BROOKHAVEN BULLETIN
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BROOKHAVEN NATIONAL LABORATORY

Kobe Earthquake: DAT Researcher Returns to Japan To View Damage, Get Insights for U.S. Structures

Young Park usually studies earthquakes after they happen, by tracing their destructive effects on manmade structures. But early this year, he narrowly missed experiencing a major quake's deadly forces firsthand.

A civil engineer in the Department of Advanced Technology (DAT), Park traveled to Japan in January for two weeks of earthquake-related research. One of his destinations was Hachinohe, a northern city that had suffered an earthquake in December 1994 and still held valuable lessons in the unrepaired structural damage to its buildings, railways and roads.

Park then journeyed south, to a research institute on the island of Shikoku. There, he watched simulated earthquakes rock a model of a portion of a power plant and collected data to compare with results from his computer model. The tests were part of an ongoing collaboration among BNL, the Nuclear Regulatory Commission (NRC) and the Nuclear Power Engineering Corporation of Japan.

On the 14th, Park's journey from Shikoku to Tokyo and home to New York led him through the historic port city of Kobe. There, he said, "I talked with people about why I had been in Hachinohe, and at least two or three said, 'Earthquakes don't happen here!'" describing Kobe as a haven for quake-fearing Japanese.

But when he switched on his Tokyo hotel room's television in the early hours of January 17, Park discovered that their optimism had been ill-placed. A fault line ten kilometers (km) under a small island in Kobe's harbor had given way overnight, causing a quake that measured 7.2 on the Richter scale and resulted in hundreds of fires, thousands of building collapses and 5,400 deaths among the city's 1.5 million residents.

With their Japanese hosts are BNL's Young Park (back row, second from right) and visitor Carl Costantino (front row, left), along with members of the U.S. Department of Energy/Nuclear Regulatory Commission team that visited sites damaged by the Kobe quake.

Said Park, "A couple of days earlier it had been A-OK, and then it turned into a nightmare."

Although Park left Tokyo that day as planned, he gathered all the news reports and seismic information that he could. And less than a month later, he returned to Japan as part of an American reconnaissance team sent to find engineering and design lessons in the rubble of Kobe's toppled and cracked structures.

One of many buildings in Kobe, Japan that suffered a mid-height story collapse in the January earthquake.

Lessons From the Rubble

The team was composed of a mix of representatives from the NRC and the U.S. Department of Energy (DOE), including Brookhaven and Lawrence Livermore National Laboratories. Also representing BNL was Carl Costantino, a visiting civil engineer in DAT and an engineering professor at the City College of New York.

The team will publish its report in an NRC document this spring; Park presented initial findings and photos in a DAT seminar on March 23. "The lessons learned from this quake also have application in the U.S.," he said.

Park pointed out that the pattern of earth rupture, caused by a very shallow fault, was quite similar to the recent ones in California — including the 1994 Northridge quake, which occurred exactly one year before the Kobe quake. On the other hand, Park explained, most recent Japanese earthquakes have originated deep in the sea bed.

Some of Park's most interesting observations came from comparing damage in older and newer structures. "There was a major change in the Japanese building code in 1980, and it became more sophisticated," Park explained. "In this quake, older buildings suffered much more damage, but newer ones suffered too," suggesting the quake generated unusually violent ground shaking.

Many old houses, most with no quakeproofing at all, collapsed, Park said, spreading fire down tightly packed neighborhood rows. Multistory office buildings fared somewhat better, although the team observed some completely collapsed structures whose vertical window blinds splayed like shredded paper through broken windows.

Mid-Height Mystery

Most resistant to damage in both the Kobe and Hachinohe quakes were newer buildings, partially built around reinforced concrete columns with steel I-beams in the center. But, while the lower and upper stories of many of these structures held firm during the quake, their middle floors mysteriously collapsed in on themselves.

These mid-height collapses, as they are called, have puzzled Japanese and foreign investigators, who have offered several theories as to their cause. One simple explanation may be found in design practices in the 1970s and 1980s, in which I-beams were not used in the concrete supports of many middle and upper stories.

But other theories are more complicated. Older standards are based on an assumption that the lowest stories bear the brunt of seismic shock. Structural analysis, Park said, suggests that actual force distribution along a multistory building's height is usually greatest in the middle stories.

Other theories abound, but Park and others hope that computer models of actual collapsed buildings combined with recorded ground movement data from both the Kobe and other tem-

(continued on page 2)

BWIS Seminar

Mapping the Universe in 3-D

One of the most elusive tasks of astronomy has been the development of a clear picture of the three-dimensional distribution of matter in the universe. But the three-dimensional layout of galaxies is critical to many aspects of astronomy, from understanding the evolution of galaxies and the structures in which they lie, to determining the fundamental parameters of cosmology, to comprehending both the past and future histories of the universe at large.

Martha Haynes, Professor in the Department of Astronomy at Cornell University and member of the Board of Trustees of Associated Universities, Inc. (AUI), will discuss "Mapping the Universe in Three Dimensions" at the next Brookhaven Women in Science (BWIS) Seminar on Thursday, April 13. Her talk will begin at 3 p.m. in the Hamilton Seminar Room in the Chemistry Department, Bldg. 555.

As Haynes will explain, mapping the universe in three dimensions involves constructing a model of how galaxies are distributed in clusters and superclusters, and, at the same time, avoiding the large empty regions known as voids.

Haynes, who pursues this research at BNL's sister laboratory, the National Radio Astronomy Observatory (NRAO), will relate how recent advances in spectrometers at both optical and radio wavelengths have contributed to this work by tremendously increasing the efficiency with which surveys of the redshifts (Doppler shifts) of large numbers of galaxies can be conducted.

Such surveys, Haynes will explain, can follow quite different strategic and technical directions, covering with different degrees of completeness one-, two- or three-dimensional volumes of the universe. First-order application of the redshift-distance relation (Hubble's law) allows the analysis of the large-scale distribution of galaxies. Comparison of the observed redshifts with ones expected on the basis of other distance estimates allows mapping of the gravitational field and the underlying density distribution.

Martha Haynes earned her B.A. from Wellesley College in 1973, then her M.A. and Ph.D. at Indiana University, in 1975 and 1978, respectively. After doing postdoctoral work at the Arecibo Observatory, 1978-80, she became a research associate there in 1981. That year, she also became an assistant scientist at NRAO, as well as Assistant Director for Operations at NRAO's Green Bank, West Virginia, site.

Haynes left NRAO in 1983, to become an assistant professor at Cornell, where she is associated with the National Astronomy and Ionosphere Center and the Center for Radiophysics and Space Research. She was named Associate Professor in 1986 and Professor in 1991, the same year she renewed her ties with NRAO, as a collaborative research scientist.

Martha Haynes

Now, Haynes is chief scientific consultant for a project for public television centered around the construction of NRAO's new 110-meter radiotelescope at Green Bank. Called "Across Time and Space," this educational film about the interrelationship of basic research and technology is planned for release when the telescope is finished in 1997.

NRAO and BNL are called sister laboratories because both are managed by AUI. Haynes joined the AUI Board of Trustees in 1994.

Refreshments will precede the lecture. To join Haynes for lunch at the Brookhaven Center at 12:30 p.m. that day, contact Eva Bozoki, Ext. 3701.

Take Your Daughter to Work

BNL will host as many as 200 girls, ages 9 to 15, on Thursday, April 27, when the Laboratory participates in the third annual Take Our Daughters to Work Day organized by the Ms. Foundation for Women.

These BNL daughters will be among the five to seven million girls nationwide expected to participate in this day, which this year has the theme "A girl is watching. What is she learning?"

As the Ms. Foundation's literature explains, "As they enter adolescence, girls need our extra support to boost their belief in themselves. Girls need to see that women have a range of life options so they have reason to believe in the promise of education and can shape more realistic futures. . . . Both in schools and in youth-serving programs, boys receive more attention than girls — girls need to know that they are important enough to warrant our attention."

Of course, BNL also thinks boys are important, so, if this day is successful, another day will be planned for boys in the fall.

Today, all employees will receive a letter from BNL Director Nicholas Samios announcing the Lab's sponsorship of Take Our Daughters to Work Day and containing a registration form. Participants will be the first 200 girls registered by April 21.

While the day is designed only for daughters, parents can be fathers or mothers. And, if the parent is unable to bring the daughter to his or her workplace due to safety concerns, the parent should arrange for a "host parent" for the early morning portion of the day's activities. Parents unable to arrange for host parents should note this on the registration form, and the Lab will find host parents for their daughters. Employees interested in being host parents should call Susan Foster, Ext. 2888.

The day will start with daughters reporting to work at their parent's or host parent's normal reporting time. At 9:45 a.m., the girls will go to the Brookhaven Center for a series of short talks and demonstrations by BNL women in various positions. After a box lunch with their parents, the girls will hop into buses for a visit to several areas of the Lab. Parents will pick their daughters up at the Brookhaven Center between 4:30 and 4:45 p.m.

More details about the day's plans will be in next week's Brookhaven Bulletin. Employees or guests who do not receive today's mailing may pick up a registration form at the reception desk in Personnel, Bldg. 185.

Ex-Employee Back in Jail After Violating Probation

A former BNL employee who was on federal probation for stealing government property from the Lab was sent to a federal prison on March 17, after pleading guilty to violations of his probation that included trespassing on the BNL site.

Raymond Patuano was banned from the Lab site in April 1993, after being fired from his job as a heavy equipment mechanic operator in the Plant Engineering (PE) Division's Grounds and Sanitation Group.

In January 1994, he pleaded guilty to stealing $14,000 in Laboratory tools and equipment after an investigation by BNL's Safeguards & Security Division (S&SD), and Raymond Greco of the Federal Bureau of Investigation.

But, on March 21, 1994, he returned to the BNL site, ostensibly to retrieve his medical records from the Occupational Medicine Clinic. Staff there and in Grounds, where he also went, notified S&SD of his presence. Patuano was brought to BNL Police Headquarters and Suffolk County Police were called in to process the trespass charges.

This incident occurred before Patuano was given his original federal sentence in May 1994, of four months in jail and five years of supervised federal probation for his guilty plea to federal theft.

As a state charge, the trespassing could not be added to the federal charge. So, last month, his trespassing was added to a list of incidents that U.S. attorneys used to convince a federal judge in Uniondale that Patuano had repeatedly violated his probation and deserved additional jail time. Also cited were 13 arrests for violating a protection order issued to his estranged wife.

As a result, the judge in the probation hearing immediately sentenced Patuano to nine months in the maximum security facility and three years of supervised probation. He will also face Suffolk County charges after completing his jail time.

"Justice has finally been served," said Gary Gross, S&SD law enforcement liaison, who has followed the case for nearly two and a half years. And, he continued, Patuano's case shows that "theft of government property is something that the Lab will not tolerate and is willing to pursue to the full extent of law."

He continued, "The site is not an open facility, so only those with authorization to be on site on official business should be here." Those allowed on site include employees, retirees, visitors and members of the public at public events — but not employees who were terminated for a cause. Employees who feel that a visitor or former employee does not belong on site should call Police Headquarters at Ext. 2238, or Ext. 2222 in an emergency situation. — Kara Villamil

PSI Meeting

At the next meeting of the Upton Chapter of Professional Secretaries International (PSI) on Tuesday, April 11, Maida Berenblatt will speak on "Empowerment in the Workplace."

The meeting will be held at 7:30 p.m. at Borders Books and Music Shop, 2130 Nesconset Highway, Stony Brook. For more information, call Susan Carlsen, Ext. 7647, or Marilyn Ewald, 632-6410.

In Memoriam

George Wright, a Participating Research Team (PRT) associate in the National Synchrotron Light Source (NSLS) Department, died on March 27 of a heart attack. He was 43.

Wright had worked for the AT&T Bell Laboratories/University of Illinois PRT since becoming a BNL employee on June 23, 1986. His work supported the research of many scientists who performed telecommunications and materials-science research at several x-ray and UV beam lines at the NSLS.

Said his supervisor, Alastair MacDowell, "He was an excellent machinist and an all-around technician. He knew a lot of people, and he'll be missed by all of them."

Wright first arrived on the BNL site in September 1982, as a guest union mechanical technician in the Alternating Gradient Synchrotron Department. He continued in contract labor and guest positions for nearly four years, including appointments in the Physics Department and the Safeguards & Security Division. After being hired as a principal technician in 1986, he was promoted to technical specialist in June 1987, and reached his final position in July 1993.

Surviving Wright are his wife Vivian and his son George.

Helpful Ideas Win Awards for BNLers

The following suggestions made by concerned and inventive BNLers recently won awards through the Employee Suggestion Program. If you have a suggestion that could save the Lab time, money or energy, or improve safety, submit your idea on a suggestion form available in your department or division office, the Personnel Office, or the Cafeteria.

Ernest Jochen, a non-destructive testing/quality control inspector in the Central Shops Division, (CSD), found new uses for a standard piece of CSD x-ray equipment.

By adapting the Andrex 200,000-volt x-ray radiography instrument, Jochen enabled experimenters using the Alternating Gradient Synchrotron, the High Flux Beam Reactor and facilities in the Physics Department to see the levels of liquid hydrogen and helium in their sealed beam-line equipment, and to locate faults and misaligned or broken parts in machines.

The suggestion, which earned Jochen a $200 award, has the potential to save down-time for many experiments at both facilities. Since Jochen suggested it, the approach has also been used to examine printed circuit boards and core samples of the ocean floor.

Muriel Pfeiffer, a personnel representative in the Personnel Division, suggested a time-saving announcement that let BNLers know they could bypass the recorded greeting on the Lab's voice-mail system by pressing the "#" key. Pfeiffer received $88 for recognizing that time is indeed money — the option of not waiting for the "beep" is estimated to save BNLers time, thus saving the Lab $880 per year.

Coming Up

Physicist Thomas Roser, Alternating Gradient Synchrotron Department, will give the next Brookhaven Lecture on Wednesday, April 19. His talk, entitled "Spinning Protons and Siberian Snakes," will begin at 4 p.m. in Berkner Hall.

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Doug McLean and his Blues Band will perform a special BERA concert on Friday, May 5, in Berkner Hall. Before McLean begins playing his famous blues harmonica at 9 p.m., Dwayne D. Kerr, known as the "funky fluteman," will open the show at 7:30 p.m. with a mixture of contemporary jazz, rhythm and blues, hip hop, and dance music.

Tickets are $10 for adults and $6 for senior citizens and children under 12. Purchase them at the door, or in advance at the BERA Sales Office, weekdays from 9 a.m. to 1:30 p.m. See the Bulletin next week for more information.

Kobe Earthquake (cont'd)

blors will yield more definite information.

Infrastructure Damage

The U.S. team was primarily interested in how industrial sites fared during the quake. They visited power stations and substations, factories, an incinerator plant, a chemical plant, a sewage plant, and even sake and beer breweries, to obtain information on the performance of structures and equipment in such industrial facilities.

They traveled to Osaka, near Kobe, to learn of the quake's effects on the Kansai Electric Power Company, or KEPCO. The utility's four nuclear power plants, situated well north of Kobe, were not affected by the quake. KEPCO's fossil fuel plants, nearer the epicenter, had shut down automatically after seismic sensors were tripped and suffered minor damage.

At the breweries, most new buildings were unharmed, but much beer and wine was spilled when tanks broke loose of their anchors. Information on the performance of large tanks, such as these, could be very useful in evaluating similar equipment in other industrial facilities to guard against quake damage.

The investigators found that other engineered structures, such as roads and highways, suffered greatly from a phenomenon known as liquefaction.

Explained Park, "When an area of sand is shaken, all the water moves upward, and the whole thing is liquefied. There was much damage due to this phenomenon." Railway piers and manmade islands in Kobe's port were severely damaged from liquefaction and resulting landslides.

One of the most dramatic sights Park remembers from Kobe was the Hanshin elevated highway bridge, built in 1970. Its reinforced concrete columns had fallen, and the roadbed was toppled and crushed.

The bridge symbolizes the mass destruction in Kobe, and serves as a warning of what could happen in other cities if they were struck by a major earthquake. "In deciding whether one should design for such event," said Park, "one must strike a balance between reasonable cost and an acceptable level of risk." — Kara Villamil

An April Evening of Art and Science With Diane and David Bouchier

Diane Bouchier

Purposeful yet delicate, the watercolor and gouache paintings of Diane Bouchier combine scientific observation with a creative grace that transforms botanical illustrations into fine art. Sponsored by the BERA Art Society, Bouchier will exhibit her work in Room B in Berkner Hall from 5:30 to 8:00 p.m. on Thursday, April 20, and from 11:30 a.m. to 1:30 p.m. on Friday, April 21.

To add incisive remarks and a literary flavor to the Thursday opening reception, accompanying Diane Bouchier will be her husband, David, known to many BNLers for his weekly essays on National Public Radio station WSHU and his regular humor column in the Sunday *New York Times*. All are invited to share "An Evening of Art and Science With Diane and David Bouchier." Refreshments will be offered.

Diane Bouchier studied at Harvard University's Peabody Museum and the New York Botanical Garden, and her prize-winning art has been exhibited in juried shows at the Vanderbilt Museum, the Bayard Cutting Arboretum, the New York Botanical Garden, the New York Flower Show and galleries in Manhattan and Long Island. Her work is also part of the permanent collection of the Hunt Institute for Botanical Documentation, Carnegie Mellon University, and it is part of the institute's prestigious 8th International Exhibition.

A resident of Wading River, Bouchier is also Professor of Sociology and Director of Graduate Studies at the State University of New York at Stony Brook.

David Bouchier

Born in London, David Bouchier took his Ph D. from the University of London. He has had experience as a journalist, broadcaster, lecturer, editor and teacher, on both sides of the Atlantic. His comments and opinions on American life and culture have appeared in newspapers all over the U.S., from *The Atlantic Journal & Constitution* and *Newsday* to *The Chicago Tribune* and *The Los Angeles Times*. He has contributed to magazines such as *Cosmopolitan*, *Harper's*, *New Republic* and *Esquire*, as well as writing award-winning books and essays.

Tennis Anyone?

1995 Tennis Ladder

Spring has sprung, the time has changed — and the BERA Tennis ladder has begun again, to run until Daylight Saving Time ends. For the $1 fee, players of all levels who are employees or visitors may sign up for the ladder at the BERA Sales Office, Berkner Hall, weekdays, 9 a.m. to 1:30 p.m.

During the first two weeks, open challenges are allowed at any level of the roster. After that, a player may only challenge players on the same rung or one rung higher.

The challenger is expected to provide a new or once-used can of tennis balls. Unless players agree beforehand to another scoring system, the first player to take eight games wins; a 12-point tie-breaker will be played in the event the score is tied at 7-7.

For more information on rules and format, contact Joe Carbonaro, Ext. 5139, or e-mail carbona1@bnl. gov.

1994 Results

The courts were very busy in '94, with over 150 ladder matches played by 23 ladder participants. So, thanks to all who participated and congratulations to the players who captured the top-three rungs:

I 1. Joe Carbonaro, 2. Om Singh, 3. Frank Kito, 4. Ed Gill.
II 5. Rudy Alforque, 6. Ken Perkins, 7. Terry Maugeri, 8. Don DiMassimo.
III 9. Ady Hershcovitch, 10. Arnold Stillman, 11. Frank Stubblefield, 12. Misha Agamalian.

Be Social Saturday

Tomorrow, Saturday, April 8, at 8 p.m., in the North Ballroom of the Brookhaven Center, all are invited to fox trot, lindy, mambo, waltz, etc., the night away at the monthly informal social sponsored by the BNL Ballroom, Latin & Swing Dance Club. The suggested donation of $1 per person goes to the club's CD music fund. For more information, call John Millener, social chairman, Ext. 3853.

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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.

The Winners Are . . .

Patti Bender

Bob Marascia

Patti Bender, Plant Engineering Division, and Bob Marascia, Alternating Gradient Synchrotron Department, have been elected to the Executive Board of the Brookhaven Employees Recreation Association (BERA).

Chosen by BERA members in elections held March 27-31, Bender and Marascia will replace outgoing BERA Executive Board members Andrea Epple, Safety & Environmental Protection Division, and Rosalie Piccione, Contracts & Procurement Division.

On May 1, Bender and Marascia will join the other six Executive Board members: April Donegain, Fiscal Division; Skelly Frei, Reactor Division; Augie Hoffmann, Physics Department; Luis Nieves, Fujitsu Business Communication Systems; Bridget Ramos, Department of Advanced Technology; and Edward Sperry IV, Relativistic Heavy Ion Collider Project.

Atlantic City Trip

The next BERA-sponsored, one-day trip to Atlantic City will be to the Claridge Hotel and Casino on the Boardwalk, on Saturday, May 6. The initial cost will be $22, but the hotel-casino will give a $12 coin return. The bus will leave the Brookhaven Center at 9 a.m., with an extra pickup at LIE Exit 63, if requested. Return will be about 11:45 p.m.

Buy tickets now at the BERA Sales Office in Berkner Hall, weekdays, 9 a.m. to 1:30 p.m. For more information, call Andrea Dehler, Ext. 3347; Rosalie Piccione, Ext. 3160; or Kay Dellimore, Ext. 2873.

Healthline Lecture

"Arthritis: Coping Strategies for Myself and Others" will be presented by Shirley Haubner of the Arthritis Foundation on Tuesday, April 11, from noon to 1 p.m. in Berkner Hall. Sponsored by the Health Promotion Program of the Occupational Medicine Clinic, the talk is open to all. To register, return the completed bottom portion of the Healthline flier to Health Promotion Specialist Mary Wood, Bldg. 490, by Monday, April 10. For more information, call Ext. 5923.

Final BERA Concert Features Strings

Chamber music by Bach, Prokofiev and Schumann will be performed by outstanding young musicians from the State University of New York at Stony Brook at the final BERA concert of the 1994-95 season on Wednesday, April 12, at 8 p.m., in Berkner Hall. Combinations of string instruments will be featured, including a piano-violin duo, a violin solo and a piano-viola duo. A $6 donation is suggested.

Review Needs You

The U.S. Department of Energy's 1996 Review of Laboratory Programs for Women will be held at BNL in May 1996. Anyone interested in volunteering to help plan programs for the review may call Women's Coordinator Vicki McLane, Ext. 5205.

Volleyball

League 2 final standings

Fossils	47-16	Jolly Vollies	31-32
Safe Sets II	42-21	Spiked Punch	27-36
Mon. Night Live	37-26	Nuts & Bolts	26-37
Net Wits	35-28	Night Court	7-56

Regular Season Champions

Open League: GTEAM - Orest Kawka, Bill Kropp, Dan Kropp, Tony Mendez, Dan Mullaly, Don Shea, Jean Spears.

League 1: Rude Dogs - Steve Hulbert, Rui Mei Ma, Annette Meier, Michi Miura, Linda Oulton, Gail Penny, Mark Renner, Mike Sagurton, Terry Sullivan, John Usher, John VanDenkieboom.

League 2: Fossils - Biays Bowerman, Carmen Falkenbach, Sue Ellen Gerchman, Larry Hoff, Hong Li, Gary McIntyre, Kathleen McIntyre, Gary Smith, Sandi Sullivan, Robert Wells, Sue Wells.

League 3: Silver Bullets - Roy Barone, Pat Carr, Kevin Cosgrove, Claudia Jones, Luis Nieves, Fran Salpietro, Dena Tullo.

Playoff Results

Open League, Round 1: The Roofing Co. 3, Bud Men 0.

League 1, Semifinals: Koopas 3, Network News 0.

League 3, Round 1: Take Five, 2, Bonnie's Bombers 0; High Volley'em, 2, For Play 0; Silver Bullets 2, Harlem Knights 0; Upton Ups 2, DO-DAT 1.

Bowling

Red and Green League

R. Raynis 279/232/693 scratch series, B. Giuliano 258/619 scratch, J. Griffin 257/627 scratch, J. Cuccia Jr. 246/237/673 scratch, E. Larsen 233/222/208/663 scratch, R. Wiseman 233/613 scratch, G. Weresnick 230/218/602 scratch, K. Koebel 224/224/212/660 scratch, R. Eggert 223/214/601 scratch, A. Warkentien 223/203/680 scratch, R. Prwivo 222, J. LaBounty 216, N. Scala 216, S. DiMaiuta 215/600 scratch, R. Larsen 214/606 scratch, J. Goode 213, R. Mulderig Jr. 212, H. Arnesen 209/200, K. Asselta 205, F. Griswold 203, K. Riker 202, E. Sperry IV 200.

Purple and White League

M. Meier 277/258/181/716 scratch series, S. DiMaiuta 256/206/181/643 scratch, G. Riker 217/174, B. Belligan 215, E. Sperry IV 205, N. Besemer 194, K. Batchelor 193, E. Zukowski 192/184, G. Munoz 190, S. Smith 189, K. Conkling 187, Doug Fisher 184, N. Fewell 183, D. Klein 182/182, D. Botts 181, K. Riker 180, C. MacDougal 179, M. G. Meier 179, P. Fewell converted the 2/10 split.

Arrivals & Departures

Arrivals

Fulvia Arfelli	NSLS
George A. Meade	Cen. Shops
James C. Milne	NSLS
Ondrej Prasil	DAS
Joseph C. Saetta	AGS
Ivan A. Samel	RHIC
Kenta Shigaki	Physics
Patricia M. Statuch	Comp. & Comm.
Michael J. Witte	RHIC

Departures

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

Martin G. Cohen	Director's Off.
Kazuma Hirota	Physics
Yi-Ping Liu	Chemistry
Richard C. Schultz	Biology
Dusan Srdoc	Saf. & Env. Prot.
Arthur Stiegler	Saf. & Env. Prot.

Basketball

First-round playoffs on March 30

Magic 91		**Air America 64**	
Troy Mayo	23	Doug Aichroth	24
Ray Jackson	20	Angelo Bosco	12
Terry Buck	18	Kevin Woodson	9
Mitch Williams	17	Louis Lalor	8
Fred Maier	6	Mike Mallardi	8
Pat Browne	2	Alex Ratti	3
Al Langhorn	2		
Dennis Ryan	2		
Ed Gregory	1		

Three-point shots: Williams (4), Aichroth (2), Lalor (2), Maier (2), Ratti.

Runaways 63		**Deep Six 61**	
Pete Ratzke	23	Tracey Fountaine	23
Jerry Gaeta	12	Charles Bennett	18
Ed Meier	9	Calvin Butts	9
Chris Ingoglia	6	Brian Hobson	8
Gerry Shepherd	5	Dwayne Eleazer	2
Jim Desmond	4	Neil Tyler	1
Ron Mayo	4		

Three-point shots: Bennett (2), Gaeta (2), Hobson (2)

Cafeteria Menu

Monday, April 10	
Soup: Chicken & escarole	.90/1.20
A la Carte: Ragout w/biscuits	3.95
Lite: Lemon-sage cod w/spring onions	3.85
Deli: Turkey w/cranberry jelly	3.20
Grill: Monte Cristo	3.30
Tuesday, April 11	
Soup: Cream of vegetable	.90/1.20
A la Carte: Chicken w/tomato coulis	3.95
Lite: Eggplant & potato gratiné	3.85
Deli: Top round of beef	3.20
Grill: Turkey on pumpernickel	3.30
Wednesday, April 12	
Soup: Split pea w/ham	.90/1.20
Display Cooking: Cajun foods Carnivale	4.75
Deli: Pork loin Dijon w/apple compote	3.20
Grill: Spicy wings w/bleu cheese	3.30
Thursday, April 13	
Soup: Beef & bean	.90/1.20
A la Carte: Sausage in chicken breast	3.95
Lite: Vegetable-tofu strudel	2.95
Deli: Jamaican jerk lamb w/slaw	3.20
Grill: Turkey chili in a tortilla	3.30
Friday, April 14	
Soup: Salsa fish	.90/1.20
A la Carte: Turkey saute w/couscous	3.95
Lite: Sea bass w/lemon glaze	4.20
Deli: Corned beef w/carraway cabbage	3.20
Grill: Swordfish teryaki	3.30

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.

LABORATORY RECRUITMENT - Opportunities for Laboratory employees.

MK 3817. FIREFIGHTER POSITION - (temporary position ending by 3/30/96) Previous substantial firefighter experience is required. Completion of New York State EMT course and possession of training certificate is highly desirable; if not, completion of course within one year is required. Must be willing to work shifts at the completion of 13-week training period. Safety & Environmental Protection Division.

NS 3322. HEAVY EQUIPMENT MAINTENANCE SUPERVISOR - (temporary position) Requires substantial pertinent experience in heavy equipment operation and maintenance. Will direct employees on jobs including assigning, training and scheduling, and will provide technical direction of work. Maintains records and reports. Plant Engineering Division.

OPEN RECRUITMENT - Opportunities for Laboratory employees and outside candidates.

DD 0560. DRAFTING POSITION - (term appointment) Requires an AAS or equivalent, the ability to perform mechanical design functions and a working knowledge of engineering fundamentals, machine shop practices, welding and vacuum systems. Must possess very proficient skills with AutoCAD Release 12. Working knowledge of MINX database highly desirable. Familiarity with RHIC design standards and procedures, and experience in the design and layout of shielding and buss bar for RHIC injection line desirable. RHIC Project.

DD 3328. ADMINISTRATIVE POSITION - Requires a BS in accounting/finance (MBA/CPA preferred) as well as several years of general accounting experience. Knowledge of spreadsheet-based applications (Lotus/Excel) is also required; practical experience in network administration desired. Responsibilities include applying accounting and cost principles to project tracking models, monitoring fuel consumption, tracking capital requests, reviewing and billing communications charges, reconciling operating accounts to general ledgers, and assisting Administrative Manager in responding to Department of Energy and Budget Office reporting requests. Plant Engineering Division.

Motor Vehicles & Supplies

93 HYUNDAI EXCEL - 2-dr. h/b, 34k, a/t, sunroof, stereo, pinstriping, orig. owner, $5,000 neg. Ext. 5927.

92 METRO - 16k mi., 5-spd., 45 mpg, 3-yr. warr., $5,500. Joe, Ext. 4496.

92 TOYOTA CAMRY LE - metallic beige, a/t, p/s, p/b, p/w, p/l, p/a, sunroof, beeper alarm, 45k mi., 30+ hwy. mi., mint, $13,000 neg. S. Spark, Ext. 4111.

91 BUICK LE SABRE - 4-dr., 6-cyl., 40k mi., full power, custom roof & trim, orig. owner, excel. cond., $11,950. Peter, Ext. 4235.

89 CHEVY CELEBRITY EURO SPORT - s/w, 3rd seat, V-6, ac, cruise, p/l, p/w, p/s, stereo, excel. cond., $5,400. Kai, 341-1003.

89 JEEP CHEROKEE - 4-dr., 4.0L, 4wd, a/t, p/s, ac, roof rack, 85k mi., new tires, batt. & exhaust, excel. cond., $8,200. Chris, Ext. 2022 or 395-6112.

89 NISSAN PULSAR NXXE - ac, T-top, p/s, p/b, am/fm cass., thunder black, car cover, $4,500. 929-0663.

89 TOYOTA CAMRY - 103k mi., a/t, red, 4-dr., good cond., $4,200. Dan, Ext. 5177 or 689-5152.

88 CHEVY BERETTA - 2-dr., a/t, ac, very clean, p/w, p/b, runs well, looks good, asking $2,400. 924-6324.

88 FORD RANGER - white, 4-cyl., new rebuilt factory motor, runs well, good body, good transportation, $2,000 firm. Pete Detoll, Ext. 4100.

88 MERCURY SABLE LS- s/w, leather seats, new tires, 15k on rebuilt eng., excel. in/out, $4,900. Sharon, Ext. 5919 or 929-1099.

88 OLDS FIRENZA - a/t, full power, cruise, ac, 4-dr., 90k mi., excel. cond. Arnie, Ext. 2606.

87 BMW 325 - 4-dr., 116k hwy. mi., orig. owner, excel. cond. Ext. 3926.

86 BUICK SKYHAWK - a/t, ac, 2-dr., 4-cyl., $1,700. Cassella, Ext. 5318.

86 JEEP WRANGLER 4x4 - gray, 4-cyl., 2.5L eng., new head from factory, runs well, solid body, $2,300 firm. Mel, Ext. 4100.

86 MUSTANG LX - h/b, 2.3L, a/t, ac, all power, 163k hwy mi., very clean, good body, runs well, $1,100. Kevin, Ext 5865.

85 BMW 735i - gray, loaded, 69k mi., used as summer car, gar., mint cond., $5,500. Marr, 472-2484.

85 KAWASAKI GPZ 1100 MOTORCYCLE - runs, needs battery and tune-up, $1,500. Maria, 924-5533, Ext. 289.

84 CHEVY VAN - custom low top, 77k mi., new brakes & tires, recent tune up, $3,750. John, Ext. 4668.

83 NISSAN SENTRA - new battery, brakes & more, runs well, good for parts, $400 or best offer. Ext. 2702 or 924-9081.

83 OLDS CUTLASS SUPREME - 4-dr., fully equipped VA car, no rust or damage, runs well, serviced, hwy. mi., $1,000 firm. Don, Ext. 3687.

• tango • cha cha • mambo • samba • merengue • rhumba • lambada • salsa • merican hat dance • flamenco • tango • cha cha • mambo • samba •

BNL Ballroom, Latin & Swing Dance Club
presents a belated

Cinco de Mayo Dance

Cinco de Mayo is a Mexican holiday marking the anniversary of the Battle of May 5th at Puebla in 1862, during which the Mexican national army under General Porfirio Diaz defeated French troops sent by Emperor Napoleon III to conquer first Mexico City and then all of Latin America.

Celebrate the 5th on the 6th!

Saturday, May 6, 1995
7 p.m. to midnight
North Ballroom, Brookhaven Center
Brookhaven National Laboratory, Upton, New York

INCLUDES

complimentary hot and cold hors d'oeuvres available at 7 p.m., including fajitas, nachos grande, buffalo wings, and spring vegetable crudites

Latin, ballroom and swing dance music by DJ Robert Beers, from 8 p.m. to midnight

full cash bar available from 7 p.m. to 11 p.m., featuring Mexican beers and Margaritas

complimentary desserts, coffee and tea served at 10:30 p.m.

Tickets: $15 per person
must be purchased in advance

For tickets, contact:

- Rudy Alforque, Ext. 4733, Bldg. 817
- Don Litcher, Ext. 7587, Bldg. 515
- Betty Organek, Ext. 3164, Bldg. 355
- Dick Savage, Ext. 4640, Bldg. 120
- Gail Schuman, Ext. 7985, Bldg. 421
- Lucian Wielopolski, Ext. 3656, Bldg. 490

no tickets available at the door

82 CHEVY CAVALIER - s/t, 2-dr. h/b, best offer. Frankie, 286-9857.

82 CHEVY MONTE CARLO - V-8, blue, alum. wheels, $750. 289-3586.

82 CUTLASS SUPREME - 6-cyl., 25k mi. on new eng., ac, p/b, p/w, metallic gray, $1,600. 567-4834.

81 BUICK LE SABRE - runs well, just inspected, $800 neg. 728-9151.

77 CADDY COUPE DEVILLE - 35k mi. on rebuilt eng., many new parts, asking $1,000. Charles, Ext. 5462 or 653-8011 after 4 p.m.

76 CHEVY MALIBU CLASSIC - 350 small block, Holley 4-barr. carb., Edelbrock manifold, chrome headers, B&M quicksilver slapshift posirear. Phil, 286-1348.

76 LANCIA SCORPION - 2-seat, mid-engine, make offer. John, Ext. 2788.

75 FORD GRANADA - excel. for parts or drive, orig. 302 V-8, a/t, 75k mi., no title, $450. 929-8414.

74 CHEVY PICKUP - 4wd, a/t, 350, 40k mi., running boards, new springs, cap, good cond., $3,000. Roger, Ext. 2382 or 734-5114.

71 CHEVY NOVA - 305 V-8, red w/black vinyl roof, new brakes & tranny, many extra parts, $1,500 neg. Jason, 744-1194.

68 VOLVO 122S - B-18 engine, many new parts; '64 122S parts car, ready for restoration, good tires, $300 neg. Paul, Ext. 5309.

66 CHEVY NOVA RACE CAR - new motor, over $25,000 invested, $10,000 firm; '85 Olds Delta 88, high mi., ask. $1,850. Steve, Ext. 3849 or Willie, 929-0586.

BUMPERS - new, front & rear, '95 Chevy van, $100 ea. firm; new radio, am/fm cass., w/speakers, $40. Don, Ext. 7237 or 744-2921 after 5:30 p.m.

HITCH - fits '81-'88 Ford Escort, $25. Mike, 467-8393.

PARTS - VW Beetle parts bought or sold; S/B 327 Chevy engine for sale or trade for pickup truck. Rich, 929-8514.

SHOP MANUAL - 1986 Isuzu Trooper, may be good for 1987 & other years, orig. $40, now $20 neg. John, Ext. 3292.

TIRES - 2, Goodyear, P225/75R14, brand-new, orig. $175, now $40 ea.; 2, UniRoyal, white lettered, P235/75R15, $30 ea. or 2/$50. 698-9274.

Boats & Marine Supplies

23' CHAPARRAL - 1984, UHF/radar, o/riggers, DF, Live-well, full canvas, d/btys, bunks, excel. cond., must see, $10,000. Marilyn, Ext. 2259.

23' DORSET - 165-h.p. Mercruiser i/o, asking $2,500. Mike, Ext. 3558.

23' PEARSON SAILBOAT - model P23K, fixed keel, sleeps 4, maint. well equipped, $5,200. John, Ext. 2788.

23' SAILBOAT - fg, fixed keel, sleeps 4, mooring dinghy, jackstands, 6-h.p. motor, sails, new windows, excel. cond, $1,900. Mike, Ext. 7861 or 698-3967.

19' CITATION - 1987, cuddy cabin, 165-h.p. i/o, Shoreline trailer, radio, DF, extras, very low hours, excel. cond., $10,000. Pete, Ext. 4235.

16' STEIGERCRAFT - 1991, runabout, 25-h.p. Johnson, used less than 2 hrs., trailer, garaged, $3,800 neg. Dave, Ext 4084.

14' GRUMMAN SPORTS - 1989, 25-h.p. Evinrude workhorse, steering, 8 controls. Cox trailer, $2,600. Roger, Ext. 2382 or 734-5114.

STAR SAILBOAT #6210 - fg, double hull, alum. spars, 2 sets sails, cover, trailer, meas. cert., good cond., $1,900; 1992, 3-h.p.Yamaha o.b., long-shaft, excel. 472-1735.

OUTBOARD - '88, 8-h.p. Yamaha, runs, mint. 286-7430.

BOAT TRAILER - small, 660-lb. capacity, 12'-14' length, steel frame, lights, $75. 589-5490.

Tools, House & Garden

ATTACHE TOOL CASE - new, Xcelite model TC-100, orig. $100+, sell for $55. 727-3608 anytime.

DETHATCHER - 36", tow behind, Sears, like new $50. Richie, Ext. 2175 or 734-7342.

FLOWERS - pansy, $10/flat. Ray, Ext. 4561.

GRILL - Quik-cook, burns newspaper, portable, 5 times faster than charcoal, used once, $15. Linda. Ext. 2733 or 395-6784.

HEATING UNIT - Miller Gun, v.g. cond., $100 or best offer; girl's bike, Pinnacle, pink & purple, training wheels, $35. O. Booker, Ext. 3082 or 727-5912.

LAWN MOWER - Aries, 22", self-propelled, access., good cond., $50. Ext. 7505.

POWER CASTOR - elec., moves trailers, boats w/o car, up to 6,000 lbs., in tight areas, orig. $1,000, asking $225. Lou, Ext. 4289.

TREES - white pines, blue arborvitaes, $2/ft., you dig, Alberta spruces, up to 2', $10/ea.; Alberta spruce, 7', $50, will help dig, all nursery grown. 744-5867.

Free

BEDS - 2 twin beds w/king headboard; also daybed, recliner, old dresser, you haul from basement. Bob, Ext. 4656.

ELECTRIC DRYER - white, it's old, but works. Robin, Ext. 4967.

FIREWOOD - many hardwood trees, stacked up, some pine, lots of kindling, bring saw, backhoe avail. to help you load. Frank, 234-0538.

SOFA BED - you pick up in Shoreham. Denise, Ext. 2776.

TV - 19" Sony Trinitron, 20 yrs. old, still works, you pick up. Harriet, Ext. 3484.

Car Pools

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

Yard & Garage Sales

MILLER PLACE - 4/8-9, furniture, household items, N. Country Rd. & Shagwong Dr.

Wanted

BABY-SITTER - for 4 & 7-yr.-old boys, from 6 a.m.-9 a.m., M-F, Mastic Beach. Ext. 2719.

CHILD CARE - looking for mature, fun-loving person to care for my 2 children from my Shoreham home, FT/PT. Grace, Ext. 2229 or 821-4743.

CHILD CARE - need mature, responsible person to care for two 1-yr.-olds, Patchogue area, ref. req. Ann, Ext. 5756 or 654-0296.

DONATIONS FOR UPTON NURSERY SCHOOL - tag sale on 5/6. Cindy, 874-3652 or Jane, 929-8513.

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

MONITOR - 1 MB clone, VGA, could be monochrome, inexpensive. Ralph, Ext. 2180.

PING-PONG TABLE - good cond. Börg, Ext. 5653.

SUMMER RENTAL - for retired couple, North Shore pref., for 4-6 weeks, excel. refs. Linda, Ext. 5763.

TILLER - rear tine, running or not, and disk for small yard tractor. Charles, Ext. 5462 or 288-2080 after 4:30.

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.*

AUTOMATIC LAWN SPRINKLERS - free estimates, professional layouts, repairs, alterations, additions, turn-ons. Lou, 928-7042.

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

CHILD CARE - avail. in my home, fenced yard, toys, TLC, nonsmoker, Kim, 471-6416.

CHILD CARE - mature, responsible mother will care for your child along w/2-yr.-old daughter, ages 2-5 yrs. pref., Wading River. Mary, 929-8613.

CHILD CARE - exp. mom will watch your child in my Rocky Point home, meals & snacks provided. Lorijean, 744-5857.

CHILD CARE - by licensed, loving mother, refs. provided by BNL employees. Robin, 345-0298.

CHILD CARE - conscientious, caring mom will care for your child in my Ridge home, meals & snacks provided. Cindy, 744-4816.

CHILD CARE - experienced, caring, avail. immed., your home or mine. Wang, 632-2487.

CHIMNEY CAPS - fireplace, wood and oil flue sweeping, custom-made stainless steel caps for all chimneys, Lab disc. Mike, 821-5526.

CLEANING - couple looking for office cleaning work, reliable & thorough, reasonable rates. 475-8242.

COMPUTERS - installation, repairs, tutoring, reasonable, all done in your home. Steve, 698-5260.

DANCER - professional Hawaiian and belly dancing for all occasions, fun for parties. Sabiha; 399-1237.

DECORATIVE PAINTING - marbling, stenciling, sponging, rag rolling, trompe l'oeil, etc., borders, walls, ceilings, trim, floors, furniture, more. Phillip, 286-1348.

ELECTRICIAN - outlets, lighting, additional circuits, service upgrades, repairs, lic./ins. Steve, 758-7002.

ELECTRICIAN - quality work, reasonable rates, Port Jeff/3 Village area, lic./ins. Tim, 331-4683.

FINANCIAL EVALUATION - of your life insurance & retirement program, options for future pension maximization, tax savings. Rich, 744-4816.

GUITAR LESSONS - your home. Brian, 475-7664.

HANDYMAN - no job too big or too small, very reasonable, done neatly and quickly, free estimates. Dom, 363-8206.

HOME IMPROVEMENTS - extensions, dormers, decks, kitchens, baths, roofing, siding, quality work, honest prices,, lic./ins., refs., free est.. Chris, 286-1348.

HOME IMPROVEMENTS - carpentry, complete service, roofing, siding, windows, doors, decks, oak-flooring, basements, lic./ins. Joe, 399-0828.

HOME IMPROVEMENT - carpentry, drywall, spackling, painting, plumbing, ceramic tile, electrical, free estimates, Lab disc. Don, 744-2921 after 5:30 p.m.

HOUSE CLEANING - neat, dependable, no job too big or small. Wang, 632-2487.

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

KID'S BIRTHDAY PARTIES - I come as Cinderella, Jasmine, Little Mermaid, Snow White, Barbie, etc., many favors & gifts incl., Sat. only. 289-8212.

LAND CLEARING - trees, stumps, brush removed, topsoil graded and raked w/450 loader, $70/hr. Tom Muller, 878-1060.

LAWN & LANDSCAPING SERVICES - gutters cleaned, reasonable, reliable, refs. Dave, 751-1474.

LAWN MOWER - & lawn tractor service, repairs, fast & reasonable, have trailer, will travel. Dan, 698-7322.

LETTERING, STRIPING, AIRBRUSHING - trucks, vans, cars, motorcyles, bugshields, boats, helmets, clothing, signs, murals, nurseries. Gary, 549-9113.

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

MAILBOXES - custom-made, many colors & designs, free lettering, free catalog, Lab discount, house & post mailboxes avail. Mike, 821-5526.

MASSAGE THERAPY - treat yourself, gift certificates also available. Kathleen, 399-6585.

PAINTING - drywall, spackle, tape, custom colors, int./ext., stains, trim work, windows, door installation, power wash, mildew control, Scott, 325-0706.

PAINTING - int./ext., Sheetrock, tape, spackle, wallpaper, stain, power wash, refs., ins. James, 399-4912.

PAINTING - wallpaper, spackle, taping, staining Sheetrock, cabinets refinished, int./ext. painting, power wash, free est. John, 563-6596.

PAINTING & PAPER HANGING - lic./ins., quality work at affordable prices, free estimates, Lab discount. Bob, 331-4336.

PAINTING - wallpaper hanging specialist, painting int./ext., free estimates, 20 years exp. John, 277-3805.

PIANO INSTRUCTION - simple & fun, for beginners of all ages, half-hour sessions, Lab discount, licensed, Stony Brook area. Rod, 751-7023.

PLUMBING & HEATING - alteration & repair work by retired BNL employee. Jim Morris, 472-1205.

POOL TABLE RECOVERY & REPAIR - choose from 27 custom colors. Philip, 369-9610.

PRESENTATIONS - overhead transparencies & handouts, color or black print, for students & business. Mike, 878-3480.

ROTOTILLING - lawns & veg. gardens, free est. Paul, 924-8143 anytime.

SCUBA LESSONS - NAUI-certified instruction, classes now forming, private or group. Rex, 929-3235.

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

SKIN CARE & BEAUTY CONSULTANT - nail care, facials, men's line, body care, free first-time facials. Barbara Jean, 929-3235.

SPRING CLEANUPS - Tim, 744-2203.

TAX PREPRATION - by experienced professional, reasonable. 744-4535.

TAXES - prepared by tax consultant, your home or mine, reasonable, serving Lab people for almost 20 years. John, 732-2472.

TENTS/CANOPIES - any occasion, we set up & take down, many sizes, combos. Fred Kuehl, 588-2268.

TRAINING - PC applications, DOS/windows environment, free brochure. Gina, 929-3649.

TUTOR - Hindi, reasonable rates, group discount. 736-0059.

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

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

WORD PROCESSING - resumes, term papers, letters, CV's, pick up and drop off, quick and accurate service. Cathryn, 821-7327.

In Appreciation

Thanks to all my coworkers and BNL friends for making my retirement party such a wonderful experience. — Barbara Fitzgerald

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