, front slider & boat rack. $350. Kurt, Ext. 4698.

70 FIAT 124 SPIDER - eng good, body bad, trans shot, tires shot. Make offer. Ext. 3812, 751-6111.

DATSUN WHEELS - only $8 ea; Subaru snow tires & wheels. 281-5532 after 6.

LINCOLN MARK IV - must sell, excel cond, all options, silver/red int. Sacrifice, $4,450. 981-1327, 549-8811.

65 BUICK LE SABRE - very good cond, orig owner. Best offer over $400. Sue, Ext. 3675, 473-6570 after 6.

75 AUDI FOX - 4 dr, std trans, AM/FM, radials, high gas mi, runs well. $1500. Ext. 3626.

77 CHEVY PICKUP - must sell, 4x4 Silverado ¾, camper special, all pwr, dual exhaust "reg," 21,000 mi, many extras. Victor, 878-0516.

65 VW - high mpg. $375. Ext. 2115, 744-0146.

76 CHEVY NOVA - std trans, high mi, good cond. $1800. 928-8522.

75 CHEVY IMPALA - V8, 44,000 mi. $1500. Ext. 4466, 472-1082.

TIRES (2) - H78x15 steel belted w/w, used 1 season, $25 ea; (1) tire 185x14 SR radial, used 1 season, $20; new 855x14 General Jet w/w on Pontiac rim, $30. Ext. 2972.

TIRES - new, used, rims, repairs, Gillette, BF Goodrich, mag wheel service. F. Usack, Ext. 4798 lunchtime.

TRUCK TIRES (4) - BF Goodrich 10 ply 16.5x9.50, good tread. $75/set. Paul, Ext. 2023, 727-1464.

69 MUSTANG - 302 eng, ps/pb. Frank, Ext. 2311, 567-5131 after 6.

SNOW TIRES - on Caddie rims, L78-15 radials, good for 1 season. $25. Steve, Ext. 2022, 277-2655.

69 PLY FURY - V8, p/s, 4 dr, runs well, must sell. $350. P. Wanderer, Ext. 3830, 744-1112.

78 RABBIT - like new, transferrable warranty, low mi. $5000. Bernie, Ext. 2916, 331-2298.

TRANSMISSION - 2 spd power glide type B, fits most model Chevy 1962-69. Asking $50. Jay, Ext. 2022.

79 RABBIT DIESEL "L" - 5 spd, 2 dr, unreg, 1800 mi. $7500. 727-7524.

75 HONDA HAWK - a/t, 400cc, cover, sis-bar, qtz-hal light, lug-rack, sp handle bars, 60 mpg, 90 day warranty. Gail, Ext. 2904, 928-2954.

Boats & Marine Supplies

14' HOBIECAT - compl w/sails & trailer, excel cond. $1050. 581-7656.

85 HP MERCURY OUTBOARD - 1975. $550. Harry, 475-4258.

Miscellaneous

PORCELAIN KITCHEN SINK - w/faucet; pickup truck gas tank. Best offer. Ext. 3431, 744-9677.

ROYAL PORTABLE TYPEWRITER - w/case. $35. 475-2075.

LAWNMOWER - 20" rotary, $100; 18" hedge trimmer, $20; elec weed wacker, $20; 2 gal funnel sprayer, $8; face cord of wood, $45. Ext. 4685, 924-6534.

PINE BLANKET CHEST - antique, cedar lined, 48"L, 27"H, 21"W. $350. Mary, Ext. 4215.

WOOD SCREEN WINDOWS - (2) ea 28"x43", (3) ea 36" x 43"; $4 ea. Bill, Ext. 3355, 472-4684 after 6.

BABY'S HIGH CHAIR - $20; playpen, $10; automatic swing w/hood, $10; all 3/$35. Ext. 7503, 924-5507.

PIANO - Hardman upright, excel cond, 4 yrs old. $900. Ext. 2889, 286-0422 after 6.

HUMIDIFIER - Sunbeam 9 gal cap console, oak woodgrain finish, w/humidistat & manual controls, 0.8 amp, easy fill from top or rear, new cond, rolls anywhere. $50. 289-6490.

CAMERA - Nikkorex 35 mm SLR, w/43-86 zoom lens; non-interchangeable lens. $175. 929-4701.

8-TRACK TAPES - Country-Western, new (still sealed), $3 ea; meat slicer, $8; 3 ch 3 watt walkie talkie & 6 ch 5w CB, $25 ea. Carol, Ext. 3297, 821-9547.

ATTENTION SEWERS - supplies: zippers, elastic, buttons, laces, trims, remnants of polyester & quiana, etc. 744-9468.

BOWLING BALLS - $4 & $6; bed frame for dbl bed, $10; Monopoly $1.50. Sue, Ext. 4267.

2-MAN CROSSCUT SAW - $15; 1 med & 1 lg coal scuttle, $12 ea. R. Johnson, Ext. 3354.

MET TICKETS - for Lohengrin, Jan 10, discounted, incl Libretto. 286-9260 eves.

FRANKLIN STOVE - all cast iron, wood or coal. $275. Bud, Ext. 3083, 878-1915 after 6.

OAK PALLETS FOR FIREWOOD - 50¢ ea, you pick up. 286-3377 after 6.

16 LB BOWLING BALL - $5; green recliner chair, $65; dinette table, formica top, chrome legs, $20. 744-9822.

TOUR-A-BED - $9; baby bouncer, $5; 10 gal tank w/slate bottom, $9. Sue, Ext. 4207.

EXTERIOR DOOR - wood, 2 sml wind, 31¾Wx79"H. $15. Ext. 2497, 281-2767 eves.

FRANKLIN FIREPLACE - excel cond. Asking $100. Frank, 924-7488.

REALISTIC TURNTABLE - manual, $15; Craig home 8 track, excel cond, $25. 286-8517 after 5:30.

MOVIE CAMERA - Argus auto reflex 8:1 zoom w/flood & film editor. $50. Tom, Ext. 4612.

SEWING MACHINE - & portable case, Sears Kenmore. $60. Ext. 7503, 924-5507.

SKIS - K-2, Kielly - 150 cm long w/Tyrolia 120 bindings, excel cond. Bob, Ext. 4637, 692-8659.

SHOTGUN - dbl barrel chamber for 3" shells. $150. GR5-4199.

AMERICAN INDIAN CRAFTS - handmade, located on Poosepatuck Indian Reservation, Mastic. Come in or call 281-7792.

ORGAN - elec cord by Estey, 72 balanced base cords, many features, bench, books, excel cond. $350. 475-8658.

SUNBEAM CHROME MIXMASTER - w/dough hooks, 12 spd, used 3 times. $60. 281-8274.

LIKE NEW - Westinghouse heavy duty washer & dryer, white, front loading, list price $650, sell $350; roll-up vinyl white shade, 6'x6', only used 6 mos, $6. Linda, Ext. 3199.

LG ORCHID PLANTS - Sacrifice. I. Merritt, 589-5126.

FRANKLIN STOVE - US made, 26" opening, incl grate, boot w/damper, flu pipe, screen. $150. 286-3235.

BAR & 2 STOOLS - wood-like formica w/blk vinyl trim. Marion, Ext. 2903, 281-5667.

KARATE UNIFORM (GHI) - size 4 w/insignia, $19; safety gate, $9; other baby items, asstd prices. Walt, Ext. 2907/2913, 698-0576.

SKI RACK - trunk style, excel cond. $10. Ext. 2452.

ELEC GUITAR - Epiphone solid-body, excel cond, bright red finish, hard case, $175; also 100w RMS Woodson amp. Jory, Ext. 4324, 724-0470.

CAMERA - Nikonmat FT3-35mm SLR w/43/86 Nikon zoom lens, excel cond. $200. Mike, Ext. 7941.

TRAVEL TRAILER - 17' fully self contained, excel cond. Asking $2200. Sheldon, Ext. 3354, 744-7861 after 6.

SKI BOOTS - Montini, ladies size 9, $20; Gertsch bindings, $5. T. Morris, 744-5096.

SKI BOOTS - Nordica, men's size 10, $25; hand vacuum cleaner, 110v, $5. 567-2345 after 6.

WHITE ELEC RANGE - $25; toilet bowl & tank set in lt avocado, new, still in boxes, $35. Lee, Ext. 7629, 929-3023.

FOR ADOPTION - 11 Labrador mix puppies, mother 100%, father left the scene, cute & lovable. Ext. 3238.

MIKE - dynamic type w/stand, model PE515 Shure. Ext. 4003, 924-4373.

21" B/W TV - $10. 727-5912.

KITCHEN TABLE & CHAIRS - formica, $30; dog grooming supplies, cheap. Ext. 7772.

STEREO - w/8 track & record changer, 4 book shelf spkrs. $50. Neil, Ext. 2023.

8MM EDITORS - $5; 4x4 foldup movie screen, $10; Sungun movie light, $8; Benjamin .22 pellet gun, excel cond, $15. Chuck, Ext. 3254.

FILE CABINET - 4 drawer, letter size. 281-8318.

CHAIN SAW - heavy duty, Remington PL-4, 2x17" bars, 3 chains. $115. Don, 473-6570 after 6.

CORNINGWARE - 10" fry pan, brand new, $13; misc household items, some brand new, $1-$2. S. Spark, Ext. 4111.

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

PATCHOGUE - 4 bedrm home, full bath upstairs, 1½ bath down, L/R, fam rm, din area, 100x150 plot on No. Ocean Ave, must be seen. Bob, Ext. 3310, 289-1568 after 6.

MT. SINAI NO. - low cash over to qualified Vet, 3 bedrms, 2 baths, full bsmt, gar, s/s, gas h/w heat, 6 appl, ½ acre. 473-7030 after 6.

SHIRLEY - 3-5 bedrms, L/R, D/R, kit, playrm, fin bsmt, gas heat, low taxes, ⅓ acre, fenced. Asking $32K. Ext. 3933, 281-4689.

MASTIC BEACH - 3 bedrm ranch, corner lot, roofed patio, pleasant location near water. Low $30's. 281-7531.

BELLPORT VILLAGE - sale/rent, 3 bedrm ranch, ⅓ acre. Sale $50,500; rent $420. 286-1513.

For Rent

SELDEN - 4 bedrm beautiful prvt home, 9 mi from Lab, 170 Mooney Pond Rd. $350 + util. 732-2720.

MASTIC BEACH - waterview 3 bedrm, w/w, fenced 100x100. Frank, 924-7488.

WADING RIVER - cozy 2-3 bedrm cape, fp, fam rm, cathedral ceiling, prvt beach, fenced yard. $375/mo. Ext. 4444.

CORAM - 3 bedrm ranch, w/w, all appl (5). $350/mo. 475-0029 days.

PORT JEFFERSON - 3 bedrm house, gar, refrig, dishwasher, fenced yard, like new, unfurn, water incl. $395. 821-0275 after 6 & weekends.

SHIRLEY - 7 rm house, 2 baths, gar, near beach & Bay. $350/mo + security. J. Carroll, Ext. 3280.

NORTH SHIRLEY - 7 rm ranch, full bsmt, gar, located off Exit 68 LIE. $350/mo, 1 yr lease. 475-6702.

MATTITUCK - 3 bedrms, 1½ baths, lg plot, close to beach, avail immed. $325/mo. Ext. 2630, (212) 631-1587 after 6.

NORTH SHIRLEY - 3 bedrms, kit, D/R, L/R, full yard priv, all util incl, very clean, 5 min to Lab, immed occupancy. $375/mo. Ext. 3199, 399-2830.

SOUND BEACH - 2-3 bedrm house, 1½ baths. $400 incl all util. Ext. 2926, 281-0268.

BROOKHAVEN - 2 rm apt, 12 min from Lab, prvt ent, util. $280/mo. 286-0626.

Wanted

12 VOLT GENERATOR - for VW Bug. Ext. 7947.

OSCILLOSCOPE FOR STUDENT - Ext. 4226, 281-4673.

SKIERS & NON-SKIERS - to ski Berkshire East, Mass, Feb 15-18. For info call B. Pyatt, Ext. 3571.

SHARE - 4 bedrm, 3 bath house. $155/mo + util. Ext. 2521/4742, 928-8379 eves.

MOTORCYCLES - bent or broken, any age or cond. 281-8031.

HOUSE - Calverton area, secluded area, 2 bedrms. 369-2151 after 6.

SAILOR - partner for 25'-27' sloop to be kept in Port Jeff marina. 473-2473.

Car Pools

BAYPORT-BLUE POINT - would like to join or begin new car pool, drivers only. Ken, Ext. 3574.

BABYLON/W. ISLIP - driver needed for on-time car pool, 8:30-5:00. M. Tesla, Ext. 3284.

QUEENS - person wanted to join car pool from border of Queens & BNL. Tony, Ext. 3749.

SO. STATE PKWY - vicinity Exit 32 (Massapequa, Seaford, Amityville, Farmingdale, Levittown, etc). Plotkin, Ext. 4717.

SELDEN - from Village in the Woods. J. Adams, Ext. 4994.

MASSAPEQUA - Exit 29 So State Pkwy, 8:30-5:00. John, Ext. 3399.

Lost & Found

GLOVE - man's, blue, driving, found in Bldg. 89. Ext. 2313.

Services

FIREWOOD - split, seasoned oak, 4'x16'x18". $110 delivered. 924-4284 after 5:30.

RUGS CLEANED - holiday special 2 rooms/$30, hall free, viber-brushed. Jim, 924-3689; Bob, 286-8116.

EXPERT TUTORING - by certified teacher in my home, all elem subjects, H.S. math, French, German. $10/hr. 941-4328.

ELECTRICAL WORK - appliance hook-ups, supplemental elec heat, bsmts, extensions wired. 363-6940 after 5:30.

JEWELRY REPAIR & POLISHING - gold & silver. Dan, 736-1939 after 5:30.

BABYSITTING - in our home, very reasonable rates, Patchogue area, infants & toddlers welcome. 654-3661.

INCOME TAX RETURNS - by experienced preparer enrolled to practice before IRS. Jack, Ext. 7942, 864-2236.

MOTORCYCLE REPAIR & ACCESS - expert work done, access for street & dirt. Ext. 2311.

AUTO REFINISHING - all areas of body work performed, discount rates for sm car refinishing. Ext. 2546, 744-4047.