



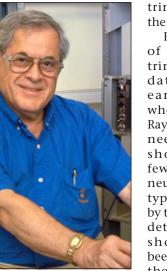
August 22, 2008

Traveling the World To Study Neutrinos BNL's Hahn Talks at ACS National Meeting

In the quest for a better understanding one of nature's most "ghostly" elementary particles — the neutrino — scientists at BNL are spreading their expertise from the mines of Canada to the mountains of China. 2 Richard Hahn, 욽 Chemistry Department, discussed some

of the neutrino's mysterious properties and two new neutrino research projects at the 236th National Meeting of the American Chemical Society on Tuesday, August 19, in Philadelphia, Pennsylvania.

Neutrinos are uncharged elementary particles created by nuclear reactions in the sun, by cosmic rays in the atmosphere, and in nuclear reactors and accelerators on Earth. Their properties continue to fascinate the scientists who analyze neu-



trinos' role in the universe.

BNL's history of solar neutrino research dates to the early 1970s, when scientist Ray Davis's pioneering work showed that fewer electron neutrinos (the type produced by the sun) were detected than should have been, based on theory. Davis,

with Masatoshi Koshiba of Japan and Riccardo Giacconi of the U.S., was awarded a Nobel Prize in physics in 2002.

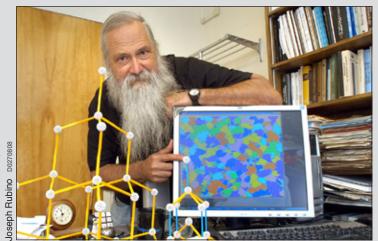
That same year, scientists at the Sudbury Neutrino Observatory (SNO) in Ontario, including Hahn and members of his BNL group, solved Davis's "solar neutrino problem" by determining that neutrinos "oscillate," or switch, between three different types as they travel from the sun to Earth. Thus, *See Hahn on pg. 2*

Michael Creutz Honored Internationally With Gian Carlo Wick Gold Medal

Michael Creutz, a BNL physicist, has been chosen by the World Federation of Scientists (WFS) as the recipient of the 2008 Gian Carlo Wick Gold Medal Award, which is given annually to a theoretical physicist for outstanding contributions to particle physics. Creutz will receive the award at a WFS meeting held in Erice, Italy, August 19–24.

Founded in 1973, the WFS is an association of more for than 10,000 scientists from 110 countries whose aim is to share knowledge among all nations so that everyone can experience the benefits of scientific progress. Gian Carlo Wick (1909-1992), a native of Italy, was an eminent theoretical physicist who led the theory group at Brookhaven Lab from 1958 to 1970.

"I am honored to have been chosen to receive this award and to be in the company of the esteemed scientists who received it previously,"



Creutz said. "Also, I am proud to be the recipient of an award named after Gian Carlo Wick. I was not yet at the Laboratory when he worked here, but I met him when I was a child because my father, Ed Creutz, then head of the physics department at Carnegie Tech — now Carnegie Mellon University — hired him as a faculty member."

Michael Creutz was cited for his work on lattice quan-

tum chromodynamics (QCD), a theory that describes the interactions of subnuclear particles. Specifically, Creutz first demonstrated that properties of QCD could be computed numerically on a fourdimensional lattice through computer-based calculations known as Monte Carlo techniques.

In 1974, Nobel laureate Kenneth Wilson of Cornell See Creutz on pg. 2

Rare K Decay Update, New Findings Physicists Find Three More Candidates of Extremely Rare Process

An international team of physicists examining an extremely rare form of subatomic particle decay has discovered additional evidence for this process, which is highly sensitive to new forces beyond those incorporated in the Standard Model of particle physics. The innovative experiment, called "E949/E787" for its experiment numbers, is located at BNL. Three new candidate events were found, bringing the total observed to seven since the first sighting in 1997. The result has been submitted to Physical Review Letters, and was presented at a colloquium on Tuesday, August 19, in the Physics Department.

This research was funded by the Office of High Energy Physics within DOE's Office of Science, with additional support from the Natural Sciences and



Taken in 2004, this photo shows many members of the E949 rare K decay experimental team, including David Jaffe (front, fourth from left) Benji Lewis (middle, fifth from left), and llektra Christidi (front, fifth from left), who, with Zhe Wang and Joss Ives, concluded the recent analysis. Steven Kettell, co-spokesperson for E949, is front, second from right, and Laurence Littenberg.



1997 E787 team including many international collaborators

Below: Members of the E949 team from TRIUMF, Canada's National Laboratory for Particle & Nuclear Physics, and the University of British Columbia, including Joss Ives (fifth from left)



Engineering Research Council and the National Research Council of Canada, through U.S.-Japan and U.S.-Russia joint funding programs for collaborative research in high energy physics, and the Chinese Ministry of Education.

The experiment discovered an extremely rare form of disintegration of an unstable subatomic particle called a K meson into three other particles a positively charged pion (π^{+}) , which is observed, and an unseen neutrino (v)-antineutrino (\overline{v}) pair. This process (written $K^+ \rightarrow \pi^+ \nu \overline{\nu}$) is predicted by the Standard Model to occur only once in every 12 billion decays, making it one of the rarest decay processes ever observed. Its rate is extremely sensitive to new physical effects not accounted for in the Standard Model, making it one co-spokesperson for the predecessor experiment E787 that found the first three events, is front, third from left.

of the most interesting decay processes to study.

K⁺ mesons exist for only 12 billionths of a second before decaying. So to catch the fleeting events and identify the rare decay, the scientists built a state-of-the-art particle detector the size of a small house, capable of examining 1.6 million decays every second. Interesting events are recorded, and physicists use sophisticated data-mining techniques to pore over the data to find the most promising events and examine them in exquisite detail.

"This is the first time that any experiment has had enough sensitivity to observe candidate events in a region with lower energy pions," said E949 spokesperson Steve Kettell of Physics. "The study of these low-energy events is challenging due to background processes that can mimic the $K^+ \rightarrow \pi^+ v \bar{v}$ process, so we had to develop increasingly sophisticated analysis techniques to exploit the full features of the detector to help exclude these background events."

The team that performed the analysis obtaining the new result was led by David Jaffe, BNL Physics, and included Zhe Wang, BNL Physics postdoc; and three graduate students: Benji Lewis, University of New Mexico; Ilektra Christidi, Stony Brook University; and Joss Ives, University of British Columbia, Canada.

Kettell explained that the current result, based on all E949

and E787 data, seven events in total, indicates that the K+_ π +___ process occurs once in every 5.8 billion decays —twice as often as predicted by the Standard Model. If confirmed with improved precision by future experiments, a deviation this large would be impossible to accommodate in the Standard Model, and would signal the existence of new fundamental physics effects.

The experimental collaboration — composed of 70 scientists from Canada, Japan, Russia and the United States — has been conducting the search for the past decade. Data collection concluded in 2002 when the Alternating Gradient Synchrotron accelerator used for this research became a dedicated injector to the Relativistic Heavy



Zhe Wang, Physics Department E949 team member

Ion Collider, another particle accelerator devoted to nuclear physics research.

Further study will have to await a new generation of experiments in Europe or at a new accelerator in Japan where the BNL experimental apparatus is to be sent. — Karen McNulty Walsh

The Bulletin

CALENDAR **OF LABORATORY EVENTS**

- The BERA Store in Berkner Hall is open weekdays from 9 a.m. to 3 p.m. For more information on BERA events, contact Andrea Dehler, Ext. 3347, or Christine Carter, Ext. 2873.
- · Additional information for Hospitality Committee events may be found at the Lollipop House and the laundry in the apartment area. • The Recreation Building #317 (Rec. Hall)
- is located in the apartment area.
- Events flagged with an asterisk (*) have an accompanying story in this week's Bulletin.

— EACH WEEK -

Weekdays: Free English for Speakers Of Other Languages Classes

Beginner, Intermed., Adv. classes, various times. All welcome. Learn English, make friends. See www.bnl.gov/esol/schedule. html for schedule. Jen Lynch, Ext. 4894

Mondays: BNL Social & Cultural Club Noon-1 p.m., Brookhaven Center, South Room, free beginners dance lessons. Rudy Alforque, Ext. 4733, alforque@bnl.gov

Mondays & Wednesdays: Pilates

12:15-1:15 p.m. Mons.; 5:15-6:15 p.m. Mon. & Wed. Rec. Hall. \$65/1ce/wk., Ext. 5090

Mondays & Thursdays: Kickboxing \$5 per class. Noon-1 p.m. in the gym. Registration is required. Ext. 8481

Mon., Thurs., & Fri.: Tai Chi Noon-1 p.m., B'haven Cntr N. Rm. Adam Rusek, Ext. 5830, rusek@bnl.gov

Tuesdays: Hospitality Coffee 10:30 a.m-noon, Rec. Hall lounge. Re-

starts 9/9. All welcome. Ext. 5090 Tuesdavs: BNL Music Club

Noon, B'haven Center, N. Room. Come hear live music. Joe Vignola, Ext. 3846

Tuesdays: Knitting Class

2 p.m. Rec. Hall. All levels of skill. Ext. 5090 for information

Tuesdays: Jiu Jitsu

6:30-7:30 p.m. Gym. All ages, 6 yrs. to adult. \$10/class, pay as you go. Tom Baldwin, Bldg. 452, Ext. 4556

Tuesdays: Toastmasters

1st & 3rd Tuesday of month, 5:30 p.m., Bldg. 463, Rm 160. Guests, visitors welcome. www.bnl.gov/bera/ac-tivities/toastmstrs/

Tue., Wed. & Thu: Rec Hall Activities

5:30-9:30 p.m. General activities, TV, ping pong, chess, games, socializing. Christine Carter, Ext. 5090

Tue., Thurs. & Fri.: Ving Tsun Kung Fu

Noon-1 p.m., B'haven Center, North Room. Taught by Master William Moy. Scott Bradley, Ext. 5745, bradley@bnl.gov

Tuesday & Thursday: Aerobic Fitness 5:15 p.m., Rec. Hall. 10 classes for \$40 or \$5 per class. Pat Flood, Ext. 7866, flood@bnl.gov

Tuesday & Thursday: Aqua Aerobics 5:30-6:30 p.m., Pool. Starts Tues., 9/9; Thu., 9/11. 8-wk session, \$20/once/ wk, \$40/twice/wk. Mail chk to BERA.

Wednesdays: On-Site Play Group 10 a.m.-noon. Rec. Hall. Infant/tod-

dler drop-in event. Parents meet while children play. Restarts 9/10. Petra Adams, 821-9238

Wednesdays: Ballroom Dance Class

B'haven Center, N. Ballroom. Instruc-tor: Giny Rae. Starts September 12 and 19. Éxt. 3845

Wednesdays: Weight Watchers Noon-1 p.m. Michael Thorn, Ext. 8612

Wednesdays: Yoga

Noon-1 p.m., B'haven Center. Free. Ila Campbell, Ext. 2206, ila@bnl.gov

Wednesdays: LabVIEW 1:30-3 p.m., Bldg. 515, 2nd fl. Semi-nar Rm. Free technical assistance

from LabVIEW consultants. Ext. 5304 Thursdays: BNL Cycletrons Club

Noon-1 p.m., First Thurs. of month. Berkner, Rm. D. Toni Hoffman, Ext. 5257

This is Your Life [Number]! After submitting an application and going through the interview and hiring processes, a new employee at the Lab is assigned his or her

life number. Life numbers are exactly what their name implies a unique number issued to an employee for life. It means that even if that employee has a break in Lab service and then is re-employed by the Lab, they will use the number originally issued to them. And the number will never be issued to anyone else.

Most employees memorize their life number soon after they start working at the Lab. "It's like memorizing your social security number," said Bonnie Miller, supervisor of the Records Group in the Human Resources and Occupational Medicine Division (HR-OMC). "Life numbers are used to identify individuals for a variety of employment purposes, such as benefits and training requirements."

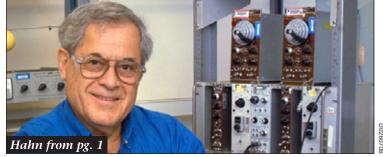
On July 7, 2008, the Records Group, which consists of Louisa Barone, Diane Di-Blasi and Darlene Peragine, issued life number 24000.

Who is employee number 24000?

Meet Michelle Scaduto, who holds BNL employee life number 24000. Scaduto will be working as an administrative secretary at the National Synchrotron Light Source II.

"I was so excited about beginning my new job here at the Lab," she said. "The extra fanfare about my life number took me by surprise, but I already feel like I'm a lifetime employee. Everyone has been very friendly and I'm happy to join the team for the Lab's newest facility on the horizon, the NSLS-II."

Miller explained that life numbers are assigned chronologically and have been issued since the Lab's inception. According to original logbooks, Philip Morse, the first Lab Director, holds life number 1,



Davis's observed electron neutrinos were only a fraction of the total number reaching Earth. The rest had changed into muon or tau neutrinos that were not detected in Davis's original experiments.

Currently, researchers at BNL and across the world are turning their attention to two new largescale neutrino experiments: one at the Daya Bay Nuclear Power Plant in China, and the SNO upgrade, called SNO+. Researchers have characterized two of the neutrino oscillations between different flavors, but they still do not know the details of the third oscillation. The Daya Bay international collaboration of researchers seeks to measure a parameter of this third oscillation known as the mixing angle θ_{13} (pronounced "theta-onethree").

"In order to understand neutrino mixing and oscillations, we must know the value of the unknown mixing angle," Hahn said. "All we know so far is that it is small."

International Nickel Company's Creighton Mine. SNO+ researchers will replace the heavy water used for SNO with metal organic liquid mixture.

The researchers working on SNO+ will study double-beta decay, a rarely seen radioactive decay mode - in which two neutrons are changed into protons, emitting two electrons and, most often, two neutrinos. A main goal of the experiment will be to search for double beta decay in which no neutrinos are emitted — a mode that has never before been seen.

"This would show that the neutrino is its own antiparticle," Hahn said. "Currently, some evidence suggests that neutrinos are different from antineutrinos, while certain theories predict that they are actually the same particle."



With a photo of Philip Morse, the Lab's first Director and owner of life number 1, are Bonnie Miller (right), of the Records Group in the Human Resources & Occupational Medicine, and Michelle Scaduto, a new employee in NSLS-II who holds life number 24000.

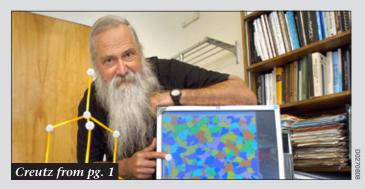
which was issued in 1946.

"Once we receive confirmation that we have a new hire, we will issue a life number to that individual a week or so before they are scheduled to begin working," Miller said.

"Looking back, I realize that I have seen over 8,000 numbers issued since I began working at the Lab, which means I've been lucky enough to see the Lab continue to expand and flourish." — Jane Koropsak

September Brookhaven Lecture Rescheduled

The Brookhaven Lecture to be given by Yong Cai of the NSLS II Project was previously announced for September 17. It has been rescheduled for Wednesday, September 24.



University first proposed using a lattice in a regular geometric arrangement of discrete points of space and time to simplify making the advanced calculations required for QCD. Coined in the 1940s by physicists working at DOE's Los Alamos National Laboratory, the Monte Carlo method derives its name from the random numbers used in this computational technique to explore the vast space of possible values for the fields that bind quarks. Such calculations are now routinely made by theoretical physicists around the world and require the most powerful computers available.

new physics findings at the Large Hadron Collider at CERN, the European Organization for Nuclear Research, near Geneva, Switzerland. Currently, Creutz is investigating including neutrinos on the lattice, which is difficult because, unlike other subatomic particles, they only spin in one direction. Over the last several years, physicists have been able to improve the control of both the size and accuracy of the lattice with the aid of powerful new supercomputers at Brookhaven.

Michael Creutz earned a B.S. in physics from the California Institute of Technology in 1966, and a Ph.D. in physics from Stanford University in 1970. He was a postdoctoral fellow at the Center for Theoretical Physics at the University of Maryland before he joined Brookhaven Lab in 1972 as an assistant physicist. He became an associate physicist in 1974, a physicist in 1976, and a senior physicist in 1980. A Fellow of the American Physical Society (APS), Creutz received the APS's Aneesur Rahman Prize for Computational Physics in 2000. He also received the Brookhaven Research & Development Award in 1991 and the Andrew Sobczk Memorial Lectureship from Clemson University in 1997.

nos in the SNO+ experiment, which will use the same general set-up from the completed SNO experiment — a large, round, acrylic vessel the size of a 10-story building, placed 6,800 feet underground in the

Thursdays: Reiki Healing Class Noon-1 p.m., Call for location. Nicole Bernholc, Ext. 2027

Fridays: Family Swim Night 5-8 p.m. BNL Pool. \$5 per family

Fridays: Family Gym Night 5-8 p.m. Family gym activities. Free

Fridays: BNL Social & Cultural Club Noon-1 p.m., B'haven Center, S. Room, free beginners dance lessons, 7-11:30 p.m. N. Ballroom, Dance Social, workshops. Rudy Alforque, Ext. 4733, alforque@bnl.gov

CIGNA Representative

A CIGNA Healthcare representative is available as needed in Human Resources, Bldg. 400, or by phone to assist with claims issues you have been unable to resolve yourself through CIGNA's Customer Service number (1-800-CIGNA24). Mary Beth Kivlen will be available by appointment only. You will need to provide all pertinent documentation. To schedule, call the Benefits Office, Ext. 5126.

To determine this angle, researchers will use eight 80-ton detectors to look at antineutrinos, the antiparticles of neutrinos, which are produced in nuclear reactors. Each detector contains a metal organic liquid mixture in the center that is surrounded by organic liquid without any metal, both of which Hahn and his group at BNL have helped to develop.

When neutrinos pass through the metal organic liquid mixture, flashes of light are produced. By placing detectors at different distances from the reactors, Hahn and colleagues will be able to map antineutrino oscillations from one flavor to another.

Hahn and his group are developing another metal organic liquid mixture to detect neutri-

Hahn explained that there should have been equal amounts of matter and anti-matter present at the Big Bang, the beginning of the universe.

"Today, however, matter dominates our Earth explaining why we don't annihilate each other when we shake hands. If the neutrino turns out to be its own antiparticle, this might help us to understand more about this imbalance," he said. "This experiment asks key questions about how our corner of the universe exists today as it does - with matter but no anti-matter."

This research is funded by the Office of Nuclear Physics and the Office of High Energy Physics within the DOE's Office of Science. — Kirsten Dorans

Using Monte Carlo techniques on the lattice, Creutz provided strong numerical evidence that quarks cannot be isolated, thus confirming this conjectured property of QCD. He found that the force between widely separated quarks, which is equal to 14 tons, did not decrease as the quarks moved farther apart. Creutz published his findings in the journal Physical Review in 1980. His paper became among the most cited from that year.

These computational methods have since been applied to numerous theoretical problems in physics, including the physics of Brookhaven's world-class accelerator, the Relativistic Heavy Ion Collider, and may be relevant for interpreting

— Diane Greenberg

The Bulletin



If you're at the Brookhaven Center around 7 on Friday nights you will easily hear the sound of music and laughter emanating from the North room. They are the sounds of friends, old and new, coming together to socialize and, yes, learn a variety of dances including west coast Swing, the Hustle, country line dancing and, of course, the Cha-Cha.

As part of the Brookhaven Employee Recreation Association, the Social and Cultural Club, which sponsors the Friday night get-togethers, has found a way to blend friendship, dancing, music, and fun. "It's about enjoying the art of dance with others," said Rudy Alforque, the club organizer. "Everyone enjoys learning new steps and we have shared many laughs along the way. I enjoy meeting new people, both from BNL and from neighboring communities."

Members of the club agree. "The BNL Social and Cultural Club provides an enjoyable venue for an eclectic mix of dance music and people of different cultures," said BNLer Omar Gould.

Karl Britz of Hampton Bays and Linda Nelson of Southampton said they learned about the Lab's Friday night gathering through the Long Island dancing "grapevine." Nelson, a student at Arthur Murray's School of Dance, said, "Dancing is a big part of my life and I really enjoy being part of this club."

Mastic Beach resident Larry Tellefsen and his wife Elyse have been coming to the Friday night socials for quite a while. "This is a great night out and a great way to end the work week," he said. "When we dance at parties and people ask us where we learned to dance. I invite them to join us at the Lab on Friday nights. I tell them the people there are just friends you haven't met yet."

Emil Mollik of Speonk en-

joys the chance to get dressed up, go out, and have fun.

"Everyone is so nice. They're pretty good dancers too. It makes me feel like I'm on the Lawrence Welk Show," he said enthusiastically.

Alforque says the club has continued to grow and currently has about 30 regular attendees. The club provides refreshments starting at 7:00 every Friday night. The dance instructions are from 7:45 to 9:15, followed by open dancing to a D.J. or live band until 11:30.

All are encouraged to join in. "The more the merrier," said Alforque. — Jane Koropsak

Cycletrons Motorcycle Club Family Picnic, 9/6

The Cycletrons, BNL's Motorcycle Club, in conjunction with the BNL Camping Club, invite all club members, their families, friends, and others who have an interest in motorcycles to their 12th annual Biker BBQ and Family Picnic on Saturday, September 6, at noon at the Gazebo picnic area near the softball fields.

Tickets are \$10 each, children of 12 and under are free. Hamburgers, hot dogs, salads, soda and more will be available as well as various games, raffles and more. To purchase tickets, contact Tony Arno, Ext. 6153; Craig Diaz, Ext. 2350; Charles Gardner, Ext. 5214; Toni Hoffmann, Ext. 5257; or Tom Seda, Ext. 7578.

Defensive Driving Course In Two Parts, 8/25 & 28

The next six-hour Defensive Driving (Point and Insurance Reduction) course will be held in two parts on Monday and Thursday, August 25 and 28, in the Brookhaven Center South Room, from 6 p.m. to 9:15 p.m. The course is open to BNL, BSA, and DOE employees, facility-users, and their families. The cost is \$38 per person. Preregistration is required. To register, call Ed Sierra, 821-1013, and leave a message. Be sure to include your phone number. For additional information, call Sarah Wiley, Ext. 4207.

Get Fit With Aerobics, Pilates Classes

Advanced registration is required for the following classes. Make checks payable to BERA, mail to: Recreation Office, Bldg. 400.

Aqua Aerobics: 8 week session, \$20/ once a week; \$40/twice a week, at the swimming pool, Bldg. 478, Tuesdays and Thursdays,

CALENDAR - WEEK OF 8/25 -

Monday, 8/25

IBEW Meeting

6 p.m. Centereach Knights of Columbus Hall, 41 Horseblock Rd., Centereach. A meeting for shift workers will be held at 3 p.m. in the union office. The agenda includes regular business, committee reports, and the president's report.

*Defensive Driving, Part I

6-9:15 p.m. Brookhaven Center, South Room. Part I of a two-part course. Part II will be on Thursday, 8/28 (see below). See also notice, below, left.

Thursday, 8/28

*Defensive Driving, Part II

6-9:15 p.m. Brookhaven Center, South Room. Part II of a two-part course. See notice, below, left.

— WEEK OF 9/1 —

Monday, 9/1

Labor Day Holiday

The Lab will be closed for the Labor Day Holiday. No Bulletin on 9/5/08.

Tuesday, 9/2

BERA Trip to NY Open

8:30 a.m. Coach will leave Brookhaven Center for stadium, leaves stadium 7:30 p.m. \$58/ person. Section 311 and 312, Upper Promenade. Buy ticket at the BERA Store, Berkner Hall.

Saturday, 9/6

*Cycletrons Family Picnic

Noon. Gazebo/ball park area. See notice at left

— WEEK OF 9/8 —

Wednesday, 9/10

*BNL Blood Drive

9:30-3 p.m. Brookhaven Center. For details, see p. 4.

— WEEK OF 9/15 —

Wednesday, 9/17

Brookhaven Lecture Rescheduled See 9/24 below.

Saturday, 9/20

BERA Trip, Football Game

7 a.m. B'haven Center. Coach leaves for West Point Army vs Akron game, leaves W. Pt. at 5p.m. or end of game. Cost \$65/person covers coach, admission and hot tailgate catered luncheon. Buy tickets at the BERA Store, Berkner Hall.

- WEEK OF 9/22 -

Wednesday, 9/24

Brookhaven Lecture Rescheduled 4 p.m. Berkner Hall. Yong Cai, National Synchrotron Light Source II Project, will discuss a new experimental beamline being planned for NSLS-II that will use inelastic scattering technoly to probe in greater detail than ever before the atomic motions in liquids and solids. All are welcome to this free lecture, open to the public. Visitors to the Lab of 16 and over must carry photo ID.

Benefits Office Reminder: Proof of Student Status

All medical/dental plan participants are reminded to submit updated proof of student status to the Benefits Office, Bldg. 400B, for the upcoming college semester. The Benefits Office will submit this to the insurance company on your behalf. Proof of student status must be in writing from the college or university and include:

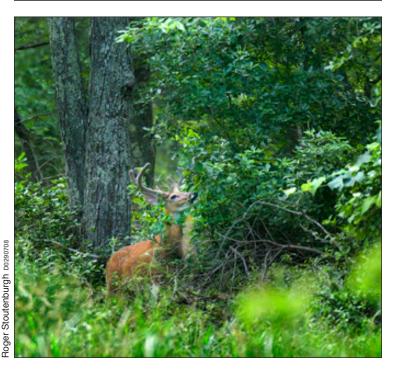
- Dependent name
- Name of college/university
- Semester for which the child is attending
- Indication of full-time status (usually at least 12 credits for undergraduate programs)

For a child over age 19 to be eligible for benefits, he or she must be unmarried, a full-time student attending an accredited college or university and primarily supported by you. Dependent children who meet these criteria may be covered until the end of the year in which age 23 is attained.

Employees covering dependent children over the age of 19 as full-time students should be aware that full-time students are only covered in between semesters if the student attends classes on a full-time basis for both the Spring and Fall semesters. Otherwise coverage ends on the last day the child attended an accredited college or university on a full-time basis. If there is a possibility that the child may not be in full-time attendance in the Fall, please contact the Benefits Office immediately to discuss continuation of benefits through COBRA.

You must notify the Benefits Office if you have dependents on your coverage that do not meet the above criteria. These dependents may be eligible for COBRA benefits. For more information, call the Benefits Office, Ext.

2877 or 5126.



5:30-6:30 p.m.

Tuesday: Sept. 9, 16, 23, 30; Oct. 7, 14, 21 & 28 Thursday: Sept. 11, 18, 25; Oct. 2, 9, 16, 23 & 30

Pilates: 8-week session, \$65/once a week, \$80/twice a week, and \$130/three times, at the Recreation Hall, Mondays and Wednesdays.

Monday: 12:15-1:15 p.m. Sept. 8, 15, 22, 29; Oct. 6, 13, 20, 27 Monday & Wednesday: 5:15-6:15 p.m. Monday: Sept. 8, 15, 22, 29; Oct. 6, 13, 20, 27 Wednesday: Sept. 3, 10, 17, 24; Oct. 1, 18, 15, 22.

School Supplies Drive

The annual BERA/Recreation School Supplies Drive is still in progress. Donations are requested for schoolchildren who will not have adequate items such as notebooks, folders, glue, crayons, pens, pencils, backpacks, and lunch bags for the coming term. Drop off all supplies you can muster to the Quality of Life/ BERA/Recreation Office in Bldg. 400. Your contributions will make a difference.

Arrivals & Departures

- Arrivals -Steven Cannella..... Plant Eng. Michael EstrellaChem. Lori LombardoDir.'s Office Jesse MontaltoITD Sanjaya SenanayakeChem.

- Departures -

Ashley Conway Medical John Lechmanski Plant Eng. Mathew Maye CFN Peter Raitch Rad. Control Vincent Susinno..... Plant Eng. Jincheng Zheng..... CMP&MS

Saturday, 9/27

New York City Dinner Cruise

5 p.m. B'haven Center. Coach departs for World's Fair Marina, Flushing, to join dinner cruise, 7-11 p.m. Buffet, dessert, coffee, DJ dancing, coach trans-portation included (cash bar). Buy tickets at the BERA Store, \$90/person, 21 & over only.

Note: This calendar is updated continuously and will appear in the Bulletin whenever space permits. Submissions must be received by the preceding Friday at noon to appear in the following week's Bulletin. Enter information for each event in the order listed above (date, event name, description, and cost) and send it to bulletin@bnl.gov. Write "Bulletin Calendar" in the subject line.

Classified Advertisements

Placement Notices

The Lab's placement policy is to select the best-qualified candidate for an available position. Candidates are considered in the following order: (1) present benefits-eliaible employees within the department/division and/or appropriate bargaining unit, with preference for those within the immediate work group; (2) present benefits-eligible 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, disability or veteran status. Each week, the Human Resources Division lists new placement notices, first, so employees may request consideration for themselves, and, second, for 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. Access current job openings on the World Wide Web at www.bnl.gov/HR/jobs/.

To apply for a position, go to www.bnl. gov. Select "Careers at Brookhaven" then "Employment Opportunities."

OPEN RECRUITMENT - Opportunities for Lab employees and outside candidates. ASSISTANT SCIENTIST (S-1) - Requires a Ph.D. in chemistry, chemical engineering or a related field. Preference will be given to candidates with two or more years of postdoctoral experience. Successful candidate will be expected to develop a vigorous research program in electrocatalysis/catalysis science strongly connected to other energy research activities in the Chemistry Department and at BNL. Preference will be given to candidates with expertise in in situ and ex situ studies of model and nanoparticle electrocatalysis systems and those who are also familiar with UHV surface science characterization of model catalysis catalysts. One particular interest is in developing a research program in ethanol electroxidation/reforming. When applying for this position, please also include three letters of recommendation along with the CV. Under the direction of J. Hrbek and R. Adzic, Chemistry Department. Apply to Job ID # 14591.

APPLICATIONS ARCHITECT/SR. SOFT-WARE DEVELOPER (I-9) - Requires a bachelor's degree in the physical sciences or computer science with at least ten years relevant experience. Experience in scientific computing, and advanced knowledge of C++, Linux and scripting languages necessary; background in high energy or nuclear physics preferred. Experience in leading large software projects, preferably in high energy or nuclear physics, required. Excellent communication skills are necessary. Experience in distributed computing, data management and relational databases strongly preferred; grid computing experience an asset. Experience working collaboratively on large projects preferred and ability to work in this environment essential, as is interest and aptitude in user and operations support. Responsibilities include a central role in the development and operation of distributed processing and data management systems for the ATLAS experiment, in support of distributed data analysis by ATLAS physicists in the US and around the world. Position is in the Physics Applications Software Group of the BNL Physics Department. Principal activities of the group are in the develop-ment of the physics data management system and the distributed data analysis system of ATLAS. Physics Department. Apply to Job ID # 14594.

MATERIALS SCIENCE ASSOCIATE I (P-8) (Reposting) – Requires a master's degree in physics, chemistry, material science, biophysics, physical chemistry or closely related discipline and a minimum of ten (10) years related experience in one or more of the following areas: simple and complex fluids, physics of polymers or biopolymers, self-organization phenom-

RADIOLOGICAL CONTROL TECHNI-CIAN/SR. TECHNICAL SPECIALIST (T-3) Requires a high school diploma, minimum 10 yrs. directly relevant work experience or an equivalent combination of work experience and any other qualifying ESH credentials such as NRRPT (BNL provides 4 years of equivalent work experience for candidates who are NRRPT registered); and a desire to work with diverse radiological source terms. Requires good problem solving and communications skills, both written and oral and current 40-hour HAZWOPER training or be capable of passing HAZWOPER training; be respirator qualified or capable of obtaining respirator qualifications. Other ESH credentials are considered a plus. Will work with a team of environment, safety and health professionals and technicians to implement the BNL Radiation Protection Program. Radiological Control Division. Apply for Job ID#14592.

SR. TECHNICAL SPECIALIST (T-3) (Reposting) Requires an associate's degree in mechanical technology or equivalent, plus at least six (6) years of relevant work experience in high-precision machining and excellent communication (written and verbal) skills. Will be required to perform mechanical machining, assembling of parts, handling of ultrahigh vacuum equipment, motion control systems, and electrical and electronic equipment, etc. as necessary. Work-ing knowledge of AutoCAD, mechanical design and experience in a R&D work environment is desired. Under the direction of the High Energy Resolution Optics Scientist and reporting to the inelastic Xray Scattering Group Leader, the candidate will be responsible for operation and maintenance of (including procurement of materials and supplies for) the crystal fabrication and testing labs. Will perform crystal fabrication including crystal orientation, cutting, lapping, polishing, etching as well as high-precision dicing of single crystals using a fully automatic dicing machine. Will also assist with the construction, operation and maintenance of the optics R&D beamline at NSLS. National Synchrotron Light Source-II. Apply for Job ID # 14396.

OFFICE SERVICES ASSISTANT (CW-2) – Requires an AAS degree or three years accounts payable experience, and knowledge of Excel and Word. Working knowledge of personal computers, exposure to computerized business systems, and good oral and written communication skills are necessary; knowledge of PeopleSoft is desirable. Responsibilities will include opening and sorting incoming mail, filing, invoice processing in accordance with BNL policies, daily check processing, and providing Accounts Payable guidance to laboratory organization. Fiscal Services Division. Apply for Job ID # 14593.

Motor Vehicles

03 MERCURY MARAUDER - black/black, auto-start, 6 cd changer, loaded, warr., excel. cond. 19K mi. \$22,995/neg. Bill, 379-7961.

00 HYUNDAI ELANTRA - black, a/t, p/w, p/l, a/c, cd, player. 102K mi. \$1,800/neg. Ext. 2209.

99 DODGE DURANGO SLT - 8 cyl,4wd,a/ c, am/fm/cd, abs, c/c, p/l,p/s,p/w, tow pkg, leather, excel. cond. 121K mi. \$3,600/neg. 258-4607.

99 FORD EXPLORER - Eddie Bauer Ltd. Edition, excel. cond., leather int., 4x4, a/ t, a/c, deluxe sound, 6-disc CD. 73K mi. \$6,800/neg. Ext. 7416 or 413-5012.

98 HONDA ACCORD - excellent cond., orig. owner. 120K mi. \$4,500/neg. 516-978-8345.

97 PONTIAC GRAND AM - dark green, runs well, no scratches, cd player, pic. avail. 180K mi. \$1,450/neg. 433-2902.

96 TOYOTA CAMRY SEDAN DE - 5 spd, a/c, 32 mpg, fair cond., drives well/reliable, gd. maint. record, come to lab serv. sta. 130K mi. \$2,200/neg. Gerry, Ext. 4771 or 286-8747.

96 TOYOTA CAMRY SEDAN DE - 5 spd, 32 mpg, fair cond., drives well/reliable, gd. maint. record (on site). 130K mi. \$2,200/neg. Gerry, 286-8747. 9' ALUM DINGHY - with oars and oar locks. \$300. John, 543-7065.

Furnishings & Appliances

CHERRY CRIB W/MAT \$50 - Toddler Bed w/mat \$35 Disney's Cars Tdlr Bed Sheet Set \$20 (used 2xs-pd. \$40) Sofa \$50 All New Cond. Ext. 7007 or 849-3411.

CRIB MATTRESS - Newly purchased. Used less than week. Must go. \$30. XT, Ext. 7790.

DAYBED W/POP-UP 2ND BED - Metal with springs, roll-out 2nd bed, ~6" narrower than twin size, matresses, exc. cond. \$50. Gerry, 286-8747.

DINING ROOM - Thomasville Elysée, pecan/ash wood, table, 2 arm & 4 side chairs, mobile server, china closet. Excellent cond. \$5,500. Ext. 7286 or 764-4444. DISHWASHER GE - Model GSD2200, white, 30w, 33h, 3.4 gallons, 4 years old, like new, You p/u. \$200. P.K., Ext. 4416. DORMITORY REFRIGIRATOR - 4 cu.ft, whitlpool, white, w/ freezer compartment, 4 yrs. old, \$50. P.K., Ext. 4416. GAS RANGE - w/matching microwave hood, GE, white, 30°, self cleaning, 4 yrs old, like new, u-pic-up, \$250. P.K., Ext. 4416.

GRACO FULL-SIZE STROLLER - Multiposition. Must go. \$30. XT, Ext. 7790.

MOVING, EVERYTHING MUST GO -Check Craigslist posting 801599349. 2-yr. old appliances, Toro snow blower, many household items.]Ext. 6047 or 294-3858. OIL BURNER BECKET - complete w/filter can, ready to install, \$75. Joe, Ext. 3783 or 487-1479.

Audio, Video & Computers

35MM SLIDE SCANNING - www.pictureperfectscans.com scans, color corrects 35mm slides, converts to DVD. DVD Music slideshows available. Port Jeff. 928-6469. 52" HD HITACHI TV - Pristine Condition, art for laden/blavroom. ask \$500. Chris.

grt for igden/playroom, ask \$500. Chris, 516-315-7833. DIRECT TV DISH - with 2 boxes and 2 re-

motes, \$125. John, 543-7065.

DIRECT TV DISH - w/2 boxes/remotes, \$125; 9' alum dinghy w/oars and oar locks, \$300. John, 543-7065.

PHOTO PRINTER - HP Photosmart 7960, never used, prints photos from memory card w/out PC. 516-697-5419.

TV - TOSHIBA 65" PROJECTION - HD Ready, 3 years old, excellent shape and working condition, asking \$675. 258-5986.

Sports, Hobbies & Pets

EXERCISE BIKE - Schwinn 203, 17 programs, heart rate sensor. Used 2.5 yrs, like new. Will deliver nearby. \$250. Carla, Ext. 5651 or 631-790-7179.

GUN SAFE - American Tradition Browning, fire proof, call for dimensions/photos, \$750, 807-9916. Ext. 5753 or 252-3356.

PROWLER TRAVEL TRAILER - '08, \$17,000.00 double bunks, new awning, queen bed, ac/heat, shower/tub, plenty of storage, must sell. Ext. 5753 or 807-9916.

Tools, House & Garden

CRAFTSMAN SHOP TOOLS - 10" Table saw - \$65 4" x 36" Belt/Disk Sander - \$40. Ext. 2159 or 331-7048.

Miscellaneous

CAST IRON RADIATOR - For hot water heating system. 26" x 4.75" x 25", very good cond. (painted). \$25. Gerry, 286-8747.

GIANTS VS NEW ENGLAND 8/28 - Single tkt w/ pkg tkt Section 112 30yd line row 32 \$100 OBO. Ext. 5288 or 487-5717. HOT TUB - 5'x7', in/out dr., redwood skirt

cover, b/o. 804-4662. TICKET - GIANTS VS BROWNS 8/18 - Sin-

gle ticket section 112 w/pkg tkt 30 yd line Row 32 \$50 OBO. Ext. 5288 or 487-5717. TICKETS - 2 MET Opera Tickets for Dr. Atomic on 10/30. Balcony \$63/ea + Bus \$20/ea from North Shore Library.

Yard & Garage Sales

Michiko, Ext. 7761.

MASTIC - 55 Poncho Dr., 8/23, 8/24, Step two, Little Tikes, Books, Movies, Misc . Andrew, 395-6264.

Give Life — Give Blood SOS Blood Drive, 9/10



The blood supply on Long Island is extremely low — an emergency appeal calls for more donors. As many people know, just one pint of blood can save several lives, and whether you save a stranger or your own friend or family, you will be providing a matchless gift.

BNL will hold a Blood Drive on Wednesday, September 10, 9:30 a.m. – 3 p.m. in the Brookhaven Center. Donors must be 16 to 75 years of age, in good health and weighing over 110 lbs. Restrictions may apply to individuals from the UK and Europe. Donors should have photo ID and know their social security number. To make an appointment, log on to the Human Resources webpage, click on "Blood Drive" and select "Schedule an Appointment." If you do not have access to a computer, call Liz Gilbert, Ext. 2315.

FIREARMS - new/old, pay fair \$\$ for clean guns. Joe, Ext. 3783.

JUICER - heavy-duty juicer for fruits & vegetables. Richard, Ext. 4011.

RIFLES - Starting a gun collection and looking mostly for rifles. Bob, 603-7261. Bob, Ext. 5551 or 772-4751.

RIFLES - Starting a gun collection and looking mostly for rifles. Bob, 603-7261. SCALLOP VINYL SIDING - Need two

pieces of White Feston scallop, double 7.5" X 60 long to finish gable. Will pay. Kathy, 821-2586.

THE NEW YORKER MAGAZINE - July 21st issue. Pam, Ext. 3097.

WANTED VACUUM CLEANER, COUCH, end table, blender. Needed for family that has lost everything. Thank you. Melinda, Ext. 2280.

Lost & Found

LOST - gold earring w/green stones, 1" long in Cafetaria or parking lot on 8/13. Judy, Ext. 5263.

For Rent

CENTER MORICHES - 2 rm apt 460 sq.ft, suitable for 1, beautiful area, walk to all, 8 mi to Lab, off-st. prkg., avail. immed. nonsmoker, refs. \$650/mo. Ext. 4979.

FARMINGVILLE - Spacious 1 bdrm apt., grnd level, priv. ent., L/R, fireplace, kitch., full bath, backyard access. Close to LIE & shop. centers. Incl. util. \$1,000/mo. Bessie, 631-736-1726; 631-332-1576.

HAMPTON BAYS - Furnished 1 family ranch, quiet n'hood. 3 bdrm, 2 baths, washer/dryer. Includes kitchenware & linens, not utilities. No smoking or pets \$1,900/mo. Jim, Ext. 7215.

MASTIC - 3-bdrm., finished basement, half-acre, fenced yard. \$1,800/mo. plus sec., utilities not included. 998-3163.

MASTIC - 3 bdrm, 2.5 ba. Victorian, EIK, d/w, w/d, basement. 1-car gar., patio, ag pool. 7mi to BNL. Roommates, some pets OK w/refs. +utilities/security \$2,000/ mo. Carla. Ext. 5651 or 790-7179.

MASTIC - New Apt, 1 Bdrm, Kit/LR combo, full bath, priv. ent, quiet area, own thermostat, utility incl, nr LIRR, no smkg/ ROCKY POINT - recently renov house 4 Irg rms/w 1 bedrm washer/dryer close to BNL walk to beach no pets, utils/security not included. \$1,000/mo. 744-5282.

SHIRLEY - 1 rm, stove, kitchenette, full bath, sep. ent, heat, cable, wireless internet inc., 1 mo sec. 14 mins. to Lab, close to stores/beach/LIRR. No smk \$700/mo. Regis, Ext. 8321 or (631)657-3008.

SHIRLEY - 1 room, microwave/kitchenette, full bath, sep. ent., TV/heat/elect. incl. 1 mo sec. Close to Lab/stores/ beach/LIRR, no smkng. or pets. \$650/ mo. Regis, Ext. 8321 or (631)657-3008.

SMITHTOWN - furn. bsmt. studio apt. w/ micro/frig, no smkg/pets or stove, walk to town, shop, LIRR, util., incl., 1 mo sec., 35 min. to lab. \$625/mo. 265-3392.

SOUTH SETAUKET - studio apt. bath, kit., w/ skylights, windows, 5 min.to SUNY 25min. to BNL incl. util., 1 person only. \$700/mo. 885-2229.

For Sale

MASTIC - 3 bdrm. ranch, 2 full bath, L/R, D/R, EIK, fin. basmt., new roof, detached 2-car gar., oak floors, CAC, IGS, water purif. system, landscaped. \$325,000 John, 281-3342.

MIDDLE ISLAND - 4BR ranch EIK DR, 2 Bath, Den w/wet bar, fin. basmnt w/wet bar, 2 frplces, Ig. deck, koi pond, and more! \$349,990 Ext. 2705.

MIDDLE ISLAND - 1-BR Co-op. Large LR-DR-BR & Patio. Open Plan. 2nd Floor. All New Interiors 3 yrs-Rooms, Bath, Kitchen, Appliances. Many Extras. \$124,500/ neg. Vatsal, Ext. 5453 or 631-220-3487.

PORT JEFFERSON STATION, NY - 3 bdrm Colonial, fin. bsmt. w/poss. 4th bdrm, 1.5 ba., L/R, D/R, eat-in kitch., agp, 1/4 acre, gas heat, young families on block. \$355,000 Joann, Ext. 7416 or 413-5012.

RIDGE - Colonial 4 bdrm. in great family neighborhood, 2 mi. to Lab, full finish. bsmt. w/ose, income potential, too many new options to list. \$472,500. 252-3356.

RIDGE - Lesiure Glen Condo/Townhouse/ Ridge Quincy Home Close to the Clubhouse in over 55 community! w/lr; dr; eik; cathdrl ceilings, suite w/2 huge closets & \$229,000/neg. Ron, 631-929-3700.

self-assembled molecular structure. Applicants with a Ph.D. degree require 5 years of related experience. A highly skilled professional background in experimental methods for soft matter physics or biophysics and their applications to nanoscale phenomena is essential. Must have excellent communication and interpersonal skills. The successful candidate will join an interdisciplinary team working on assembly and optical properties of organic-inorganic hybrid nanomaterials. Will be responsible for operation and development of Center for Functional Nanomaterials (CFN) experimental facilities, including spectroscopic instruments, atomic force and optical microscopes, and thin-film characterization instruments. Will work closely with Brookhaven National Laboratory (BNL) scientists and CFN users, and will have an opportunity to develop an independent research program aligned with the group's scientific directions. Center for Functional Nanomaterials. Apply to Job ID# 14535.

94 HONDA CIVIC DX - 5 spd, runs well, gd. cond. 150K mi. \$1,500. Serban, Ext. 3721 or 473-4375.

94 TOYOTA COROLLA WAGON - a/c, a/t, am/fm, fair cond., drives well, excel. maint. record, come to Lab service sta. 100K mi. \$2,000/neg. Gerry, Ext. 4771 or 286-8748.

89 MERCURY GRAND MARQUIS LS -8cyl. 5L, a/t. clean car, daily user, going to college must sell ASAP. 104K mi. \$750/ neg. Matt, 801-2008.

CLEARANCE LIGHTS - for truck/trailer, 6 amber and 3 red, brand new + 1/ea. used, \$5/all. Peter, Ext. 5551 or 772-4751.

WHEELS/TIRES - Bridgestone Turanza, P205/55R16 89H, hubcaps/lug nuts, new take-offs from '08 Civic LX, \$200. Jay, Ext. 4994 or 332-0240.

Boats

23' SUNBIRD NEPTUNE - 1996, 5.0 Volvo Penta. New exhaust manifolds and risers, full canvas, GPS with sonar. Great boat. \$7,000/neg. Ken, 379-1341.

Community Involvement

N. FORK FOODIE TOUR, Sun. 9/7. Selfguided tour of veg. grown on L.I., also goats-w/great cheese, herbs, hens (check out measuring eggsl), bison farm, wine, fruit, shellfish, much more. To benefit North Fork Reform Synagogue. To see route, where to buy tickets (\$25) get maps & info., see www. northforkreform synagogue.com/calendar/ events/ or call 722-5712.

AIR CONDITIONER - Freidrich, window unit. 10,000 Btu, high efficiency, rarely used, clean but old. Bob, Ext. 3782 or 325-8476.

WATER PUMP MOTOR - & pump parts all used, for camper domestic water supply, 12 VDC. Peter, Ext. 5551 or 772-4751.

Wanted

CANS OF FOOD - Please remember to donate cans of food in the BNL Food Drive bins located in most buildings, e.g., near the Mail Room in Bldg. 170. Many people around here are in need. Thanks. pets, walk to shop, 7 mins to Lab. \$775/ mo./neg. 631-335-4907.

MIDDLE ISLAND - 1 bdrm, Ig bsmt apt, pvt ent&drwy, phone, cable, internet, clean, quiet, strictly no pet/smkg, all incl, close to Lab, BNL employee only. Avail 1 Sept \$920/mo. Istvan, Ext. 7020.

PORT JEFF STA - Spacious 700sq.ft. L-shaped L/R D/R/Kitchen, sep. bdrm, CAC, wood floors, cath ceil, 2nd flr., internet, private entry & parking. Furnished (opt.) \$1,200/mo. 921-6750.

RIDGE - Newly renovated 1 BR cottage - kitch, bath, LR, gas, AC, Unfurnished, (furnishings avail. for purchase). Avail. mid-Sept. \$1200/mo inc. utilities. \$1,200/ mo. Brian, 516-818-7388.

RIDGE - spacious 1br/1ba apt., bright I/r, eat-in kit, priv. ent. & dr. way, 5-10 minutes to BNL, incl. utilities & washer/dryer, no smoking. \$1,175/mo. Marie, 236-9114.

ROCKY POINT - I bedrm apt., ideal for single, walk to beach, no pets, util/security not incl. \$800/mo. 744-5282.

RIVERHEAD - 3/fir. house, bsmt., 3-4 b/r, 3.5 bath, formal d/r, eik, den, 1 car gar., 5 min. to shopping, ½ circle drway., cac/heat, 2549 sq. ft., must see, b/o. \$450,000/neg. Keith, 981-5100.

On-Site Services

ON-SITE SERVICE STATION - How old is your battery? You can get your vehicle's battery and/or air conditioning checked and serviced, or have other repairs done, while you are at work. Ext. 4034.

ENTERPRISE CAR RENTAL - has moved to new Research Support Bldg., Bldg. 400 lobby. Cars, pick-ups, vans available for short or long rental. Discounted rates for BNLers. Ext. 4888.

Services

A list of services supplied by employees is available on the web at the end of "See all ads," or call Ext. 2346. Services are neither screened nor recommended by the Bulletin. Place services as an ad.

Bulletin

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