BROOKHAVEN BULLETIN
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BROOKHAVEN NATIONAL LABORATORY

BNL Lecture: Reducing Bone Pain In Cancer Patients Using Radioactive Tin

For most people, the possibility of developing breast or prostate cancer is a frightening thought. But for those who have already developed these diseases and whose cancers have metastasized to the bone, it is an excruciatingly painful reality.

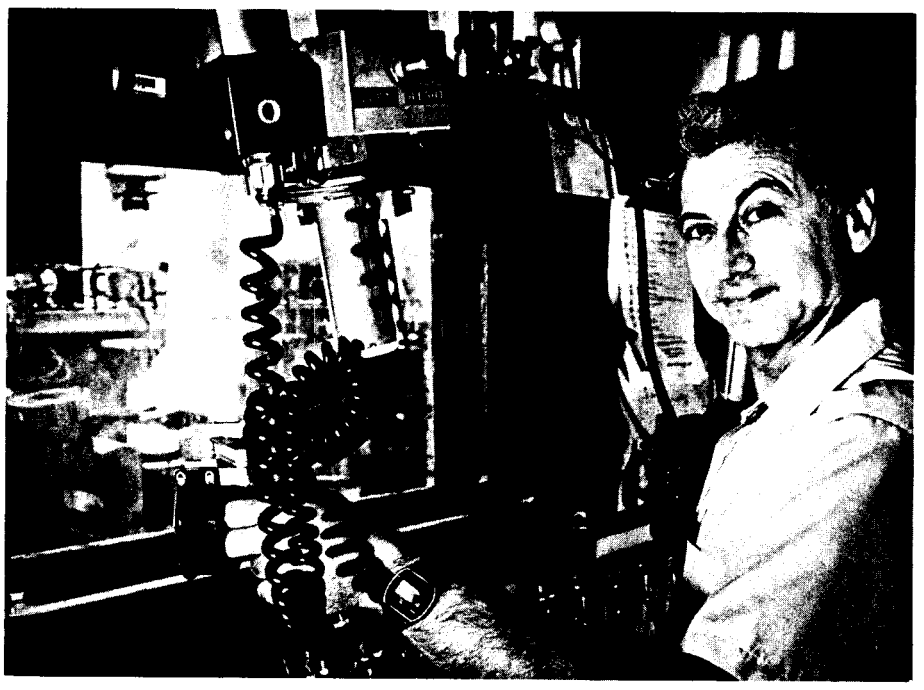
On the theory that diminished tumor size will reduce pain, researchers have turned to radionuclides. Ideally, when injected into a patients' bloodstream, these radioactive atomic species will localize in the painful bone area, where the radiation they emit can kill the growing cancer cells.

Radionuclides currently in use for this application have several drawbacks and do not provide complete relief. But BNL researchers have found a radioisotope of tin — ^{117m}Sn — that may prove to be the most effective radionuclide therapy yet.

Scientist Leonard Mausner, who heads the Radionuclide Research Group in the Medical Department's Radionuclide & Radiopharmaceutical Research (R&RR) Division, is principal investigator of this program. He will introduce this work in the first Brookhaven Lecture of the 1991-92 series (see box).

Entitled "Reducing Bone Pain in Cancer Patients Using Radioactive Tin," the 271st Brookhaven Lecture will begin at 4 p.m., on Wednesday, September 11, in Berkner Hall. The speaker will be introduced by Senior Chemist Suresh Srivastava, Head of the R&RR Division.

To improve on the present use of radionuclides to reduce pain from metastatic bone cancer, Mausner will explain that he and his group sought a radiopharmaceutical with good localization — the ability to pool primarily in the targeted area. Mausner found that, when injected into mice, some tin compounds exhibit high uptake in bone and bone tumors, without localization in any other organ.



Leonard Mausner in the Hot Lab where radioisotopes produced in BLIP are processed.

As Mausner will relate, the tin radionuclide ^{117m}Sn has other significant advantages as well. Because ^{117m}Sn emits low-energy electrons, its radioactivity affects only the nearby cancer cells. Thus, sensitive bone marrow is spared, and the patient's health is not further compromised.

These attributes were confirmed in recently completed clinical trials. Because these trials were conducted with low doses of ^{117m}Sn, verification of the radionuclide's pain-killing effects must wait until the conclusion of full therapeutic trials, for which Mausner is now preparing an application to the Food and Drug Administration.

The ^{117m}Sn for these trials is produced at BNL, using either neutrons at the High Flux Beam Reactor or protons at Medical's Brookhaven Linac Isotope Producer (BLIP), which uses particles siphoned from the linear accelerator for the Alternating Gradient Synchrotron.

Leonard Mausner took his B.S. at the Massachusetts Institute of Technology in 1968, and his M.A. at Princeton University in 1972, both in chemistry. He earned his Ph.D. in nuclear chemistry from Princeton in 1975.

After spending 1975-77 at Los Alamos National Laboratory on a Director's Fellowship, Mausner became an assistant scientist in the Radiological & Environmental Research Division of Argonne National Laboratory.

Mausner joined BNL in 1981 as an associate scientist in Medical's R&RR Division. Since being named Scientist in 1983, he has been responsible for BLIP and for the Radionuclide Research Group, where he oversees the production, purification and use of new radionuclides and generator systems of medical interest, and the isotope sales program. He also investigates the radiochemistry of isotopes relevant to nuclear medicine and was principal designer of BLIP II.

He is a member of the American Chemical Society's Division of Nuclear Chemistry & Technology, American Physical Society, Society of Nuclear Medicine and the Radiopharmaceutical Science Council.

After the lecture, those attending are invited to join the speaker for discussion and hors d'oeuvres. To join the lecturer for dinner at a restaurant off site, call Susan Cataldo, Ext. 4661.

Brookhaven Lectures, 1991-92

The Brookhaven Lecture Series was initiated in 1960 to acquaint members of the Lab community with developments and ideas in their own and other important fields of science, and to heighten awareness of the aims and potential of BNL.

Carrying out this charge is the Brookhaven Lecture Committee, which is now chaired by Graham Smith, Instrumentation Division, with Martin Woodle, National Synchrotron Light Source Department (NSLS) serving as secretary.

Other committee members are: Edward Bleser, Alternating Gradient Synchrotron (AGS) Department; Bruce Brunschwig, Chemistry Department; James Bullis Jr., Medical Department; Stephen Dewey, Chemistry; L. Doon Gibbs, Physics Department; James Hainfeld, Biology Department; Walter Mangel, Biology; William Morse, Physics; Paul Moskowitz, Department of Applied Science (DAS); James Neiderer, Computing & Communications Division (CCD); James Reilly Jr., DAS; Ann Reisman, Department of Nuclear Energy (DNE); Suresh Srivastava, Medical; Gregory Van Tuyle, DNE; Peter Wanderer Jr., Accelerator Development Department; and Gwyn Williams, NSLS.

Five ex officio members are: Anita Cohen, Public Affairs Office; Gertrude Goldhaber, Physics; Jonathan Hanson, Chemistry; George Rabinowitz, CCD; and Morton Rosen, Photography & Graphic Arts Division.

Brookhaven Lectures are normally held on a Wednesday at 4 p.m. The following talks are scheduled for the remainder of the 1990-91 series:

Date	Speaker	Subject
Oct.*	Eugene Premuzic, DAS *Date to be announced.	Bioremediation of Hazardous Waste
Nov. 13	Peter Johnson, Physics	Surface Magnetism
Dec. 11	Peter Bond, Physics	Heavy Ion Physics
Jan. 22	Robert Beuhler, Chemistry	Cluster Fusion
Feb. 19	Joseph Indusi, DNE	Arms Control
Mar. 18	John Dunn, Biology	Lyme Disease Spirochete
Apr. 15	William Weng, AGS	The Booster
May 13	Triveni Rao, Instrumentation	Laser Accelerators
June 17	Speaker to be announced.	

Coming Up

"Molecular Biology of Maize Transposable Elements" is the title of the Brookhaven Women in Science Seminar to be delivered by Nina Fedoroff, a plant molecular biologist with Carnegie Institution of Washington's Department of Embryology. Her talk will begin at 3:45 p.m., on Thursday, September 19, in the Biology Department Seminar Room in Bldg. 463.

BNL Opens Doors To Child Care And to Radiation Treatment

The beginning of September marked the beginning of operations for two new facilities at BNL: the Child Development Center (CDC) and the Radiation Therapy Facility (RTF).

Beginning at 8 a.m. on Tuesday, September 3, BNL parents began using the new road near the main gate to bring their children to the CDC — the first newly constructed day-care facility to begin operating at a U.S. Department of Energy site. By week's end, the sounds and energy of 65 youngsters had filled the new, barn-like building in the apartment area for the first time.

Also this week, the first patients arrived for treatment at the RTF. A collaboration between BNL and the State University of New York at Stony Brook, the RTF provides radiation treatment for cancer patients using a linear electron accelerator capable of producing beams of radiation at up to 25 million electron volts — the best in Suffolk County. For information about cancer care, call Ext. 7123.

Photos taken at the CDC on the morning of its first day of operation appear on page 2. More on the opening of the RTF will appear shortly in a future Bulletin.

Tremendous Year For Touring BNL

A record 21,066 visitors enjoyed the Exhibit Center/Science Museum over this past year — more than in any other year during the 13-year history of BNL's Tour Program.

Over seven Sundays this past summer, 6,890 visitors were guided through the museum. The other 14,176 were students ranging from kindergarten through high school, who came since last September on the tours the program conducted for school groups throughout the year.

The Tour Program is run by the Public Affairs Office and headed by Janet Tempel. "It was a tremendous year!" she said, stating that in addition to those who visited the Exhibit Center/Science Museum, the program hosted about 900 college students who toured some of the Lab facilities.

Incoming TDD Calls Accepted at BNL

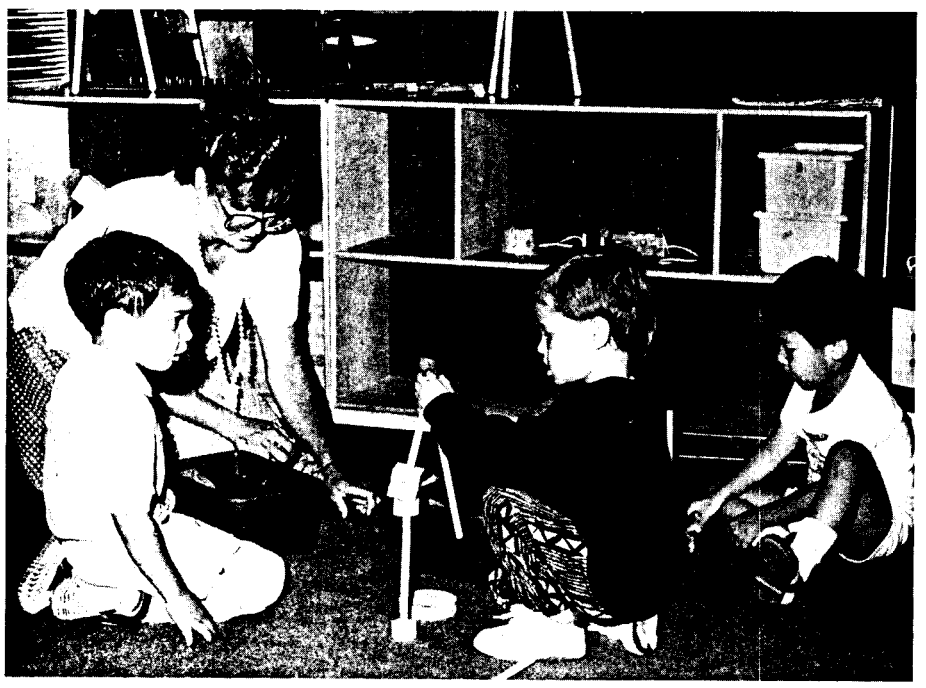
The Computing & Communications Division has recently installed a Telecommunications Device for the Deaf (TDD) with the BNL telephone operators in Bldg. 515. This teletypewriter-like device allows any hearing impaired person who has access to a TDD, whether on or off site, to communicate with a BNL operator.

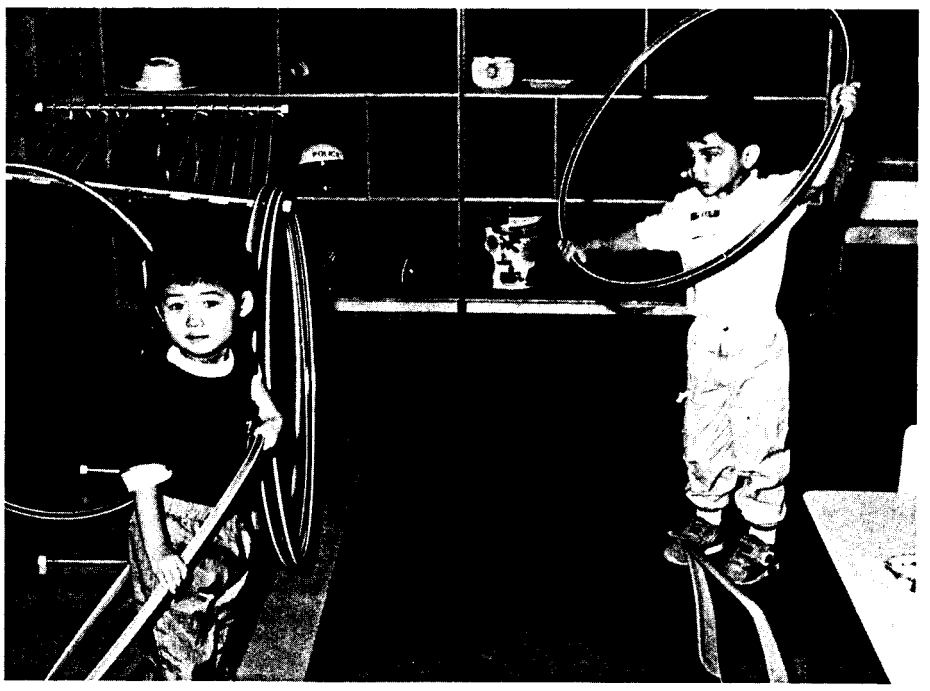
It is expected that the facility will be used primarily to provide information to callers, who then could be instructed to directly dial another TDD-equipped line at BNL.

The TDD number is 282-7464, and it will be listed in the next issue of the Suffolk County edition of the New York Telephone directory.

BNL's Child Development Center — The First Day . . .

Photos in this issue by Roger Stoutenburgh.





Openings for the CDC still exist. For enrollment information, call Ext. 7416.

Here's Your Chance To Stop Smoking

If you've decided to stop smoking, you've truly come a long way, baby. To help you quit, the Health Promotion Program of the Occupational Medicine Clinic is sponsoring a smoking cessation workshop, to be given on site by the American Lung Association of Nassau-Suffolk.

The four-week workshop will run from 5 to 6:30 p.m. on Mondays, September 16, 23 and 30, and October 7. To be held in the Brookhaven Center, the workshop is open to all BNL employees and their dependents.

As the Lab is paying $40 of the $60 fee, the cost for each participant is only $20, which is to be paid in a check made out to the American Lung Association and sent to Mary Wood, Bldg. 490, by September 12.

The program is based on the premise that smoking is a learned habit. Accordingly, quitting should involve unlearning the automatic behavior of smoking and substituting new, healthy alternatives.

In a step-by-step plan, the workshop will introduce different tactics to help smokers gain control over their behavior.

Post-Tournament Tennis Party

The annual after-tournament tennis party will be held at 5:15 p.m. on Thursday, September 12, at the tennis courts, or if it rains, in the Physics Department, Bldg. 510. Tournament participants and other tennis buffs are invited.

Sign up for Stretch Or Aerobic Dance

It's September — time to think about getting back to class — with the Aerobic Dance Club. Instructor Pat Campbell will lead aerobic dance classes on Tuesdays and Thursdays, and stretch classes on Mondays, all from 5:15 to 6:15 p.m. Participants may take any or all of these classes. Mats are recommended for floor exercises.

Each ten-week session (M, T or Th) costs $30, payable at registration preceding the first classes:

- **Stretch** — Monday, September 9, at Physics, Bldg. 510.
- **Aerobic Dance** — Tuesday, September 10, and Thursday, September 12, at the Recreation Building.

For more information, call Pat Campbell, Ext. 4853 (mornings) or Ext. 5070 (afternoons), or Janet Sillas, Ext. 2345.

Local Users Group

The next meeting of the Upton Local Users Group will be on Wednesday, September 11, at 10:30 a.m., in Room B, Berkner Hall. Highlighted at this meeting will be reports from the system managers of the various CCD/CSCF systems.

All are welcome. For more information, call LUG Chairperson Zohreh Parsa, Ext. 2085, or send E-mail to LUG@BNL.

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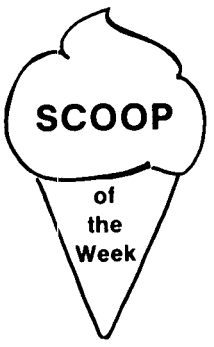
Scoop of the Week



For his scoop on the recent graduates under BNL's tuition reimbursement program, Glenn Jennings, Equal Opportunity Office, is a Scoop of the Week winner.

A second scoop goes to Michele Dickerson, Photography & Graphic Arts Division, who suggested that we let readers know the purpose of BNL's new road leading to the Child Development Center.

Summer is almost over, so rush your hot tips for news and features to the Bulletin, Bldg. 134, or Ext. 5053.

If you scoop the Bulletin's informed sources and your hot tip is turned into a published story, then you will be rewarded with an official Scoop of the Week certificate, redeemable for your favorite cold dessert at the Cafeteria or the ice cream truck, complements of the Service America Corporation.

Stockroom Closings

All Supply & Materiel Division (SMD) stockrooms will be closed for inventory on Thursday and Friday, September 12 and 13. Please make all necessary stock withdrawals prior to 3 p.m. on Wednesday, September 11, to give SMD sufficient time to prepare for the inventory.

During the inventory, call John Scarpeger, Ext. 2974, with emergency requirements.

Volleyball

The first Volleyball League captains' meeting will be held on Wednesday, September 18, at noon, in Room 300, on the third floor of Chemistry, Bldg. 555. Team captains or their representatives must attend. Team roster sheets are being sent to last year's captains and must be submitted at this meeting as they will not be accepted later.

Anyone not on a roster who wants to play and those interested in receiving a roster sheet should contact either Kathi Barkigia, Ext. 7661, or Nancy Ohlmann, Ext. 4440.

Reminder: The nights that Open League and League I matches will be played have changed. On Monday nights, Open League and League 2 will play. On Wednesday nights, Leagues 1 and 3 will play.

Cafeteria Menu

Luncheons

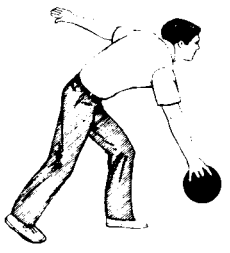
Monday, September 9	
Soup: Chicken noodle	.75/.95
Entree: Chef's choice	3.10
Fitness: Linguine w/clam sauce	3.10
Carvery: Hot pastrami sandwich	2.85
Grill: Reuben, cole slaw & pickle	2.85
SPICE: Fourth down delight — Nachos plate, cheese, chili, 12-oz. soda	3.70
Tuesday, September 10	
Soup: Beef barley	.75/.95
Entree: Fried chicken w/1 veg.	3.10
Entree: Baked fish w/Mornay sauce & veg.	3.10
Fitness: Chef's choice	3.10
Carvery: Hot roast beef sandwich	2.85
Grill: Monte Cristo, cole slaw & pickle	2.85
Wednesday, September 11	
Soup: Tomato rice	.75/.95
Entree: Sausage & pepper hero	3.10
Entree: Chef's choice	3.10
Fitness: Vegetable quiche w/1 veg.	3.10
Carvery: Hot ham sandwich	2.85
Grill: 3-D burger, cole slaw & pickle	2.85
Thursday, September 12	
Soup: Lentil	.75/.95
Entree: Broiled sliced flank steak w/veg.	3.65
Entree: Stuffed peppers w/1 veg.	3.10
Fitness: Chef's choice	3.10
Carvery: Hot corned beef sandwich	2.85
Grill: Hot dog special w/French fries	2.85
SPICE: Football feast — Roast beef sandwich, chips and a 12-oz. soda	2.95
Friday, September 13	
Soup: Manhattan clam chowder	.75/.95
Entree: Spaghetti w/meat sauce	3.10
Entree: Chef's choice	3.10
Fitness: Baked New England scrod w/veg.	3.10
Carvery: Hot turkey sandwich	2.85
Grill: Tuna melt w/French fries	2.85

Congratulations, Recent Graduates

As school bells ring, calling students of all ages back to the classroom this fall, congratulations are overdue to the class of '91 — BNL employees who completed undergraduate degree programs last spring under BNL's tuition refund program. The recent graduates are:

- **Richard Backofen**, Photography & Graphic Arts Division: B.S. in business administration, Dowling College.
- **James Della Sala**, Computing & Communications Division: B.A. in business management, Dowling College.
- **Philip Hayde**, Safety & Environmental Protection Division: B.S. in general studies, New York Institute of Technology (NYIT).
- **Michael Huskey**, Safeguards & Security Division: B.A. in psychology, State University of New York (SUNY) at Stony Brook.
- **Frances Ligon**, Equal Opportunity Office: B.S. in general studies, St. Joseph's College.
- **Michael Paquette**, Plant Engineering Division: B.S. in general studies, St. Joseph's College.
- **Douglas Ports**, Reactor Division: B.S. in liberal studies, SUNY at Stony Brook.
- **Jeffrey Taylor**, Equal Opportunity Office: B.S. in business administration, NYIT.

Call for Bowlers



Bowlers are still needed as full-time players in the Mixed League, which bowls in Shirley every Thursday at 6:30 p.m. Sign up as an individual or sign up with a minimum of three other people as a team — but sign up as soon as possible! Call Fern Simes, Ext. 3969.

Service Awards

The following employees celebrated BNL service anniversaries during the month of August 1991:

30 Years

Allen N. Goland.....App. Science
Thomas S. Malinowski.....S&EP
Louis P. Remsberg Jr......Chemistry

25 Years

Roland J. Baillargeon Jr...Staff Serv.
Leigh D. Hawkins.....Physics
Richard S. Horwitz..Comp. & Comm.
Robert D. Jansson....Mgmt. Info. Sys.
Roger J. Keily.....Sfgrds. & Sec.
Betty A. Organek.....Con. & Proc.
Muriel I. Pfeiffer.....Personnel
Augustus Prince.....Nuc. Energy

20 Years

Frances Brown.....S&EP
James T. Garrison.....NSLS

10 Years

David L. Alexoff.....Chemistry
Richard Chernis.....Cent. Shops
Mark K. Culp.....Plant Eng.
Kenneth B. Dobreuenaski.....S&EP
Willibald K. Eberl.....Cent. Shops
Katherine M. Einfeldt.....Physics
Ann C. Fort.....Nuc. Energy
Eloise K. Gmur.....Director's Off.
Dean B. Ince.....Accel. Dev.
Richard J. Rossetti.....Sfgrds. & Sec.
Daniel A. Schiappa.....Accel. Dev.
Walter H. Shaffer.....AGS
Kenneth W. Vitkun.....AGS
Susan E. Wells.....Mgmt. Info. Sys.
Paul J. Zahra.....S&EP

Arrivals & Departures

Arrivals

Margaret D. Alexoff.....Cent. Shops
Alexander Andolfi.....Accel. Dev.
Robert P. Crease Jr.....Director's Off.
Kurt D. Newman.....Biology
Jeffrey K. Williams.....S&EP

Departures

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

Gerhard Grubel.....Physics
Theodore R. Lehecka.....NSLS
Daniel Morganelli.....S&EP
Russell G. Tonkyn.....Chemistry
Maduwegedara A. Wickramaaratchi.....Chemistry
Ding-Wei Yu.....Chemistry

Film badges will be changed tomorrow. Please place your badge in its assigned rack space before leaving work today.

Classified Advertisements

Placement Notices

The Laboratory's placement policy is to select 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.

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 stated above, each listing does not necessarily represent an opportunity for all people.

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

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.

MK 0130. GENERAL SUPERVISOR, ELECTRICAL - Requires substantial experience in facilities electrical service functions, knowledge of electrical construction, maintenance, fire and security systems, and power distribution. In addition, previous supervisory experience, and good oral and written communication skills are required. A working knowledge of maintenance management is highly desirable. Will be responsible for control and efficient operation of the electrical service functions and coordinating the task of various electrical service units to ensure expeditious completion of assigned projects. Will provide assistance to supervisors and act as replacement in supervisor's absence. Plant Engineering Division.

OPEN RECRUITMENT - Opportunities for Laboratory employees and outside candidates.

DD 6112. DESIGNER POSITIONS - Requires AAS or equivalent and the ability to perform mechanical design functions with a working knowledge of engineering fundamentals, machine design, shop practices, welding and vacuum systems. Must be familiar with ANSI Y14-5-1982. Will be responsible for design projects from conceptual layouts to detailed working drawings. Experience in AUTOCAD, DOS/UNIX highly desirable. Alternating Gradient Synchrotron Department.

DD 0980. DRAFTER POSITION (term appointment) - Requires AAS or equivalent experience and a thorough knowledge of both electronic and industrial schematics, wiring diagrams and associated parts lists. Also requires complete working knowledge of analog and digital circuits, the ability to work from rough engineering layouts following accepted drafting procedures, and a familiarity with graphic symbols per ANSI Y32.2. PCAD experience highly desirable. Accelerator Development Department.

DD 0981. DESIGNER POSITION - Requires BS or equivalent and substantial experience performing professional-level design and engineering functions. Also requires AUTOCAD and a thorough knowledge of machine shop practices, ANSI Y14.4-1982 and DDD-1000. Experience in RF and cryogenic design highly desirable. Accelerator Development Department.

NS 6111. ENGINEERING POSITION - Requires BSME and five years' experience in general machine design and related manufacturing techniques. Strong background in thermal and stress analysis is required. Proven skills using CAD and CAE are highly desirable. Familiarity with accelerator systems and components such as vacuum, rf, high voltage, high current and/or conventional magnets very desirable. Alternating Gradient Synchrotron Department.

LF 0005. TECHNICAL POSITION - Requires an AAS degree in a scientific or technical field or equivalent, plus several years of pertinent experience. Required skills include instrument

(continued on page 4)

Classified Ads (cont'd)

design and fabrication, as well as experience with stepping-motor systems and high-vacuum techniques. Must be willing to work with outside users and assist in the operation of the user program. Will perform a variety of highly skilled technical assignments in support of the Department's beam line located at the NSLS. Biology Department.

LF 0037 BIOLOGY ASSOCIATE POSITION (part-time) - Requires a BS in biology or related field. Will work on DOE project "DNA Repair, Cytogenetics and Epidemiology." Primary responsibility will be to prepare and score slides of human lymphocytes for sister chromatid exchanges resulting from treatments in vitro with chemical/carcinogens. Biology Department.

LF 8360. SCIENTIFIC ASSOCIATE POSITION - Requires an MS in human factors, behavioral science, or related disciplines, and several years' experience in human factors related to process control. Responsibilities will include working as part of an interdisciplinary human factors team, which works on a variety of research projects in areas of human-system interface technology, organization and management, human performance, and reliability and training technology. Will work on issues related to supervisory control systems. Department of Nuclear Energy.

Motor Vehicles & Supplies

89 DODGE RAM CHARGER - 318 V-8, ac, a/t, p/s, p/b front (disc), p/b rear (anti-lock), trailer pkg., $11,500. 369-3899.

89 CHEVY CAVALIER - convertible, gray/black, loaded, new tires, 40k mi., $12,500. Bob, Ext. 4434.

89 SAAB 900 TURBO - convertible, red, tan int., orig. owner, built-in radar/alarm, low mi., excel. cond., $22,000. 997-8941.

89 FORD CROWN VICTORIA LS - 48k mi., new tires & brakes, power door locks, cruise, 4-dr., black. $8,900. Dan, Ext. 7271.

86 MERCURY TOPAZ - blue, 4-dr., sedan, p/s, p/b, excel. cond. Murray, Ext. 3189 or 3210 eves.

86 CHEVY SPRINT - silver, 2-dr., front-end damage, $500. Joe, pager 0925 or Ext. 2898.

86 CHEVETTE - a/t, ac, mint cond., 67k mi., $2,500. Manny Rosa, 286-9426.

86 CHRYSLER NEW YORKER - turbo, 4-cyl., 4-dr., leather int., digital dash, voice alarms, all options, mint, $5,400. Jim, Ext. 4040 or 289-0876.

86 COUGAR LS - clean, 80k mi., $3,500. Sassano, Ext. 3082.

86 ISUZU PICKUP - 4wd, 77k mi., 36k mi. on the eng., LS pkg., excel. cond., $4,200. Lloyd, Ext. 3163 or 288-1024 after 6 p.m.

85 CADDY SEVILLE - 4-dr., maroon w/tan leather int., $5.000 neg. 281-2399.

85 GRAND PRIX - a/t, ac, all power, new tires, battery, shocks v.g. cond. Dean, Ext. 4407.

85 MERCURY LYNX - 4-dr., ac, p/s, p/b, 36k mi., v.g. cond., $3,000. 475-1844 before 9 p.m.

85 FORD THUNDERBIRD - excel. cond., must see, $3,600 C. Kerr, Ext. 7100 or 924-4097.

85 PONTIAC GRAND AM LX-LE - 5-spd., 86k mi., excel. cond., $3,500. Helene, Ext. 4795 or 5617.

84 CHEVY CUSTOM VAN - 84k mi., 4 captain's chairs, table, bench, seat, bed, fully optioned, picture windows, $5,250. Roy, Ext. 7357.

84 BUICK REGAL - 40k mi. on new Goodwrench engine, new trans. & exhaust, ac, all power, $2,000. Frank, Ext. 4284 or 698-1176.

84 NISSAN SENTRA - ac, stereo cass., 2-dr., 5-spd., 81k mi., excel. cond., asking $1,400. Ext. 4369 or 399-6424.

83 FORD ESCORT - red, new tires, new brakes a/t, p/s, good cond., 73k mi., asking $900 neg. Barbara, 758-6892.

83 CHRYSLER LEBARON - 4-dr., a/t, p/b, p/s, p/w, ac, tape/fm, excel. cond., orig. owner, garaged, 68k mi., $1,995. John, Ext. 2509.

82 YAMAHA XS400HS MOTORCYCLE - 6k mi., many access., classy, $800 neg. 878-2702 after 6:30 p.m.

81 SUBARU - s/w, 5-spd., am/fm, runs well, $350. Mark, Ext. 4289.

Boats & Marine Supplies

29' THOMPSON DAYTONA - 1988, twin 190s, orig. owner, loaded, loran, radar, must sell. 878-6007.

20' CLAMBOAT - w/cabin, self-bailing, teleflex steering, fiberglass over wood, excel. cond., $600. 563-6680.

21' RINKER - 1988, cuddy, Mercury i/o, 175 h.p., low hours, trailer, mint, $10,500. Karen, Ext. 4772 or 447-2921.

21' THOMPSON - 1986, sport cruiser, w/full canvas, 8' beam, df, uhf, 190-h.p. Mercury cruiser i/o, in water, $7,500. Sue, Ext. 7235.

19' STINGRAY - 1989, 130 i/o, trailer, cuddy, electronics, full canvas, used 20 hours, $10,995. Tom, Ext. 4631 or 744-0681.

19' BAYLINER - Bowrider, 1987, 125 h.p., full canvas, low hours, excel. cond., must sell. Ext. 2642.

18' CELEBRITY CALIS - 1986, V-hull, 140-h.p. Mercury cruiser i/o, trailer, extras, mint cond., asking $7,900. 928-6551 eves.

16' WINNER - 1973, 50-h.p. Evinrude, extras, marina maintained, $1,100 or best offer. Ken, Ext. 3395 or 325-1537.

14' SUNFISH SAILBOAT - ready to sail, 2 adult life vests, $300. Jim, Ext. 2163.

BOAT TRAILER - Load Rite, galvanized, GVWR, 3,100 lbs. or 20' boat, power winch, excel. cond., $600. Bill, Ext. 4986 or 563-1940.

Tools, House & Garden

GARDEN HOSES - 2, Gering, ⅝", 75', brand-new, low temp., tire-cord, $15/ea.; extension cord, 100', outdoor, brand-new, $10. Eugene, Ext. 7113.

GENERATOR - Niagara, 4kW, w/extended-run oil supply & 5-gal. tank, test run only, $375. 724-1135.

JET PUMP - shallow-well, ½-h.p., 82-gallon glass-lined tank. Jerry, 363-6908.

FIREWOOD - ready, cut. $2/truckload. 744-5801.

LAWN MOWER - v.g cond., $100; assorted hoses, $5/ea.; sprinklers, $2/ea. Ext. 5097 or 9022 eves.

SNOW PLOW - Meyer, $250; Honda motor scooter, needs work, $300. Ext. 3082.

STORM DOOR - 36"x80", white, $20; Ext. 2679 or 472-6922.

TOPSOIL - fine, screened, delivered, 3-yard minimum. 696-6011.

WOOD STOVE - Vermont Castings, w/chimney, triple wall piping, 2+ cords of wood, $1,100. Steve, Ext. 4669 or 722-4821.

OCTAGON WINDOW - 29", insulating glass, never used, $75. E. Raka, Ext. 4727.

WINDOW - vinyl, double hung, full screen, 32" x 37½". Tony, 698-9274.

WINDOW - Anderson energy efficient, screen frame, 25½" x 40¾", new, never used, white, $150. Ext. 4611 or 286-2788.

Sports, Hobbies & Pets

AFRICAN CICHLIDS - many types of fish, $3 and up. Roy, Ext. 7357 or 878-5886.

COLLECTIBLES - boxed Jim Beam ceramic 5-cars Central RR train set, unopened, filled w/fifth of whiskey, $250 neg. Jerry, 281-5667.

FLUTE - Artly 18-0, needs tune-up, $75; Minolta Easy Flash camera, range finder, F-1.7 lens, $50. Janet, Ext. 2345 or 929-3910.

GOLF CLUBS - 9 irons, Titleist, $75; crib & mattress, $10; high chair, $5; 10 dozen canning jars, $12. 878-6637.

JACK LALANNE MEMBERSHIP - gold card, lifetime, $550. Anton, 467-8297.

LABRADOR RETRIEVER PUPPIES - chocolates & yellows, bred for large size, good temperament, great w/kids, reasonable. 924-5062.

LIGHT TABLE - Bishop graphics model #3201, self-standing, 25½" x 37½" surface area, $100. Bob McCarthy, Ext. 5265.

Audio, Video & Computers

CAMERA - Nikon F3Hp Md4, motor drive, flash, 35-200mm Tokina zoom lens. 929-4326.

COMPUTER - IBM-XT clone, 640k ram, two 5¼ drives, 21 meg hard drive, color monitor, $550. Neal, Ext. 2254.

COMPUTER - Dell 316SX, 40 meg drive, 3.5 hd VGA, monitor, printer, programs, $1,800. Keith, Ext. 5827.

RECORD ALBUMS - American classics, 33 rpm, excel. cond., make offer. Janet, Ext. 2345 or 929-3910.

Miscellaneous

BASEBALL TICKETS - 2, Mets vs. Expos, Tues., Sept. 10, 1:40 p.m., loge, section 22, row A, prepaid parking, $30/pair. Dick, Ext. 2911.

CONCERT TICKETS - 2, Grateful Dead, Sept. 18, Madison Square Garden, section 232, $60/pair. Joe, Ext. 4482.

DOG GROOMING SUPPLIES - combs, brushes, shampoo, leashes, discount prices. 473-6432.

ENCYCLOPEDIA - Colliers, 1960, 20-volume full set, excel. cond., $350. Eugene, Ext. 7113.

GREAT HORNED OWL - Franklin Mint, 14" tall, on base. 475-4199.

HUNTING KNIFE - $12; wicker basket, $20; TV VCR cabinet, $10; silk flower arrangement, $10; suitcase, $20; old barrel, $85. Kathy, 744-2203.

MICROWAVE OVEN - wooden desk, couch, twin-size bed, high chairs, Schwinn 10-spd. bike, fan, etc., moving, must sell. Ext. 4940 or 821-5833.

OPERA TICKETS - *Mother of Three Sons*, Sat., Nov. 2, 2 p.m., $40/ea. Joyce, 289-5770.

OPERA TICKETS - 2, Met, *Don Giovanni*, Sat., Oct. 19, matinee, balcony box, $20/ea. Ext. 4637.

SNOW SUITS - boys' sizes 18 months, 3T & 4. $20/ea. 281-1540.

Free

FREEZER - G.E., old & not too pretty, but works, you pick up. Keith, Ext. 5827.

REFRIGERATOR/FREEZER - 24 cu. ft., side by side. Bill, Ext. 4175.

REFRIGERATOR - old, G.E., works fine, you pick up. Bill, Ext. 7230.

SHED - wood, 6½'x20½', sturdy, you take away. Chris, 395-6112.

Lost & Found

FOUND - postal money order, near Medical Bldg. 212-316-9764.

Yard & Garage Sales

MANORVILLE - Sept. 6-15, Halsey Manor Road, pre-moving sale, 45 yrs. of accumulation.

Car Pools

FRESH MEADOWS, QUEENS - will drive. George, Ext. 5866.

Real Estate

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

For Rent

EAST PATCHOGUE - on waterfront, wildlife setting, $850/mo. + sec. 475-4199.

MASTIC - 1-bdrm. apt., furn., small, sep. ent., cable, single person, $450/mo. + sec. & refs. 281-7844 eves.

MILLER PLACE - 1-bdrm. apt., paneled kitchen, l/r, full bath, w/w, priv. ent., quiet neighborhood, $560/mo. includes all. 928-0093.

PATCHOGUE - 2-bdrm. apt., eik, full bath, w/w, clean, near Sunrise Hwy., $675/mo. + elec. 758-9835.

NORTH SHIRLEY - 2-bdrm. apt., l/r, full bath, priv. ent., 5 min. from Lab, full 2nd floor, $800/mo. incl. util. Joanne, Ext. 3415.

RIDGE - furnished studio apt., private, fenced-in yard, 5 min. from Lab., avail. end of Oct. $500/mo. 744-8632.

ROCKY POINT - 2-bdrm. house w/1-bdrm. downstairs apt., w/d, dw, fenced yard, priv., avail, 9/15, $800/up, $550/down, $1,250 all. 821-4147.

ROCKY POINT - free room incl. use of kitchen, l/r, washer, etc., in exchange for approx. 10 hr./wk. child care for a 5-yr.-old and/or light housekeeping, hours flexible. Dave, 821-7179.

ROCKY POINT - new, 2-bdrm. house, large kitchen, l/r, full bsmt., quiet area, no pets, $850/mo. + util. & sec. Ext. 2642.

RONKONKOMA - 1-bdrm. apt., newly redecorated, l/r-kit. combo, priv. ent., w/w, cable, single, nonsmoker, no pets, $600/mo. all. 467-8297.

CLAREMONT, NH - 2-bdrm. condo, antique shops, factory outlets, 10 min. to Lake Sunapee, 1 hr. to Lake Winnipesaukee, $330/wk, $225/wknd. Frank, Ext. 7749.

For Sale

BELLPORT VILLAGE - 3-bdrm. 5-yr.-old Col. l/r, d/r, fp, 2½ baths, oak floors, fin. bsmt., ig sprinklers, village rights, assum. 8.8% mortgage, 1st owner. Claudio, Ext. 2731 or 286-5579.

BROOKHAVEN - 3-bdrm. Cape, cedar shake, l/r, d/r, eik, spa rm., full unfin. bsmt. w/shop area, 2-car gar. w/shed, near boat ramp, low taxes, $195,000. Ext. 3844.

CENTER MORICHES - 4-bdrm. Col., l/r w/fp, d/r, eik, TV rm., laundry rm., 1½ baths, full bsmt., deck, gar., walk RR, shops, 10 min. to Lab, 100'x150', $189,000. Marilyn, Ext. 2259.

CENTRAL ISLIP - 3-bdrm. Cape, new bath, l/r w/bay window, eik w/greenhouse window, many improvements, shed, bsmt., good neighborhood, near all, $85,000. Brian, Ext. 7519 or 234-9487.

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

EAST MARION - beautiful 1-acre bldg. lot, adjacent to Greenbelt, walk to Sound. 325-0447.

HAMPTON BAYS - 5-bdrm. m/d ranch, porch, ½ acre, wooded, fp, oak floors, igp, wooden deck, close to ocean, bays, school, town & more. $165,000. Charles/Ann, 728-1931.

MIDDLE ISLAND - Coventry Manor, 3-bdrm. townhouse, 2 baths, kit., l/r, d/r, cac, 5 appl., patio, pool, tennis, clubhouse, carpet, ask. $102,000. Rosalie, Ext. 3160 or 289-5704 after 5 p.m.

MT. SINAI - 4-bdrm. Colonial, l/r, d/r, eik, den, 2½ baths, bsmt., 2-car gar., igp, new fence, 0.4 acre, $170,000. 331-3785.

RIDGE - 3-bdrm. townhouse, 1½ baths, cac, w/w, all appl., patio, storage rm., attic, low monthly maint., 5 min. to BNL, $80,000. Mary, 924-4328.

RIDGE - 2-bdrm. townhouse, 1½ baths, new appl., w/w, attic, shed, low monthly maint., 3 mi. to Lab, $78,000. Rob, 924-2832.

RIDGE - 4-bdrm. high ranch, 2 yrs. old,. 1 acre, 2 baths, extra-large master bdrm., fp, skylights, ceramic tile, deck, possible m/d, 5 min. from Lab, $168,000. 924-9049.

SHIRLEY - 3 bdrm., l/r, d/r, full fin. bsmt., attached gar., large fenced yard, w/w, quiet neighborhood, $113,900.

SHIRLEY - 3-bdrm. ranch, designer bath w/skylights, full bsmt. w/laundry rm., all oak floors, d/r, l/r, sec. lights, fully fenced on 100'x'100', $110,000. Ext. 3531 or 281-7578.

SHOREHAM - 4-bdrm. brick Cape, eik, playroom, gar., full bsmt., 1½ baths, remodeled, conven. loc., SWR SD, $135,000. Janet, Ext. 2345 or 929-3910.

SHOREHAM - 4-bdrm. Cape, attach. 2-car gar., 2 fp, 1½ baths, d/r, 1-acre treed lot, new appl., extras, estate sale. Vi, Ext. 5169 or 744-6043.

SHOREHAM - 3-bdrm. ranch, ½ acre, SWRSD, low taxes, large eik, d/r, l/r, den, storage/workshop rm., cac, gas heat, all appl., prof. landscaped, $145,000. Ext 2833.

YAPHANK - Whispering Pines, 3-bdrm. townhouse, two baths, a/c, bsmt., gar., fp, $120,000, neg. 924-2726.

STUART, FL - waterfront condo, 2/2, screened porch, pool, clubhouse, sauna, boat dockage, furn., $81,500. Beth, Ext. 3555 or 472-0706 eves.

WESLEY HILLS/SPRING VALLEY, NY - 11-rm Col., 10 yrs. old, cac, 4 bdrm., 1 acre, fenced yard, 2-car elec. gar., fin. bsmt., new 12'x24' deck, low tax, alarm system. Eugene, Ext. 7113.

HUBBARDTON, VT - 38 deeded acres situated on town-maintained road w/power & telephone, largely wooded w/view of Lake Bomoseen, ask. $34,000, neg., terms avail. Tom, Ext. 2833.

Wanted

BUS TRIPPERS - 90 to go w/Art Society up Hudson to Storm King Sculpture Park & antique Boscobel house, Oct. 19, $26/all. Liz, Ext. 2346.

CAR SEAT - for toddler, good cond. Ext. 2910 or 698-6259.

EXTENSION MODULES - for TI 99/4A. John, Ext. 2788.

HOUSE - 3 bdrm. in Moriches-Easport area, s. of 27A, large downpayment, financing preferable. Beth, Ext. 3711.

ICE SKATES - children's sizes from approx. 10-3. Tom, Ext. 4631.

OLD DOLLS - older the better. 475-4199.

PET LOVER - to care for cat for 1 mo., 9/12-10/15, in their home, will pay for service/food. Jean Howard, Ext. 3673.

POOL LINER - used, any size. Rich, Ext. 7013.

ROCKING CHAIR - for mother-to-be, natural or wicker, reasonable. Carol, 821-9547 after 6 p.m.

ROOF LUGGAGE RACK - or bar that is supported off the rain gutter. Garry, Ext. 5289.

TRAINS - Lionel & American Flyer & accessories, top $ paid. Bruce, 924-4097 after 5 p.m.

WEIGHTS - metal free weights & bench. Chris, Ext. 2022 and 395-6112.

WET SAW - for cutting bricks, rent or buy. Tony, Ext. 698-9274.

Services

*Services are listed in the first **Bulletin** of every month as a courtesy to BNL employees. They are neither screened nor recommended by the **Bulletin**. Services forms are available in the **Bulletin** lobby, Bldg. 134.*

ACCOUNTING - bookkeeping, general accounting & tax service avail. for small business or individual. Naida, 878-5886.

ALTERATIONS - men's & women's clothing, children's back-to-school alterations. Theresa, 289-0898.

AUTOMATIC LAWN SPRINKLERS - free estimates, prof. layouts, repairs, alterations & additions, prompt, courteous service. Lou. 928-7042.

ART INSTRUCTION - adults/children, your home or mine, certified art teacher & gallery painter. Vincent Nasta, 395-6520.

BABY-SITTING - reliable, flexible hours, in your home or mine, M-F. 821-1721.

BABY-SITTING - Shirley-Mastic area or on site, responsible teenager, fun w/kids, especially young ones. Vicki, 281-7568.

BABY-SITTING - experienced 13-yr.-old, Shoreham-Wading River area, very good w/young children. Stacy, 929-5945.

BAKING - brownies, double batch w/choc. chips, $10/9x12 pan; birthday cakes, inscribed, del. on site, $8/9x12 pan. Barbara, Ext. 3381 or 281-4208.

BLACKTOP DRIVEWAYS - sealing, coating, repairing. 475-4382.

BRICKWORK - masonry, patios, walks, swimming pools, retaining walls, landscaping ties, Belgian block, 25 yrs. exp., Lab discount. Tony, 698-9274.

CAPS - chimney caps, custom-made stainless steel or copper, all size fireplaces, wood, oil & coal, flues, Lab discount. Mike, 821-5526.

CARPENTER - all home improvements, decks, kitchens, baths, dormers, windows, floors, steel stud work, 10% Lab disc. Mike, 737-1506.

CARPET/UPHOLSTERY CLEANING - spot, pet stains, odor removal, auto interior, fabric protector, free est., Lab discount. Jerry, 924-6019, days.

CENTRAL AIR CONDITIONING - installation & service, quality workmanship, reasonable rates. John, 467-5827.

CERAMIC TILE - installation, bathrooms, kitchens, foyers, etc., repairs, cheap prices, quality work, free estimates. Patrick, 475-8504.

CLOWNS - add a very special touch to your child's next party. 696-8248.

COUNSELING - exp. licensed CSW will help w/individual, marital or fam. problems, confidentiality guaranteed, reas. rates. Linda, 929-5945.

ELECTRONIC REPAIR - TVs, stereos, VCRs, toasters, vacuums, I fix it all, very reasonable. George, 585-6119.

FACIALS - without surgery, firms, tightens, massages & tones, facial lift system & usage video, $19. Kathy, 286-8582.

HOUSECLEANING - reliable & flexible hours, M-F. 821-1721.

HOME IMPROVEMENTS - vinyl siding, doors, windows, driveways, all phases concrete work. Carl, 698-9274.

HOME IMPROVEMENTS - complete carpentry services, roofing, siding, decks, windows, extentions, licensed & insured. Joe, 399-0828.

HOUSEKEEPING - house dirty? need cleaning? call Dirtbusters, refs., cheap. Cathy, 281-0366.

KAYAK LESSONS - touring & river playboats, $70 for 5 hrs. + 3 hrs. free time, equip. supplied, intro to kayaking, 2 hrs. for $25. Ernie, 281-7873.

LANDSCAPE CONSTRUCTION - there's nothing I can't do, services unlimited, so is my equip., call for free estimate. Dennis, 395-6055.

LANDSCAPING CLEANUP - general cleanup, shrubs moved, reasonable. Ernie, 698-9274.

LAWN SERVICE - cleanups, free fertilizer w/cleanup, all landscaping needs, we do attic & basement cleanups, free estimates. 737-8281.

LEGAL SERVICES - wills, closings, traffic court, all legal matters. 487-9065.

LOCKSMITH - sales & service, 10% Lab discount, keys cut during lunch. Pete, 399-2813 after 5 p.m.

MAILBOXES - distinctive mailboxes, custom-made and installed, heavy-gauge metal, nine colors, Lab discount. Mike, 821-5526.

NAIL WORKS - fiberglass, acrylics, wraps, special nail art, free for new customers, full sets, $25, certified nail tech. Lisa, 874-4123.

PAINTING - interior/exterior, taping, spackling, wallpapering, power washing, insured. James, 399-4912.

PARTIES - or catering, make all your parties special events, every detail covered, all size parties, any occasion. Rosalie, 289-5704.

PARTY TENT - 20'x30' w/side curtains, we set up & take down, $250/38 hrs. 321-2889.

ROTOTILLING - Troybilt custom service, gardens & lawns. Bob, 732-9517.

SHEETROCKING - & spackling. free estimate. Kevin, 563-9855.

SKYLIGHTS - complete, prof. service, cleaning, preventive maint., installations. Joseph, 924-6019.

SOLAR NAILS - full set, $25; fill-in, $15; manicure, $10. Carol, 399-3446.

STAINED GLASS - custom-made, panels, boxes, suncatchers, clocks, nightlites, wedding invitation frames. Mark, 744-9308.

STUMPS REMOVED/LAND CLEARING - with rake on 450 loader, $70/hr. Tom, 878-1060.

TREE SERVICES - Bob, 281-2746.

TROPICAL FISH - maintenance service, professional setups to satisfy your tastes, complete maintenance programs avail. Roy, 878-5886.

TUTOR - teacher will tutor your child, reasonable rates. 325-8331.

WINDOW CLEANING - all work squeaky clean, reliable, courteous service. 928-3189, leave message.

In Appreciation

Jerry's family joins me in thanking all of his friends for their help and kindness during the past few weeks. — Viola Malloy

Thanks for the sympathy given to Fred B. Krieger's family by all the special people who worked with my husband. Sharing your memories of Fred with me was a great comfort for all of us. — Joan Krieger

Ads left out of this issue due to lack of space need not be resubmitted to appear in the next issue.