BROOKHAVEN BULLETIN
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BROOKHAVEN NATIONAL LABORATORY

Incredible (and Useful) Shrinking Compound Discovered at HFBR

A team of scientists working at BNL's High Flux Beam Reactor (HFBR) has discovered a compound that acts like none other known on earth, and that might someday be used to make up for the shortcomings of more mundane materials.

The compound, known as zirconium tungstate, has been found to *shrink*, not expand, when heated from temperatures near absolute zero all the way up to 1,050 kelvins (590.3 degrees Fahrenheit), researchers from BNL and Oregon State University report in today's issue of *Science*.

And even though the compound's shrinking was on the order of nanometers (billionths of a meter), a sophisticated instrument at the HFBR was able to detect it.

An Oddity With Potential

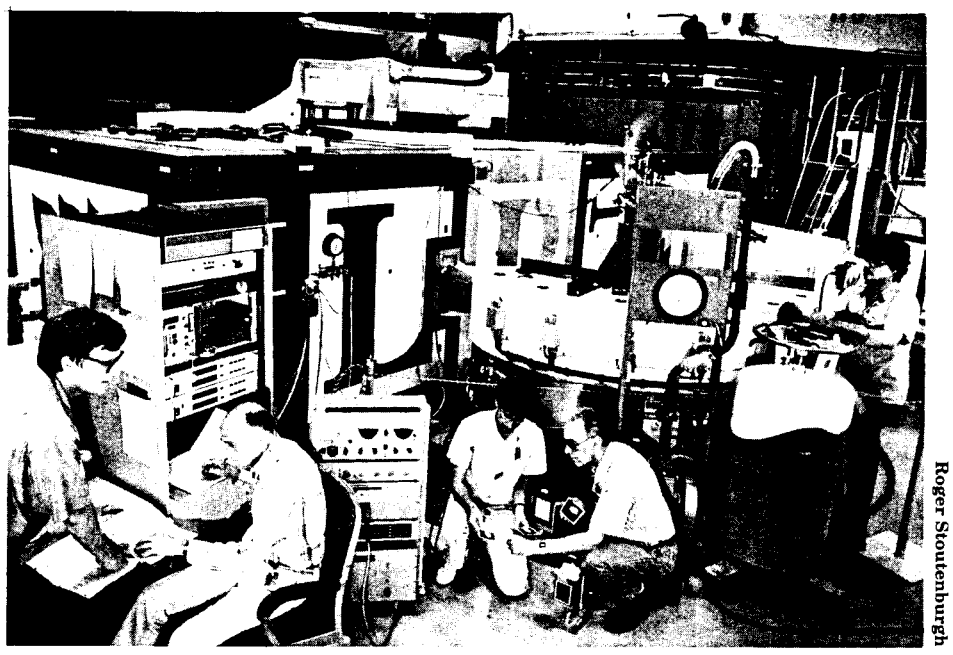
Solid objects usually expand when heated and shrink when cooled, as the bonds between the atoms in their molecules lengthen and shorten.

But instead of melting or expanding like molecules of other materials exposed to high temperatures, or shrinking in one direction like the molecules in some heat-resistant bakeware, the molecules in solid zirconium tungstate experienced what is termed negative thermal expansion in all directions.

This strange behavior makes the compound a strong candidate for future use in things like circuit boards and telescopes, whose precise parts today can warp and crack when molecules expand due to temperature changes.

The shrinking zirconium tungstate, it is thought, would counteract the expansion of conventional materials, creating products that neither contract nor expand when heated or cooled. The Oregon State researchers who developed the material have al-

(continued on page 2)



Roger Stoutenburgh

At the High Flux Beam Reactor beam line where the shrinking material was studied are: (from left) Tom Vogt, Laurence Passell, Shu Cheung, Paul Schaedler and James Biancarosa, all of the Physics Department.

Community Forum Sees Lots of Activity During March

The community forum, organized by community members in January to provide an additional means by which BNL and its neighbors can share concerns and information, met on several occasions in March.

On March 12, representatives of the U.S. Environmental Protection Agency and the New York State Department of Environmental Conservation came to BNL to address the group on permits and regulations that apply to Lab operations. At Longwood High School on March 19, BNL's Doug Paquette, Safety & Environmental Protection Division (SEP), shared information on BNL's groundwater monitoring programs in both SEP and the Office of Environmental Restoration (OER).

Then, on March 20, a subgroup of the community forum met at Brookhaven with personnel from SEP and OER to discuss independent sampling of monitoring wells on site. And on March 28, the agenda at Longwood High School included presentations by the New York State Departments of Health and of Environmental Conservation and by the Suffolk County Department of Health Services, all to address health concerns.

At the March 28 meeting, in response to questions raised at a previous meeting about radionuclides in the water provided by the Suffolk County Water Authority, the county announced that the Water Authority supply wells in the vicinity of BNL will now be tested several times a year for radionuclides. The county also summarized historical data on radionuclides in groundwater in various locations on Long Island, showing that it is not unusual to find radioactivity occurring naturally in groundwater.

Yosef Shiloh

Van Slyke Distinguished Lecture

New Insights Into Cancer Biology

A recently discovered gene known as *ATM* may hold important clues to how cancer develops and spreads.

About one in 100,000 people worldwide have two defective copies of the *ATM* gene, and, as a result, suffer from the genetic disorder known as Ataxia-telangiectasia. The ailment is characterized by neurodegeneration, prominent blood vessels, immune deficiency, hypersensitivity to x-rays and a predisposition to certain types of cancer.

Another one percent of the world population — some two million people in the U.S. — have one defective copy of the *ATM* gene. They have up to a sixfold greater risk for developing certain types of cancer. Among women, the greatest increased risk is for breast cancer.

Until now, it has not been possible to identify individuals with a single defective *ATM* gene. But the investigations of Yosef Shiloh, an associate professor of human genetics at the Sackler School of Medicine of Tel Aviv University in Israel, may soon change that. Shiloh, the leader of the international team that recently identified the *ATM* gene, is working to understand the physiological role of the *ATM*-gene product in the development of cancer.

Shiloh will deliver the next Donald Van Slyke Distinguished Lecture on Wednesday, April 10, at 4 p.m. in Berkner Hall. In his lecture, entitled "New Insights into Cancer Biology: Ataxia-telangiectasia and the *ATM* Gene," Shiloh will discuss his findings concerning the link between the *ATM* gene and cancer. He will also outline his plans for further research in this area.

Yosef Shiloh earned his B.S. in biology from the Israel Institute of Technology in 1974, and his M.S. and Ph.D. in 1977 and 1983, respectively, from Hebrew University of Jerusalem.

In 1979, Shiloh came to the U.S. as a visiting research associate at the University of Chicago, and again, in 1983, to take a two-year position as postdoctoral fellow at Harvard Medical School and Children's Hospital of Boston. Upon returning to Israel in 1985, Shiloh joined the staff of the Sackler School of Medicine. In 1992-93, he was a visiting scientist at the Howard Hughes Medical Institute.

Among numerous awards and fellowships, Shiloh's recent distinctions include the Richard M. Goodman Fellowship in Jewish Genetic Diseases, in 1992, and the American Cancer Society International Research Fellowship, in 1993.

Known as the initiator of modern clinical chemistry, Donald Van Slyke served as BNL's Associate Director for Life Sciences, 1948-51. In 1956, he resumed full-time research at Brookhaven, until his death at age 88. The lectureship is funded by private sources, with a donation from Associated Universities, Inc. —Diane Greenberg

Coming Up

Ilan Ben-Zvi, a physicist in the National Synchrotron Light Source Department, will give the 315th Brookhaven Lecture on Wednesday, April 17, in Berkner Hall. His talk on "Catching Waves and Making Waves: Laser Accelerators and Their Inverses" will begin at 4 p.m.

Roger Stoutenburgh

Greetings, From Kids to Seniors

"Happy Easter!" is the message from the youngsters of the BNL Child Development Center (CDC) to the seniors of Coram and Shirley who receive hot meals from the Brookhaven Nutritional Center (BNC). Sponsored by the American Red Cross, this center has been operating since 1985, when the Lab offered the use of the kitchens in the former Medical Research Center. Every weekday, BNC staff prepare about 650 hot meals for delivery to the homebound and to senior citizens' centers in the area. And, since 1993, all the CDC children, aged from three to five, have been adding their sunshiny greetings to the spring holiday meals delivered to the homebound. Pictured at the nutrition center, at the ceremonial "handing over" of the artwork, are: young CDC representatives (front, from left) Brooke Johnson, Taryn Boucher, Kenneth Ehrlich and Christine Cummings; and (back, from left) BNC driver Donald Lydick; CDC Director Deborah O'Neill, holding Rebecca Ehrlich; BNC drivers Karin Deldalle and Kim Nolan; BNC Supervisor Joan Kalivas; and BNC driver Bunnie McDonald. —Liz Seubert

Survey Says: You Love the Bulletin, but You Want More From It

Over 700 on-site readers — almost a quarter of the Lab's employees — responded to the Brookhaven Bulletin's Employee Survey of last December.

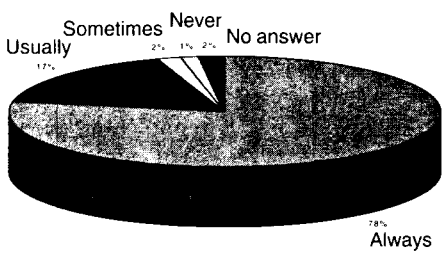
In general, the respondents like the Bulletin and look forward to getting it on Friday. But there was also a strong message: Our readers want more information about the Laboratory's problems and future plans.

Coming at a time when the Lab is being confronted by the local community and the media on many issues, these results gave strong impetus to our devoting a great deal more space in the Bulletin to informing employees and presenting the Lab's point of view.

Given the Bulletin's limited space, this intense coverage may seem to have taken over — to the exclusion of our usual coverage about the Lab's research and activities. But we feel that, while BNL is going through this difficult period, there is no more important task for the Bulletin than to keep employees informed and able to respond intelligently to their family members, neighbors and friends when they are asked questions about Brookhaven.

Some of your responses about what you read and what you think of it are summed up in the accompanying charts and box. In addition, many of you took the time to elaborate on the things you think we're doing right and wrong.

Do you look forward to getting the Bulletin?



For example, many of you felt the Bulletin prints too many stories about science, physics and lectures, as well as the AGS, NSLS and RHIC. You want to read more about the HFBR, budgets, chemical sciences and biology.

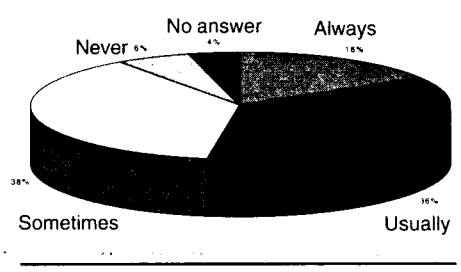
Also, several respondents said there are not enough stories about people, specifying support staff, individual employees and human interest.

How else could the Bulletin be improved? Readers gave lots of good suggestions for stories, so we'll be using that list for story ideas for some time.

Many respondents want to see the Bulletin print letters to the editor. Unfortunately, letters have come to the editor infrequently over the years, and those that have come rarely have addressed issues of interest to the Bulletin's general readership.

However, with the Bulletin's now covering more provocative topics, perhaps our readers have more questions or comments that they would like to share with Lab community. The editor welcomes your letters, and if enough people have similar comments, we will address them in the Bulletin.

Do you read most science stories in full?



Other repeated comments concerned format rather than content. You'd like color photos or some color in our printing, and you'd like us to be longer, if necessary, to accommodate all the ads in a given week. We'd like that too, of course, but budget realities preclude our adding more color or length any time soon.

Two other of your wishes we can accommodate: First, you'd like electronic access to the Bulletin on the World Wide Web. We're working on that now and hope to announce an active website for the Bulletin soon.

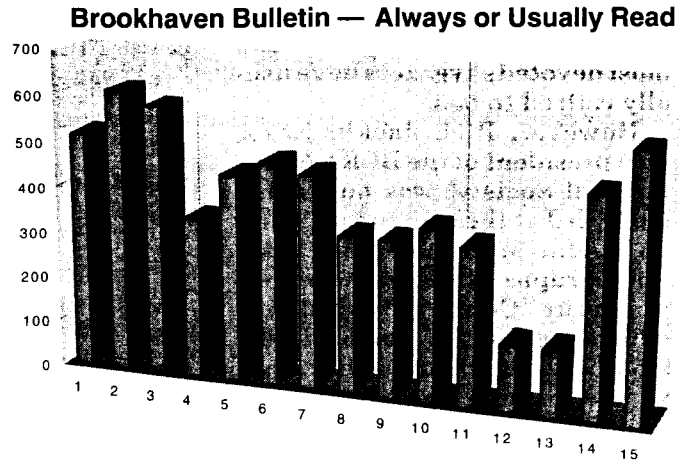
Second, you'd like a more modern layout, and we couldn't agree more. As familiar and serviceable as the Bulletin is, it's looked about the same for almost 20 years now. Our goal is to give the Lab's newspaper a facelift to kick off Brookhaven's 50th anniversary year in 1997.

In sum, your response has been welcome and valuable. We'll be using your input as a guide, and we hope it won't stop with your survey submittal. Please feel free to contact the Bulletin with your comments or suggestions by calling Ext. 5054, writing to Bldg. 134 or sending e-mail to acohen@bnl.gov. — Anita Cohen

Types of Stories:

1 science
2 administrative
3 issues in the media
4 lecture
5 award
6 photo w/long caption
7 employee feature
8 club/group feature
9 obituary
10 club/group notices
11 Healthline/Outreach
12 sports scores
13 cafeteria menu
14 job postings
15 classified ads

Brookhaven Bulletin — Always or Usually Read



Survey results show that most Brookhaven Bulletin readers always or usually read science stories about current Lab research (516); administrative stories about budgets, benefits changes, etc. (615); stories clarifying BNL issues that may be of interest to the local or national media (587); and classified advertisements (569). While most other story categories achieved respectable ratings among our readership, proving more popular than not, two areas clearly had fewer fans: the cafeteria menu (141) and the sports scores (143). Since the menu had been running only sporadically anyway, we have permanently stopped printing it. However, because we know that the scores are very meaningful to those involved in BERA sports, we will continue to run them, though, as always, we reserve the right to "bump" scores — and classified ads — as necessary to make room for other items.

If You Could Describe the Bulletin In One Word, What Would It Be?

"Informative" was by far the most common response to this question, garnering 164 votes. Others in the top six were: good (42), excellent (38), interesting (34), great (24) and useful (12).

Other positive responses included: needed, enlightening, treat, welcome, helpful, anticipated, notable, versatile, worthwhile, relevant, unifying, supercalifragilisticexpealidocious, effective, unique, TGIF, essential, professional, resource, valuable, broadening, indispensable, superior, diverse, clear, comprehensive, timely, asset, consequential, readable and reliable.

A bit less enthusiastic were: OK, adequate, predictable, average, satisfactory, noncontroversial, traditional, science, suitable, acceptable, classifieds, sufficient, upbeat, inexpensive, consistent and family.

Negative adjectives included: bland, technical, superficial, starchy, vanilla, trivial, sugar-coated, out-of-date, old-fashioned, frill, superfluous, yawn, dated, ineffective, tame, dull, infomercial, irrelevant, dry and propaganda.

Shrinking Compound (cont'd.)

ready entered a technology-transfer agreement with one company.

List of Users Expanding

The Oregon State zirconium tungstate sample was one of more than a hundred brought or sent to the HFBR's H1 beam line last year. There, a team led by BNL physicist Tom Vogt operates a powder neutron diffractometer, a powerful instrument built by Vogt that can sort out the precise atomic structure of complicated solids.

The instrument makes use of subatomic particles called neutrons, which are produced in the reactor's core and channeled to the diffractometer through the beam line. The HFBR gives scientists a constant flow of neutrons for their experiments, unlike a typical nuclear power reactor, which operates at a hundred times the HFBR's power level but is designed to give off heat that can be used to produce electricity.

The powder diffractometer allows neutrons to pass through a small sample of the material being studied. When neutrons hit the individual atoms within the sample, they scatter, or diffract, onto the instrument's detector. The patterns made by neutrons in the detector can then be analyzed by a computer to give a three-dimensional view of the material's internal atomic structure. Neutrons offer an advantage over other methods, since they allow detection of "light" elements, such as oxygen, as well as "heavy" elements, such as tungsten and zirconium.

At the HFBR, the material was heated and cooled to different temperatures in the diffractometer and examined. The resulting diffraction pattern allowed the exact location of each zirconium, tungsten and oxygen atom of the sample to be determined. Careful analysis of the atoms' location shifts over the entire temperature range revealed the surprising finding.

Vogt offered a possible explanation for the compound's unusual behavior. "It is thought that the oxygen atoms within the compound vibrate more strongly at increased temperatures, pulling the zirconium and tungsten atoms together," he said.

The BNL instrument produces higher-resolution images than any other instrument of its kind. It was able to sort out the atomic structure of zirconium tungstate down to a precision of 0.0004 nanometers. The distance between zirconium and oxygen atoms in the compound is around 0.2 nanometers, while the tungsten and oxygen atoms are about 0.18 nanometers apart.

The instrument was built in 1993 through funding from the U.S. Department of Energy's Office of Basic Energy Sciences. (For more on this instrument and its uses, see the 1994 *Brookhaven Highlights*, Reactor Division section.) — Kara Villamil

50 YEARS AGO THIS WEEK

This series, which recounts the earliest days of Associated Universities, Inc. (AUI), and BNL, will run as appropriate throughout 1996 and 1997, the 50th anniversary years of AUI and BNL, respectively.

• **April 8, 1946** — The Initiatory University Group's Subcommittee on Contracts holds its first meeting. The committee includes chairman Henry Smyth, Princeton University, and representatives from the administrative departments of four of the other universities sponsoring a research laboratory in the northeast: George Brakeley, Princeton; Joseph Killian, Massachusetts Institute of Technology; P. Stewart Macaulay, Johns Hopkins; and George Pegram, Columbia.

Asked to consider the relative merits of three possible mechanisms for contracting for the laboratory's operation — a single university; an industrial, as opposed to a nonprofit, organization; or a new corporation formed by the universities as a contractor — the members of the subcommittee agree unanimously on some form of inter-university corporation. Pegram had already examined in some detail the methods of establishing such an organization of universities and, with J. Hillis Miller, Deputy Commissioner of Education in New York State, he had explored the possible ways that such a corporation might be formed. *(To be continued on April 12.)*

Look for 1996 Benefit Summary

Next week, the Human Resources Division will provide eligible employees with summaries of their individual benefits containing information on each employee benefit, as well as on the coverage held under each. The information will be as of March 1996.

In Memoriam

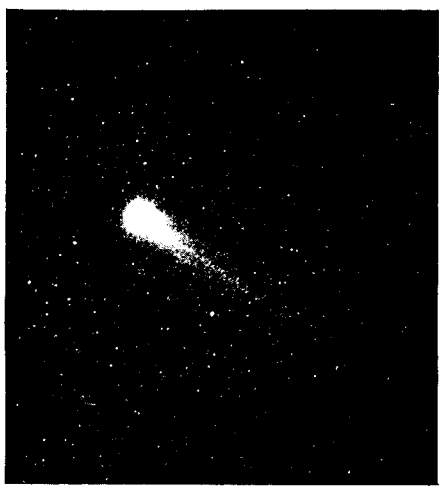
Frank German, who retired from the Lab with 35 years of service on September 30, 1982, died on March 3. He was 74. He had started at BNL on September 22, 1947, as an operating engineer B in the Grounds Section of the then six-month-old Laboratory, and retired from the Biology Department as a staff assistant. He is survived by his wife Mary German, who retired from the Chemistry Department in 1984.

Shots in the Dark

Everybody's watching the latest comet. But, by 3 a.m., even the most devoted skygazers have usually retired to bed.

However, Rick Jackimowicz, vice president of the BERA Astronomical Society, was out in his backyard at three in the morning on Sunday, March 24, taking these photographs of the 93,000-miles-per-hour Comet Hyakutake, which has lit the northern sky since mid-March and will remain visible through April. Named for Yuji Hyakutake of Japan, who first spotted it on January 30, the comet is believed to have passed by Earth before, about 18,000 years ago.

"Several people have asked if the Astronomical Society would be arranging a viewing of the comet," said Jackimowicz. "The snag is that the power line that goes to our observatory is no longer operating, and a generator is very inconvenient. But, for this comet, it's not necessary. You can see it well with just a small telescope or binoculars. And as for taking photos — the most amazing thing is that it's so easy now. I've been doing astrophotography for 20 years, but the films available today are so excellent that even simple equipment gets good results."



For these photos, Jackimowicz used ASA 12,500 film for a 30-second exposure — shooting the view above through a five-inch refractor telescope, and the one on the left through a 300-millimeter telephoto lens. Both are available on the World Wide Web at http://www.durhamnews.net/~qhc856/comet.htm; Hubble Space Telescope images of the comet are at http://www.stsci.edu/pubinfo/PR/96/14.html.

Although the society's 16-inch telescope is not being used at present, Keith Power, president, Ext. 7772, and Jackimowicz, Ext. 3803, welcome calls from anyone interested in astronomy or astrophotography. —Liz Seubert

The Winners Are...

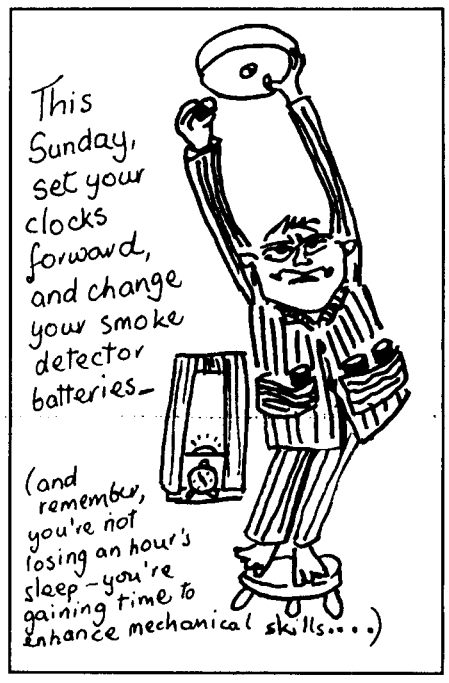
Charles Gardner, Alternating Gradient Synchrotron (AGS) Department, and Ed Meier, Physics Department, have been elected to the Executive Board of the Brookhaven Employees Recreation Association (BERA).

Charles Gardner

Ed Meier

Chosen by BERA members in elections held the week of March 25, they will replace outgoing BERA Executive Board members April Donegain, Financial Services Division, and Skelly Frei, Reactor Division.

On May 1, Gardner and Meier will join the other six Executive Board members: Patti Bender, Plant Engineering Division; Augie Hoffmann, Physics Department; Bob Marascia, AGS; Luis Nieves, Siemens Rolm Communications; Bridget Ramos, Department of Advanced Technology; and Edward Sperry IV, Relativistic Heavy Ion Collider Project.



Speakers Bureau

The following speakers have given talks on behalf of the Laboratory:

• **Jan Naidu**, SEP: St. Louis de Montfort Parish Environmental Committee, "BNL Environmental Issues," January 2.

• **Dorry Tooker**, DO: Mastic Beach Property Owners' Association, "BNL & the Next Century," January 4.

• **Nina Leonhardt**, DO: Dayton Avenue Jr. High School, Manorville, "Careers at BNL," January 10.

• **Sydell Lamb**, Bio.; **Abass Wessen**, PE: Brookhaven Learning Center Career Day, "Careers at BNL," January 17.

• **Brenda Laster**, Med.: Long Island Chapter of American Society for Metals, "Cancer Therapies," January 17.

• **Nicholas Thomas**, RHIC: Seaford High School Career Day, "Careers at BNL," January 24.

• **Jim Davis**, retired: Islandia Senior Citizens' Group, "BNL in General," January 25.

• **Kathleen Geiger**, OER; **William Gunther**, OER; **Jan Naidu**, SEP: Unitarian Universalist Fellowship, Bellport, "BNL's Environmental Issues," January 28.

• **Steven Dewey**, Chem.: Eastport School District, "Science, Kids & Education," February 1.

• **Jan Naidu**, SEP: Manhasset Middle School Environmental Club, "BNL's Environmental Issues," February 9.

• **Terri Lacker**, Reactor: Society of Women Engineers' Week, SUNY at Stony Brook, "Careers at BNL," February 20.

• **Dorry Tooker**, DO: Riverhead Senior Citizens' Club, " Technology Transfer at BNL," February 27.

• **Mona Rowe**, DO: Southampton College Public Relations Class, "Public Affairs at BNL," February 29.

• **Kathleen McIntyre**, SEP; **Gary Schroeder**, SEP; **Warren Voegelin**, SEP: Masonic Lodge, Riverhead, "BNL's Environmental Issues," March 6.

• **Donald Gardner**, Phys.: Harborfields High School Career Awareness Day, "Careers at BNL," March 13.

• **Joanna Fowler**, Chem.: Women of Distinction Program, U.S. Food & Drug Administration, "PET & Drug Research," March 13.

• **Jan Naidu**, SEP; **Gary Schroeder**, SEP; **Warren Voegelin**, SEP: Masonic Lodge, Smithtown, "BNL's Environmental Issues," March 13.

• **John Post**, retired: St. John's School, Riverhead, "BNL's Environmental Issues," March 14.

• **Kathleen McIntyre**, SEP; **Jan Naidu**, SEP; **Mona Rowe**, DO; **Gary Schroeder**, SEP; **Warren Voegelin**, SEP: Masonic Lodge, Southampton, "BNL's Environmental Issues," March 15.

• **Jan Naidu**, SEP; **Edward Richards**, SEP; **Gary Schroeder**, SEP; **Warren Voegelin**, SEP: Masonic Lodge, Greenport, "BNL's Environmental Issues," March 20.

• **Anne Meinhold**, DAS: Women's History Month Event, Bellport Middle School, "Careers for Women at BNL," March 25.

• **John Carter**, OER; **Mary Dernbach**, OER; **William Gunther**, OER; **Jan Naidu**, SEP: Wading River Civic Association, "BNL Environmental Issues," March 27.

BROOKHAVEN BULLETIN

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The Brookhaven Bulletin is printed on paper containing at least 50 percent recycled materials, with 10 percent post-consumer waste. It can be recycled.

New York Taxes: Some Good News

Believe it or not, BNLers should notice a slight *decrease* in the New York State income tax that BNL withholds from their paychecks, starting this month. The change results from slightly increased deduction allowances and reduced tax rates under the revised personal income tax law.

Employees who are paid weekly should have begun seeing the change in this week's paychecks. Monthly employees will first see the impact in their April paychecks.

Rifle & Pistol Club

The Rifle & Pistol Club meets on the second Wednesday of each month, so the next meeting is April 10, in Room 202, Bldg. 911B, at noon. For more information, call Otto Jacobi, club president, Ext. 3471.

Menopause Workshop

A three-session workshop on the biomedical, psychological and social issues involved in menopause will be offered by the Health Promotion Program and the Employee Assistance Program to female BNLers on Tuesdays, April 16, 23 and 30. The final session will be devoted to participants' questions and concerns about menopause.

The workshop is limited to 12 participants. To register or for more information, call Mary Wood, Ext. 5923, or Dianne Polowczyk, Ext. 4567.

Adult Fluoride Study

This is the final year of the Adult Fluoride Study, which includes 3,878 active subjects, 360 of whom are BNLers. Dental appointments for the latter group have been scheduled for April 15-19, in the North Room of the Brookhaven Center. Anyone who has not yet been scheduled or needs to change an appointment, should call Robin Johnson at the School of Dental Medicine, State University of New York at Stony Brook. For other information, call Mary Wood, Ext. 5923.

Closings Coming Up

The following areas have scheduled closings during the next week:

• The **Research Library**, Bldg. 477, and the **Swimming Pool**, Bldg. 478, will both be closed on Easter Sunday, April 7.

• The **Recreation Building** in the apartment area will be closed for maintenance during the week of April 8. For more information, call M. Kay Dellimore, Ext. 2873.

• The **Safety Glasses Office** will be closed on Wednesday, April 10.

Daughters Are Coming to Work

For the second consecutive year, many daughters of BNLers will have an opportunity to spend a day on site, learning about what kind of work their parents do and where they do it, as the Laboratory participates in the fourth annual Take Our Daughters to Work Day organized by the Ms. Foundation for Women.

Scheduled for Thursday, April 25, the day's events will be available to the first 200 girls ages 9 to 15 years old registered by April 19. Information on registration and the day's activities will be distributed to all employees in a few days.

The schedule calls for the girls to spend the morning in their parents' workplaces, then enjoy a box lunch with them at the Brookhaven Center, courtesy of Associated Universities, Inc. The afternoon will include tours of various areas on site and, for the younger girls, a visit to the BNL Science Museum.

As organizer of the day's activities, Susan Foster, Human Resources Division, is looking for volunteers for the afternoon. She needs departments and divisions willing to open their workplaces and explain their work to large groups of girls. Foster also seeks individual volunteers to help on the buses and act as chaperones as the girls visit the work areas.

Anyone interested in volunteering should call Foster at Ext. 2888.

MIX Meeting

The next Monthy Information eXchange (MIX) meeting with the Computing & Communications Division will be held on Thursday, April 11 at 11 a.m., in Room B, Berkner Hall. Topics to be discussed include computer security and the convex parallel computer. All are welcome to attend.

BERA Softball

Wanted: People who enjoy warm summer nights and the company of good friends, and who would like to recapture the good times of their youth.

BERA Softball is looking for players. You do not need to be of major league ability, or 21 years old, but you must be able to enjoy yourself!

There are openings on teams of all abilities. Games are played Monday through Thursday at 5:30 p.m on the Lab's softball fields. Employees and spouses are eligible. Women players are needed for both mixed and open play.

For more information, call Rich Scheidet, Ext. 5284, or Joe D'Ambra, Ext. 3764, or e-mail softball@bnl.gov.

Bowling

Red and Green League

J. Griffin bowled a 269/264/204/737 scratch series, R. Mulderig Sr. 259/228/222/709 scratch, R. Mulderig Jr. 255/213/649 scratch, R. Eggert 226/213, H. Arnesen 220/203, G. Weresnick 211/206, C. Bohnenblusch bowled 234, D. Fisher 234, A. Warkentien 230, S. DiMaiuta 224, W. Powell 215, K. Riker 211, B. Geib 203, J. Goode 202, J. LaBounty 201, R. Prwivo 201, R. Raynis 201, E. Sperry IV 201.

White and Purple League

D. Riley bowled 225/219/180/624 scratch, J. McCarthy 224/198/183/607 scratch, R. Wiseman 203/198/196, E. Sperry III 202/194/187, M. Guacci 195/192/188, T. Mehl 194/193/185, R. Raynis 192/186/180, S. DiMaiuta 246, R. Larsen 235, E. Meier 209, S. Frei 203, A. Pinelli 196, M. Addessi 195, R. Picinich 194, B. Guiliano 192, M. Musso 179, P. Manzella 172.

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 Human Resources Division lists new placement notices. The purpose of these listings is, first, to give employees an opportunity to request consideration for themselves through Human Resources, 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 (344-7744), for a complete listing of all openings.

Current job openings can also be accessed via the BNL Home Page on the World Wide Web. Outside users should open "http://www.bnl.gov/bnl.html", then select "Scientific Personnel Office" for scientific staff openings or "Employment Opportunities" or "BNL Human Resources Division" for all other vacancies.

SCIENTIFIC RECRUITMENT - Doctorate usually required. Candidates may apply directly to the department representative named.

SCIENTIST/ENGINEER - Trained in physics, with several years' experience in accelerator physics. The successful candidate will be responsible for coordination of magnetic field mapping and shimming for the g-2 superconducting storage ring and for performing liaison with AGS experiments. Contact: Philip Pile, Alternating Gradient Synchrotron Department.

POSTDOCTORAL RESEARCH ASSOCIATE - Trained in biological or physical sciences, with a strong background and interest in computational methods. Preference will be given to cand dates with experience in analyzing 3-dimensional structures of proteins. The project aims at developing computational and database management tools to explore 3-D structures of proteins and nucleic acids to further understanding of the relationships among biological function, sequences, and 3-D structures. Contact: Enrique Abola, Biology Department.

POSTDOCTORAL RESEARCH ASSOCIATE - Trained in chemistry, with experience in analyzing trace levels of gases using HPLC, GC and mass spectrometry. Program involves laboratory and field studies of reactions important to atmospheric transformations regarding oxidant formation and hydrocarbon degradation. The successful candidate will identify and characterize reactive intermediates involved in oxidation of atmospheric hydrocarbons, oxides of nitrogen, and sulfur-containing compounds; quantitate effects of surface organic materials on air-surface exchanges of trace constituents; and determine kinetic and thermodynamic properties of important atmospheric species. Contact: Y.-N. Lee. Department of Applied Science.

OPEN RECRUITMENT - Opportunities for Laboratory employees and outside candidates.

DD 3834 TECHNICAL POSITION - Requires an AAS or equivalent experience, the ability to wear a respirator and to pass the Radiological Control Technician training. Familiarity with automated low-background alpha-beta counters, liquid scintillation counters desirable. Will provide ES&H coverage to multiple departments on the Laboratory site. Safety & Environmental Protection Division.

Motor Vehicles & Supplies

95 HONDA ACCORD SE-i - fully loaded, 4-dr., m/t, moonroof, ac, runs well. $2,200 neg. Jeff, Ext. 3046.

94 SATURN SC2 - 27k, 5-spd., alarm, airbag, ac, ABS, sunroof, am/fm stereo, mint, $11,900. 286-5459.

93 GEO - convertible, a/t, ac, am/fm cass. stereo, air bag, aqua w/black top, 26k mi., excel. cond., $8,500. Ext. 2168 or 744-4948.

92 METRO - 23k mi., 5-spd., 45 mpg, 50k mi. factory warr. to 3/98, am/fm, blue, like new. Joe, Ext. 4496.

91 MERCURY TRACER - 4-dr., a/t, ac, 47k mi., cruise, p/w, am/fm, p/s, white, $5,000. Kiyoshi, Ext. 5793.

91 FORD TAURUS GL - 6-cyl., 76k mi., a/t, ac, p/s, p/b, excel. cond., $5,400. Ext. 7830/1021 eves.

89 FORD ESCORT - 83k mi., am/fm cass., runs well, v.g. cond., $1,800 neg. Leite, Ext. 1067.

88 PONTIAC GRAND AM - 4-dr., a/t, ac, 85k mi., Quad 4, 2.3L, orig. owner, $2,600. Tony, Ext. 3637.

88 MAZDA 323 - good body & int., needs ignition coil, 160k mi., best offer. Bud, Ext. 7685 or 751-2587 eves.

88 JEEP WRANGLER LAREDO - red, 5-spd., 3-tops, 45k mi., 1 yr. man. warr., $7,800. 878-6640.

87 HYUNDAI EXCEL - 4-spd., ac, am/fm, many new parts, 86k mi., $550 neg. Yian-Biao, Ext. 3369 or 924-5275.

84 TOYOTA CAMRY LE - brown, 4-dr., a/t, p/s, p/b, p/w, p/l, moonroof, cruise, 106k mi., needs some work, $1,000 or best offer. Kevin, 331-4487.

83 TOYOTA TERCEL - 4-spd., 3-dr., excel. cond., $900 neg. Rotem, Ext. 3187.

81 TOYOTA CELICA - h/b, m/t, runs well, reliable, make offer. Phillip, Ext. 3267.

80 MUSTANG - 302, posi rear, m/t, new brakes, recently tuned, sunroof, black/red int. John, 331-7945.

79 YAMAHA 650 XS MOTORCYCLE - special, stored 12 yrs., Japanese classic twin, complete w/papers, $250 firm. Jim, 727-3469.

79 FORD TRUCK PARTS - hood, door, fenders, 4x4, 4-spd. tranny, CB radio, like new, B&M shifter, 302 alum. manifold. Wayne, Ext. 3084.

78 CHEVROLET SUBURBAN - a/t, 2wd, 305 ci., runs well, $300 obo. 734-2593 eves.

77 BUICK ESTATE WAGON - p/s, p/b, p/w, p/seats, ac, am/fm cass., runs well; '60 Chevy Bel Air, good mech. cond., 4-dr., 235 cu. in., 6-cyl. Doug, Ext. 4484.

PARTS - 302 motor, headers, trans., rear GT 40 heads, wire spike reverse rims, 5-lug Dodge Ford 12.5 rim tires. Ed, 661-9155.

Boats & Marine Supplies

21' DONZI - 1988, 350-h.p. i/o, low hours, red/white, VHF, am/fm radio, DF, mint cond., $7,800 neg. Vic Truglio, 567-2350.

21' REGAL REGENCY - 170-h.p. Mercruiser i/o, cuddy cabin, $4,000. 325-0567 after 5 p.m.

19' STAMAS - 1987, center console, 135-h.p. Mariner, all electronics, Coast Guard pkg., w/trailer, must see, $6,500 obo. Jason, 563-7746.

19' FOUR WINNS - 1986, cuddy, 140-h.p. Merc i/o, VHF, Loran, FF, DF, full canvas, dual batt., 1989 Shoreline trailer, all access. Gary, 567-9617 after 5 p.m.

PROPELLER - 17" pitch, 13½" diameter, from 1988 70-h.p. Johnson, excel. cond., $40. Brian, Ext. 2799.

JET SKI - 1991 Kawasaki X2, 650 cc, w/trailer & tote, low hrs., fast, clean, $2,800. David, Ext. 5217.

JET SKI - 1987 Kawasaki 300, excel. cond., $900. 878-1178.

Furnishings & Appliances

CABINET - gray steel, double door, wardrobe hanger & shelf, $25; Singer treadle sewing machine, cabinet, early 1900s. Doug, Ext. 4484.

ENTERTAINMENT CENTER - 3-pcs., oak, Broyhill, $800; hutch, custom-made, $150; love seat, $50; Mikasa stoneware, 12 places, $70. Rich, 929-8514.

KITCHEN SET - $50; bookcase, $15; infant's changing table w/4 drawers, $25; Whirlpool washer/dryer, $175/ea. 473-6432.

LOVE SEAT/SOFA - leather, white, $200. Dan, Ext. 3078.

MATTRESS - & boxspring, new, $175; used boxspring, mattress & metal frame, $30; flip sofa bed, $50. Josh, Ext. 6295.

TABLE - 36" round, glass top, w/black pedestal & 2 match. chairs, $175; TV, 27" Fisher, color, stereo, hardly used, $225. Linda, 874-8259.

Tools, House & Garden

DOORS - louvered bi-fold, set of 4, unpainted, for 6' opening, $35; parson's tables, oak parquet, $15/ea. or $25/2. Sue, Ext. 7235 or 399-7997 after 5 p.m.

FENCE - 150', 4' high, vinyl-coated chain link, w/gate, all hardware, posts. Ext. 5834.

KITCHEN COUNTERTOP - 5' long w/matching cabinets, sink, faucet, v.g. cond., $75. 363-6940 after 5 p.m.

KITCHEN FAUCET - Moen, single handle model #5285600, like new, $25. Theresa, Ext. 2907.

PATIO FURNITURE SET - redwood, 60" round table, 4 benches, chaise, chair, double chair, cushions, v.g. cond., $175. Richie, Ext. 2216 or 734-7342.

PATIO SET - 6-chairs w/cushions & matching umbrella table, 40"x90", green PVC, covers for all, light fix., orig. $2,000, now $1,000. John, 395-5922.

ROUTER - Porter Cable laminate, orig. $150, now $75. Neal, 727-5849.

TABLE SAW - Sears Craftsman, works well, many extras, older model, $250. John, 395-5922.

TREES - spruce, white pine, cedar, Doug. fir, b&b, sheared, excel. for yd./priv., 4'-8', $20-$75 ea., depending on selection, quantity. Tom, 878-1060.

TREES/SHRUBS - white pines, $2/ft.; arborvitaes, $3/ft.; Alberta spruces, $4/ft., all nursery grown. John, 744-5867.

Sports, Hobbies & Pets

BICYCLE - Mongoose Villain, chrome, $85; super Nintendo setup w/2 joysticks, 2 games, Donkey Kong World & NBA Jam, $100. Tirre, Ext. 3288 or 281-0360.

DOGHOUSE - large, custom built, heavy-duty, excel. cond., $50; also dog supplies. 473-6432.

EXERCISE MACHINE - Nordic Gold Flex multi-station, incls. butterfly attachment, excel. cond., 4'x3' area needed, $450 neg. 584-3830.

EXERCISE MACHINE - Solo Flex, no attachments, all papers, excel. cond., $400. Pat, Ext. 7705.

EXERCISE MACHINE - stepper, dual action, excel. cond., best offer. 281-9172.

FISH TANK - 125-gal., rock background, 2 water pumps, white gravel, $300. Doug Wood, Ext. 7698.

GOLF CLUBS - Smith, metal woods 1-3-5, 2 yrs. old, ask. $165. Ext. 2539.

ORGAN - Gulbransen, spinet, $200. John, Ext. 2460 or 281-2471.

PHOTOGRAPHIC EQUIPMENT - Besler drums, 8"x10", 11"x14", motor; base, agitator, color filters/calc., color printing book, $125 firm. Ext. 4538 or 286-8904.

Audio, Video & Computers

BASS HEAD - Gallien Kruger 200 rb, 100 watts, 3-band eq., chorus, $115. Jim, 924-7374.

COMPUTER - 486DX/100, 16MB memory, two 540 MB HD, Soundblaste Awe, 9330 video, Toshiba 4X CD ROM, Promise IDE controller, $1,400 firm. Juanita, Ext. 3915.

COMPUTER - Apple Macintosh Performa 450, 4/120 fax modem, SUGA color monitor, keyboard, mouse, w/software, orig. $2,200, now $900. 744-9664.

COMPUTER - 486Dx2-66, 8MB RAM, 540 HD, CD-ROM, 15" MAG monitor, sound card, softwares, $900. James, Ext. 6100.

PRINTER - Panasonic KX - P2123, 24-pin dot matrix, b/w or color, stand & software incl., hardly used, $75. Joe, Ext. 5131.

PRINTER - Macintosh Seikosha image writer, $100. Dan, Ext. 3078.

PRINTER - Macintosh StyleWriterII, in box, w/software, manuals, 3 cartridges, 1 refill, 1 yr. old, asking $250. Judy, Ext. 4538.

STEREO - Proton amp/rec., CD player, cassette deck, 2 Boston speakers. Janet, Ext. 2345 or 929-3910.

TV - Toshiba, color, 14", cable, c.c., $80. Gabriel, Ext. 2707 or 344-1087.

TV - Goldstar, 19", like new, $120 neg. Kiyoshi, Ext. 5793.

VIDEO GAME - Nintendo, deluxe joystick, NAS Advantage, controller, 18 games w/TV, $300. John, 395-5922.

Miscellaneous

BABY'S SWING - almost new, $10. Frank, 399-7309.

BABY'S SWEATERS - handmade, all colors. 281-9172.

WEDDING DRESS - size 12, plenty of room for alterations, w/slip & headpiece, $550. Pat, 878-9117.

Lost & Found

LOST - woman's gold watch in vicinity of Bldg. 460, reward. Carol, Ext. 3325.

Free

CATS - stray cats need shelter/food, already spayed/neutered/shots. Pat. Ext. 7705.

CAT - orange female tabby, 1½ yrs. old, spayed, all shots, needs good home. 981-2280.

Car Pools

LIE EXIT 36 - fourth needed. John, Ext. 5181.

Wanted

COMPANION(S) - for retired BNL physicist, single/couple, live in, in exchange for free housing in waterfront home. Larry, Ext. 5462.

ETHNIC COSTUMES - for children, need to borrow for parade, will care for them & return. Janet Sillas, Ext. 2345.

GENERATOR - 3-4 kw, in working cond., reasonable. 878-1178.

GUITARS - 467-1343.

HOMES - for BNL visitors/guests, furn. apts., condos, houses for short-term rentals. Marie, Ext. 4489.

HOUSE/CONDO - for retired couple for month of August, furnished, non-smokers, excel. refs. Linda, Ext. 5763.

KITCHEN CABINETS - old, interior doors, pool table, VW beetle cars & parts. Rich, 929-8514.

LIFE VESTS - 6, 2 rowboat paddles, 15-30 lbs. thrust electric boat motor. Nick, Ext. 5050.

POOL LADDER - for above-ground swimming pool. John, Ext. 5283.

RIDE - to work from Main Rd., Jamesport to Bldg. 905, M-F, will pay all gas. Brett, Ext. 2012.

ROLLER BLADES - size 7½, good cond. Vera, Ext. 7702.

SAIL - for Sunfish sailboat. Ext. 3966.

TOASTMASTERS - celebrate charter anniversary of BNL Toastmasters Club, 5:20 p.m., 4/19, Bldg. 475, refreshments. Ronnie, Ext. 2851, or Margaret, 473-9129.

VIOLIN - full-size, a decent instrument for student. Yako, Ext. 5091.

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.*

AUTO CUSTOMIZE - vinyl tops, headliners, convert. tops, sunroof installation, elec. sunroof repair, rugs, some mech. work, brakes. Rob, 395-4521.

BABY SITTER - to live-in w/family, refs. are available. Elishka, 751-1538.

BOAT TRANSPORT - power & sail, licensed & insured, local & long distance, ramp service; Merc., Volvo, OMC service repairs. Donna or Tom, 563-2809.

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

BUSINESS CARDS - raised lettering, many colors, BNL cards available, flyers, letterheads, envelopes, logos. Mike, 878-3480.

CHILD CARE - in home, nonsmoker, refs., Ronkonkoma. 471-9634.

COUNSELING - individual child and family therapy, alcohol & drug counseling, licensed social worker. 732-5464 for appointment.

DRIVER - w/15-passenger van, any occasion, $275 for 8 hrs. Bob, 467-2790.

ELECTRICIAN - outlets, switches, lighting, alterations, service upgrades, repairs, lic. & insured. Steve, 758-7002.

FINANCIAL PLANNING - college, retirement, insurance, mutual funds, tax-free investments. Dave, 395-3484.

GUTTER PROTECTION - keeps debris out, water in, guaranteed, free estimates, Lab disc., lic., insured. Henry, 727-7227.

HOME IMPROVEMENTS - carpentry, complete service, roofing, siding, windows, doors, decks, oak flooring, basements, licensed, insured. Joe, 399-0828.

HOME IMPROVEMENTS - carpentry, drywall, spackling, painting, plumbing, ceramic tile, electrical, free estimates, Lab disc. Don, 929-6571 after 5:30 p.m.

HOUSEKEEPER - will clean your home to your standards w/schedule convenient to yours, excel. refs. Jane, 874-4049.

JEWELER - special orders, repairs, honest, affordable, no job too large/small. Kelly, 821-5239.

LANDSCAPING - grass cut & maint., free estimates 286-5403.

LAWN SPRINKLERS - automatic, prof. layouts, repairs, alterations, additions, spring turn-ons, winterizations, free estimates. Lou, 928-7973.

LAWN SPRINKLERS - prof. layouts & installations, free estimates. Bill, 231-5772.

LAWN MOWER/TRACTOR - service & repair, also all other small engine tools, have trailer & will travel. Dan, 698-7322.

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

PARTY TENTS - we set up & take down, call for details, sizes & combinations. Fred Kuehl, 588-2268.

PHOTO RETOUCHING/ENHANCEMENT - damaged photos repaired, backgrounds changed, objects added or removed, etc. Lenny Sr., 878-6020.

PIANO TUNING & REPAIRS - quality work, reasonable rates. 298-9560.

PLUMBING & HEATING - service & repair, free estimates. Brett, Ext. 2012 or 722-5698.

PLUMBING & HEATING - all phases, lic., insured, free estimate. Eric, 924-8530.

PLUMBING & HEATING - alterations, repair. Jim Morris, 472-1205.

RIBBONS - personalized ribbons printed, also large selection of wedding & miscellaneous favors. 981-5993.

ROTOTILLING - small & large gardens, free estimate. Paul, 924-8143.

SHEETROCKING & SPACKLING - free estimate. Kevin Tisch, 567-6621.

TAX RETURNS - prepared by tax consultant, your home or mine, reasonable, serving Lab employees for 20 yrs. John, 732-2472.

TREE REMOVAL - no job too small, experienced, free estimate. Danny, 744-3027.

TYPIST - 10 yrs. exp., quick, efficient, will return your work on PC disk, spell-checked, no job too big or small. Michele, 369-1438.

VIDEOGRAPHER - capture those precious moments on video, will tape weddings, parties, all occasions. Larry, 281-7240.

WINDOW CLEANING - all work squeaky clean, reliable, references. 289-4759.

Yard & Garage Sales

BELLPORT - Woodland Park Rd., Sat., 4/6, 10 a.m., books, magazines, LPs, baby's items, stair machine, household, misc. Paul, 286-7127.

On-Site Service

OMEGA LEISURE TRAVEL - spring special, fly Continental Airlines before 6/14, get $100 off. Carol, Omega Travel rep., Ext. 5918.

In Appreciation

Thanks to everyone for your many prayers, cards and well wishes during my recent surgery and convalescence. — Virginia Stewart

Classified Ad deadline is noon Friday for publication Friday of the next week.