BROOKHAVEN BULLETIN
Vol. 49 - No. 18 May 5, 1995
BROOKHAVEN NATIONAL LABORATORY

AUI Distinguished Lecture

Physicist Lev Borisovich Okun On 'The Physics of Nothing'

A vacuum is a space that theoretically contains no matter, but, in fact, physicists believe it has a very complex structure possessing significant physical properties. Because the vacuum is the most elementary, lowest-energy state of the universe, physicists find it critically important to understanding the origin of matter and properties of the early universe.

World-renowned theoretical physicist Lev Borisovich Okun, Head of the Elementary Particle Theory Laboratory at the Institute of Theoretical and Experimental Physics (ITEP) in Moscow, Russia, will give an AUI Distinguished Lecture entitled "Vacua, Vacuum: The Physics of Nothing," at Berkner Hall on Thursday, May 11, at 4:30 p.m. Coffee, tea and cookies will be served in the Berkner lobby before the lecture.

Lev Borisovich Okun

Okun believes the vacuum occupies a unique position in the modern picture of the physical world, both in particle physics and cosmology. So it requires more study.

"The physics of the vacuum is still in its cradle," Okun explained. "The most interesting situations occur when the fundamental interaction of particles and the physical vacuum have different symmetries. This is called 'spontaneous symmetry breaking,' and it is crucial to the theory of unification of weak and electromagnetic interactions, where it is realized by the so-called Higgs mechanism."

In his lecture, Okun will describe the atmosphere in which key ideas on the properties of the vacuum were formulated by the theorists in Moscow with whom he has interacted, among them such famous names as Landau, Pomeranchuk, Sakharov and Zeldovich.

In addition, Okun will explain the interplay of experimental discoveries and theoretical constructions, particularly in regard to two Nobel Prize-winning discoveries at Brookhaven: the theoretical breakthrough in 1956 on parity violation by theoretical physicists T. D. Lee of Columbia University and C.N. Yang, then of the Institute for Advanced Study, for which they were awarded the Nobel Prize in 1957; and the 1964 discovery of CP violation by Princeton physicists James Cronin and Val Fitch, for which they won the Nobel Prize in 1980.

According to the principle of CP symmetry, the laws of physics would stay the same if all particles were replaced by their antiparticles (charge conjugation, or C), while all their motions were replaced by their mirror images (parity, or P). In effect, physics would be the same even if time were reversed. As a result of research performed at BNL's Alternating Gradient Synchrotron, Cronin and Fitch, however, found that this principle can be violated.

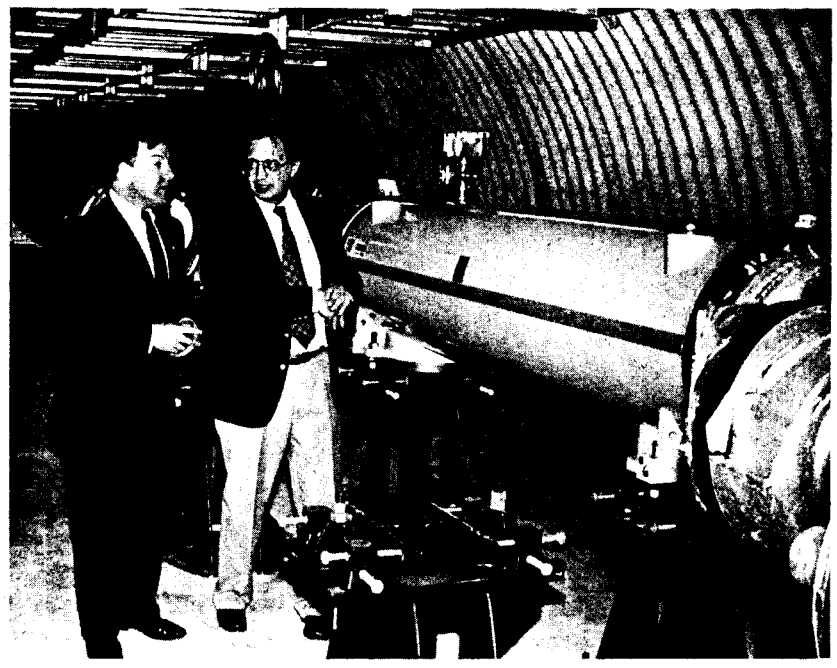
Okun maintains that the CP violation in the weak interaction, which is the force responsible for radioactivity and nuclear decay, may cause the matter-antimatter asymmetry of the universe. Thus, if two equivalent vacua with opposite signs of CP parity exist, that would imply the existence of walls in the universe separating the domains of these two vacua. As Okun will explain in his lecture, an exotic possibility is that the universe's vacuum is not the lowest energy state, so the universe could spontaneously decay to the true vacuum in the future.

Okun received his Ph.D. in physics and mathematical sciences from ITEP in 1962, and, from 1956-76, he was a research scientist there. In 1976, he was promoted to his present position. Okun is also a professor at the Moscow Physico Technical Institute.

Well-known as the author of several textbooks on physics theory, Okun has also made significant scientific contributions, advancing the understanding of the Standard Model, which is the modern theory of the interactions of elementary particles that make up the universe. Okun is an academician of the Academy of Sciences in Russia.

Associated Universities, Inc., began the AUI Distinguished Lecture series in 1965. Okun will be the 66th speaker in the series, which features experts lecturing on fields of general interest.

First Visit of Congressman Forbes



Roger Stoutenburgh

On his first visit to BNL on Wednesday, April 19, Congressman Michael Forbes (left), who took office in January as the U.S. Representative for New York's 1st Congressional District of eastern Long Island, was taken on tour by Lab Director Nicholas Samios. The agenda included a stop at the Lab's Relativistic Heavy Ion Collider (RHIC), where they inspected this corrector-quadrupole-sextupole magnet unit just installed in the tunnel. RHIC will require about 1,700 superconducting magnets that will guide two beams of heavy gold ions at extremely high energies around the tunnel in opposite directions until they collide to create a quark-gluon plasma — a form of hot, dense matter that was last produced at the earliest stages of the Big Bang. In addition, at the Medical Department, Forbes was introduced to Brookhaven's pioneering work on gioblastoma multiforme brain tumors using boron neutron capture therapy. Forbes also met impromptu with some employees lunching at the Cafeteria in Berkner Hall, and he made another stop at the Lab's Child Development Center, which opened in 1991 as the first such center built in the nation by the U.S. Department of Energy.

Coming Up

The 1995 Annual Users' Meeting of the National Synchrotron Light Source (NSLS) will begin on Tuesday, May 9, at 8:30 a.m. in Berkner Hall and run through 3 p.m. Wednesday, May 10.

Following an introduction by Laboratory Director Nicholas Samios, the keynote address will be presented that Tuesday at 11 a.m. by Robert Galvin, who is Chairman of the Executive Committee of Motorola, Inc., and Chairman of the Secretary of Energy's Advisory Board Task Force on Alternative Futures for the Department of Energy's National Laboratories.

The rest of the meeting's agenda can be found on the reverse side of the Weekly Calendars of May 1 & 8.

Preceeding the meeting, on Sunday, May 7, there will be a satellite workshop on the Future of EXAFS, and, on Monday, May 8, there will be five workshops: Medical/Biological Applications of Synchrotron Radiation, Synchrotron Infrared Science, Powder Diffraction Using Synchrotron Radiation, Advances in the Characterization of Buried Interface Using Synchrotron Radiation, and Advances in Applying Synchrotron Radiation to Catalysis.

For more information, contact the NSLS Users Administration Office, Ext. 5763. To register, contact your department chair or division head.

•

"The Structure of the Tetramerization Domain of Tumor-Suppressor Protein p53, as Determined by Multidimensional NMR Spectroscopy" will be the subject of the next Brookhaven Women in Science seminar. To be given by Cheryl Arrowsmith, a senior scientist at the Ontario Cancer Institute of the University of Toronto, Canada, the seminar will take place on Monday, May 15, at 4 p.m. in the Hamilton Seminar Room of the Chemistry Department, Bldg. 555.

To join Arrowsmith for dinner off site after her lecture, contact Eva Bozoki, Ext. 3701.

•

Senior Scientist Joel Sussman, Chemistry Department, will give the next Brookhaven Lecture on Wednesday, May 17. His talk, "AChE in 3-D: Mysteries Revealed From the Crystal Structure," will begin at 4 p.m. in Berkner Hall.

BNCT Approved for Younger Patients

Brain tumor patients as young as 18 with glioblastoma multiforme will now be eligible to receive the experimental treatment known as boron neutron capture therapy (BNCT) at BNL, as part of the Lab's approved clinical trial of BNCT for this especially virulent brain tumor.

Early this week, the U.S. Food and Drug Administration gave researchers in the Medical Department permission to expand the age range for their existing clinical trial of BNCT, which was approved in February to include only glioblastoma multiforme patients aged 50 and over.

To date, three patients have been treated at BNL's Medical Research Reactor under the February protocol, while one patient had been treated in September 1994 under a single-patient protocol. BNL is the only location in the United States where researchers are conducting clinical trials of BNCT involving patients diagnosed with glioblastoma multiforme.

To be eligible for consideration for the clinical trail, patients must not have had previous radiation therapy or chemotherapy for their brain tumors. In selecting patients for the trial, other factors are considered, such as tumor location.

For more information on BNCT, patients and physicians may contact Jane Hodgkinson, Medical, Ext. 3684.

BNL Takes 206 Girls to Work, on Grand Tour

"What do my parents do at work all day?" For 206 daughters of Lab employees and guests, Thursday, April 27, was the day to find out, as BNL held its first Take Our Daughters to Work Day for girls ages 9 to 15.

In the morning, the young BNL visitors reported to work with their parent or "host parent," to get a glimpse of their workplaces. Then, they gathered in the Brookhaven Center to hear some of the Lab's women scientists and professionals in several fields discuss their career paths.

After lunch with their parents at the Center, the girls boarded school buses for a grand tour of seven BNL facilities, where hands-on activities and informal talks on still more careers awaited them.

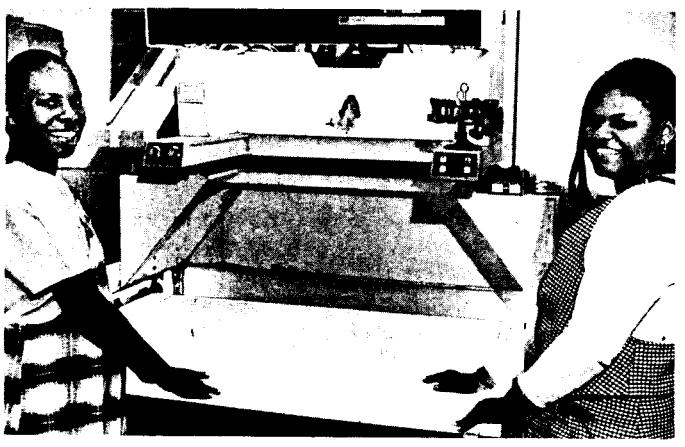
The event, one of many held at companies around the country on that day, was originated by the Ms. Foundation for Women, which first organized the event in 1993 to give girls exposure to many career options open to them.

Said Sue Foster, Personnel Division, who headed the committee that organized BNL's event, "Everything went smoothly, and everybody was excited about the day and loved having girls in the workplace."

The girls have already begun sending back their evaluations of the event, many with positive reviews. The committee will review the evaluations, with the hope of planning future Take Our Daughters to Work Days, and an eye toward doing a Take Our Sons to Work Day this fall. — Kara Villamil

In the tunnel (left) of the Relativistic Heavy Ion Collider (RHIC) Senior Technical Specialist Hue Anh Pham, RHIC Project, shows a group of girls the overhead cable-tray system, the installation of which she coordinated.

Her mother's computer terminal interests Diana Feliciano, 10, daughter of Cora Feliciano, a secretary in the Physics Department.



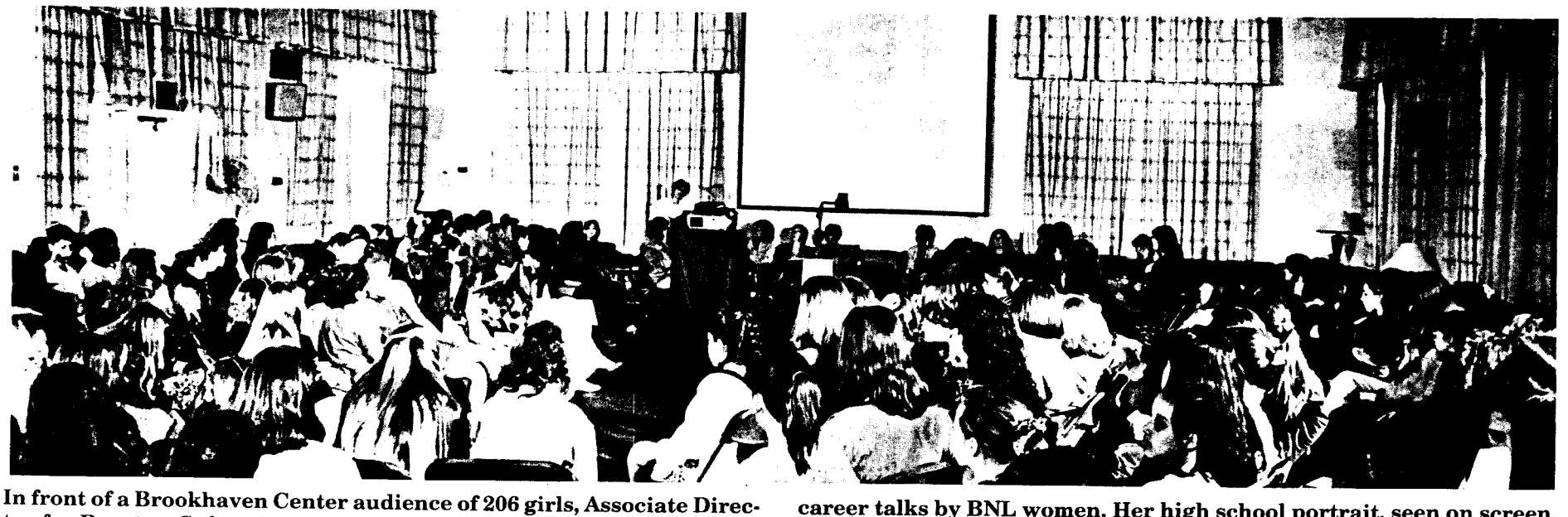
For Marysa Johnson (left) Alternating Gradient Synchrotron Department, it was Take My Sister to Work Day. Her sister Maryona Cooper, 15, learns about the microfilm camera that Johnson uses to transfer mechanical diagrams to microfilm.

One stop on the afternoon tour took the girls into the Central Shops Division's Heavy Equipment Shop, where Gerhard Redelberger, a tool and instrument maker, displays a micrometer used there.

Photos by Roger Stoutenburgh

Maureen Dunn, an oceanography associate in the Department of Applied Science, shows her daughter Samantha, 12, the fluorescent microscope and image analysis system she uses to examine marine bacteria.

Brenda Riddle, a business systems analyst in the Management Information Systems Division, demonstrates computer programs she works with for her daughter Lee Bryant, 15.



In front of a Brookhaven Center audience of 206 girls, Associate Director for Reactor, Safety & Security, M. Sue Davis, opens the morning's career talks by BNL women. Her high school portrait, seen on screen, reminds the girls that she was once their age, too.

BWIS Meeting
Flex Time in ETD

At the next Brookhaven Women in Science (BWIS) meeting at noon on Wednesday, May 10, in the CCD Seminar Room, Bldg. 515, Deborah Shurberg, a scientific associate in the Department of Advanced Technology (DAT) will discuss the trial implementation of an alternative work schedule in DAT's Engineering Technology Division (ETD). All are invited; bring your lunch.

Also known as flex time, alternative work schedules are gaining popularity in the workplace, and the Lab last year agreed to try such a schedule in ETD. Shurberg's talk will describe the impetus for the trial, the approach that ETD has taken, and the results of surveys of ETD employees on the success of the alternative work schedule.

Shurberg came to BNL in 1987, to work in DAT's ETD. She recently received her doctorate in Applied Research and Evaluation in psychology, with a focus on industrial and organizational psychology. Her research includes investigating the impact that organizational factors have on the safe operation of hazardous systems.

Public Sale Of Motor Vehicles

Twenty-eight vehicles, located at warehouse T-87, are now available for sale.

Inspection of these vehicles will be permitted on Tuesday and Wednesday, May 9 & 10, between 10 a.m. and 3 p.m. This sale will be conducted as a sealed bid, and bids will be opened at 2 p.m. on Wednesday, May 24.

Bid forms may be obtained at warehouse T-87. For further information, call Ext. 4527.

Bowling

Red and Green League

J. Griffin 246/243/235/724 scratch series, R. Mulderig Sr. 235/233/215/683 scratch, J. Cuccia Jr. 246/221/662 scratch, E. Meier 238/212/643 scratch, B. Giuliano 231/229/627 scratch, S. DiMaiuta 213/209/612 scratch, H. Arnesen 247/611 scratch, R. Wiseman 213/209/607 scratch, R. Mulderig Jr. 256/226, F. Wahlert 231, R. Eggert 226, A. Warkentien 220, E. Sperry III 219, J. LaBounty 211, R. Prwivo 203, J. Goode 202, G. Weresnick 201, H. Dawson 201, E. Larsen 200.

Purple and White League

M. Meier 257/225/191/673 scratch series, S. DiMaiuta 223/213/203/639 scratch, E. Sperry III 204/200, E. Sperry IV 202/202, J. McCarthy 201, S. Logan 199/181, E. Meier 198/180, B. Belligan 192, M. Picnich 190, J. Biamonte 186, K. Batchelor 189, K. Conkling 184, D. Klein 183/181, N. Besemer 182, D. Fisher 181, L. Besemer 177, E. Zukowski 176, M. DiMaiuta 173, C. Wood 170, M. Addessi 170, S. Frei 6/7/10 converted the split.

BROOKHAVEN BULLETIN

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

ANITA COHEN, Editor
MARSHA BELFORD, Assistant Editor

Bldg. 134, P.O. Box 5000
Upton NY 11973-5000
Tel. (516) 282-2345; Fax (516) 282-3368

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

Blues and Jazz At Berkner Tonight

Tickets are still available for the BERA-sponsored blues and jazz concert — featuring Doug "Harmonica" McLean and his Blues Band, and "funky fluteman" Dwayne D. Kerr — to be held tonight at 7:30 p.m. in Berkner Hall.

Tickets for the concert cost $10 for adults and $6 for senior citizens and children under 12. Purchase tickets at the door, or, during the day, at the BERA Sales Office, 9 a.m. to 1:30 p.m.

PSI Meeting

At the next meeting of the Upton Chapter of Professional Secretaries International (PSI), "Color Analysis, Skin Care, and Color Cosmetics for Today's Woman" will be discussed by a Mary Kay Cosmetics representative.

The meeting will be held on Thursday, May 11, at 6:30 p.m., in the South Dining Room of the Brookhaven Center. For more information, call Susan Carlsen, Ext. 7647.

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

Speakers Bureau

The following speakers recently gave talks on behalf of the Laboratory:

Eloise Gmur, DO: East Moriches School Teacher's Meeting, "The Scientific Method," January 4.

Leslie Fishbone, DAT: Gelinas Jr. High School Science Awareness Day, science fair judge, January 5.

Darryl Kaurin, DAT: Shoreham-Wading River Science Museum, "Radiation Is All Around Us," January 21.

R. C. Anderson, DO, Retired: Rotary Club of Franklin Square, "BNL in General," February 8.

Michael Brennan, AGS: Career Awareness Day at Harborfield High School, "Careers in Science," February 9.

Kathleen Geiger, DO: Rotary Club of Rocky Point, "Future Land Use," February 21.

Louise Hanson, DO: Three Village School District Women's Program, "Women Helping Girls With Choices," March 8.

Keith Power, RHIC: Shoreham-Wading River Science Museum, "Earth and Moon: A Double Planetary System," March 18.

Edward McFadden, CCD: Bayport/Blue Point High School Career Day, "Careers in Science," March 21.

Robert Sabatini, DAS: Medford/Oregon Middle School, "Careers in Science," March 31.

Melvyn Cowgill, DAT; **James Hurst**, DAS; **John Weeks**, DAT: Long Island Science Congress, judges, April 5 & 6.

Conrad Foerster, NSLS: Commack High School Careers & Technology Day, "Careers in Engineering," April 10.

Veronica Evans, CCD; **Terrie Lacker**, Reactor; **Harriet Martin**, ISD: Sayville Middle School Career Day, "Careers for Women in Science," April 27.

Carmen Benkovitz, DAS; **Eva Emmerich**, AGS: Career Day at Amityville Middle School, "Careers for Women," April 27.

R.C. Anderson, DO, Retired: Dowling College National Aviation & Transportation Center High-Tech Future Seminar, "Science & Technology in the 21st Century," May 3.

Paychecks, Paystubs Get a New Look

For more than a year, BNLers have been able to have the Payroll Office deposit their paychecks directly into their bank accounts, no matter where they bank. But, even when paychecks are deposited electronically, employees still receive a record of pay and benefits on payday.

Starting May 12 for employees who are paid weekly, and May 31 for those paid monthly, that record will be printed on a new paper-saving, all-in-one mailer. Although it will look slightly different, the mailer will include the same information as before.

Starting May 19, employees who have not yet opted to join direct deposit will also see a change — their checks and pay statements will also be printed on a single-sheet mailer, which can be separated into its two components.

The majority of employees already choose direct deposit, and Payroll invites remaining BNLers to save time and hassle by electing to have their paychecks sent to the bank electronically. Forms are available in Payroll, Bldg. 134, and questions can be directed to Ext. 2470.

Help Students Via E-Mail

Students and teachers on Long Island can now get their science-related questions answered on-line, thanks to a moderated electronic mailing list called quest-l, which was recently established by BNL's Office of Educational Programs (OEP).

But, while OEP's staff can answer some questions, quest-l needs scientists and other BNLers to volunteer to help answer inquiries relating to their fields.

Since quest-l ("quest-" followed by a lower-case L) is a moderated mailing list, questions will be screened by OEP staff. All answers can be provided through e-mail, and answerers' addresses and other information can be removed upon request. Both questions and answers sent to quest-l will be forwarded by e-mail to individuals and schools that have subscribed.

If you're interested in helping out, send e-mail to scied@bnl.gov or call Nina Leonhardt, OEP, Ext. 5963.

Rifle & Pistol Club

The Rifle & Pistol Club meets on the second Wednesday of each month, so the next scheduled meeting is May 10, in Room 202, Bldg. 911B, at noon. Anyone interested in club activities may call Otto Jacobi, Ext. 3471.

Cafeteria Menu

Monday, May 8	
Soup: Chicken & escarole	.90/1.20
A la Carte: Ragout w/biscuits	3.95
Lite: Cod w/lemon-sage & spring onions	3.85
Deli: Turkey w/peppered cranberry jelly	3.20
Grill: Monte Cristo	3.30
Tuesday, May 9	
Soup: Cream of vegetable	.90/1.20
A la Carte: Chicken w/tomato coulis	3.95
Lite: Eggplant & potato gratinée	3.85
Deli: Top round of beef	3.20
Grill: Kentucky turkey on pumpernickel	3.30
Wednesday, May 10	
Soup: Split pea w/ham	.90/1.20
Display Cooking: Cajun foods carnivale	4.75
Deli: Pork loin Dijon w/apple compôte	3.20
Grill: Spicy wings w/bleu cheese	3.30
Thursday, May 11	
Soup: Beef & bean	.90/1.20
A la Carte: Chicken breast w/sausage	3.95
Lite: Vegetable & tofu strudel	2.95
Deli: Jamaican jerk-rubbed lamb w/slaw	3.20
Grill: Turkey chili in a tortilla	3.30
Friday, May 12	
Soup: Salsa fish	.90/1.20
A la Carte: Turkey & pear w/couscous	3.95
Lite: Champagne-lemon glazed sea bass	4.20
Deli: Corned beef w/carraway cabbage	3.20
Grill: Swordfish teriyaki	3.30

Inside Info

At the fifth annual Science Team meeting of the Atmospheric Radiation Measurement (ARM) Program of the U.S. Department of Energy (DOE), BNL Computer Scientist **Joyce Tichler** was one of seven presented with a certificate of appreciation from DOE and a plaque from the ARM management team. Tichler received her awards from the DOE ARM Program Manager, Peter Lynn, on March 20.

In a certificate signed by Martha Krebs, Director of the Office of Energy Research, which funds the ARM Program, Tichler was cited "for your outstanding contribution to the Atmospheric Radiation Measurement Program as a team leader within the ARM Data System. You have demonstrated outstanding leadership and technical insight, greatly facilitating the acquisition of external data and bridging between the scientific observations and needs of the ARM Science Team, thereby contributing directly and most effectively to the success to date of the ARM Program."

The ARM management team presented the plaque to Tichler "in appreciation of your outstanding contributions to DOE's Atmospheric Radiation Measurement program."

Established in 1990 and involving seven DOE labs, three federal agencies, over a dozen universities and several private corporations, ARM is making what will be the most comprehensive set of atmospheric radiation and meteorological data ever assembled, from three geographically distinct regions of the world. These data are being obtained to improve what are called General Circulation Models and other computer programs that describe and predict climate and climate change.

Leader of the Scientific Information Systems Group in the Analytical Sciences Division, Tichler is in charge of maintaining a computerized database of the operations of the instruments located in and around each ARM site. She and her group are also identifying and obtaining information from other sources engaged in independent research and monitoring of the weather and related phenomena in the vicinity of the ARM sites, which will be used in conjunction with ARM data to analyze the processes governing atmospheric radiation and climate.

Volleyball Party

The Volleyball League will hold its annual end-of-season party on Friday, May 19, from 6 to 11 p.m. in the Recreation Building, with music by deejay Lou starting at 7 p.m. The party will be catered with a hot & cold buffet, and soda, beer and wine will be provided. The cost per person is $16, if tickets are purchased by Monday, May 15; or $19, if bought after May 15.

For tickets, contact team captains or Terry Sullivan, Bldg. 830, Ext. 2840; Ken Sutter, Bldg. 480, Ext. 4514; or Ron Webster, Bldg. 526, Ext. 2845.

Arrivals & Departures

Arrivals

Simon W. North ..... Chemistry
Xilin Wu ..... NSLS

Departures

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

William A. De Caro Jr. ..... Cent. Shops
Eric B. Forsyth ..... RHIC
Frances K. McKenna ..... App. Science
Balchand J. Patel ..... Dir. Off.
Alexander G. Sabelnikov ..... Biology

Note to Employees:

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

Let's Dance

Cinco de Mayo

A few tickets remain for the Cinco de Mayo Dance, which is sponsored by the BNL Ballroom, Latin & Swing Dance Club and will be held tomorrow, Saturday, May 6, from 7 p.m. to midnight in the North Ballroom of the Brookhaven Center. The $15 per-person ticket includes complimentary hot and cold hors d'oeuvres, dancing to the Latin, ballroom and swing music of deejay Robert Beers, and dessert, coffee and tea; a full cash bar featuring Mexican beers and Margaritas will be available. To purchase your tickets, contact Gail Schuman, Ext. 7985; no tickets will be available at the door.

Be Social Soon

Next Saturday, May 13, the BNL Ballroom, Latin & Swing Dance Club will hold its informal monthly social, at 8 p.m. in the North Ballroom of the Brookhaven Center. All are invited to lindy, mambo, tango and rhumba, etc. the night away to tapes and CD music. 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.

Equipment Demo

On Friday, May 12, from 9 to noon, in the seminar room of Bldg. 911, a representative of Burr Brown, Inc., will present solutions to precision analog-circuit design. Databooks, spice and filter discs, seminar books and new product guides will be distributed.

For more information, call J-Square Marketing, 935-3200, or Sager Electronics, 348-1300.

Summer Job Lottery Canceled

This year, unfortunately, due to the budget concerns that have developed recently, the 1995 summer job lottery usually drawn in May has had to be canceled, so no jobs can be offered to those who have submitted their applications.

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 3934. ADMINISTRATIVE/SECRETARIAL POSITION - Requires an AAS or equivalent experience, and significant secretarial background and administrative ability, including an extensive knowledge of Laboratory practices, policies and procedures, and excellent communication skills. In addition, the ability to operate independently and under pressure, and to exercise a high degree of discretion and judgment consistently is also required. Must possess a high level of competence in processing information using a personal computer. Expertise in WordPerfect, R:BASE, Excel, Harvard Graphics and Novell highly desirable. Will assist the Associate Director and the Deputy to the Associate Director for Reactor, Safety and Security in the coordination and direction of their administrative office. Responsibilities will include screening and responding to inquiries and administrative problems, collecting and analyzing data, summarizing findings on complex assignments and projects, and arranging conferences and meetings. Will supervise secretarial support personnel. Director's Office.

OPEN RECRUITMENT - Opportunities for Laboratory employees and outside candidates.

LS 0053. SCIENTIFIC ASSOCIATE POSITION - (part-time/term appointment) Requires a BS in mathematics, computer science or molecular biology, MS preferred, programming experience and strong analytical skills. Knowledge of C programming and UNIX, as well as a proven ability to do signal processing and statistical analysis are required. Responsibilities include analyzing biological data, developing algorithms related to the data and assisting programmers in the development of a high-throughput, automated DNA-sequencing software package for the Human Genome Project. Biology Department.

Motor Vehicles & Supplies

94 KAWASAKI NINJA ES500 MOTORCYCLE - 1.5k mi., w/driver & passenger helmets, $4,900. 289-1887, leave message.

93 FORD EXPLORER - Eddie Bauer ed., 4wd, immaculate. 744-1439.

93 MERCURY CAPRI - conv., black, 5-spd., 30k mi., fm cass., air bag, loaded, extras, like new cond., sacrifice, $10,500. Bill, 924-6940 after 8 p.m.

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

90 MUSTANG - air bag, passive alarm, a/t, p/d, p/l, p/w, sunroof, ac, am/fm w/tape deck, ext. warr., asking $6,200. Harris, 758-7911.

90 CADILLAC SEDAN DEVILLE - white, blue leather int., all power, stereo cass., hwy. mi., clean, NADA loan value $7,050, sell $6,995. Leland, Ext. 3328.

89 TOYOTA CELICA - 5-spd., tilt, cruise, alloy wheels, tape deck, ac, $5,500. Burr, Ext. 3396.

89 HONDA CIVIC - s/w, high mi., new muffler system, runs well, $2,300. Robin, Ext. 5589.

89 TOYOTA CAMRY - red, 4-dr., a/t, new timing belt/brakes, v.g. cond., $3,600. Dan, Ext. 5177 or 689-5152.

89 GEO TRACKER - 5-spd. conv., good cond., asking $3,000. Charlie Edwards, Ext. 2238 or 395-3914.

88 OLDS FIRENZA - a/t, full power, cruise, ac, 4-dr., 90k mi., excel. cond., $2,500. Arnie, Ext. 2606.

88 STERLING 825SL - red/camel int., luxury sports car, $5,500. Chellie, Ext. 7416/7426/4308.

88 SUBARU XT6 - 5-spd., red/black, full power, loaded one owner, excel. cond. in/out, $4,500. Jean, 361-8119.

87 MAZDA 323 - 5-spd., m/t, am/fm cass., 82k mi., $2,500. Mike, Ext. 2052.

87 JEEP CHEROKEE PIONEER - 6-cyl., p/s, p/b, new brakes, roof rack, alarm, plug-in radio, 73k mi., v.g. cond., $6,300. Bob Wheeler, Ext. 2012 or 924-9662.

86 FORD BRONCO 4x4 - Eddie Bauer, 5.0L, V-8, 90k mi., new trans., pushbar, running boards, asking $5,600. 584-3830.

86 PONTIAC FIERO - new shocks, struts & tires, body mint, asking $1,000. Joe, 345-3175.

85 PONTIAC 6000 - 98k mi., 4-dr., new tires, tuned, a/t, V-6, runs well, minor rust, $1,600. Rick, Ext. 3932 or 472-9789 after 5:45 p.m.

85 CORVETTE - red, a/t, full power, 29k mi., ac, excel. cond., $14,000 neg. Tom, Ext. 5899.

85 TOYOTA TERCEL - 4wd, ac. a/t, am/fm cass., 97k mi., $1,250. Mike, Ext. 2052.

85 COUGAR - dependable station car, good for parts, good rubber, low mi. on motor & tranny. Ed, Ext. 5462 or 929-4904.

84 OLDS CUTLASS SUPREME - a/t, V-8, new paint, brakes, trans. & alum. rims, all new parts, excel. cond., $3,800. 399-7744.

83 MAZDA PICKUP - 5-spd., new brakes & clutch, good tires, bed cover & carpeted, tool box, radio, tune-up, $1,200. Dick, Ext. 4640.

76 CHEVY MALIBU CLASSIC - 350 small block, Holley 4-bbl. carb., Edelbrock manifold, chrome headers, B&M quicksilver posirear, $500. Phil, 286-1348.

75 PONTIAC FIREBIRD ESPRIT - new tires, body good, low mi., factory rally rims, asking $1,400. Joe, 345-3175.

66 NOVA RACE CAR - new motor, $10,000 firm; '72 SS Chevy Chevelle, big block, mint, $7,500. 929-0586.

SHOP MANUAL - 1986 Isuzu Trooper, orig. $40, now $14.99. John, Ext. 3292.

BUMPERS - new, front & rear, '95 Chevy van, $50 ea. firm; new radio, am/fm cass., w/speakers, $40. Don, Ext. 7237 or 744-2921 after 5:30 p.m.

ENGINE - 283, Chevy. Bob, Ext. 2710.

TIRES - Goodyear custom polysteel radials, P205/75R14, $100/4. 878-1617 after 6 p.m.

ENGINE - H.P. 327 Chev. roller cam, 60 over, 360+ H.P., trade for pickup or VW Beetle. 929-8514.

HELMET - motorcycle, full face, shield, size med., almost new, $20. Victor, Ext. 2395.

Boats & Marine Supplies

36' EGG HABOR - 1961, sleeps 6, twin International 392 cu. engines, many accessories, $5,000. 399-7744.

25' SEA RAY - 1984, original, 290 hrs., $11,000. Mike, Ext. 2115 or 665-4495.

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

19' O'DAY MARINER - 1979, galv. trailer, good cond., $3,000. 286-1097.

17' O'DAY SAILBOAT - outboard, trailer, excel. cond., $2,300. Ed, 581-1509.

STAR SAILBOAT #6210 - fg, double hull, alum. spars, 2 sets sails, cover, trailer, meas. cert., good cond., $1,900. 472-1735.

BOAT CRADLE - welded steel, 6'x12' for 28' sloop, fits boats 28'-32, orig. $650, ask. $150. 744-5096.

OUTBOARD - 6-12-h.p. w/ 12V battery charger output or conversion w/charger option. George, Ext. 3061 or 751-0265.

OUTBOARD - 60-h.p. Evinrude, full elec., 20" transom, tank controls, shop manual, runs well, $250. Joe, 281-7683.

ROPE - 1" hemp, never used, 300 feet, $200. Dan, Ext. 3185 or 765-5405.

LOBSTER POTS - wire. Bob, 689-9234.

Furnishings & Appliances

BATHTUB - beige, 1-piece unit w/3 walls, $95. Pat, Ext. 3275.

BED - youth, w/mattress, comforter, sheet set, like new, $45. Mike, Ext. 7434.

BEDROOM - modular, formica, Atlantic, teen, loft, wood color, orig $4,000, now $1,500. Sue, 734-2593.

CARPET - brand-new, mauve, fully bound, 5½'x12', $100. Pat, 878-9117.

CHAIRS - 6, modern, dining room, side, walnut & black vinyl, good cond., $50/ea. or $275/all. Paul, Ext. 4474 or 929-5699.

DESKS - 1 wood, 30"x52", $40; 3 metal, 24"x40", 24"x54", 30"x60", $30/ea. Victor, Ext. 2395.

DINING ROOM SET - 1 table, 6 chairs, $80. Ching Yang, Ext. 3663 or 474-3845.

DISHWASHER - Westinghouse, heavy-duty deluxe, Potscrubber, black reversible panels, excel. cond., $150. Frank, Ext. 4220 or 277-0464.

FAN - Sherwood, 5' pedestal, light beige, never used, orig. $40, now $25. Gene, Ext. 7113.

HOUSE CONTENTS - queen-size bed, 2 dressers, $250; antique sofa, $500; twin beds w/headboard & table, $100; teak buffet & top, $350. Niels, Ext. 3774.

KITCHEN SET - 4 chairs, table, $50. 286-8952.

MATTRESS - boxspring, frame, queen-size, $230; 2 sofas, $70 & $90; storm door, $60. Ext. 3842 or 929-6925 after 7 p.m.

MATTRESS - Sterns & Foster, firm, queen-size, box spring, mattress, excel. cond., $100. 751-7847.

MICROWAVE - brand-new, Whirlpool, 550 watts, white, electronic, $75. Bob, Ext. 4551 or 475-3612.

REFRIGERATOR - compact, 1.5 cu. ft., Sanyo, new cond., $50. 727-3608.

REFRIGERATOR - Kenmore, $200; range, $150; almond duo-jog bicycle cart, 2 kids, $125; air conditioner, $125. Eileen, 929-5521.

SEWING MACHINE - antique, oak, iron treadle base, $120; Sears toning exercycle, $50. 689-7326.

SOFA BED - w/slip cover, v.g. cond., $75. Bob, 737-1786.

SOFA BED - Col., solid wood, queen mattress, $50 or best offer. Bob, Ext. 3509 or 289-9533.

STOVE - Hotpoint, self-clean, elect., 1½ years old, $250. John, Ext. 4482 or 821-4280.

WALL SCONCES - 2, antique brass, elect., 5 lights ea., formal decor. Bill, 924-6940 after 7 p.m.

WING CHAIR - 38" round maple table w/4 ladderback chairs; boudoir chair; sm. formica table & 2 chairs, double bed w/headboard & night stand. 286-1770.

Tools, House & Garden

ANNUALS - flowers, $10/flat, $5.50/½ flat; vegetables, $1/pack. Ray, 727-6818 after 4 p.m.

ATTACHE - technician tool case, new, Xcelite TC-100, orig. $100, now $50. 727-3608.

BARBEQUE - gas, Arkla, 5 yrs. old, side & front tables, dual controls, large cooking area, w/tank, excel. cond., $65. Lisa, Ext. 5867 or 467-8185.

BULBS - canna, giant red, 3/$1; fig trees also avail. Jim, 325-9293.

LAWN MOWER - Sears Craftsman, 22" cut, rear-bagger, self-propelled, $50. Ching Yang, Ext. 3663 or 474-3845.

LAWN MOWER - new, Toro, mulcher, self-propelled, elect. start, $500. 929-6209.

PICNIC TABLE - white, 5' octogonal, w/umbrella, $75; chairs, 8, stacking, white, $5/ea. 473-2473.

SOLAR PANELS - 2, water, 4'x8' Agway; Wellington air-tight coal stove, make offer. Jim, 727-3469.

Sports, Hobbies & Pets

BICYCLE - boy's, 20", Dyno GT-VFR, like new, $125. Ext. 5080 or 751-1884.

BICYCLE - girl's, 24", Royce Union, mountain bike, 12-spd., $50. Phil, Ext. 5669.

FISH TANK STAND - black steel, 13"Dx30½"Wx30"H, $20. Sue, Ext. 3492 or 734-2593 eves.

PIANO - upright, good cond., $500. Bob, Ext. 2710 or 467-4222.

POOL - 15', above ground, filter, pump, ladder, needs new liner & cover. Ext. 4591.

PUPPIES - yellow Labrador retrievers, avail. 6/1, $525, deposits being accepted. 924-5505.

PUPPIES - Brittany spaniels, AKC, liver & white, orange & white, championship hunting lines, $350. Mike, 588-9163.

SKIS - Spalding Formidable, 1809, w/o bindings, $50; mountain bike, 18-spd., excel. 878-1617 after 6 p.m.

Audio, Video & Computer

MODEM - Hayes, Optima, 9600 baud, external, $50. 878-2023.

MOTHERBOARD - 386DX/33, SUGA card w/512kb ram, $100; 80 MB IDE hd, $40; 80387 math coprocessor, $60. Ext. 3207.

TV - Mitsubishi, 46", projection screen, oak wood case, $400. 363-7633 after 5 p.m.

Miscellaneous

MAPLE SYRUP - from my family's farm in Vermont. Peter, Ext. 7687 or 744-1112.

SHUTTERS - six 12"x51", eight 16'x51", $3/ea., need paint. Dave, Ext. 5460.

TRANSPORTATION VOUCHER - AA, worth $220, exp. 6/19/95, now $120. Ext. 7505 or 689-8605.

Free

TREES - small, various pine/evergreens and maples, you dig and take away. John, Ext. 4482 or 821-4280.

Yard & Garage Sales

CENTER MORICHES - 5/6, 9 a.m.-3 p.m., benefit for Upton Nursery School, 23 Beachfern Rd., just south of Main St. & Railroad Ave.

HOLBROOK - Sat. 5/6, rain date Sun. 5/7, videos, games, puzzles, action figures & vehicles, books, household & misc. items., 269 Thunder Rd. off Greenbelt.

MASTIC - Sat. 5/13, 9 a.m-3 p.m., 247 N. Titmus Dr.

Wanted

BOOK - *The Sense of Wonder* by Rachel Carson, need for 1st child & 1st granddaughter. John, 924-6809 after 6 p.m.

CAP - to fit Ford F150 8' bed. Bob, Ext. 2710 or 467-4222.

CHILD CARE - f/t, my Setauket home, caring non-smoker w/genuine love for children desired, June/July start, refs. Paula, Ext. 3293.

DRAWING TABLE - Anco-type, all wood, A-frame stand, 23"x31" size; rototiller, gas-powered, mini-size. John, Ext. 7671.

HOUSE/APT. - reliable family looking for 2-3 bdrms. in Shoreham-Wading River, Rocky Point, nonsmoking, no pets. Wu, Ext. 5872 or 821-5240.

JUNK CARS/TRUCKS - free removal, money paid for running, late model cars. Steve, beeper 276-7671 or 924-8741.

SHOP MANUAL - for 86 Pontiac V8 station wagon. John, Ext. 4632.

Car Pools

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

Services

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

AUTO REPAIR - tune-ups, brakes, transmissions, etc. Brett, 929-4753.

BABY-SITTING - for preschool children at my home in Shoreham. 744-4615.

BALLOONS - wrap your gift inside a balloon for Mother's Day, portfolio available. Fred, Ext. 2534.

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

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

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

CHILD CARE - college senior, extensive experience, fluent Spanish, own car, loves pets, avail. May 8-Aug. 10. Laura, 744-1898.

CHILD CARE - my clean, safe condo in Coram, f/t only, Mon.-Fri., experienced, refs. Pat, 732-5540.

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

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

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

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

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

HOME IMPROVEMENTS - carpentry, drywall, spackling, painting, plumbing, ceramic tile, elect., free est., Lab disc. Don, 744-2921 after 5:30 p.m.

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

HOUSE CLEANING - neat, dependable, no job too big or small. Wei, Ext. 3370.

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

KAYAK LESSONS - coastal touring, river playboats $85/5 hrs., equip. supplied, intro to kayaking $30/2 hrs. Ernie, 281-7873.

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

LAWN/YARD CLEAN UPS - landscaping, college-bound student, refs. provided, reasonable. Dave, 751-1474.

LAWNMOWER - and lawn tractor repairs and service, reasonable rates, fast service, have trailer will travel. Dan, 698-7322.

LAWN SERVICE - landscaping, gutters cleaned, very reasonable. Dave, 751-1474.

LAWN SPRINKLERS - automatic, free estimates, professional layouts, repairs, alterations and additions, prompt courteous service. 928-7042.

LETTERING - airbrushing, striping, land/sea vehicles, helmets, clothing, store fronts, window splashers, paper signs. 549-9113.

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

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

PAINTING - wallpaper hanging, lic. & ins., free estimates, BNL disc. Bob, 331-4336.

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

PARTY TENTS - for rent, we set up and take down. Fred Kuehl, 588-2268.

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

PICK-UP TRUCK & DRIVER - for hire, small to medium jobs, reasonable, experienced, local only. 821-4407.

PLUMBING/HEATING ALTERATIONS - and repair work by retired BNL employee. Jim Morris, 472-1205.

POWER WASHING - decks, houses, cedar restorations, free estimate, licensed & insured. Bob, 331-4336.

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 facial. Barbara Jean, 929-3235.

TRAINING - PC applications, DOS and Windows, from accounting to word processing. Gina, 929-3649.

TREE WORK - 281-2746.

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

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