

New g-2 Results May Rock Standard Model

Brookhaven physicists, in collaboration with researchers from 11 institutions in the U.S., Russia, Japan, and Germany, announced an experimental result that directly confronts what is called the Standard Model of particle physics.

"This work could open up a whole new world of exploration for physicists interested in new theories, such as supersymmetry, which extend the Standard Model," says Boston University physicist Lee Roberts, co-spokesperson for the experiment.

The Standard Model is an overall theory of particle physics that has withstood rigorous experimental challenge for 30 years.

The BNL finding — a precision measurement of something called the anomalous magnetic moment of the muon, a type of subatomic particle — deviates from the value predicted by the Standard Model. This indicates that other physical theories that go beyond the assumptions of the



Standard Model may now be open to experimental exploration. The results were reported at a special BNL physics colloquium last Thursday, February 8, 2001, and have been submitted to *Physical Review Letters*.

The experiment, dubbed the muon g-2 (pronounced gee-minus-two), has been generating data since 1997. Until just before the colloquium, however, the scientists did not know whether their work would confirm the prediction of the Standard Model because they intentionally analyzed data in two separate groups be-

fore combining their analyses to get a final result.

"We are now 99 percent sure that the present Standard Model calculations cannot describe our data," says BNL physicist Gerry Bunce, project manager for the experiment.

The Standard Model, in development since the 1960s, explains and gives order to the menagerie of subatomic particles discovered throughout the 1940s and 1950s at particle accelerators of ever-increasing power at BNL and other locations in the United States and

Europe. The theory encompasses three of the four forces known to exist in the universe — the strong force, the electromagnetic force, and the weak force — but not the fourth force, gravity.

The g-2 values for electrons and muons are among the most precisely known quantities in physics — and have been in good agreement with the Standard Model. The g-2 value measures the effects of the strong, weak, and electromagnetic forces on a characteristic of these particles known as "spin" — somewhat similar

to the spin of a toy top.

Using Standard Model principles, theorists have calculated with great precision how the spin of a muon, a particle similar to but heavier than the electron, would be affected as it moves through a magnetic field. Previous experimental measurements of this g-2 value agreed with the theorists' calculations, and this has been a major success of the Standard Model.

The scientists and engineers at BNL, however — using a very intense source of muons delivered by the Alternating Gradient Synchrotron, the world's largest superconducting magnet —

(continued on page 2)

The 1995 photograph above, center, shows members of the muon g-2 team gathered around the world's largest superconducting magnet, which was built at BNL for the experiment. Photo CN5-684-95, by Roger Stoutenburgh.

BNL Honors 2001's Engineering, Computing Achievers

At the BNL Employee Recognition Award Ceremony and reception on January 24, 15 Lab employees were rewarded with BNL's highest honors. Last week's Bulletin featured the five employees who won the Science and Technology Award; this week, the spotlight is on those who won the \$5,000 Engineering Award, which is given to recognize distinguished contributions to the engineering and computing objectives of the Laboratory over one or more years. The next Bulletin will report on the five Brookhaven Award winners.

At the ceremony, the Engineering Awards were presented by Laboratory Deputy Director Thomas Sheridan to:

Scott Coburn

Scott Coburn, a research engineer II in the Physics Department, has made significant innovations in the design and construction of two world-class liquid spectrometers, facilitating the study of liquid surfaces and interfaces with x-ray scattering techniques. One instrument has significantly improved a Physics Department beam line at the National Synchrotron Light Source. Coburn has completed an even more ambitious liquid spectrometer for BNL researchers at the Advanced Photon Source at Argonne National Laboratory. His innovations overcome serious limitations of earlier instruments, opening new experimental opportunities.



BNL's 2001 Engineering Award winners are: (from left) Scott Coburn, Physics Department; Anand Kandasamy, Instrumentation Division; Michael Hauptmann, Environmental Restoration Division; Joseph DePace, Information Technology Division; and Charles Pearson, Collider-Accelerator Department.

Joseph DePace

Joseph DePace, a technical research associate in the Information Technology Division has had as his primary responsibility over the last 24 years the operation and maintenance of BNL's scientific mainframes and supercomputers. He was one of the main contributors to the building of the RIKEN BNL QCDSF supercomputer, which won a 1998 Gordon Bell Prize. DePace currently works with BNL and Columbia University scientists to prepare for building the next generation QCD supercomputer. He was also the driving force in starting the Lab's Silicon Graphics varsity maintenance program, saving BNL more than \$100,000 a year.

Michael Hauptmann

Over the past three years, Michael Hauptmann, a project engineer I in the Environmental Restoration Division, has directly managed the successful completion of the engineering design and the construction of four groundwater treatment systems for BNL, one being the remediation of the highly visible and technically challenging High Flux Beam Reactor tritium plume. Hauptmann overcame time constraints and the public and regulatory scrutiny paid to the proposed and ultimate decisions reached on these projects. Also, his technical expertise has made him a credible and effective spokesperson for the Lab's cleanup program.

Anand Kandasamy

Anand Kandasamy is a research engineer II in the Instrumentation Division. His knowledge of hardware and software engineering, attention to detail, problem-solving abilities, and professionalism in all circumstances made him singularly responsible for the success of several projects involving advanced integrated circuits. For example, he designed, tested, and supervised construction of the PHENIX Time Expansion Chamber front-end electronics, and now has similar responsibilities for the Cathode Strip Chamber readout for ATLAS. He also developed the CAD systems used for monolithic circuit design in the Instrumentation Division.

Charles Pearson

Charles Pearson, a senior project engineer in the Collider Accelerator Department, has an outstanding record of accomplishments that bridges both liaison and basic engineering functions. He was responsible for the engineering of the BRAHMS experiment's spectrometer magnets and support structure, and the Ring Imaging Cerenkov detector. For the PHENIX experiment, he designed and built the shielding wall, including two rolling plug doors — one, 34 foot high, weighs 450 tons. At the AGS, his target station designs have allowed major reductions in radiation dose to personnel while maintaining radioactive components.

Coming Up In Berkner Hall



BNL Lecture
Wednesday
February 21
4 p.m.

Studier on Genomics



BSA Lecture
Wednesday
February 28
4 p.m.

Zeilinger on Physics

(see page 2)

Calendar of Laboratory Events

- The BERA Sales Office is located in Berkner Hall and is open weekdays from 9 a.m. to 3 p.m. For more information on BERA events, contact Andrea Dehler, Ext. 3347; or M. Kay Dellimore, Ext. 2873.
- Additional information for Hospitality Committee events can be found at the Lollipop House and the laundry in the apartment area.
- The Recreation Building is located in the apartment area.
- Calendar events flagged with an asterisk (*) have an accompanying story in this week's Bulletin.

— EACH WEEK —

Tuesdays: Welcome Coffee

10-11:30 a.m. Recreation Bldg. Newcomers meet friends. Mimi Luccio, 821-1435
— Hospitality event

Wednesdays: On-Site Play Group

9:30 a.m.-11:30 a.m. Recreation Bldg. Parents meet while children play. Free, drop in any time. Monique de la Bey, 399-7656.
— Hospitality event.

Wednesdays: beg.-adv. Dance Lessons

6-9 p.m., Brookhaven Ctr. North Ballroom
Marsha Belford, Ext. 5053.

Wednesdays: Yoga Practice Sessions

12:10-12:50 p.m., Recreation Bldg., free. For more information, contact Ext. 3924.

Tues. & Thurs.: Aerobic Dance

5:15 p.m., Recreation Bldg. \$4 per class or \$35 for any ten classes. Pat Flood, Ext. 7886; or Susan Monteleone, Ext. 7235.

Mon., Tues., & Thurs:

Cardio Kickboxing

noon-1 p.m., Mon. & Thurs. and 5:15-6:15 p.m., Tues. & Thurs. Mary Wood, Ext. 5923, or wood2@bnl.gov.

— TODAY —

Friday, 2/16

Women Engineer's Lunch Networking Meeting

Noon, Berkner Hall, Room A. Contact Lorraine Merdon, Ext. 3318.

— NEXT WEEK —

There will be no Bulletin published this week due to the Lab holiday of President's Day.

Monday, 2/19

BNL is closed in observance of Presidents' Day.

Closed: BERA Sales; Gym; Omega Travel; On-site Teachers Federal Credit Union; Research Library; U.S. Post Office, Upton Branch.

Food Service:

Brookhaven Center dinner service: closed Sat. 2/17 & Sun. 2/18; open Mon. 2/19, 5-9 p.m.

Cafeteria: open Sat. - Mon., 2/17-19, 7:30 a.m. - 2 p.m.

Other food: during the holiday weekend, cold food and snack machines in Bldgs. 179 (Post Office) & 912 (AGS) will be available 24 hours/day. The NSLS (Bldg. 725) food machines in the lobby and on the experimental floor, and the food machine off the lobby at RHIC (Bldg. 1005) are available for those with access to

361st Brookhaven Lecture Bringing the Genome to Life

The Human Genome Project made news again this week, with the first descriptions of what the nearly completed human genome sequence tells us. Surprisingly, humans appear to have only



Roger Stoulenburgh ON-11488

William Studier

about twice as many genes as the roundworm and three times as many as the fruit fly.

Genes carry the "blueprints" for proteins, but it is the proteins that perform the functions of life, acting through their specific structures and interactions. Attention is now focusing on discovering functions of the estimated 30,000-40,000 human proteins — the human proteome — and the proteins of other organisms.

One promising approach, referred to as structural genomics, is to determine structures of proteins selected systemati-

cally to reveal the range of structures and functions found in nature. For the past three years, a consortium of BNL and four New York City research institutions has been exploring the structural genomics approach, piloting procedures to produce proteins more efficiently and to determine their structures more rapidly.

William Studier, a senior biophysicist in the Biology Department, will describe this work in the 361st Brookhaven Lecture, "Structural Genomics — Bringing the Genome to Life." The lecture will be given in Berkner Hall on Wednesday, February 21, at 4 p.m., when Studier will be introduced by Biology Chair Carl Anderson.

Studier earned his Ph.D. in biophysics from the California Institute of Technology in 1963. Joining BNL in 1964, he developed a patented process, the T7 expression system, that uses information in genes to produce proteins. It is widely used in molecular genetics and biotechnology research. Studier, who was awarded the 1977 E.O. Lawrence Memorial Award for his contributions to genetics, served as Biology Chair 1990-1999.

To join the lecturer for dinner at a restaurant off site after the talk, call Gloria Ganci, Ext. 3673, by noon on Wednesday, February 21.

New g-2 Results May Rock Standard Model

magnet, and very precise and sensitive detectors — have measured g-2 to a much higher level of precision. The new result is numerically greater than the prediction.

"There appears to be a significant difference between our experimental value and the theoretical value from the Standard Model," says Yale physicist Vernon Hughes, who initiated the new measurement and is co-spokesperson for the experiment.

"There are three possibilities for the interpretation of this result," Hughes says. "Firstly, new physics beyond the Standard Model, such as supersymmetry, is being seen. Secondly, there is a small statistical probability that the experimental and theoretical values are consistent. Thirdly, although unlikely, the history of science in general has taught us that there is always the possibility of mistakes in experiments and theories."

According to Roberts, "Many people believe that the discovery of supersymmetry [a theory that predicts the existence of companion particles for all the known particles] may be just around the corner. We may have opened the first tiny window to that world."

Bill Marciano, a BNL Physics Department theorist, predicts that the g-2 finding will spur "much more analysis of supersymmetry predictions and searches for new particles [predicted by that theory]. If the masses of these new particles are relatively low, Fermi National Accelerator Laboratory has a chance of seeing some in their next run of the Tevatron accelerator."

BNL Physics theorist Sally Dawson agrees, expressing her excitement at the potential deviation from the Standard Model. "There have been lots of people looking for a crack in the Standard Model," but most experiments have agreed



Roger Stoulenburgh DO050201

BSA Distinguished Lecture Quantum Experiments

Anton Zeilinger, a professor of experimental physics at the University of Vienna, will give a BSA Distinguished Lecture on Wednesday, February 28, at 4 p.m. in Berkner Hall. The title of his lecture is "Quantum Experiments and the Foundations of Physics."

In this talk, Zeilinger will focus on his experiments involving the quantum interference of hot fullerene molecules, comprised of 60 carbon atoms, which are the most massive objects showing quantum behavior so far. He will also discuss recent studies of quantum entanglement, and demonstrate esoteric phenomena known to science fiction buffs as quantum cryptography and quantum teleportation.

After earning a Ph.D. in physics and mathematics from the Universität Wien in Austria in 1971, Zeilinger stayed on at the Technical University of Vienna as until 1981. He also became a research associate at the Massachusetts Institute of Technology (MIT) as a Fulbright Fellow in 1977, and, in 1981, became an associate professor of physics at MIT. In 1983, he returned to the Technical University of Vienna. In 1990, he joined the Universität Innsbruck in Austria as a full professor, and in 1999 he assumed his current position at the University of Vienna.

President of the Austrian Physical Society from 1996 to 1998, and a Fellow of the American Physical Society, Zeilinger has won numerous honors, including the "Austrian Scientist of the Year"



Photo by ORF/Thomas Ramstorfer

Anton Zeilinger

award in 1996, the Senior Humboldt Fellow Prize, and the Science Prize of the City of Vienna, both in 2000.

— Diane Greenberg

In Memoriam

Ralph Shutt, who was an active BNL guest senior physicist following 46 years as a Lab employee, died on February 2 at the age of 87.

Shutt joined BNL's Physics Department as a particle scientist on July 1, 1947. In 1953, he and colleagues observed the associated production of strange particles. Under his leadership, the Lab built and operated a series of bubble chamber detectors at the Cosmotron and the Alternating Gradient Synchrotron — 1950s-1970s. In 1993, the American Physical Society awarded Nicholas Samios, Shutt, and Robert Palmer the W.K.H. Panofsky Prize, recognizing their 1964 discovery of the omega-minus particle.

After his retirement on December 31, 1993, Shutt continued his work on the design and analysis of superconducting magnets. He contributed to the RHIC magnet system and the magnet used in the current muon g-2 experiment (see story, page 1).

Colleagues agree that "his many achievements, astute and perceptive judgement, wise counsel, and mentoring of talented scientists played a major role in turning the young BNL into the preeminent Laboratory that it is today."

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with the predictions. "It's more interesting to find cracks," she says, "because it points to new physics."

All the physicists agree that further study is needed. And they still have a year's worth of data to analyze. "When we analyze the data from the experiment's year 2000 run, we'll reduce the level of error by a factor of 2," says physicist William Morse, BNL's resident spokesperson for g-2. The team expects that analysis to come within the next year.

Furthermore, Hughes adds, substantial additional data that have not yet been used in evaluating the theoretical value of g-2 are now available from accelerators in Russia, China, and at Cornell University. These data could reduce significantly the error in the theoretical value.

This research was funded by the U.S. Department of Energy, the U.S. National Science Foundation, the German Bundesminister für Bildung und Forschung, and the Russian Ministry of Science, and through the U.S.-Japan Agreement in High Energy Physics.

—Karen McNulty Walsh

At left: (from left) Laboratory Director John Marburger and BNL high-energy physics theorists Bill Marciano and Sally Dawson in discussion after the new g-2 results are announced.

At right: William Morse, BNL's resident spokesperson for the g-2 experiment, gave the new results at a colloquium, February 8.



Roger Stoulenburgh DO050201

New Advocacy Council Established Nominating Committee Calls for Candidates

A new committee, the Brookhaven Advocacy Council (BAC) is being established as a key component of the Lab's system of justice, to advise and make recommendations on resolving concerns and issues involving BNL employees, guests, and facility users and the quality of work life at the Lab. The council will function independently, reporting directly to the Lab Director.

BAC will replace and expand the scope of the Employee Relations Committee (ERC), which, Laboratory Director John Marburger noted, "has given excellent service to employees over the years. That tradition will be continued in the new format [BAC], which has been crafted in response to recommendations from the Diversity Focus Group formed after the 1998 Employee Survey."

A recent memo explaining BAC's charge and asking for candidate members was sent to all employees by the BAC nominating committee: Vin-

cent Castillo, Ext. 3772, castillo@bnl.gov; Joe Gisondo, Ext. 4567, psych@bnl.gov; Grace Webster, Ext. 3227, gwebster@bnl.gov; and Corene Wood, Ext. 5070, wood1#bnl.gov.

Candidates should be good listeners who will maintain confidentiality, remain impartial, have interest in establishing an atmosphere of trust between BNL management and employees, and devote time and energy to ensure equal quality of life at BNL to all. The nominating committee will recommend candidates to the Director, who will then appoint members for a term of three years. Members are responsible for participating regularly in the monthly BAC meetings.

Anyone who is interested in becoming a BAC member should contact Grace Webster, Ext. 3227, gwebster@bnl.gov, by Tuesday, February 20. Candidates will be invited to meet with the nominating committee to discuss membership.

IBEW Meeting

Local 2230, IBEW, will hold its regular monthly meeting on Monday, February 26, at 6 p.m. in the Knights of Columbus Hall, Patchogue. A meeting for shift workers will be held at 3 p.m. at the union office. The agenda includes regular business, committee reports, and the president's reports.

Arrivals & Departures

Arrivals

Genda GuPhysics
Jeong-ho HanES&T
Burt Holzman.....Chemistry

Departures

Lauren E. Brechtel.....Env. Restor.
Betsy A. Dowd.....NLS
Ayman J. Froom.....Medical
Eli D. Tchouparova Petzeva.....ES&T
Dirk H. Rischke.....Physics

Martin L. Purschke was inadvertently added to the departure list last week. He is a member of the Physics Department.

LIANS Dinner, Talk

On Wednesday, February 28, George Maise, Plus Ultra Technologies, Inc., will speak on "Exploration of Jovian Atmosphere Using a Nuclear Ramjet Flyer" at the meeting of the Long Island Section of the American Nuclear Society, at the Brickhouse Brewery, Patchogue, starting at 6 p.m.

Maise, who worked in BNL's Department of Advanced Technology for 23 years, will discuss how the ramjet flyer will map the detailed atmosphere of Jupiter. For reservations, call Arnie Aronson, Ext. 2606, by Tuesday, February 27.

Pollution Prevention Proposals Funded

Pollution prevention is an integral part of BNL's overall strategy to reduce waste and emissions, thereby protecting the environment and cutting waste-management costs. The Lab's Pollution Prevention Council has selected the following projects for funding in fiscal year 2001:

•**Capture of condensate discharge from air receivers** – This \$17,300 project, proposed by Tirre Farmer, Plant Engineering, will result in the purchase and installation of mechanical oil/water separators to process air compressor condensate. The project is expected to improve compliance, eliminate about 6,000 pounds of industrial waste yearly and result in an annual cost savings of \$20,000.

•**Construction of a preparative-scale, supercritical fluid chromatograph** – Richard Ferrieri, Chemistry, requested \$30,000 to purchase components to upgrade an existing prototype design to a preparative-scale chromatograph. Besides improving performance, this project has the potential to eliminate approximately

184 gallons of mixed/hazardous waste per year and result in an annual cost savings of \$23,000.

•**Electric utility vehicle pilot project** – Plant Engineering's Chris Johnson requested \$17,000 to purchase and test a zero-emissions electric utility vehicle, to evaluate further fleet replacement with low-emission vehicles. The project is expected to reduce maintenance costs and, Johnson calculated, eliminate about 140 pounds of nitrogen oxides, 120 pounds of hydrocarbon emissions, and 4,000 pounds of carbon monoxide emissions annually. The annual cost savings is expected to be \$1,500.

•**Replacement of heavy-metal compounds by a xenon pressure cell** – Dieter

Black History Month at BNL Poster Display

The BNL celebration of Black History Month began with a display of posters on "Past, Present, and Future Black Scientists," in Berkner Hall lobby. The posters will remain on exhibit throughout the month.



Roger Stoutenburgh CH2-32-01

Gospel Songfest

At gospel songfest, held at lunch time on Monday, February 5 (see photo above), some 35 participants from around the Lab gathered in Berkner Hall lobby to share music and informal discussion focussed on "The Evolution of Gospel."

Talk: Blacks in Science

On Wednesday, February 7, Hattie Carwell, Operations Lead at the DOE Berkeley Site Office at Lawrence Berkeley National Laboratory (LBNL), talked in Berkner Hall on "Blacks in Science: Past and Present." Carwell, a health physicist, interned at BNL in the 1970s as part of her M.S. requirements. She now manages environmental safety & health oversight and the nuclear and high-energy physics program for the DOE Berkeley Site Office at LBNL. She is also the author of *Blacks in Science: Astrophysicist to Zoologist*.



Roger Stoutenburgh CH2-32-01

Hattie Carwell, with Laboratory Director John Marburger (right), and Otto White, Chair of the Diversity Management Steering Committee, who was later to moderate a follow-up seminar on "Blacks in Science — Present," on Thursday, February 15.

Black History Month: Still to Come

Trivia Contest on Black History, to be held weekly until noon, February 21. Forms and ballot box are in Berkner lobby.

Panel Discussion on "Blacks in Science — Future," will be held with panelists Dudley Cox, Pace University, and Omar Gould and Onarae Rice, BNL, on February 21, 11 a.m., Berkner Hall.

The Diversity Office especially thanks the Black History Month Program committee responsible for coordinating these programs.

Calendar

(continued)

those facilities.

Wednesday, 2/21

*BNL Lecture

4 p.m., Berkner Hall, William Studier, Biology Department, All are welcome.

Friday, 2/22

BERA Radio Club Meeting

Noon, Berkner Hall, Room D. All BNLers are welcome. For more information, contact Christ Neuberger, Ext. 6062.

—WEEK OF 2/26—

Monday, 2/26

Voicestream Wireless Demo

10 a.m. - 2:30 p.m., Berkner Hall. Special wireless rates for BNLers for digital PCS wireless services on Voicestream's GSM network will be presented. Richard Goll, (516) 343-5900.

*IBEW Meeting

6 p.m., Knights of Columbus Hall, Patchogue. 3 p.m. meeting for shift workers, at the union office.

Wednesday, 2/28

*Noon Recital

Noon, Berkner Hall, Marta Felcman, leading Argentine pianist.

*Injury Prevention Workshop

Noon, Brookhaven Center North Room. For more information, contact Mary Wood, Ext. 5923, wood2@bnl.gov.

Softball Captains' Meeting

Noon, Berkner Hall, Room C. A \$50 commitment fee is due at this meeting. Be sure to have submitted team rosters to softball@bnl.gov, or to bring rosters to the meeting.

BSA Distinguished Lecture

4 p.m., Berkner Hall. Anton Zeilinger will speak on quantum experiments and the foundations of physics.

Thursday, 3/1

BERA Bridge Club

7 p.m., Berkner Hall cafeteria. Contact Morris Strongson, Ext. 4192, mms@bnl.gov.

—WEEK OF 3/12—

Thursday, 3/15

BERA Bridge Club

7 p.m., Berkner Hall cafeteria. Contact Morris Strongson, Ext. 4192, mms@bnl.gov.

—WEEK OF 3/19—

Wednesday, 3/21

*BERA Ski Trip

Brodie Mt., Massachusetts \$45, includes bus, lift ticket. Reserve at BERA Sales.

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. Please enter the 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.

The Pollution Prevention Council, made up of one representative per directorate, serves as an information exchange mechanism to promote general awareness of pollution prevention information. Chaired by George Goode, Environmental Services Division, the 11-member body also provides a system to document pollution prevention progress, identify pollution prevention opportunities, and make recommendations regarding pollution prevention funding allocations and requirements.

Computer Corner

An information meeting for an on-site Microsoft Certified System Engineering training program is scheduled for February 21 at 5 p.m. in the ITD Seminar Room, Bldg. 515. Classes will meet in the evening, 6-10 p.m., and participants are eligible for financial assistance under the Laboratory's tuition assistance program. For more information contact Pam Mansfield, Ext. 7286, pam@bnl.gov.

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 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, 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; call the JOBLINE, Ext. 7744 (344-7744), for a list of all job openings; use a TDD system to access job information by calling (631) 344-6018; or access current job openings on the World Wide Web at www.bnl.gov/JOBS/jobs.html.

LABORATORY RECRUITMENT - Opportunities for Laboratory employees.

NS8400. MAIL CLERK - (Temp. 5/1/2001 - 8/31/2001) Staff Services Division.

OPEN RECRUITMENT - Opportunities for Laboratory employees and outside candidates.

MK9140. ASSISTANT SCIENTIST - position in clinical research. Candidates should have residency and/or fellowship training in medicine, neurology or psychiatry, and/or neuroimaging. A joint appointment at Stony Brook University is available. The Laboratory's research resources include a whole-body 4-Tesla MRI scanner, two human PET scanners, a micro-PET, and image processing capabilities. Under the direction of L. Chang. Medical Department.

MK9141. MEDICAL FELLOW - to be involved in clinical research utilizing neuroimaging techniques. Candidates should have completed residency training in neurology or psychiatry, and have special interests in neuroimaging. Additional clinical training is available through Department of Neurology or Psychiatry, Stony Brook University, or other institutions in the NY area. BNL's research resources include a whole-body 4-Tesla MRI scanner, two human PET scanners, a micro-PET, and image processing capabilities. Under the direction of L. Chang. Medical Department.

DD9139. RESEARCH COORDINATOR POSITION - Requires a BS or experience in a relevant field of study. Must have working knowledge of MS Office (Word and Excel). Prior experience with Clinical Research is preferred. Will participate in human physiological research studies using Magnetic Resonance. Duties include patient/volunteer screening evaluations, provision of Informed consent to participants, research and medical record charting and review, scheduling MR subjects, maintaining schedule and magnet time log databases, and billing for MR studies. All studies are performed in conjunction with research MR imaging protocols within the Clinical Research Center at BNL with NYS regulations governing research activities. Medical Department.

Noon Recital: Marta Felcman, Piano

Marta Felcman will present a noon recital on Wednesday, February 28, in Berkner Hall. Felcman, a leading Argentine pianist, has established herself internationally as a recitalist and chamber musician. Winner of several important piano competitions, her performances have garnered critical acclaim in Europe, South America, and the United States. She has been praised for her sensitive musicianship and interpretative genius.

Free English Classes Given On Site

All classes are available free for BNL facility users, guests, visitors, employees, and their spouses.

A free "English for Speakers of Other Languages" class is planned for March through the Human Resources Division. Registration will be held on Thursday, March 1, at 9:30 a.m. If 10 or more learners register, the class will take place on Thursdays from 9:30 - 11:30 a.m. in the Recreation Hall.

For information about the following classes, contact Marilyn Pandorf, Ext 5251, or Starr Munson, Ext. 7631.

class level	day	time
Advanced	Thurs.	6:30 - 9 p.m.
Intermediate to advanced	Wed.	9:30 - 11:30 a.m.
Beginner to intermediate	Thurs.	9:30 - 11:30 a.m.

The following classes are available through the BNL Hospitality Committee. For information about the following classes, contact Joseph O'Connor, Ext. 2212.

class level	day	time
Intermediate	Tues.	9 - 11:30 a.m.
Advanced learners' tutoring	Tues. & Thurs.	noon
Beginner learners' tutoring	sessions scheduled as needed	
TOFEL exam preparation	Fridays	9:30 - 11:30 a.m.

Pick a Summer Student

Student applications for the summer 2001 DOE-sponsored undergraduate internship programs will be available for review on an electronic database on Friday, February 23. This year it is "first come, first-served", so it is best to make choices early. The address and passwords for accessing the database are available from the Office of Educational Programs or from the education coordinator in each department/division. The programs will run for ten weeks, June 4 - August 10.

For more information, contact Louise Hanson, Ext. 5849, hanson2@bnl.gov; Renee Flack, Ext. 3316, flack@bnl.gov; or Catherine Osiecki, Ext. 4503, cathyo@bnl.gov.

Injury Prevention Workshop

Frank McCoy and Rick Gabriel, physical therapists from Health South, will present a hands-on interactive workshop entitled, "Injury Prevention at Home and in the Workplace," on Wednesday, February 28, at noon in the Brookhaven Center, North Room. Wear comfortable clothes to join in exercises. To register, contact Mary Wood, Ext. 5923, wood2@bnl.gov.

BERA Ski Trip

BERA will sponsor a one-day ski trip to Brodie Mountain Ski Resort in Ashford, Massachusetts, on Wednesday, March 21. The cost of \$45 per person includes bus transportation and a lift ticket. The bus will leave from the Brookhaven Center at 5 a.m., returning at 8:30 p.m. Reserve by Friday, March 9, at the BERA Sales Office. For information, contact Andrea Dehler, Ext. 3347; Tom Dilgen, Ext. 7455; or Bob Marascia, Ext. 7779.

Spring Fling

BERA will be holding its annual Spring Fling starting at 6 p.m., on Friday, March 30, at the Rock Hill Country Club in Manorville. The party will include a hot buffet from 7 to 8:30 p.m., a DJ, and a cash bar. Tickets are available at \$15 each from Andrea Dehler, Ext. 3347; John McCaffrey, Ext. 2075; Louie Nieves, Ext. 4897; or Laurie Pearl, Ext. 5520.

Defensive Driving

A six-hour defensive driving course will be offered on Saturday, March 31, 9 a.m.-3:30 p.m., in Berkner Hall, Room B. The course is open to BNL, BSA and DOE employees, BNL facility-users, and their families, at \$23 per person. To register, send a check to Empire Safety Council, care of Scott Zambelli, P.O. Box 670, Mount Sinai, NY 11766. All checks must be received by March 26. Include your phone number in case you need to be contacted.

BERA Book Fair

On Wednesday and Thursday, March 28 & 29, 10 a.m. - 3 p.m., BERA will sponsor a Book Fair. New, hardcover books will be sold at a 50-70 percent reduction. Books will be in stock, ready for immediate purchase, and some gift items will also be available. Cash, checks, and credit card purchases will be accepted.

For more information, call Andrea Dehler, Ext. 3347, or M. Kay Dellimore, Ext. 2873.

Aquarium Discounts

BNLers presenting a valid Laboratory ID card will receive a 10 percent discount on admission to the Atlantis Marine World Aquarium, located on East Main Street in Riverhead.

The 80 exhibits include seals, giant sharks, sea lion shows, and more. Discounts are also available at the Atlantis Café, the City Treasure Gift Shop, the Atlantis Explorer, and on membership packages.