BULLETIN Vol. 45 - No. 20 May 17, 1991

BROOKHAVEN NATIONAL LABORATORY

ATF Measuring Up in Terms of Brightness

Measurements conducted in April have confirmed that BNL's Accelerator Test Facility (ATF) produces one of the brightest electron beams in the world.

With a 50-ampere peak current and $4-\pi$ millimeter-milliradian emittance. the ATF's electron beam is already comparable to its nearest competitor, the High Brightness Accelerator Facility at Los Alamos National Laboratory.

"The ATF is a small but classical linear accelerator, similar to the large Stanford Linear Accelerator, but, when the ATF is commissioned, the production and the brightness of its beam should make it unique in the world," explains ATF Project Manager Harold Kirk.

The ATF is the centerpiece of BNL's Center for Accelerator Physics, which coordinates interLaboratory research into new methods of accelerating particles and producing coherent radiation.

When the ATF delivers its bright beam for the first experimental use by the end of the summer, it will be BNL's newest user facility and the first in the world dedicated for use by accelerator physicists. The ATF is being constructed in Bldg. 820 by a collaboration including BNL, Los Alamos National Laboratory (LANL), Princeton University, and the State

University of New York at Stony Brook.

Peak Current and Emittance

Brightness is a measure of a beam's intensity, as well as spacial distribution. It is related to two other measurements: peak current, which is the rate of flow of electrons through the accelerator per unit time; and emittance, which is a measure of the focusing properties of a beam.

The ATF beam's emittance was determined by using a device called a profile monitor.

In order to quantify the peak current, a streak camera that is owned by Rocketdyne Corporation, California, was brought in to measure the time length of the pulses of electrons. Due to technical difficulties, the first peak current measurements could only be made indirectly. They showed that the electron pulse lengths were within a factor of three of the design goal of six trillionths of a second. Measurements will continue until the peak current is ascertained directly.

Explains Kirk, "These are important and difficult measurements requiring sophisticated equipment, so we'll take the time we need to do them right."

To Be Brightest in the World

At the ATF, the key to the production of low-emittance, high-current electron beams is a radio-frequency electron gun with a photocathode: When its photocathode is stimulated by a pulse of light from a neodymium: yttrium-aluminum-garnet (Nd:YAG) laser, the gun ejects pulses of electrons with an energy up to 4.5 million electron volts (MeV).

By summer's beginning, the 4.5-MeV electrons will be accelerated to 50 MeV in two 10-foot-long linac

HFBR Restarts

On May 9, Secretary of Energy James Watkins approved startup of BNL's High Flux Beam Reactor (HFBR). This Wednesday, May 15, at 12:30 p.m., the HFBR was restarted. After a period of training and testing, the facility is expected to be ready for experimenters this summer, operating at a power level of 30 megawatts.

The reactor had not operated since spring of 1989, while safety reviews were carried out by BNL and the U.S. Department of Energy.

Details on the HFBR start-up will be carried in next week's Bulletin.

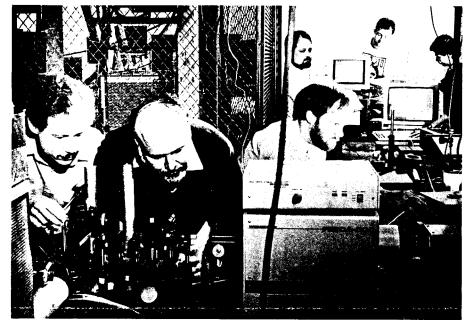
sections. Attached to the linac, a 100foot-long transport line will deliver the beam eventually to three experimental beam lines.

Two beam lines — one for a freeelectron laser (FEL) and another for a laser acceleration experiment - are now under construction, and the FEL experiment will be the first on line.

Other future ATF experiments include: studying a laser accelerator, which employs the Nd:YAG laser in conjunction with a CO2 laser aimed at grating structures, which will serve as minature linacs; and accelerating long trains of electron bunches to investigate beam instabil-

"Our initial results are very encouraging — we are already producing beams bright enough for the ATF's experimental program," says Kirk. "And we feel confident that, by the end of this year, we will have the brightest electron beam in the world available from this type of facility."

— Marsha Belford



At BNL's Accelerator Test Facility (ATF), (from left) Alan Fisher and Harold Kirk of BNL adjust the optics of a streak camera before it is used to measure the peak current of the ATF's electron beam; Phillip Metty of Rocketdyne is at the computer controls; and (background) Mark Curtin of Rocketdyne, and Lothar Shubert and Chi Ming Hung of the State University of New York at Stony Brook review the displayed results.

Environmental Restoration Chief Concern of New Office

BNL's new Office of Environmental Restoration (OER) has a relatively small staff. But their responsibility is large: They coordinate all efforts to ensure that environmental damage due primarily to past activities at the Lab is thoroughly investigated and corrected.

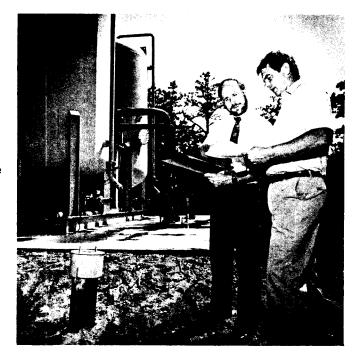
The seeds for the new office were sown in December 1989, when the U.S. Environmental Protection Agency (EPA) named BNL as one of the nation's 1,200 so-called Superrequiring environmental cleanup. Subsequently, intensive planning of how best to do the job resulted in an Interagency Agreement among the U.S. Department of Energy (DOE), EPA and New York State's Department of Environmental Conservation (DEC).

To help carry out the terms of the agreement, the new office was created as part of the Director's Office. Working there with M. Sue Davis, Assistant to the Director, is Manager Alan Raphael, a civil engineer with extensive project management experience who joined the Lab in February. With him are Deputy Manager Robert Howe and Achyut Tope, both environmental engineers, and secretary Regina Dorr.

"One central office has a better chance to address all the many terms, agreements and laws relevant to a given situation," said Davis, "so certain issues that might have been the concern of divisions such as Safety & Environmental Protection, Plant Engineering, and Contracts &

Alan Raphael (right) and **Robert Howe** compare groundwater data at the site of the new carbon absorption filter (background) for some of the Lab's arınkıng water supply wells, such as the one in the foreground.

> Photos on this page by Roger Stoutenburgh.



Procurement, or the Public Affairs or Quality Assurance Offices will now be primarily handled by OER. It will take some organizing, but it will be easier to eliminate duplication of effort and mistakes.'

Raphael agreed. "In cleaning up, one should be right the first time, he said. "Mistakes are expensive and often make matters worse. The detailed procedures we follow under the Interagency Agreement take time, but they give what we hope are the best possible safeguards against

One RI/FS per Operating Unit

At present, 24 areas of concern have been identified over the Lab site. Those that need cleaning up have been streamlined into seven operating units. For each unit, the Interagency Agreement requires a work plan and Remedial Investigation and Feasibility Study (RI/FS).

"Remedial investigation refers to finding out what has to be done,' explained Raphael. "Feasibility study means, 'What is the most environmentally sound, cost-effective solution?' Both sides of the question must be taken into account."

An RI/FS starts when a three-part detailed work plan is made. One part is an overview discussing, for example, the history, geology, hydrogeology and population of the area.

A second part deals with sampling and analysis - including where samples should be taken, the type of sampling to be done, and how the quality of the analyses will be tested.

The third part centers on health and safety, with descriptions of work zones, procedures and equipment, and how they will affect personnel.

When the work plan is ready, it is sent to DOE for review. From there. it goes to EPA and DEC for review and approval. After that, the work plan becomes available for public comment for 30 days, and suggestions and criticisms may be incorporated in the final plan. Following a last look by DOE, EPA and DEC, it is approved. Then the actual RI/FS work begins, typically taking three years to complete.

A Comprehensive Look

"The first step in starting an RI/FS is a comprehensive look at the site," said Howe. "You consider groundwater, soil, surface water, air; study existing data; take samples — then think of possible ways to right whatever's wrong."

The Lab's first RI/FS work plan was contracted to I.T. Corporation about six months ago and is almost (continued on page 2) Brookhaven Bulletin May 17, 1991

Enrollment Building For Child Development Center



Children age five and under may still be enrolled for this fall's opening of BNL's Child Development Center (CDC). While all spaces for infants have been filled, infants may be signed to a waiting list.

Construction of the CDC building on Yale Road in the apartment area is proceeding on schedule, so the day-care facility should open as planned on September 3. Pictured at the CDC construction site are: (from left) BNL architect John Castro, who designed the CDC building, and Gene Corcoran, construction superintendent for the general contractor, Fortunato Sons, Inc., of Bohemia.

To be operated by Child Care Management, Inc. (CCMI), the CDC will accommodate 16 infants, 20 toddlers and 60 preschoolers who are children of either BNL, DOE or AUI employees, or staff of on-site service organizations, or those with continuing affiliations with the Lab. In addition to providing full-time child care, CCMI is enrolling children in need of part-time supervision regardless of their required care schedules.

The fee for full-time care is \$495 for infants to 18 months and \$475 for toddlers and preschoolers, but each is prorated for part-time care.

Registration forms may be obtained from the Personnel Division, Ext. 2888. Completed forms for toddlers through preschoolers should be sent along with a deposit of a month's tuition to the CDC Director, Deborah O'Neil, Just Kids Learning Center, P.O. Box 12, Middle Island, NY 11953. To sign infants to the waiting list, return only the completed form.

For information about the program, call O'Neill at 924-0008.

To Your Health Where There's a Will...

Upon their deaths, most people would like to will something perhaps their house, jewelry or some cash - to their children and grandchildren. However, terminal illnesses can rob them of that opportunity: These final medical encounters are often catastrophic not only in the physical and emotional tolls they take, but also for the financial havoc they wreak on ill persons' estates.

"Money Matters — When Illness Strikes" will be discussed during the next lecture sponsored by the Health Promotion program of the Occupational Medicine Clinic. The speaker will be George Roach, Chief Attorney of the Legal Aid Society of Suffolk County's Senior Citizen Division. He will speak on Tuesday, May 21, from noon to 1 p.m. in the Hamilton Seminar Room of Chemistry, Bldg.

Roach will explore the financial impact of devastating diseases suffered by elderly parents and loved ones, and how to protect family assets from the costs of catastrophic illnesses. He will outline basic estate planning, which includes arranging for the transfer of assets, durable powers of attorney, health care proxies and Medicaid. Roach will answer questions from the audience on these topics.

With the Legal Aid Society for the past 12 years, attorney George Roach has been exclusively handling the legal problems of the elderly and elderly poor.

Roach received his B.A. in government from Manhattan College and his law degree from St. John's University School of Law. He is licensed to practice law in New York and Hawaii, and is a member of the American Bar Association, the New York State Bar Association and the Suffolk County Bar Association.

To register for the seminar, return the bottom portion of the Health Promotion flyer that was sent to all employees last week to Health Promotion Specialist Mary Wood, Bldg. 490, before May 20. Space permitting, registrations will be taken at the door. For more information, call Wood at Ext. 5923.

New Office

(cont'd)

at the stage of being approved by EPA and DEC. This unit contains the Central Steam Facility, where soil was contaminated in 1977 when a pipeline leading to an underground tank ruptured as a result of floodwater pressure during a very heavy rainfall. About 80 percent of the spill has been removed already.

Like this first unit, subsequent units will be chosen for treatment depending on how seriously the situation could affect the groundwater, surface water or air.

An RI/FS is not always needed for every clean-up job on site. Included in the Interagency Agreement are provisions for immediate action that can be taken in an emergency. Also, efforts that began before the Super-

Most work, though, will fall under units covered by an RI/FS, and OER is looking to the Lab community for

fund designation are continuing.

"We hope that anyone who thinks of any reason for checking an area - an old spill, or a place used as a handy dump long ago — will let us know right away," said Raphael. "We need to use the Lab's living memory to get a feel for areas that we may

have missed. A phone call is fine, as nothing formal is needed."

"Even an anonymous letter will do," said Davis. "Soon, we'll be holding what is called a formal Historical Site Review, examining records and interviewing people who remember anything we should investigate. But we welcome extra information at any time. It's in everyone's interest to help the Lab achieve a clean environment." - Liz Seubert

Coming Up

"Retirement: Whose Life Is It?" is the topic of the next Outreach workshop sponsored by the Employee Assistance Program of the Occupational Medicine Clinic. To be presented by clinical psychologist Frank Verdicchio, the workshop will address retirement and the decision whether or not to retire, from the psychological perspective.

Present and prospective retirees are invited to the workshop on Tuesday, May 28, from noon to 1 p.m. in Room B, Berkner Hall. For those who cannot attend, this workshop will be audiotaped, and the cassettes may be borrowed from the Research Library, Bldg. 477.

Reports Available

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

BNL-52250

Contact: F. Donnelly, Ext. 4835 Performance Control Strategies for Oil-Fired Residential Heating Systems. Project Report. T. Butcher

NUREG/CR-5627 **BNL-NUREG-52257**

Contact: M. Drapkin, Ext. 4909

Alternate Modal Combination Methods in Response Spectrum Analysis. Prepared by: P. Bezler, J.R. Curreri, Y.K Wang and

Hotline for Fraud, Waste and Abuse

If you suspect or know of any fraud, waste or abuse involving the U.S. Department of Energy (DOE) or its employees, programs, contracts or subcontractors, DOE wants you to report it, using the following toll-free hotline number: 800-541-1625. The number operates 24 hours a day, seven days a week, and all calls are kept confidential.

BNL-52270

Contact: P. Durcan, Ext. 3807 Accelerated Leach Test Development

Program: Annual Report. M. Furhmann, R.F. Pietrzak, J. Heiser, E.M. Franz and P.Colombo

NUREG/CR-5280 BNL-NUREG-52178

Vol.2 Contact: A. Fort, Ext. 2114

Age-Related Degradation of Westinghouse 480-Volt Circuit Breakers. Mechanical Cycling of a DS-416 Breaker Test Results. Prepared by: M. Subudhi, E. MacDougall, S. Kochis, W. Wilhelm and

BNL-52262

Contact: B. Sherwood, Ext. 4901 Fourth Workshop on Experiments and Detectors for a Relativistic Heavy Ion Collider. Edited by: M. Fatyga and B.

Moskowitz BNL-52265

Contact: A. Lancsarics, Ext. 4519 Proceedings of the Fourteenth DOE Solar Photochemistry Research Conference.

BNL-52269

Contact: L. Hanlon, Ext. 7517 Assessment of Similarity of HFBR With Separate Effects Test. U.S. Rohatgi and G.C. Slovik

BNL-52267

Contact: P. Durcan, Ext. 3807 Users Guide for the Accelerated Leach Test Computer Program. M. Furhmann, J.H. Heiser, R. Pietrzak, E.M. Franz and P Colombo

BNL-52268

Contact: P. Durcan, Ext. 3807 Method for Accelerated Leaching of Solidified Waste. M. Fuhrmann, J.H. Heiser, R.F. Pietrzak, E.M. Franz and P.

BNL-52247

Contact: D. Earley, Ext. 4007 Can RHIC Be Used to Test QED? M. Fatyga, M.J. Rhoades-Brown and M.J. Tannenbaum

BNL-52273

Gallardo

Contact: K. Tuohy, Ext. 3845 Proceedings of the Workshop on Prospects for a 1-A Free-Electron Laser. Juan C.

NUREG/CR-5139 **BNL-NUREG-52278**

Contact: M. Beckman, Ext. 3228 Dose-Reduction Techniques for High Dose

Worker Groups in Nuclear Power Plants. T.A. Khan, J.W. Baum and B.J. Dionne

NUREG/CR-5282 BNL-NUREG-52181

Contact: K. Nasta, Ext. 2267 Estimation of Containment Pressure Loading Due to Direct Containment Heating for the Zion Plant. N.K. Tutu, C.K. Park, C.A. Grimshaw and T. Gins-

NUREG/CR-4444 BNL-NUREG-52275

Contact: M. Beckman, Ext. 3228

Radiation Safety Issues Related to Radiolabeled Antibodies. D.E. Barber, J.W. Baum and C.B. Meinhold

NUREG/CR-5555 BNL-NUREG-52232

Contact: A. Fort, Ext. 2114

Aging Assessment of the Westinghouse PWR Control Rod Drive System. W. Gunther and K. Sullivan

BNL-52281

Contact: N. Sautkulis, Ext. 4304 The Enriched Chromium Neutrino Source for Gallex. F.X. Hartmann and R.L. Hahn BNL-52126

Contact: P. Durcan, Ext. 3807 Stabilization of Compactible Waste.E.M. Franz, J.H. Heiser III and P. Colombo

In Memoriam

Henry B. Hansteen, who retired from BNL in 1969 as a senior engineer, died on April 23, at the age of

Hansteen's long association with BNL began in 1948, when, as a professor of electrical engineering at City College of New York, he first came to BNL as summer visitor. He returned every year through 1959, spending his summers consulting in a number of departments, including Nuclear Engineering and Accelerator. He joined the Lab's staff permanently in September 1967, in the Plant Engineering and Planning Division.

Upon his retirement, Hansteen moved to the Adirondacks. In 1982. he and his wife Emma moved to Ithaca, where he was residing at the time of his death. In addition to his wife of 60 years, he is survived by a daughter, Beatrice Brownell of Ithaca, who formerly worked in BNL's Personnel Division; a son, Robert Hansteen of Philadelphia; a sister, Margaret Wherry, Ithaca; grandsons, Stefan Brownell and Henry Hansteen, both of Ithaca; and several other grandchildren in Philadelphia and Albuquerque.

Note to Employees:

Attendance at lectures, meetings and other special progams held during normal working hours is subject to supervisory concurrence.

Wanted: Documents From BNL's Past

As BNL's official historian, Robert Crease is writing a series about the Laboratory for the Long Island Historical Journal. The journal is published twice each year by the Department of History at the State University of New York at Stony Brook, where Crease is also a professor of philosophy.

The first article in this series, "The History of Brookhaven National Laboratory Part One: The Graphite Reactor and the Cosmotron," has been published in the journal's Spring 1991 issue. A limited number of copies may be purchased for \$6 each, from the Tour Program in the Public Affairs Office, Ext. 4049.

In preparing subsequent articles for this series, Crease says he is always looking for more historical information about BNL. High on his wish list are annual reports — either a complete set or individual copies. Memoranda, diaries, notes, photographs, other records — if you're tempted to throw them out, "Don't!", says Crease, "I would welcome them." They can be sent to him in Bldg. 510, where he can be reached at Ext. 2364.

Arrivals & Departures

Arrivals

Michael D. Bolotine	. Accel. Dev.
Leo Paffrath	Physics
Alexander G. Sabelnikov	Biology
Larry D. Smith	
Steven H. Stein	Dir. Office

Departures

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

Christopher T. Tersigni.......S&SD

Toastmasters Get Charter



The BNL/BERA Toastmasters held a "Charter Celebration" in April at which their president, Margaret Foster, was presented with the club's charter document by Gregory Batson, Toastmasters International District 46 Governor. As the world's largest organization devoted to communication excellence, Toastmasters helps its members develop effective communication and leadership skills through regular n a supportive and encouraging atmosphere. Formed last year, the BNL Toastmasters now has 21 members. All are welcome to attend their meetings, held every Tuesday, at 5:15 p.m., in the main conference room, Bldg. 475. For more information, call Foster, Ext. 3644.

BROOKHENEN BUILFTIN

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ANITA COHEN, Editor MARSHA BELFORD, Assistant Editor LIZ SEUBERT, Reporter

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Volleyball Champs



Magnum toasted victory in the Open League: (back, from left) Terry Sullivan, Jose Zorrilla, Mark Renner, Ron Webster; (front, from left) Russ Tonkyn, Kathi Barkigia and Mike Sagurton. Not pictured: Jim Griffin.

— Photos by Stoutenburgh



In League III, the Nutcrackers could not be broken: (back, from left) Sue Ellen Gerchman, Kathleen McIntyre, Darcy Mallon; (front, from left) Sue Pepper, Sandi Lane and Diana Toledo. Not pictured: Ruth Coughlan, Nancy Erickson and Pat Giacalone.



The Cannonballs shot down their opponents in League I: (back, from left) Ralph Brown, Nancy Ohlmann, Steve Hulbert; (front, from left) Gail Penny, Bill McGrath, Rich Garrett and Diana Toledo. Not pictured: Ryan Brown.



The Netwits kept their wits about them and took top honors in League II: (back, from left) Bill Horak, Ray Savino, Rich Wagener; (front, from left) Carmen Falkenbach, Darcy Mallon, Kathy Kolsky. Also shown are the team's mascots, standing in for missing players: Jean Springston, Jim Guppy and Carl Falkenbach.

Courses Offered?

The User Support Section of the Computing & Communications Division could offer the following courses if there were enough interest — that is, if at least 12 people would take each course at a cost of about \$1,075 per person. The courses, which would be taught on site by a representative of Sun Microsystems, Inc., and would require a five-day commitment, are: Sun Workstation System Administration, Sun Workstation Advanced System Administration, SunOS for Programmers, and SunOS for Users.

For more information, call Ron Wittlock, Ext. 4112.

IBEW Meeting

Local 2230, IBEW, will hold its regular monthly meeting on Monday, May 20, at 5:30 p.m., in the Knights of Columbus Hall, Railroad Avenue, Patchogue. On the agenda will be regular business, committee reports and the president's report.

Software Demo

On Wednesday, May 22, at 2 p.m. in the CCD Seminar Room, Bldg. 515, representatives from Aston-Tate will demonstrate its Cross Platform Strategy, whereby dBASE IV applications can run without modification on DOS, VAX/VMS, UNIX and MAC workstations. They will also discuss how this cross-platform implementation can facilitate Labwide computing.

Users are invited to see how their dBASE applications can be ported to other platforms, provided the application contains no DOS-specific commands.

Call Kurt Fuchel, Ext. 4116, for details.

Camera Club

The Camera Club will sponsor a special program on portable electronic flash at its next monthly meeting, on Thursday, May 23, from 5:15 to 7:15 p.m. in Room B, Berkner Hall. Interested nonmembers are invited.

The program, which will consist of a lecture followed by discussion, will be presented by Peter Horton of BNL's Photography and Graphic Arts Division. A graduate of Brooks Institute, he will draw on the knowledge that he has gained during his years of experience as an industrial engineering photographer to present a program that should be of great interest to advanced photography enthusiasts as well as novices. Be sure to bring paper and pen for taking notes!

For information, contact Lew Jacobson, Bldg. 134C, Ext. 5193; Ripp Bowman, Bldg. 911B, Ext. 4672; or Anne Baittinger, Bldg. 134, Ext. 5055.



"PARTICLES, PARTICLES, PARTICLES."

©1989 by Sidney Harris — Einstein Simplified, Rutgers University Press

Book Review Time

A book review group has been formed for spouses of Lab employees and guests. The Joy Luck Club by Amy Tan will be discussed at the monthly Book Review meeting on Thursday, May 23, at 10 a.m., in the Recreation Building in the apartment area on site.

Cafeteria Menu

monday, may 20	
Soup: Vegetable barley	75/.95
Entree: Sauteed liver w/onions & 1 veg.	3.10
Entree: Stuffed shells w/spaghetti	
sauce & 1 veg.	3.10
Fitness: Oven-broiled fish amandine	
& 1 veg.	3.10
Carvery: Hot pastrami sandwich	2.85
Grill: Fried fish sandwich	2.85
Tuesday, May 21	
	75/.95
Entree: Chicken Parmesan w/1 veg.	3.10
Entree: Pork fried rice w/1 veg.	3.10
Fitness: Vegetable quiche w/1 veg.	3.10
Carvery: Hot roast beef sandwich	2.85
Grill: Hawaiian ham & turkey melt	2.85
SPICE: Discover our Mexicali omelet	
Vednesday, May 22	
a and i	75/.95
Entree: Ham rolls w/broccoli & cheese	0, .50
& 1 veg.	3.10
Entree: Baked ziti w/1 veg.	3.10
Fitness: Chef's choice w/1 veg.	3.10
Carvery: Hot Black Forest ham sandwick	
Grill: Cajun chicken on roll	2.85
Thursday, May 23	00
	5/.95
Entree: London broil w/mushroom	57.95
gravy & 1 veg.	3.65
Entree: Chef's choice w/1 veg.	3.10
Fitness: Keilbasa & sauerkraut w/veg.	3.10
Carvery: Hot turkey sandwich	2.85
Grill: Pastrami melt	
SPICE: Strawberries—Get 'em while	2.85
they're fresh	
•	
riday, May 24	
	5/.95
Entree: Fried catch of the day w/1 veg. Entree: Potato skins nacho grande	3.10
w/1 veg.	2 10
Fitness: Macaroni & cheese w/1 veg.	3.10 3.10
Carvery: Hot turkey sandwich	2.85
Grill: Fried clams on hun	2.80

Bowling

The Bowling Awards Dinner will be held on Friday, June 7, at 5:15 p.m., at the Brookhaven Center. The cost will be \$5 for bowlers and \$10 for a guest. Contact your team captain for tickets.

Red/Green League

The Designers won the second half of the season. E. Meier had a 220, H. Dawson 202, R. Eggert 202, C. Bohnenblusch 201.

Classified **Advertisements**

Placement Notices

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

Each week, the Personnel Division lists new placement notices. The purpose of these listings is, first, to give employees an opportunity to request consideration for themselves through Personnel, and, second, for general recruiting under open recruitment. Because of the priority policy cated above seek listing does not policy stated above, each listing does not necessarily represent an opportunity for all

Except when operational needs require otherwise, positions will be open for one week after

For more information, contact the Employment Manager, Ext. 2882, or call the JOBLINE, Ext. 7744 (282-7744), for a complete listing of all openings.

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

LABORATORY RECRUITMENT - Opportunities for Laboratory employees only.

NS 8347. ADMINISTRATIVE POSITION -Requires bachelor's degree in business administration or equivalent work experience and familiarity with the IPAP system. Will act as liaison for Department in the processing of subcontracts, handling invoicing, and processing ILRs and monitoring their progress in the JCAR system. Must be willing to become familiar with the budgeting process with the intent of assuming financial responsibilities for several divisions. Department of Nuclear Energy.

MRK/AUI. SYSTEMS AUDITOR - Requires a bachelor's degree or equivalent and a minimum of three years' experience in a data-processing environment. Will be involved in systems controls auditing. Associated Universities, Incorporated.

DD 5068. SECRETARIAL POSITION - Requires AAS in secretarial science, business or equiva-lent. Experience with both word-processing and database systems such as WordPerfect, Lotus 123 and Informix are also required. Will provide varied secretarial support to the User Administration Office, including issuing and maintaining guest appointments and coordination of major user meetings. National Synchrotron Light Source Department.

DD 8681. SECRETARIAL POSITION - Requires AAS in secretarial science or equivalent and a thorough knowledge of Laboratory policies and procedures. Excellent communication skills and IBM PC experience also required; WordPerfect experience highly desirable. Will provide varied secretarial support to Section Head and Hazardous Waste Management Group. Safety & Environmental Protection Division.

OPEN RECRUITMENT - Opportunities for Laboratory employees and outside applicants.

NS 0123. ADMINISTRATIVE/ACCOUNTING POSITION - (temporary 7/1/91-1/15/92) Requires minimum of an AAS in accounting and 3-5 years' pertinent experience, or bachelor's degree in business administration/accounting and two years' experience. Previous background in budgeting and forecasting and familiarity with spreadsheet programs, i.e. Multiplan or Excel, necessary. Plant Engineering Division.

DD 8806. VETERINARY SERVICES POSITION -Requires relevant work experience and certification in Laboratory Animal Care, Will be sible for the handling, general care, breeding of laboratory animals, and making clinical observations to the appropriate personnel. Medical Department.

LL 8552. ENGINEERING POSITION - Requires a bachelor's degree in mechanical engineering with minimum ten years' design experience or equivalent. Must be knowledgeable in advanced HVAC and hazardous exhaust systems for laboratory and industrial applications. Should have design experience in steam, chilled water, fire protection, hot water and general utility services. A PE license or ability to obtain license is desirable. Plant Engineering Division.

LL 8553. ENGINEERING POSITION - Requires a bachelor's degree in civil or structural engineering with a minimum ten years' structural design experience or equivalent. Responsibilities include the design of structural steel and reinforced concrete structures, and preparation of related specifications for bidding purposes. Knowledge of AISC ACI, Life Safety and model Building Codes, as well as drafting skills, is essential. A PE license as well as Auto-Cad experience is desirable. Plant Engineering Division.

LL 8766. ENGINEERING POSITION - Requires a BS/MS degree in chemical engineering or equivalent. Must be familiar with optimization and computerization of unit processes, be able to work independently and to generate technical and economic feasibility estimates. Responsibilities include the construction and testing of lab-scale to semi-pilot plant-scale operating units using new biochemical processes for biotechnology applications. Department of Applied Science.

Motor Vehicles & Supplies

89 DODGE B250 VAN - 10k mi., 7/70+ power option warranty, all options, alarm, mint cond., \$17,000. 924-9427 eves.

88 JEEP PIONEER - 4.0, a/t, 2-dr., ac, am/fm, \$8,900 neg. Denise, 736-4135.

88 HONDA CIVIC DX - 2-dr. h/b, a/t, ac, am/fm stereo cass., 4.8k mi., \$6,000. Aoki 632-7977 or

87 YUGO - 2-dr., 4-spd., am/frn stereo cass., 28k mi., runs well, excel. cond. Joey, Ext. 2950 or 758-2938.

86 ISUZU PICKUP - 4wd, 77k mi., 38k mi. on the eng., LS pkg., excel. cond., \$5,200. Lloyd, Ext. 3163 or 286-1024 after 6 p.m.

86 CAMARO - red, V-6, fully loaded, T-top, alarm, custom wood dash, 56k mi. Ext. 5873 or 821-0019. 85 SENTRA - red, 4-dr. sedan, a/t, ac, 94k mi., runs well, good body, well maintained, \$1,500. Kurita, 914-591-8100, Ext. 291.

83 CHRYSLER LE BARON - 4-dr., orig. owner, 82k mi., clean, excel. body, runs but needs engine work \$750 289-0791

81 OLDSMOBILE OMEGA - 2-dr., fwd, a/t, ac, p/s, p/b, am/fm, new tires, battery, muffler, brakes, runs well, \$1,200. 979-8619 after 7 p.m.

78 PONTIAC LE MANS - V-8, 2-dr., a/t, p/s, am/fm, 90k mi., new brakes & exhaust, running OK, \$500 or best offer. Sam, Ext. 3631

78 OLDS 88 - looks good, runs well, \$500 or best offer. Ext. 7897.

69 CAMARO RALLY SPORT - classic car, \$3,500. Jim, Ext. 3372 or 821-0250.

31 CHRYSLER MODEL B - 2-seater, rumble seat, all orig., excel. cond., must see, asking \$7,500. Ext. 3160 or 289-5704 after 5 p.m.

DOORS - 2, for Jeep CJ7, soft top, black, \$10. George, Ext. 5288 or 878-8177.

HOLLEY CARBS - one 2 bbl., new for early Chrysler; one 4 bbl., marine w/rebuilding kit, \$25 & \$40. Bob, Ext. 4446.

CAR RADIO - fm only, good cond., \$15; calculators, basic working cond., \$3 Susan, Ext. 7716.

Boats & Marine Supplies

25' AQUASPORT - 1987, 200-h.p. Merc. w/9.9h.p. kicker, new canvas, Loran, more, sleeps 3, in water, immac., \$20,000. 878-0480 eves.

25' MACH I - 1984, cabin cruiser, 260-h.p. OMC, sleeps 4, galley, head, h/c water, Loran, VHF, DF \$12,000 or best offer. Mike, Ext. 4345 or 473-9124. 22' CATALINA SAILBOAT - 6-h.p. Johnson, new

mainsail & tiller, trailer, \$4,250. Ext. 3496 20 CHRIS CRAFT 205 LTD BOWRIDER - 1988. 6-cyl., i/o, 8' beam, am/fm radio, shore trailer, many extras. Bill, 732-8793.

19' STEURY CUDDY - 1979, w/1986 90-h.p. Evinrude, VRO, trim/tilt, sink, full canvas, potty, CB, trailer, dock space, \$5,500. George, 878-8177.

18' MARSHALL CATBOAT - new 9-h.p. ob., many extras, excel. cond., \$10,500. Frank, 589-5980.

17' CHRIS CRAFT - 1967, 60-h.p. Evinrude, Gator tilt trailer, CB radio, power winch, v.g. cond., \$1,800. Morse, Ext. 3859 or 286-1712.

16' BOWRIDER - 65-h.p. Johnson, trailer, p/winch, \$2,000. Jim, Ext. 3372 or 821-0250. 15' THUNDERBIRD BOWRIDER - 1973, 65-h.p.

Evinrude, galv. trailer, \$900. Al, Ext. 5128. 14' HOBIE CATAMARAN - roller reefing jib, trailer, v.g. cond., \$1,600 or best offer. Ext. 7657

14' CAPE DORY SAILBOAT - 41/2-h.p. Johnson, oars, new trailer, good for learning to sail, rowing,

fishing, \$2,600 firm. Bruce, Ext. 4290 or 722-5740. 13' TRI HULL - fiberglass, lake boat w/trailer, Minn Kota 36 lb. thrust elec. motor w/battery, asking \$1,000. Joey, Ext. 2950 or 758-2938.

12' CRESTLINER - aluminum, semi-vee, canvas cover, \$300; Sunfish, AMF, all new except hull, used 1 seas., dagger board, dolly, \$700. 286-1097.

SAIL & MAST - for Sunfish, good cond., \$100; 2-h.p. Johnson, short-shaft, used 4 hrs., \$225; 13' galv. trailer, good cond., \$125. Bob, Ext. 3509.

Furnishings & Appliances

BEDROOM - 5 pieces, headboard, end tables, desk, hutch, dresser, dark pine, good cond., \$250. Ext. 3334 or 744-2404.

CHEST - of drawers, \$10; Sears rug shampooer, \$10; child's desk, \$10; book shelves, \$3/ea; sofa/bed, \$100; more. Ext. 5097 or 744-9022.

COMPACTOR - Kenmore, \$25; doahouse, \$25; bookcase, \$10; 9-drawer dresser w/mirrors, \$50; table, formica/iron, \$50; more. 288-9596.

COMPUTER DESK - brand-riew, never used, 50%" x 42%" x 23%", oak-finished, orig. \$80, asking \$40. Patriche, Ext. 2456.

DINING ROOM - Bennington, pine, Colonial, hutch, table w/two 12" leaves, 6 chairs, needs refinishing, \$300. Jim, Ext. 2957 or 281-4541.

FREEZER - Westinghouse, 12 cu. ft., white, like new, \$125; 36" mirrored 3-door medicine cabinet, brand-new, make offer. Ext. 2345.

END TABLES - 2, all wood, matching coffee table, \$175 neg. Jean, Ext. 2119.

REFRIGERATOR - 18 cu. ft., Westinghouse, frostfree, \$250. 331-1754.

WASHER - \$250; queen bed, \$180; twin bed, \$130; table, \$65; desk, \$90; more, moving sale. Aoki, 632-7977 or 689-5415.

WATER BED - twin, motionless, new, orig. \$426, make offer, 363-2941.

Tools, House & Garden

BANDSAW BLADE WELDER - welds 1/4-1/4 blades, new, orig. \$400, sell for \$200; 2 Kennedy machinist toolboxes, \$25 & large one, \$30, 363-2941.

DEEP-WELL PUMP - Sta-Rite 1-h.p., Sta-Rite Con-Air bladder-type water tank, 2 yrs. old, \$150/both. Jim, Ext. 2957 or 281-4541.

FIREPLACE GLASS DOORS - new, in orig. packaging, 25"h x 441/2"w, brass. Noreen, 728IRRIGATION PIPE - 530', 3", 5 end plugs, 2 forty fives, 4 elbows, 3 tees, 1 start fitting, 10 sprinklers, \$750. 325-0193.

LADDER - aluminum, 20' extension, good cond. 325-0447 after 6 p.m.

LAWN MOWERS - Sears, elec., 3½ h.p., rear bag, \$50; Craftsman, 21" cut, rear bag, \$85; Craftsman leaf shred., \$125. Dan, Ext. 4987 or 698-7322.

LAWN MOWER - Sears, 23", self-propelled rear bag, excel. cond., extra blades, filters, best offer. 744-8386.

MOP - bucket & wringer, commercial, galvanized, \$55; hand truck, steel, 400 lb. cap., 10" semipneumatic tires, low mi., \$40. Bill, Ext. 4175.

SHREDDER - heavy-duty; spindle-back chairs; Gibson freezer. 363-7032.

STORM DOOR - 32"x6'8", right swing, \$50; Andersen window, 12'x6', thermo-pane w/louvers, \$500. Ruth Ann, Ext. 7774 or 929-6235 after 5 p.m.

Audio, Video & Computer

COMPUTER - Atari ST 1040, color monitor, floppy disk drive, 1 meg memory, lots of software, \$300 or best offer. Dave, Ext. 4148.

STEREO SYSTEM - Pioneer, radio, power unit. turntable, speakers, very good cond., \$35; clock radios, \$5/ea. Ext. 5097 or 744-9022.

TYPEWRITER - Underwood 765CR, electric, portable, excel. cond., \$170. 473-0963.

VCR - Teac, 3 mo. old, \$150; TV/VCR cart, \$20; more, moving sale. 632-7977 or 689-5415.

Sports, Hobbies & Pets

BICYCLE - Savoy man's 10-spd., \$20; ski poles, \$3; ski car rack, \$5. 878-8144.

BICYCLES - 26" boy's 3-spd., \$20; Huffy, 26" girl's 10-spd., excel. cond., \$50. 286-1097.

CLARINET - Signet, wood, excel. tone, \$250; Prince CTS approach 90 tennis racket, \$110. Jim, Ext. 3372 or 621-0250.

DOG CHAIN - tie-out runner, 20', \$7; 15', \$4; dog collar, 20", new, \$6. Dolores, Ext. 2907.

JET SKI - Kawasaki, 2 yrs. old, only 10 hours of use, asking \$3,500. Tim, Ext. 2350.

ORGAN - Hammond sounder, w/bench, music books, \$50. Barbara, 288-9596.

POOL - Doughboy, 16'x32', 3 yrs. old, \$800; Hayward EC-40 D/E pump, 1 h.p. motor, \$200; fiberglass slide, \$200. Carl, Ext. 5270.

POOL - above ground, 16'x48", w/fenced-in railing, 4'x12' decking, all filters & pump, \$300. 654-0613, leave message.

POOL PUMP - & filter, ½ h.p., sand, like new, SURFBOARD - Ocean Avenue, 5'9", like new,

\$265; Westone Spectrum DX electric guitar, red, good cond., \$200. Ralph, Ext. 4446. SURFBOARD - Easy Rider boogie board, used

6 times, \$25. 286-8664. TROMBONE - Bach, great for beginner, 3 yrs. old. Rob, 286-0429.

VIBRA HARP - w/working motor, \$500 or best offer. Janet, Ext. 2345.

Miscellaneous

MOVING SALE - car, washer, VCR, beds, tables, desk, TV cart, rug, BBQ grill, bookcase, more. Aoki, 632-7977 or 689-5415.

MAN'S SLACKS - new, \$5/ea.; rowing machine, \$45; large fish platter, \$20; desk light, \$10; coffee table, \$45. Kathy, 744-2203.

SHOES - woman's, sizes 81/2-9, varied styles, colors & widths, all extremely good cond., \$5-

\$10/pair. Ext. 4538 or 924-2012, leave message. TICKETS - 4, Indianapolis 500, back-stretch bleachers, \$18/ea. Foley, Ext. 3943.

VENDING MACHINE - new, mechanical type, 4'h x 21/2 w x 2'd, candy, etc. \$100. Dan, Ext. 4987 or 698-7322.

CAT - 1-yr.-old neutered male, very affectionate, needs good home. 689-9214.

KITTENS - cute, box-trained, 8 weeks old. Biays, Ext. 2946.

SWING SET FRAME - clean, but needs seats, take

it away. Dave, Ext. 4148. Yard & Garage Sale

WEST ISLIP - 250 George St., May 18, 10 a.m.-5 p.m., rain date, May 25, 30+ years accumulation.

Real Estate

without regard for the race, color, creed, sex or national origin of the applicant.

CENTER MORICHES - 2-bdrm. apt., new paint,

excel cond., large rooms, all appl., \$650/mo. + util. 878-1178.

CORAM - studio apt., kitchen, full bath, priv. ent., \$550/mo. all. 696-3782. CORAM - room in house, \$350/mo. pays all. Ext.

7897 or 331-0807.

EAST MORICHES - 2-bdrm. apt., ground floor of Victorian house, bath, kitchen, d/r, I/r, large yard, 3 blocks to bay, shops, school, \$680/mo. + util. Mona, Ext. 5056 or 878-9384 eves.

EAST PATCHOGUE - 3-4 bdrm., furn., fenced acre, 20 min. from lab., walk to Bellport Village, avail. for 1 year beg. Aug./Sept., \$850/mo. + util., no smokers/pets. Vera, 286-3903.

EAST SETAUKET - 1-bdrm. apt., kit./l-r combo, ground floor, 7 min. from SUSB, priv. ent., cable, w/d, no pets, \$600/mo. incl. util., single preferred. Valerie, 751-6091. HOLBROOK - 3-bdrm. ranch, large eik, den,

solar-assisted heating, all appl., 1/3 acre, underground utilities, Sachem 5 SD, \$975/mo. + util. Ext. 2679 or 472-0392/6922. HOLBROOK - 1-bdrm. apt., furn./unfurn., full kit., bath, I/r-d/r area, priv. ent., 20 min. to Lab., single,

nonsmoker, no pets, \$500/mo. single, \$550/ double, util. incl. Fred, Ext. 7947 or 588-2268. LAKE GROVE - 1-bdrm. apt., eik, full bath, \$600/mo. incl. util. Judy or Bea, 689-8413. MANHATTAN - studio apt., Kips Bay area, 1 flight up, secure bldg., avail. June-Aug., furn., phone, full kit. John, Ext. 7671 or 516-765-1299.

MASTIC - 3-bdrm. house, I/r, new eik, full bsmt., fenced yard, OHA, 10 min. to Lab., \$850/mo. + util. 281-7899 after 6:30 p.m.

MIDDLE ISLAND - 1-bdrm. condo, upstairs, newly redecorated, new stove, washer, dw, cac, gas heat, pool, tennis, \$675 rent, or \$75,000 buy. Kath, 924-9464.

MONTAUK - walk to ocean beach, 3 bdrm., 2 baths, fp, deck, laundry, fin. bsmt., furn., long season avail. Jim, Ext. 4150 or Ruth, 563-8374.

RIDGE - large 1-bdrm. apt., priv. ent., 5 min. to Lab., suitable for couple/single, \$650/all, 1 mo. sec., no pets. Ext. 5076 or 744-4615.

SHIRLEY - 2-3 bdrm. house, fin. bsmt., near shopping, \$750/mo. + util. 15 min. to Lab. Maureen, 360-3803 after 5 p.m.

SHIRLEY - quiet, 21/2-rm. apt., employed mature person, nonsmoker pref., 10 min. from Lab., \$450/mo. all. 281-6263.

SOUND BEACH - 1-bdrm. apt., full bath, kitchenl/r combo, cable, priv. ent., \$600/mo. incl. all + 1 mo. sec. Ext. 2671 or 744-3284 after 4 p.m. YAPHANK - 4-bdrm. restored Victorian, Ig. treed

prop., patio, 5 mi,. from Lab., recently remodeled, avail. now, 924-5219, 924-4872 or 924-3066. CATSKILLS - 3-bdrm. chalet w/sleeping loft, fully furn., near Hunter Mt. music festivals, great for hiking, golfing, fishing, rafting, etc. Kay, Ext. 4501

or Bea, Ext. 3642. HILTON HEAD, SC - 2-bdrm. condo, sleeps six, two baths, pool, beach, tennis, golf course, May-Sept. \$450/wk. Guy, Ext. 3147 or 689-5378.

CORAM - Strathmore East, 4-bdrm. ranch, 2 baths, cathedral I/r, 2-car gar., gas heat, fenced corner lot, \$120,000. Ext. 3791 or 928-7154.

CORAM - N. of Rt. 83, 4-bdrm. contemp. Colonial, l/r, d/r, fam. rm., fp, fin. bsmt. w/nightclub, 1/3 acre, \$140,000. Ext. 7897 or 331-0807.

EAST MARION - beautiful 1 acre bldg. lot, adjacent to Greenbelt, walk to Sound. 325-0447. MEDFORD - Blue Ridge, 3-bdrm. condo, l/r, d/r, galley kit., util. rm., 11/2 baths, rec. facil., in/outdoor

MIDDLE ISLAND - Coventry Manor, 3-bdrm. townhouse, 2 baths, kit., I/r, d/r, laun. rm., cac, 5 appl., patio, new carpet, more, ask. \$102,000. Rosalie, Ext. 3160 or 289-5704 after 5 p.m.

pool, tennis, golf, price neg. Ext. 4853 or 698-

MT. SINAI - 2-bdrm. ranch, full bath, kit., dinette, I/r. ½ bsmt., gar., ¾ acre. treed, \$127,000; also, %-acre flag lot, approved, \$55,000. 473-6432.

N. SHIRLEY - 3-bdrm, ranch, full bsmt., 1/3 + acre, across from Southaven Park, 5 min. to Lab, new eik, new boiler & HW heater, all new windows, deck, extras, \$122,500. Jim, Ext. 2957 or 281-4541. RIDGE - Leisure Knoll adult community, 1-bdrm. duplex, ac, all appl., close to clubhouse, pool, immed. occup., over 55 only, \$75,000, taxes \$1,800. Ted, Ext. 4589 or 475-8581 eves/wknd.

ROSLYN - 1-bdrm. co-op, corner, sunny, fully renovated, w/w, Rosyln SD. Ext. 3924 or 246-5064

SHOREHAM - 3-bdrm. brick Cape, eik, den, playroom, gar., full bsmt., 1½ baths, remodeled, conven. loc., SWR SD, \$140,000. Carol, Ext. 3315 or 744-7493; or Janet, Ext. 2345 or 929-3910.

SHOREHAM - 3 bdrm., large eik, d/r-l/r, den, 2 baths, atrium, stone fp, large storage rm., all appl., cac/gas heat, SWR SD, \$149,500. Ext. 2833 or 744-SPEONK/WESTHAMPTON - 2 bdrm., 11/2 baths,

cac, patio, 1000 sq. ft., skylights, 20 min. to Lab., \$795/mo. or \$135,900. Rich, Ext. 4834 or 588-0507. SPEONK - 1987 Mobile Home, 124'x60', 2 bdrm. w/10'x10' shed, bay window in I/r, 2-car gar., \$42,000. Dave, Ext. 5460.

YAPHANK - Colonial Woods, 2-bdrm. condo, 1½ baths, fin. bsmt., wet bar, pool, tennis, rec., facil., 5 min. to Lab., red. to \$100,000. Monica, 924-3846. HUBBARDTON, VT - 38 deeded acres, on town-

maintained road w/power & telephone, largely wooded w/view of Lake Bomoseen, ask., \$39,000 neg., terms avail. Tom, Ext. 2823.

Wanted CARSEAT - used, in good cond., for second car.

Ginger, Ext. 2073 or 472-6613. CHILDREN - ages 3 & 4, for Sept. enrollment in Upton Nursery School, classes are filling quickly. Elaine, 474-4525.

ELVIS PRESLEY TAPES - especially his slow ones like "The Wonder of You." Janet, Ext. 2345.

HOUSE TO SIT - free, exp., reliable, any period after May 17. J. Allentuck, Ext. 2412. HOUSEMATE - cable & phone in furn./unfurn. bdrm., Ir/dr. kit., w/d, more, M/F, 10 min. to Lab.,

\$3**5**0/mo. avail, 6/1. Henry, Ext. 5110 or 399-6947. LAWN MOWERS - old, complete, any cond. Dan, 698-7322 days or Ext. 4987 eves.

PEOPLE TO JOIN - non-denominational Christian fellowship group, every Thurs, at noon in the Rec. Bldg., apt. area. Pete, Ext. 3297. RIDE TO LAB - 7:00-3:30 from Moriches, Ext. 3084

or 878-0744 ROOM TO RENT - for couple, \$500/mo. or less,

close to Lab if possible. 924-0123. TUBE TESTER - for testing old type radio tubes, Hickok 539B or similar, not working OK. Gene,

On-Site Services

TEACHERS FEDERAL CREDIT UNION - offers VISA & Mastercard at 16.8% interest rate, \$15 annual fee. For application, Ext. 2790, Bldg. 193.

In Appreciation

I would like to thank all my friends and co-workers who wished me well during my stay in the hospital. -John Brown

Classified Ad deadline is 4:30 p.m. Friday for publication

Friday of the next week.