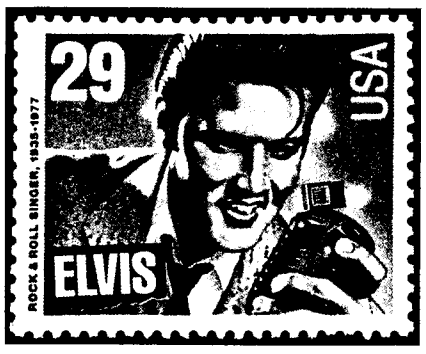
BROOKHAVEN BULLETIN
Vol. 48 - No. 10 March 11, 1994
BROOKHAVEN NATIONAL LABORATORY

BNL Lecture: Chips Off an Old Block

In the immense collider experiments being planned for much particle physics of the future, thousands of subatomic particles will emerge from each collision.

To amplify and convert the particles' signals into data that researchers can read, new, higher speed detectors will be required, each containing 100,000 to 10,000,000 channels. Each channel, or electronic path, will be made up of hundreds of transistors. Yet the channels must neither crowd other parts of the detector apparatus, nor impede the particle trajectories.

This giant problem has a very small solution — tiny silicon chips, so little that 221 of them could fit on an Elvis Presley stamp.



Roger Stoutenburgh

An 8-channel microchip has been photographed perched on the tip of Elvis Presley's microphone.

In BNL's Instrumentation Division, designing these new chips is the work of Physicist Paul O'Connor, who will give the 295th Brookhaven Lecture, "Chips Off an Old Block: Custom-Integrated Circuits for Science," on Wednesday, March 16, at 4 p.m. in Berkner Hall. The speaker will be introduced by Instrumentation Division Head Veljko Radeka.

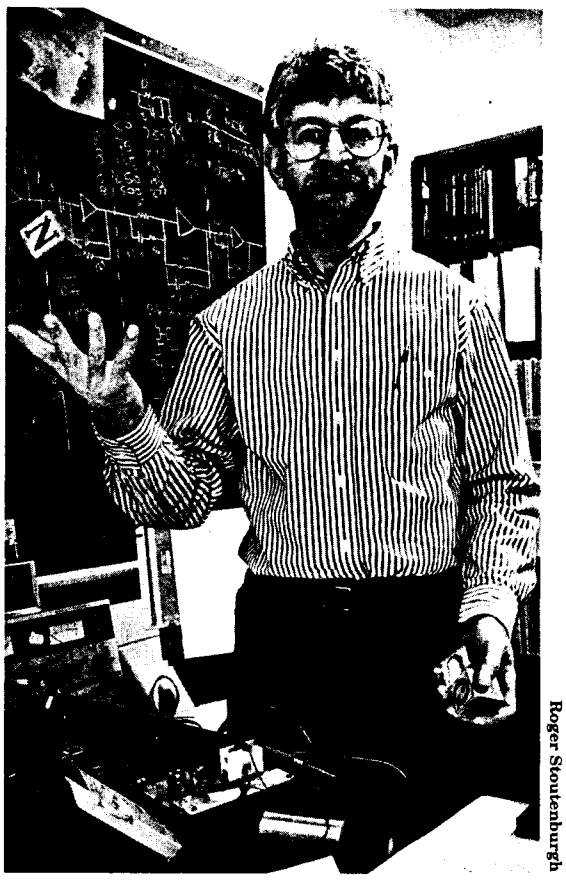
As O'Connor will explain, he uses state-of-the-art technology to cram each two-millimeter-square chip, about the size of a big freckle, with up to 10,000 transistors, turning it into a miniature amplifier for one channel in the detector.

At this size, the chips can be packaged to much higher densities than has been possible previously. This will lead to greater economy in building and operating detectors, as well as better accuracy and precision in experiments.

O'Connor will describe the technological background leading to the new chips, which includes some of his division's long history of custom building innovative electronics. He will explain the design procedure of integrated circuits, with the difficulties of balancing the necessary trade-off — keeping a low electronic noise level, which is easier to achieve in a large package with more power consumption, or making a smaller package with lower power, which brings more noise with it.

O'Connor will detail how his designs are fabricated by private firms so efficiently that the only communication needed between designer and builder may be the specifications sent by electronic mail. He will also describe some of the customized chips and special tools that have been developed for this work.

After taking his B.A. in chemistry and physics at Oberlin College in 1975, O'Connor received his M.S.E.E. in electrical engineering and Ph.D. in physics in 1976 and 1980 respectively, at Brown University. From 1980 to 1990, he worked for Bell Laboratories, doing research on compound semiconductor device physics and also developing circuits for fiber-optic transmission systems. He joined the Lab in 1990.



Roger Stoutenburgh

From any of the blocks he is juggling, Paul O'Connor could chip off about 27,000 pieces of the same size as one of his tiny silicon chips.

After the lecture, all are invited to join the speaker for discussion and refreshments. To accompany him to a dinner at a restaurant off site, call Graham Smith, Ext. 4253.

Brookhaven Town to Honor Eva Bozoki

Eva Bozoki, a physicist in the National Synchrotron Light Source (NSLS) Department, is one of 12 women who will be honored next Thursday, March 24, for their accomplishments and contributions to Brookhaven Town, at the town's eighth annual Women's Recognition Night, which is part of its observance of Women's History Month.

Bozoki is being cited for excellence in the field of science. Other awards are being given in the fields of art, business, communications, education, government, law, medicine, religion, sports and volunteerism.

Bozoki was nominated for this award by Brookhaven Women in Science (BWIS). On behalf of BWIS, Louise Hanson, Department of Applied Science, noted that Bozoki "has had a productive and scientifically rewarding career in a field unusual for a woman — accelerator physics."

Since coming to BNL in 1978, Bozoki has specialized in modeling-based control, especially orbit control, for the NSLS. Modeling programs help accelerator physicists learn more about the behavior of an accelerator — knowledge that can be used to control the machine more accurately.

Bozoki holds an M.S. in physics and a Ph.D. in high-energy elementary particle physics from the Roland Eötvös University in Budapest, Hungary. She came to the U.S. in 1971, as a research fellow at the University of Pennsylvania. Before joining BNL's staff, Bozoki worked for Western Union and Merck, designing and developing engineering programs.

Bozoki recalls that she arrived at BNL just two weeks before the groundbreaking for the NSLS. Since then, she has become a recognized expert in the field of orbit control, and, in 1986, she was invited to CERN, the European particle physics laboratory, where she worked for six months on high-level orbit control for the Proton Synchrotron. She is also collaborating on developing orbit control for the phi-factory at Frascati Research Institute in Italy.

Commenting on her award, Bozoki said, "I am honored to be selected by my peers for this honor. Women should be encouraged to do whatever they want to do — whether it is pursuing a career, raising a family, or both. I was fortunate to have an excellent education, with a strong science and math curriculum in high school, which awakened my interest in physics."

Roger Stoutenburgh

Eva Bozoki

Eva Bozoki is married to George Bozoki, a physicist in the Department of Advanced Technology. The couple has one daughter, Andrea, who is an intern at Beth Israel Hospital in Manhattan.

Patent Awarded

U.S. Patent No. 5,254,726 has been awarded to **Yu-Shin Ding**, **Joanna Fowler** and **Alfred Wolf**, all of the Chemistry Department, for devising a new way to prepare fluorine-18-labeled tracers for studying neuronal activity using positron emission tomography (PET).

Nerve cells, or neurons, communicate with one another through the release of chemical messengers called neurotransmitters. PET can be used to track the activity of neurons by using neurotransmitters that have been labeled with, or attached to, radioisotopes such as fluorine-18. So far, researchers have been able to make many labeled compounds, and PET scanning has given tremendous insight into the neurochemical and functional activity of the brain and the heart.

However, fluorine-18 presents a special challenge. A longer half-life (110 minutes) and low positron energy make it more attractive for some kinds of PET studies. But fluorine does not easily form bonds to the carbon atoms that make up the bulk of neurotransmitter molecules. Additionally, many of the common labeling procedures produce undesirable mixtures of labeled compounds and cannot be used on the very small scale required for tracer studies of physiologically active molecules such as neurotransmitters.

Faced with all of these problems, Ding, Fowler and Wolf set out to improve the synthesis pathway for such labeled neurotransmitters as 6-^{18}F fluoronorepinephrine and 6-^{18}F fluorodopamine. They used nucleophilic aromatic substitution, which allows the fluorine-18 to be substituted for a nitrogen-containing group of atoms in an aromatic compound. The compound can then be built up to form the labeled neurotransmitter.

Using this process, PET researchers can label various neurotransmitters with fluorine-18, including L-dopa, fluorotyrosine, norepinephrine and dopamine. But, the inventors wrote in their patent application, it may also be useful in the synthesis of other tracers.

For These Are Jolly Good Fellows . . .

They come from all over the country and the world, working at BNL's user facilities and laboratories for a few months or a year or two as the first step in their newly minted careers. They are the fellows, usually postdoctoral, who both contribute to and benefit from the Laboratory's research.

Generally sponsored through U.S. government grants or other special fellowships, many programs bring fellows to BNL, according to Gail Williams, Manager of the Office of Scientific Personnel in the Personnel Division.

"We take in fellows who have varied levels of preparation and build upon their research experiences so

(continued on page 2)

For These Are Jolly Good Fellows . . .

(continued)

that they may compete more effectively in the job market after their Brookhaven stay," said Williams, whose responsibilities include "matchmaking" prospective fellows with potential advisors and helping fellows from around the world in their pilgrimage to BNL.

One of a Distinguished Dozen

Among others, Williams coordinates the U.S. Department of Energy (DOE) Distinguished Postdoctoral Fellowship program for BNL. The most recent DOE Distinguished Fellow to arrive is Lisa Kelly, who came to BNL in late January to begin work at the National Synchrotron Light Source (NSLS) after receiving a Ph.D. in photochemistry from Bowling Green State University in Ohio.

Kelly's work centers around the effects of ultraviolet (UV) light on crucial biological molecules: the nucleic acids that are the building blocks of the genetic molecules DNA and RNA.

The UV light, some of which is the same as that in sunlight, comes from the NSLS. Using a spectrometer built with help from co-advisors Eric Johnson, NSLS, and John Sutherland, Biology Department, Kelly's initial experiments will use the U11 beam line's UV light to irradiate the nucleic acid molecules and determine the immediate aftereffects.

At first, Kelly says, she wasn't sure she had a chance for the highly prestigious DOE Distinguished Fellowship — only about a dozen are awarded each year, across a broad range of fields. But Sutherland knew of the fellowship and encouraged her to apply through her doctoral advisor, Michael Rodgers.

"Until someone told me to go for it, I hadn't thought of trying, but then I started realizing these things were feasible," she says now, adding that she feels she's already made professional connections that will be valuable for her planned teaching and research career.

A Hollaender Fellowship brought x-ray crystallographer Lisa Keefe to BNL one and a half years ago, after she received a Ph.D. from The Johns Hopkins School of Medicine.

A Fellow in Two Labs at Once

Lisa Keefe

Actually, Keefe's appointment is a joint one: She prepares her crystallography samples in the BNL Biology Department lab of Carl Anderson, but collects diffraction data for those crystals at the NSLS's X8C beam line under the umbrella of Argonne National Laboratory and her Argonne advisor, Ed Westbrook. After the fellowship ends in August, she plans to continue in crystallography research, perhaps at a national lab such as BNL or Argonne.

Keefe's present goal is to determine the detailed structure of a complex of two molecules found in the adenovirus family of viruses: a protein-cleaving enzyme, and a brief chain of amino acids that acts as its partner in crime. Without the complex, the viruses cannot get into their human host cells to reproduce and cause disease. Keefe's work uses a new kind of detector, a charged-couple device or CCD, which was developed by a group at Argonne and Brandeis University, to record the patterns produced by x-rays diffracted by the crystal.

A Visitor Becomes an Employee

The DOE Distinguished Fellowships are given to scientists in a broad range of fields for research relating to energy, while the Hollaender — named after radiation biology pioneer and longtime BNL consultant Alexander Hollaender — encompasses energy-related research in medicine and environmental sciences. But other programs are earmarked for specific fields. In the case of the DOE Global Change Distinguished Postdoctoral Fellowship, the name says it all.

BNL has hosted several Global Change fellows since the program began in 1991. One, Hong Ma, was able to translate her two-year fellowship, which ended in December 1993, into a full-time position in the Department of Applied Science's (DAS) Analytical Sciences Division, beginning in January. There, she is doing further work on the project she initiated for her doctoral thesis at the University of Michigan and continued during her fellowship: a massively parallel computer model of ocean circulation.

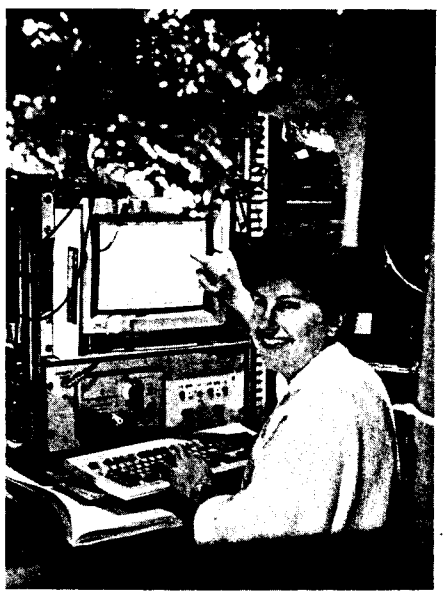
While completing her doctorate in physical oceanography and scientific computing, Ma applied for several fellowships, but found that the Global Change program fit her research best. "It allowed me to do what I really want to do and am best suited to do," she said. "It worked out well." She credited DOE and DAS, as well as Analytical Sciences Division Head Ron Peierls, with helping her to continue her project.

Hong Ma

With the aid of computers in BNL's Computing & Communications Division, as well as a massively parallel computer at Los Alamos National Laboratory, Ma hopes to create the oceans model as a component of a comprehensive ocean-atmosphere model that will allow scientists to project the effects of mankind's activities, such as carbon dioxide production, on the environment.

From Hungary to BNL

The opportunity to perform research in the U.S. may mean better safety for Hungary's nuclear power facility, says Zoltan Karsa, a recent arrival in the Department of Advanced Technology (DAT) under the International Atomic Energy Agency's fellow ship program for future specialists in peaceful nuclear power from around the world.



Lisa Kelly at the NSLS U9B beam line where she will perform photochemistry research on nucleic acids through a DOE Distinguished Postdoctoral Fellowship.
—Photos in this story by Roger Stoutenburgh

Zoltan Karsa

While American reactor safety research is well established, Hungary's four nuclear reactors, outside the city of Budapest, have not been as well studied. As an employee of Hungary's Institute for Electric Power Research, Karsa is interested in assessing damage to the reactors' cores through probabilistic risk assessment (PRA), a safety protocol important to those who regulate the operation of nuclear power plants.

"At the institute, it is customary to go abroad for a fellowship," Karsa said. "I was the youngest in the division, and it was my turn to go, so I was nominated for the fellowship." After spending some time getting up to speed on the topic, Karsa chose BNL as his fellowship destination, and DAT's Robert Hall became his advisor.

Not only has the research experience given him something to take back to Hungary, he says, but BNL's rural setting is also a nice change from the crowded center of Budapest.

Over all, said Scientific Personnel's Williams, the dozens of fellows who visit BNL each year are "scientists in development," whose Brookhaven experience is one more building block for a highly promising career.

—Kara Villamil

New Team, New Tastes at the Cafeteria

Cafeteria, catering and Brookhaven Center customers will be noticing new faces among the Service America Corporation (SAC) team at the Cafeteria.

Louis Alicea arrived in mid-January to be SAC director of food services at BNL. And now working with him are Executive Chef Jim Hansen, Assistant Manager Chad Goldman and Sous-Chef Jared Binns.

"We're enjoying finding our way around and learning about the diverse operations we take care of," said Alicea, who recently joined SAC after three years' managing restaurants in Puerto Rico and, prior to that, six years in Forte's Trust House chain. "There's an interesting variety — not only the Cafeteria, but also the special catering on site, the Center Club, the vending machines and the coffee truck."

Alicea and Hansen want to cater to diners' convenience as well as their wide range of tastes. "For example, we plan a new, more comprehensive menu for the Center Club," said Alicea. "We'll still have burgers and fries, but we're adding salads and more low-cholestrol choices so we'll fit more of the needs of our customers."

Roger Stoutenburgh

Pictured behind the scenes at the Cafeteria are: (foreground, from left) Executive Chef Jim Hansen, staff member Bonnie Thomson, Bookkeeper/Manager Terry Coombs and Director of Food Services Louis Alicea. In the background, (from left) Tina Bellamy, Kevin Woodson and Joe Rubino work on lunch preparations.

"In the Cafeteria, I'll be concentrating on low-salt, low-fat soups that still taste great, and a bigger variety of fresh vegetables at the salad bar," said Hansen, a "returned home" Long Islander who worked previously with Morrison's in Baltimore and with Marriott Corporation. "As for special catering, I'm hoping to make BNL known for a really four-star quality."

Other plans in store are a wider selection of vegetarian dishes and a special eat-in or take-out pizza program, to be available both at the Center and the Cafeteria. "We also welcome suggestions or comments," added Alicea. "Just drop us a note at Bldg. 488 or call on Ext. 3541. We'll be happy to try and accommodate you. In fact, for anything to do with food — we'll be at your service!"

Said Ron Manning, Staff Services Division Manager, who has been working closely with SAC during the transition period, "I welcome Louis and his team to the Lab community. They join a capable and dedicated Cafeteria and Center Club staff, and I look forward to their further enhancements to menus and service." — Liz Seubert

In Memoriam

Michael Brauner, the Supervisor of both the Maintenance Sheet Metal and Insulation Groups in the Plant Engineering (PE) Division, died on February 23 at the age of 52.

Brauner came to BNL in 1977 as a metal worker in Plant Engineering. He became leader of that group in 1983, and was promoted to his final position in 1988. In that capacity, he oversaw the work of four sheet metal and four insulation workers.

"He was really a nice person, and it was a privilege working with him," said Lance Warren, Manager of PE's Operations and Maintenance Division.

A resident of Farmingville, Brauner is survived by his wife Carol; his sons: Michael Jr., Kenneth and Dennis; his daughter, Phyllis Lingg; and ten grandchildren.

Country-Western Line Dancing Coming to BNL

All BNLers and their friends and families — couples and singles — are invited to a country-western line dance to be held in the Brookhaven Center's North Room on Friday, April 8, from 8 p.m. to midnight. There's no need to know the steps beforehand, since Country Kate will provide dance instruction from 7 to 8 p.m. and during two band breaks.

Sponsored by Brookhaven Women in Science and the Upton Chapter of Professional Secretaries International, the dance will feature the music of a local five-piece band, Swingin' Easy. The popular country-western band, which includes a singer, has played at similar events all over Long Island.

Tickets are $10 each and can be purchased in advance from:

Name	Bldg.	Ext
Patricia Durcan	460	5406
Sharon Jones	30	2493
Terri Lacker	750	2112
Harriet Martin	477	3484
Sue Monteleone	130	7235
Flo O'Brien	475	4962

Hospitality News

The Women's Forum, conducted by Marion Davis-Parzen and sponsored by the BNL Hospitality Committee, will meet Tuesday, March 15, from 10 a.m. to noon, in the lounge of the Recreation Building in the apartment area on site. Come to discuss any problems or concerns facing women, particularly those on site, and to share your experiences. Wives of Lab employees and guests are welcome.

Workshop on Aging Of Nuclear Facilities

With many of the nuclear facilities owned by the U.S. Department of Energy (DOE) getting older, DOE's Office of Environment, Safety and Health initiated a project in 1993 to develop programs to monitor and mitigate the effects of aging degradation.

As part of this project, DOE will sponsor an Aging Management/Life Extension Workshop at BNL, March 30-31, where information on technology relevant to both non-reactor and reactor-related nuclear facilities and components will be exchanged. The workshop will include sessions on regulatory perspectives, the U.S. commercial nuclear experience, DOE's aging-management experience, and international experience.

To register or for more information, call Jeanne Madaia, Department of Advanced Technology, Ext. 7125, by March 18.

BROOKHAVEN BULLETIN

Published weekly
by the Public Affairs Office
for the employees of
BROOKHAVEN NATIONAL LABORATORY

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Verdi Quartet Concludes BERA Concert Series

The Verdi Quartet — a popular and critically-acclaimed German ensemble — will perform the final concert of the current BERA season on Thursday, March 17, at 8 p.m. in Berkner Hall. The Fresk Quartet, which had been originally scheduled to appear on that date, canceled its performance due to the illness of one of its members.

As young musicians, the Verdi Quartet members honed their considerable skills in chamber music by studying with the Amadeus Quartet at the Cologne Conservatoire. Since making its debut in 1985, the Verdi Quartet has toured Europe and the U.S., receiving excellent reviews.

Although Giuseppe Verdi wrote only one string quartet, the Verdi Quartet chose him as its patron because the players were attracted to the expressiveness of the composer's music.

The program for the Brookhaven concert consists of Quartet in D Major, Opus 64, No. 5, *The Lark*, by F. Joseph Haydn; *Italian Serenade* by Hugo Wolf; Quartet Opus 10, No. 2 by Zoltan Kodaly; and Quartet in E Minor, No. 1, *Aus meinem Leben*, by Bedrich Smetana.

The Verdi Quartet

Purchase tickets at the door the night of the performance for $14, general admission; $9, students and people over 65; and $5, youths under 18.

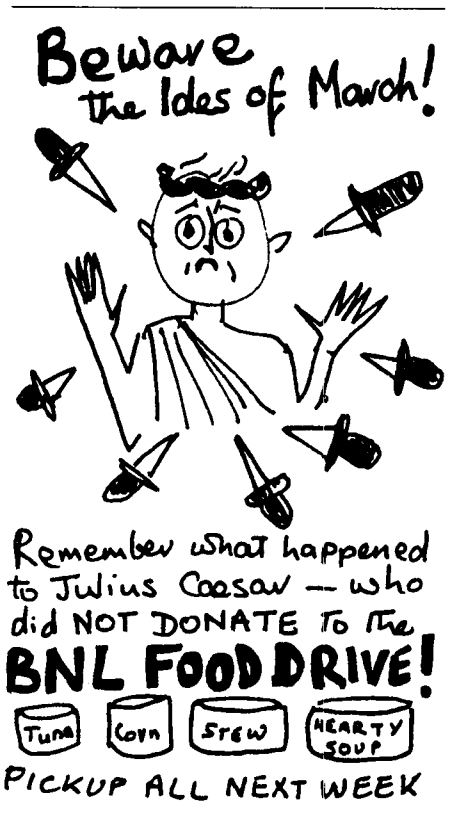
Benefit Art Auction March 19

As reflected in this piece from *The Musical Suite*, Graciella Rodo-Boulanger's visual poetry rings with music and the sound of children.

Rodo-Boulanger is one of dozens of artists whose work will be sold at an auction in Berkner Hall on Saturday, March 19, to be run by Marlin Art Inc., of Deer Park. Brookhaven Women in Science's Renate W. Chasman Scholarship Fund will benefit, and its percentage of artwork sales receipts will increase with the number of attendees.

The auction will feature originals and prints, which will be available for inspection beginning at 7:30 p.m. The auction will start at 8:30 p.m., Artwork prices should range from $50 to $200, payable by check or credit card.

The $5 admission fee includes wine and cheese. Purchase tickets at the door, or in advance from: Eva Emmerich, Bldg. 911, Ext 4758; Rae Greenberg, Bldg. 510, Ext. 5564; Terri Lacker, Bldg. 750, Ext. 2112; Stephanie LaMontagne, Bldg. 1005, Ext. 7141; Ruth Ann Lutz, Bldg. 460, Ext. 7774; Harriet Martin, Bldg. 477, Ext. 3484; and Mary Wood, Bldg. 490, Ext. 5923.



UNIX Training

The next round of UNIX training will be basic and advanced programming in the C language, to be given by Dave Kelly of Kelly Lloyd Associates.

The two courses will be held April 11-22, in the CCD seminar room, Bldg. 515, with the basic class from 8:30 a.m. to noon and the advanced class 1-4 p.m. The training fee is $300 per person; registration is being accepted by Maria Gatz, Ext. 5196, Bldg. 515.

Let's Dance!

Dance to 300 CDs

After work on Friday, March 18, dance to selections from Frank Izzo's dance-music collection of nearly 300 CDs — at the next Thank-Goodness-It's-Friday informal monthly social sponsored by the BNL Ballroom, Latin & Swing Dance Club.

From 5:30 to 11 p.m. that evening, all are invited to the Brookhaven Center's North Ballroom, to swing, cha-cha, etc. the night away. Food and beverages are available at the Center Club.

The club will use the suggested donation of $1 per person toward buying more dance music. For more information, contact Brenda Riddle, social chairperson, Ext. 4524; or co-chair John Millener, Ext. 3853.

Lindy & Polka for Beginners

There is still room for more beginners in the Dance Club's lindy and polka class, which will be held 6:30-7:30 p.m. for eight Wednesdays, beginning March 23.

BNL employees, retirees and those employed by on-site contractors, plus their spouses, dance partners, family and friends are welcome — especially men. Since even numbers of men and women will be enrolled, you don't need a partner to sign up.

A minimum of 44 people is needed to run the class, and the cost per person is $20. To register, call Marsha Belford, club president, Ext. 5053, by Friday, March 18.

Cafeteria Menu

Monday, March 14	
Soup: White bean, tomato & fennel	.80/1.10
A la Carte: Mexican pizza	2.75
Fitness: Baked fish w/lemon & tomato	3.55
Deli: Pastrami sandwich	2.95
Grill: Bratwurst & peppers	2.95
Salad: Tuna flake bowl	
Tuesday, March 15	
Soup: Chicken & rice	.80/1.10
A la Carte: Chicken piccata	3.65
Fitness: Sole w/onion, tomato & oregano	3.75
Deli: Roast beef au jus	2.95
Grill: BBQ pork sandwich	2.95
Salad: Chef's	
Wednesday, March 16	
Soup: Cream of spinach	.80/1.10
A la Carte: Baked manicotti	3.35
Fitness: Mushroom-Dijon chicken	3.65
Deli: Virginia ham	2.95
Grill: Monte Cristo	2.95
Salad: Fresh fruit	
Thursday, March 17	
Soup: Beef barley	.80/1.10
A la Carte: Corned beef & cabbage	3.75
Fitness: Braised beef w/vegs.	3.65
Deli: Corned beef sandwich	2.95
Grill: Cuban sandwich	2.95
Salad: Oriental chicken	
Friday, March 18	
Soup: Cajun seafood gumbo	.80/1.10
A la Carte: Display cooking of pasta entree	
Fitness: Flounder Florentine	3.75
Deli: Turkey sandwich w/giblet gravy	2.95
Grill: Fried clams	3.45
Salad: Cantaloupe bowl	

These Bridges Are All They're Cracked Up to Be

More than 300 were entered, but only one could be the strongest.

And, in this year's Bridge Contest, held Saturday, February 26, in Berkner Hall by the Museum Program of the Public Affairs Office, the basswood model bridge that held up under the most pressure was designed by Ted Trask, a senior at Walt Whitman High School in Huntington Station.

Trask's bridge, like all others in the contest, weighed less than an ounce. But it took the strain like a true champion, holding 2,225.93 times its own weight. The second place winner, Christine Ritter, a junior at East Islip High School, built a span that withstood a load 1,979.79 times its weight.

Perhaps the best example of form following function was a bridge built by Melissa Zimmerman, a Walt Whitman 11th grader. Not only did its elegant design garner the aesthetic prize, but Zimmerman's entry was the fifth most durable in the pressure contest.

After their triumph at BNL's 13th local bridge contest, the top two finishers will have a chance to attend the 1994 International Bridge Building Contest in Denver, Colorado, this May.

Roger Stoutenburgh

While Melissa Zimmerman and Ted Trask, both of Walt Whitman High School, wait to see how much stress their model bridges can take, Museum Program staff member Ruth Fernow (rear) enters results into a computer. Trask's bridge won the strength test, while Zimmerman's captured top aesthetic honors as well as fifth place.

Healthline Talk Rescheduled

The Healthline lecture entitled "Osteoporosis" has been rescheduled for Monday, March 28 (instead of March 14), from noon to 1 p.m. in Berkner Hall. For more information, call Health Promotion Specialist Mary Wood, Ext. 5923.

Basketball

Games of March 3

Magic 90		Runaways 87	
Derrick Hoggard	23	Ed Meier	23
Terrence Buck	22	Jerry Gaeta	20
Raymond Jackson	14	Jim Desmond	19
Troy Mayo	14	Pete Ratzke	14
Neil Donahue	8	Chris Saxen	7
Pat Browne	7	Charlie Edwards	4
Carlos Victoria	2		

Three-point shots: Desmond (3), Gaeta (2), Mayo, Saxen

Deep Six 67		Knicks 46	
Charles Kirkland	21	Greg Mack	15
Tracy Fountaine	15	Chris Ingoglia	8
Brian Hobson	9	Tom Snow	6
Ulysses Tapley	7	Rich Domenech	5
Neil Tyler	7	Al Ratti	4
Dwayne Eleazer	4	Dan Delgado	3
Tom Dilgen	2	Ed Gregory	3
Tony McGill	2	Al Langhorn	2

Three-point shots: Domenech, Fountaine, Hobson, Kirkland

Bowling

Red/Green League

R. Wiseman bowled a 258/230/667 scratch series, H. Arnesen 227/205/614, K. Riker 224, R. Raynis 211, K. Koebel 208, E. Beadle 206/201, R. Mulderig 205/203/606, C. Scarlett 203, A. Warkentien 200.

Purple League

Norm Fewell 217, Manny Dador 203, Walter Powell 214, Andy Warkentien 246/205/624 scratch, Fred Schaefer 223, Phyllis Fewell 185, Mary Addessi 179/173, Maria Yanez 177. Yanez converted the 5/7 split, Ed Sperry III 3/6/7/8/10 split.

Industrial Tournament High Scores

Week of 2/19 - R. Larsen bowled 238, K. Asselta 215, H. Arnesen 203, R. Mulderig 200.

Week of 2/26 - K. Asselta bowled a 257/224, R. Mulderig 243, H. Arnesen 203/202, R. Larsen 201.

Final week 3/5 - K. Asselta 236, R. Larsen 235 R. Mulderig 216/202.

Scotch Doubles

Enjoy a day at the Scotch Doubles Tournament, to be held on Sunday, March 20, at 1:30 p.m. sharp, at the Port Jeff Bowl. The tournament costs $24 per couple, and is open to BNL employees and their immediate family members.

The deadline for applications, available at the BERA Sales Office in Berkner Hall, is Friday, March 18. If you need a partner or have any questions, contact Andy Warkentien, Ext. 2765, or Ray Raynis, Ext. 3536.

Phys Rev Opening

The American Physical Society (APS) is seeking a Ph.D. scientist with a broad interest in physics for an immediate, permanent, entry-level editorial position with *Physical Review Letters*. Will assist in all phases of selection of manuscripts for publication. Excellent written and verbal communications skills are essential, as is a basic understanding of the working scientist's expectation of the editorial process. Postdoctoral research experience is desirable. APS is particularly, but not exclusively, seeking candidates who have contributed to more than one subfield or to a broadly applicable subfield. Send cover letter and resume, including references, current salary and requirements, to Joseph Ignacio, Personnel Manager, APS, 1 Research Road, Box 1000, Ridge, NY 11961, or E-mail, personnl@aps.org. APS is an equal opportunity employer.

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.

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

POSTDOCTORAL RESEARCH ASSOCIATE - Trained in inorganic/organic chemistry, with a strong background in synthetic and mechanistic aspects of both transition metal and organic chemistry, and experience with NMR, inert atmosphere techniques and computers. Research involves study of the interaction of organo-transition metal complexes with diols, carbohydrates and other biomass model compounds, including synthetic, mechanistic and physicochemical aspects. Contact: Mark Andrews, Chemistry Department.

Motor Vehicles & Supplies

91 HONDA CIVIC - 3-dr. h/b, gray, 5-spd., ac, am/fm cass., p/b, 24k mi., ext. warr., gar., like new, $6,500. Vinny, Ext. 4706.

91 VOLKSWAGEN CORRADO - all options, 36k mi., must sell, like new. Jon, 732-9370.

89 KX80 DIRT BIKE - runs well, clean, lots of extras, mint cond., $1,000 firm. Mike, 928-7093.

88 FORD ESCORT GL - 2-dr., 62k mi., clean, excel. cond., $2,200 neg. Ramesh, Ext. 3267.

88 ISUZU TROOPER II - 68k mi., 5-spd., 4wd, am/fm stereo cass., cruise, ac, excel. cond., $7,300. Donna, 924-5062.

88 ISUZU TROOPER - 4wd, 4-dr., 5-spd., ac, am/fm cass., low mi., clean in & out, $6,800. 722-3905.

86 HONDA CIVIC - needs oil ring & clutch, make offer. Ext. 3291 or 589-3020.

86 MITSUBISHI CORDIA - turbo, 4-spd , ac, sunroof, cruise, 2-dr., am/fm, needs tires, $875. Fawn, 744-9794.

85 HONDA 200X ATC - 3-wheeler; '84 Honda 200S ATC, original adult owner, many extras, excel. cond., $1,600 for both. Bill, Ext. 3457 or 567-5631.

85 OLDSMOBILE CALAIS - blue, $1,000. Ext. 1229.

85 OLDS CUTLASS SUPREME - 2-dr., blue, 71k mi., runs well, excel. cond., $3,850 neg. Kim, 727-6989.

85 TOYOTA 4x4 - extra cab pickup & cap, 2-yr.-old engine & rebuilt trans., new tires, $4,200. Larry, Ext. 3499.

84 NISSAN 300ZX - T-top, vibrating seats, p/w, good cond. in & out, engine needs work. Jackie, Ext. 3671.

84 VW VAN - seats 7, new tires, 130k mi., good transportation, $1,250. Ext. 2339 or 751-1224.

83 AUDI 5000 - 4-dr., $2,200. Mike, Ext. 3570.

83 SUBARU GL WAGON - 120k mi., runs but needs work, $250. Steve, Ext. 5323 or 744-3902.

81 AUDI 5000S - good running cond., sunroof, high mileage, $1,300. Chas, Ext. 5462.

81 BUICK LESABRE - 307 engine, two-tone, ac, p/w, p/b, 76k mi., runs well, $1,000 neg. Joe, Ext. 2023.

81 GMC CIERA TRUCK - 2500 series, 4wd, $10,000 invested, must sell, asking $5,500. Kris, 581-8438.

80 KAWASAKI 1000 LTD - orig. owner, stored indoors for 10 years, mint cond., sacrifice, $2,900 neg. Joel, Ext. 5988 or 924-7288.

79 FORD F150 4x4 TRUCK - 94k mi., ladder rack, plow, $2,000 neg. 467-4038.

79 INTERNATIONAL SCOUT II - 345, 4bbl, 4wd, parting out or whole, make offer. Nancy, Ext. 7976.

CAP - for small pickup, alum., $50. Joe, Ext. 4986.

Boats & Marine Supplies

29' THOMPSON DAYTONA - 1987, sleeps 6, radar, Loran, many extras, excel. cond., $26,900 or best offer. Dan, 878-6007.

23' 4 WINNS - 1986, 230-h.p. Merc i/o, many extras, excel. cond., trailer optional, $8,900. Charlie, Ext. 2407.

20' ISLANDS SLOOP - sleeps 4, Evinrude 4-h.p., autohelm, roller furling, trailer, many extras, will consider trade, $3,500. Rich, Ext. 3239 or 472-9034.

15' BAYLINER - 1986, 50-h.p. Force, low hours, Escort trailer, $1,590. Mike, Ext. 4789.

Furnishings & Appliances

AIR CONDITIONER - 5,000 Btu, Fredrich, new, used 2 mos., $175; dining room set, black lacquer, hutch, table, 4 chairs & leaf, $600. Beth, Ext. 4120.

BAR - walnut, w/black leather, 76"Wx39"Hx18"D, $100; bookcase, walnut, 36"Wx30x"Hx12"D, 1 adjustable shelf, $30. Anthony, Ext. 4035.

BED - boxspring, mattress, double size, metal frame. Allen, 581-2961.

BED - queen size, platform w/drawer underneath, mattress, $100 or best offer. 929-4886 after 5 p.m.

BEDROOM SET - armoire/dresser combo, 5 drawer dresser, nightstand, queen bed w/headboard, 1 yr. old, $200. 289-8105.

COUCH - green, 42"W, mint cond., 2 yrs. old, $350. 584-7672.

CRIB - Child Craft, honey oak crib, Youthbed Inc. mattress, crib bumpers, Youthbed comforter sheet set, $350 neg. Nancy, Ext. 7976.

DINING ROOM SET - light oak, table, 2 leaves, 6 chairs, breakfront w/mirrored back, glass shelves, table pad, $950. 368-6115.

GAS RANGE - 30", good cond., bottled gas, asking $50. 924-6751.

MICROWAVE - 1 yr. old, excel. cond., $50; small stereo, $50; end table, $25; chair w/slipcover, $50. 584-7672.

OVEN - wall, 220V, GE, harvest gold, good cond., self-clean, $60. Bob, 289-2986.

SINK/REFRIGERATOR/STOVE - 3-in-1 combo, $450. Marie, 589-3020.

STEREO CABINET - $40; 19½"Wx36"Hx16"D, walnut w/glass door. Anthony, Ext. 4035.

SOFA - love seat, chair, Formica coffee table, 2 end tables, good cond., $150. Jim C., Ext. 4150.

SOFA BED - & chair, Colonial, $25; fireplace glass doors, $10; glass patio doors, $25; wood grain Formica dinette set, $40. John, Ext. 3302 or 924-0651.

TABLE - dining room table, white Formica w/drop-in leaf, 6 light green swivel chairs, $250. Don, Ext. 7237 or 744-2921 after 5:30 p.m.

VACUUM - Regina Housekeeper Plus 7000, w/tools & bags, $25. Bart, 924-6761.

Tools, House & Garden

BANDSAW - cuts metal, excel. cond., combo cut-off, 4", $100. Jim, 821-5239.

CYLINDER-HEAD REFACER - & jet engine block washer, Van Norman. Ted, Ext. 4289 or 395-4284.

DRILL PRESS - 5-spd. pulleys, ½" chuck, asking $75; Snapper lawn mower, 21", push-mower, asking $75. Don, Ext. 7237 or 744-2921 after 5:30 p.m.

FIREPLACE - freestanding, $100; Fisher Price kitchen w/pots & pans, $60; stroller, $20; playpen, $10; rocking horse, $5; golf clubs, $25. Rod, Ext. 3243.

IMPATIENS - assorted, $10/flat, w/delivery date around 6/3. Joyce, Ext. 4215.

LAWN MOWER - 20", starts on 1st pull, good cond., $70. Bart, 924-6761.

SAW - radial arm, Craftsman, 10", w/stand, dust hood, $275. Ralph, Ext. 2591.

SNOW BLOWER - Toro, 2-cycle, lightweight, like new, $50. Keith, Ext. 5355 or 474-3863.

WOOD STOVE - Franklin, cast iron, w/screen, good cond., $50. Jim, 821-5239.

Sports, Hobbies & Pets

CAGE - steel kennel, w/floor, 28"Wx48"Dx36"H, $45. Judy, Ext. 2590.

CAT - beautiful, 2 yr. old, female tabby, named Taffy, for adoption to good home, all shots, neutered. Phil, Ext. 5669.

EXERCISE EQUIPMENT - Sport Flex, cross training system, $125. Bill, 878-4356.

FISH TANK - saltwater, 29-gal., complete setup, $200 neg. Jim C., Ext. 4150.

GUITAR - Fender Strat, 1984, anniversary issue, active EMG pickups, Kahler bridge, ruby red w/gold trim, case, $665. Tim, Ext. 2005 or 331-4683.

ICE SKATES - men's hockey, Wildcat, size 7, excel. cond., hardly used, $20. Bob D., Ext. 7772.

PIANO - upright, vintage Exner, excel. tone, soft action, rebuilt, $700. 781-1149.

WET SUIT - medium/large, excel. cond. 289-8105.

Audio, Video & Computer

CAMCORDER - full-size, 8 lux, excel. cond., $400. Chas, Ext. 5462.

CAMCORDER - Hitachi S-VHS, many features, like new, orig. $1,200, sell for $695. L. Arnold, 5462.

COMPUTER - 386, 16 MHz, 4 MB RAM, 80 MB HD, VGA color, runs DOS 6.0, Windows, has 24-pin printer, $600. Jerry, Ext. 5507 or 473-6532.

COMPUTER - laptop, NEL prospeed 286, 40 MB HD, 3½" drive, expandable, external, monitor, keyboard, rarely used, $500. Jim, 474-1302.

PRE AMP - stereo, NAD model 1020, $100. Jim C., Ext. 4150.

SPEAKERS - 2, AR-10 TT, rebuilt, good cond., asking $75/pair. Don, Ext. 7237 or 744-2921 after 5:30 p.m.

SPEAKERS - 2, Pioneer, wood grain, 22"x11", input 40 watts peak, $40/ea. 265-7444.

CORDLESS TELEPHONE - Sony SPP-75, used 2 mos., in orig. box, $70. Jim C., Ext. 4150.

TV - brand-new, color, bought 11/93, $100 or best offer. Brauer, Ext. 2587.

VCR - Toshiba, good cond., asking $70. Ramesh, Ext. 3267.

VIDEO GAMES - Super Nintendo, $25/ea., $45/two. Ext. 7505.

Miscellaneous

CAR SEAT - toddler-size, Kantwet, new cond., $20. Phil, Ext. 5669.

CAR SEAT - Ultra, good cond., $20. O. Booker, Ext. 3082 or 727-5912.

FIGURINE - Lladro, *Over the Threshold*, bride & groom, orig. $300, sell for $200 neg. Cynthia, 286-6305.

FUR COAT - natural ranch, mink tuxedo trim, fox fur sleeves, size 10, $800. Chas, Ext. 5462.

PLAYPEN - Century, $45; Fisher Price bathtub, $5; Sesame St. playgym, $5; quartz heater, $25. Chris, 744-6874.

STROLLER - good cond., ask. $20. Ramesh, Ext. 3267.

TICKETS - 2, *Dialogues of the Carmelites*, 3/19, Met Opera, $22/ea. Ext. 7849 or 821-0459 eves.

Free

PARAKEETS - 2, yellow, need new home. Arlene, Ext. 3428.

PIANO - Baldwin Acrosonic, mahogany spinet, needs work. Ext. 7537 or 286-0640.

REPAIR MANUAL - 1978 Jeep Cherokee. Jim, Ext. 7079.

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

BRENTWOOD - furnished 1-bdrm. apt., l/r-d/r combo, bath, close to RR and parkways, nonsmoker preferred, no pets, $650/mo. includes all util. & cable. Donna, Ext. 2456 or 224-1447 eves.

CENTER MORICHES S. - 3-bdrm. older home, 1½ baths, huge l/r, fd/r, gar., bsmt., porches, fenced yard, walk to shops, water, $1,100/mo., sec., refs. Nick, Ext. 4979 or 878-6760.

CENTER MORICHES - 3-bdrm. apt. w/ocean view, 2 baths, kit., lg. l/r, spacious balcony, $850/mo. incl. all, avail. May 1. Brauer, Ext. 2587.

HOLBROOK/BROOKHAVEN - 1-bdrm. apt., full kit., bath, l/r-dining area, 2nd floor, priv. ent., 20 min. to Lab, single, nonsmoker, no pets, $525/mo. incl. util. + 1 mo. sec. Fred, Ext. 7947 or 588-2268.

MANORVILLE - Hampton Vista The Greens, 2-bdrm. condo, 2 full baths, l/r, d/r, kit., gar., fp, w/d, tennis, pool, $925/mo. + gas & elec., avail. April 1. Ext. 7218.

MEDFORD - hide-a-way house, very private, porch & gar., fenced-in yard, $650/mo. + sec. 475-4199.

MILLER PLACE - 1-bdrm., l/r, eik, full bath, cable, priv. ent., spare l/r or den, near all, single, $625/mo., couple, $695/mo. 1 mo. sec. preferred, all util. incl. Mitch, Ext. 4212.

MT. SINAI - 2-bdrm. apt., 1½ baths, l/r, kit., new carpet, cable-ready, $750/mo. + sec. Paul, Ext. 3308.

RIDGE - room, 2nd floor, priv. ent., share full kit., bath, l/r, 10 min. from Lab, $375/mo. + sec. 924-6365.

ROCKY POINT - new, l/r-bdrm. combo, full kit., full bath, furn., cable, priv. ent., near beach, own thermostat, $490/mo. incl. all. Karen, Ext. 3122, 744-2259.

SHIRLEY - new, large studio, priv. ent., separate kit., carpeted, cable, suitable for one nonsmoker, no pets, $525/mo. incl. all. 395-3914.

SHIRLEY - 1-bdrm. waterfront property, eik, l/r, full bath, fp, priv. ent., parking, furn., 1 mo. sec., $650/mo. Matthew, 399-2989.

SOUND BEACH - 1-bdrm. apt., full bath, eik, l/r, cable, driveway, 20 min. to BNL, $500/mo. includes all. Ext. 7918 or 744-7007.

HILTON HEAD, SC - 2-bdrm. condo, sleeps 6, fully furn., 2 baths, beach, tennis, golf nearby, $300/wk., Jan.-March. Guy, Ext. 3147 or 689-5378.

LAKE PLACID, NY - 3-bdrm. condo in town, 2 baths, walk to village, skating oval, arena, restaurants, shuttle service to Whiteface, views of Lake Placid & Whiteface. Tom, Ext. 4631 or 744-0681.

For Sale

BRIGHTWATER FARMS/BAY SHORE - 3-bdrm. Colonial, den, fd/r, eik, l/r, laundry, bsmt., wood fence, Andersens, carpeted, 2 tiled full baths, shed, $135,000. Bill, Ext. 2762 or 665-3782.

CENTER MORICHES - 9-rm. Colonial, 4 bdrm., oversize l/r w/fp, d/r, eik, TV/laundry, 1½ baths, gar., town water, walk to rr, school, dock, many extras, 10 mi. to Lab., $165,000. Marilyn, Ext. 2259.

MEDFORD - Blue Ridge Country Club, 5-rm. condo, 1½ baths, includes golf, tennis, billiard, in/out pools, whirlpool, sauna, clubhouse, restaurant, 15 min. to Lab., $88,900. 736-8742.

MIDDLE ISLAND - Artist Lake, 1-bdrm. condo, upper, new paint, w/w, blinds, cac, gas heat, pool, clubhouse, tennis, 5 min. to Lab, must sell, $50,000. Frank, 698-5046, day & eve.

MIDDLE ISLAND - 2-bdrm. condo, mint cond., move-in 1½ baths, cac, all upgrades, French doors, pool, clubhouse, five minutes from Lab, must sell, ask. $66,900 neg. 369-7476.

RIDGE - 3-bdrm. high ranch, 2 baths, l/r, d/r, eik, sunroom 1+ acres, wooded, secluded, many extras, 5 min. to BNL, $135,000. 924-7077.

RIDGE - 3-bdrm. townhouse, 1½ baths, lg. l/r, 5 min,. to Lab, $69,900. 924-4734.

RIDGE - 3-bdrm. townhouse, 1.5 baths, cac, w/w, all appl., new w/d, hot water heater, attic, patio, storage rm., 5 min. to BNL, move-in cond., reduced, $63,000. Mary, 924-4328.

RIVERHEAD - mobile home, adult 55+ park, Glennwood 1989, 14'x70', 2 bdrm., 2 baths, + more. 447-9046.

SMITHTOWN - Hamlet of Pines, 0.7 acre, 4-5 bdrm. high ranch, 2.5 baths, cac, priv. deck, 2-car gar., SD#6, $249,000. Vashihis, Ext. 2830 or 543-0487.

WADING RIVER - 3-bdrm., 2½-bath Colonial, custom kit. w/Jennair, 2-car gar., 1.1 acres, igs, igp, deck, shed, gazebo, steam bath, satellite dish, $239,000. 929-8323.

NORTH CAROLINA - 1.13 wooded acres, waterfront community, pool, clubhouse, 35 ft. boat slip on Pimlico River, $36,000. Ken, 281-5565.

PORT CHARLOTTE, FL - ¼-acre bldg. lot, in developed neighborhood, ready to go, $10,900. 929-8323.

WEST PALM BEACH, FL - 1-bdrm. condo, 1 bath, patio, golf, tennis, sailing, clubhouse, in/outdoor pools, Century Village, 50 or over, $100/mo. maintenance, no dogs, $17,500. Regina, 286-8849.

Wanted

APT. OR HOUSE - for a couple & 3½-yr.-old child, nonsmokers, no pets. Ext. 3889.

BABY-SITTER - German-speaking. Stas, Ext. 7849 or 821-0459 eves.

CAT-SITTER - diabetic cat requires 2 housecalls per day for food and injection, 3/27-4/2, $7.50/visit, reliability a must. Pete, Ext. 7955.

CONDO - to purchase, 3 bdrm., plus garage, bsmt., &/or storage area. Morris, Ext. 4192.

ENGINE - 4.9 liter, 300 c.i., Ford 6, 1980-1984, in good running cond., will pick up. Bill, 281-6498.

JUNK CARS - trucks, machinery, alum. boats, will remove. Rich, Ext. 4986 or 589-9103.

LIGHTED HOOD - for ten-gal. fish tank. Chas, Ext. 5462.

MAST - spars, boom for Alcourt Sailfish or Sunfish, usable and reasonable. Tony, Ext. 2023.

NORDIC TRACK - good condition. Mark, Ext. 4896.

PARENT'S HELPER - to help care for toddlers, some light housekeeping, part-time, flexible hours, Mastic Beach. Heidi, 399-1934.

PART BOARDER - for horse, west/Eng., trails, indoor arena, rings, Calverton area. Pat, Ext 5406.

PEOPLE TO JOIN - BNL Toastmasters, become a better speaker, open avenues for career growth. Sharon, Ext. 7140, or Mitch, Ext. 4212.

PERSONS WHO CONTACTED ME - re: buying 286 computer, lost your telephone number, any other 286 offers. Bill, 281-6498.

SAXOPHONE - Bundt II, in good cond., reasonable price, leave message. 727-6289.

SHEET MUSIC - classical piano. Ext. 3889.

SKIERS - to ski Windham 3/23, $43 for bus and lift, send payment by 3/17 to Augie Hoffman, Bldg. 510C.

TABLE - 42-48" butcher block or oak on center pedestal. John, Ext. 7671.

TELESCOPE - Reflector w/quality optics. Tim, Ext. 2005 or 331-4683.

VIEWERS - to see 2-part video *St. John in Exile*, starring Dean Jones, in Snyder Conf. Rm., 911A, 3/22 & 29, noon. Frank, Ext. 2368/Pete, Ext. 3297.

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

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