

AGS Is Sole U.S. Facility for NASA's Research on Cosmic Ray Effects

Front-page news this week is the unmanned spacecraft due to land on Mars today, December 3, after being launched by the National Aeronautics & Space Administration (NASA) last January. The Mars Polar Lander will seek ancient subsurface water and any signs of primitive life on the planet.

But even as NASA awaits news of this flight, preparations are ongoing for future exploration, such as testing how cosmic rays affect astronauts and

"with these experiments, we hope to understand more of the effects of radiation, which will pave the way for developing new countermeasures"

their spacecraft. The only machine in the United States — and one of only four in the world — that can simulate the heavy-ion component of cosmic rays is BNL's Alternating Gradient Synchrotron (AGS) (see Brookhaven Bulletin, July 28, 1998).

So, for two weeks during November, NASA-sponsored researchers from Lawrence Berkeley National Laboratory, Johnson Space Center, and other institutions joined Betsy Sutherland, Biology Department, and Marcelo Vazquez, Medical Department, to do a series of radiobiology, dosimetry, and space-material testing experiments at the AGS.

Because a primary goal of the experiments is to understand the biological effects of cosmic radiation during long-term deep space flights, the scientists irradiated a variety of specimens. These included worms, cultured cells from humans and mice, and DNA in solution, as well as industrial materials that may be used for space suits and for shielding the walls of the space shuttle and station.

Astronauts are exposed to galactic cosmic rays — heavy charged particles and energetic protons that zip through space at high speeds — and also to solar radiation, which is composed of protons, heavy ions, and electrons.

Said Sutherland, "If a person is on a Mars mission for a year, one-third of the person's nuclei in his or her cells would experience a hit by a heavy charged particle. We know we can't get rid of heavy charged particles in space, but with these experiments, we hope to understand more of the effects of radiation, which will pave the way for developing new countermeasures."

"Although in deep space travel the galactic cosmic rays will be attenuated and fragmented by electromagnetic and nuclear interactions in shielding material, crew members will still be exposed to considerable radiation from both primary and secondary nuclei," said Vazquez.

"The importance of heavy ions stems from the inability to shield against them effectively and the potentially greater biological effect they have on nondividing cells such as neurons," he continued. "A new estimate predicts that on a three-year Mars mission, between 13 to 46 percent of neural cells will be traversed by heavy ions such as iron in certain brain areas. This clearly demands that we define the damage which may be incurred by heavy-ion exposure."

Vazquez added, "Besides increasing our knowledge of the effects of cosmic radiation on humans and materials, these studies could tell us more



BNL-NASA team researchers Betsy Sutherland, Biology Department, and Marcelo Vazquez, Medical Department, are in front of a digital-image rendering of a future NASA spacecraft approaching Mars.

Roger Stouteburgh

about the structure and repairability of genetic material and the link between ionizing radiation and such biological effects as cancer, aging, and neurodegeneration."

In addition to the current research on biological and industrial samples at the AGS, future NASA experiments may involve other materials that could

be used to develop radiation-hardened "smart" circuits for space computers. If a smart circuit received a potentially damaging hit from a charged particle, it would "know" how to pass its function on to a backup circuit.

Commented Derek Lowenstein, who is Chair of the Collider-Accelerator Department that runs the AGS,

"Our partnership with NASA, which began in 1995, makes use of the unique capabilities of the AGS to mimic the cosmic ray spectrum. Without the answers to the questions that are being studied at the AGS, the future U.S. manned space program would be in jeopardy."

— Ann Ferrar Dusek with Liz Seubert

Fryberger Is New ALD for Applied Science, Technology



Roger Stouteburgh

BNL's new Associate Laboratory Director for Applied Science & Technology (AS&T) is Teresa Fryberger. A national leader in the environmental sciences, Fryberger comes from Pacific Northwest National Laboratory (PNNL), where she was Senior Deputy Director of the Environmental Molecular Sciences Laboratory.

At BNL, with a staff of 322 and a budget of almost \$97 million, Fryberger's directorate encompasses the Department of Applied Science (DAS), the Department of Advanced Technology (DAT), and the Office of Economic Development and Technology Transfer (OTT). Fryberger oversees the diverse basic and applied research programs of DAS and DAT, and OTT's technology transfer program, which works to transform suitable BNL discoveries into commercially successful products or processes.

The Associate Director hopes to strengthen AS&T's role as a national leader in research related to three key areas: the environment, energy and national security.

"Our role will be to keep building on our primary research areas to span the broad range from basic research to engineering, and, when suitable, to commercialization," Fryberger said. "We need to continue to make the best use of the Lab's superb experimental facilities, such as the National Synchrotron Light Source, and enhance our con-

"I am encouraged by management's support of AS&T and the talented staff at BNL and their openness to new ideas"

— Teresa Fryberger

tribution to the northeast region through our applied science programs. Focal points will include research in support of our site cleanup, and using our expertise in national security to work on domestic security issues."

Fryberger's vision for AS&T includes merging certain research projects and developing a collaborative atmosphere. "Funding agencies more and more expect the scientific community to tackle major scientific problems using collaborative, multidisciplinary teams. The Lab's ability to do this, together with its ability to lead the way in new applications for its facilities, is critical to BNL's continuing success," she said.

To increase efficiency, Fryberger hopes to be able to achieve a measure of physical consolidation within AS&T. "Also, we must increase staff in strategic areas and hire more postdoctoral students," she added.

Teresa Fryberger earned a B.S. in chemistry from the University of Oklahoma in 1978, and a 1982 M.S. and 1986 Ph.D. in physical chemistry from Northwestern University. A National Research Council postdoctoral fellow at the National Institute of Standards and Technology (NIST) from 1986-88, she stayed at NIST as a staff chemist until 1990. Then, after a year as an associate editor at the journal *Science*, she joined DOE's Office of Environmental Management in charge of research and development on chemical separations and processing needs for radioactive waste treatment and environmental restoration. She joined PNNL in 1996 as Deputy Director at the Environmental Molecular Sciences Laboratory.

— Diane Greenberg

Coming Up

On Friday, December 10, at 8 p.m., the Stony Brook Opera Ensemble will present operatic scenes, with a cast of 12 singers and musicians under the direction of David Lawton.

The program includes excerpts from Mozart's *Le nozze di Figaro*, Britten's *The Rape of Lucretia*, and Bizet's *Carmen*, and highlights episodes from two different settings of the Cinderella story: Rossini's *Cenerentola* and Massenet's *Cendrillon*. Admission is \$5 and is open to the general public. Refreshments will be available.

On Wednesday, December 15, at 4 p.m. in Berkner Hall, the 350th Brookhaven Lecture, "Quenched! The ISABELLE Story," will be given by Robert Crease, BNL Historian and Associate Professor of Philosophy at the State University of New York at Stony Brook.

PeopleSoft Workshop

Each Wednesday in December and January, the Financial Services Division's (FSD) Business Information Systems (BIS) Group is conducting workshops for anyone interested in learning about PeopleSoft and how it is used in business practices at BNL.

- **First Wednesday of month, Jan. 5:** general introduction, overview, review of modules. 10 a.m. No registration.
- **Second Wednesday of month, Dec 8, Jan. 12:** hands-on introduction to PeopleSoft and two tools: nVision, Query. Set up expense accounts, more. Three sessions daily, each limited to 4 participants. 10 a.m., 2 p.m., 3:30 p.m. Registration required.
- **Third Wednesday of month, Dec. 15, Jan. 19:** Procurement issues - overview, track purchase orders, etc., 10 a.m., no registration required; hands-on review, 2 p.m., registration required.
- **Fourth Wednesday of month, Dec. 22, Jan. 26:** new applications, make-up sessions. Topics to be announced, see FSD Web page.

For descriptions of sessions, Q-&-A, and detailed workshop schedules, see the FSD Web page at www.fsd.bnl.gov in the What's New section. To register, or for more information, call the FSD help desk, Ext. 6262.

Service Awards

The following employees celebrated service anniversaries during October:

- 45 Years**
- David C. Rahm Physics
- 35 Years**
- Bill Greenberg Biology
- John C. Heinrichs OMC
- Mark Sakitt Adv. Tech.
- 30 Years**
- Donald M. Lazarus C-A
- Ronald R. Picinich C-A
- 25 Years**
- Mark O. Israel Fiscal
- John C. Lee Adv. Tech.
- 20 Years**
- Jay W. Adams Adv. Tech.
- William J. Behrens App. Sci.
- Richard W. Biscardi NSLS
- Susan T. Carlsen Adv. Tech.
- William H. Dalton Cent. Shops
- Albert L. Hanson Adv. Tech.
- Glenn H. Jochen Superc. Magent
- Salvatore F. Marino Physics
- Venotios A. Polychronakos Physics
- John A. Scheblein Physics
- Walter F. Stoeber NSLS
- Arlene F. Waltz C-A
- 10 Years**
- James E. Allegue Fiscal
- William S. Brown Adv. Tech.
- Joseph Gisondo OMC
- Michael A. Morello C-A
- Bruce L. Murray Rad. Control
- Attilio J. Somma Reactor
- Amarjit S. Soni Physics
- Peggy A. Von Achen Info. Tech.



Roger Stoutenburgh

BNL Director John Marburger (front) and Assistant Director for Finance & Administration Brian Sack (right) board a Lab van that provides weekday shuttle service around the BNL site. They are joined by other passengers at the Lollipop House, one of the shuttle-stop locations in the on-site housing area. "Whether you have a car on site or not, all employees and official visitors are welcome aboard," says Ron Manning, Staff Services Division Manager, who adds that he is seeking feedback right now to evaluate the new service. The shuttle schedule is available on-line at: <http://www.bnl.gov/bnlweb/shuttle.html>. Riders can also get printed schedules in Berkner Hall, the Transportation and Housing Office in Bldg. 179, and the facility-user offices at the National Synchrotron Light Source and Relativistic Heavy Ion Collider.

Chemical and Nuclear Risk Assessment

A new book was added to BNL's 70,000-volume collection when Ralph Fullwood, a retired nuclear engineer who is now a visiting scientist, presented Bruce Style, Research Library Manager, with a just-completed work: *Probabilistic Safety Assessment in the Chemical and Nuclear Industries*. Fullwood had started the book on his retirement from the Department of Advanced Technology two years ago.

"Chemical and nuclear industrial risk involves the probability of an accident and its consequences in terms of health, effect on the environment and/or financial cost," said Fullwood. "Public perception of risk strongly affects what we may or may not do. But what is the real risk?"

In his 514-page book, published by Butterworth-Heinemann, Oxford, Fullwood answers this question by presenting the history, regulations, and techniques of assessing the probability of failure of process safety systems and the consequences of failure. After mathematically defining risk, discussing public perception, federal regulations and the techniques for presenting the results to the public, he presents techniques such as fault trees and event trees for calculating reliability.

Further chapters describe chemical and nuclear process safety systems, including the next generation of



Roger Stoutenburgh

reactors, and how to analyze their failure potential. Additional chapters discuss accidents such as occurred at Three-Mile Island-1, Chernobyl, Texas City, Bhopal and others.

"I believe this book is unique in covering both the chemical and nuclear industries to show similarities," commented Fullwood. "I included computer codes for downloading to perform systems analysis, problems with answers, and Web references for additional information, so I hope the book will prove a useful tool." For more information see <http://www.rfullwood.com> or <http://www.bh.com>.

Dosimetry badges will be exchanged today, Friday, December 3. Therefore, please place your badge in its assigned rack space before leaving work today.

Omnipoint Demo 12/8

Omnipoint Communications will be in Berkner Hall on Wednesday, December 8, 10 a.m.-2 p.m., with special rates for BNLers buying digital PCS wireless services on Omnipoint's GSM network.

Service plans include free caller ID, voice mail, FOX News headlines, and more. Plans range from \$15.99 monthly with free phone; to 40 free minutes at \$19.99 monthly; or to 250 free minutes, with unlimited weekend calling for the year of the contract at \$29.99 monthly. Call Richard Goll at (631) 343-5900.

BNL's Weekly Calendar To Go Electronic Only

BNL's Weekly Calendar is published every Friday by the Media & Communications Office to inform the Lab community of the scientific and technical seminars and lectures coming up on site during the following two weeks.

For the past several years, the Weekly Calendar has also been available on BNL's Web site, at www.pubaf.bnl.gov/calendar.html. The latest calendar is usually posted there by the afternoon of its publication — before it is distributed around the site in paper form via intra-Lab mail.

As of the calendar dated Monday, December 20, the Weekly Calendar will no longer be printed and distributed in paper form, so it will only be available electronically. As a result, those interested in Weekly Calendar listings are invited to subscribe to the Weekly Calendar listserv. Each week, subscribers will receive an e-mail notice when a new Weekly Calendar is posted on the Web.

To subscribe to this listserv, send an e-mail message to the e-mail address listproc@bnl.gov stating: subscribe weekly-calendar-1 your name.

For instance, if your name is John Smith, then your message would read: subscribe weekly-calendar-1 John Smith. Note the character after the hyphenated words weekly-calendar is a lower case l, not the number one.

To view the Weekly Calendar, subscribers would then go to the calendar's Web location by clicking the address included in the reminder message. They would use Adobe Acrobat Reader to view the calendar in portable document format (PDF) form.

To obtain the latest version of the free Acrobat Reader, use the link on the Weekly Calendar page or go to Adobe's home page at www.adobe.com. The reader is available for most computer-operating systems.

This change will allow Weekly Calendar subscribers to obtain the information that they need more efficiently and allow the Media & Communications Office to provide it more cost-effectively.

For more information, call Ext. 5053.

Windows Training

The Information Technology Division offers a two-day, on-site course on the terminal server edition of Microsoft Windows NT 4.0 for system administrators familiar with NT 4.0 and NCD's WinCenter Pro.

The course is tentatively scheduled for February at a cost of \$1,188 per student. To register, send an ILR by Friday, December 17, to Pam Mansfield, Bldg. 515. For more information, contact Susan Eng Wong, Ext. 7988 or sge@bnl.gov.

Arrivals & Departures

- Arrivals**
- Lee R. Hammons C-A
- Richard F. Perez C-A
- Salvatore A. Polizzo C-A
- Manoj K. Sammi Medical
- Departures**
- James Eckroth Emerg. Serv.
- Khem Fatimi Occup. Medicine
- Wendy Mosca Safety & Health Serv.
- Jacqueline Paulk Occup. Medicine
- Albert Prodell Supercond. Mag.

Stocking up for the holidays?

BNL FOOD DRIVE

PLEASE SHARE
some of your plenty with the needy of Brookhaven Town. Give generously to the

BNL Food Drive

No time to shop? Send personal checks to BNL Food Drive, care of Rita Kito, Bldg. 460, or Donna Wadman, Bldg. 129.

Hospitality Committee

The Committee invites all on-site residents, their spouses and friends to the following events. More details are posted in the laundry room and on the door of the Recreation Bldg. For more information, call Susan Hart, 821-4257.

Festive Potluck

Bring the family to a festive seasonal party on Friday, December 17, at 6 p.m. in the Recreation Bldg. Cold cuts and hot cider, etc., will be provided. Bring a side dish, salad or dessert to share. Call Vicky Chang, Ext. 1040, by December 14, with the number of adults and children who will attend.

Welcome Coffee

In December, the Recreation Bldg. lounge is not available for the usual coffee on Tuesdays from 10 a.m. to 11:30 a.m. To find out where to go, see the schedule posted in the laundry.

Parent-Toddler Group

Starting January 5, the parent-toddler group will meet again in the Recreation Bldg. on Wednesday mornings, 9:30-11:30 a.m. For more information, call Sarah Zill, 821-2602.

Wanted: Furniture

The Hospitality Committee needs a piano stool and a telephone table. Donations of these items will be gratefully accepted. Call Ingrid Dilly-Hartwig, Ext. 1006.

Free Flu Shots

The Occupational Medicine Clinic (OMC) offers free flu shots to employees, to precede the winter influenza season. To make an appointment to be vaccinated, call OMC, Ext. 3670.

BERA Activities

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

Toy Drive

Participate in Brookhaven Town's annual Toy Drive to help give happier holidays to children in need. Until December 17, bring new toys for infants through teenagers to the BERA Sales Office, Berkner Hall, Tuesday through Friday, 9 a.m. to 1:30 p.m.

Book Fair

On Friday, December 17, solve last-minute holiday buying at the book fair in Berkner Hall, where *The New York Times* best-sellers, children's books cookbooks, and other potential gifts will be sold at discount prices, 10 a.m.-3 p.m. Discover, Mastercard and Visa charge cards will be accepted.

Holiday Bash

BERA's Second Annual Winter Holiday Bash will be on Friday, December 17, at the Patchogue Knights of Columbus. Tickets at \$20 per person include dinner, dancing, and open bar. Buy by December 10 from Charles Gardner, Ext. 5214, chuckg@bnl.gov, Louie Nieves, Ext. 4897, nieves@bnl.gov, or the BERA Sales Office, Ext. 3347.



All eyes were on Kathy Kudner (above, left) as she made an impassioned appeal to those gathered for the kickoff breakfast of this year's BNL United Way Fund Drive on Thursday, November 18. Kudner described how, while incarcerated for making fraudulent credit-card charges, "I got my life back together" with the help of counselors funded by Long Island's United Way.

Both she and her parents sought help from Family Counseling Services, just one of more than 170 Long Island organizations to benefit from United Way funds. "I didn't know if I'd survive," Kudner recalled, describing her plight.

But with guidance from Family Counseling, she turned her life around. Speaking with courage about her ability to support herself in her own apartment with her own job, she urged everyone at BNL to contribute to the

Fund to "help someone else the way it helped me."

Patti Bender of the Plant Engineering Division, (above, center) who is this year's campaign chair, urged everyone to contribute through payroll deductions, which have now reached \$49,843. Pledge forms have been distributed and should be returned to your campaign captain or to Liz Mogavero, Bldg. 510A, by December 10 to qualify for early pledge return prizes.

The goal, says Bender, is to surpass last year's record BNL donation of \$110,000. Though the economy is good, said Lab Director Jack Marburger at the kickoff breakfast, not everyone is enjoying the benefits of the economic boom. And because government programs to help those less fortunate have been cut, he said, "those of us who care about this should make direct contributions if we can."

You can also donate your time, in-

Calling All Volunteers

As part of this year's BNL United Way Fund Drive, employees are encouraged to sign up for a variety of approved volunteer opportunities, including:

- Landscaping
- Interior Painting
- Gift Wrapping
- Sorting Food
- Distributing Donations

Volunteer efforts will benefit United Way agencies directly, as well as through matching financial contributions from BSA. Employees can even donate one hour of work time as long as they also give at least one additional hour of their own time. For more information, see <http://www.bnl.gov/bnlweb/unitedway.html>, or contact Patti Bender, Ext. 3145, bender@bnl.gov, or Beth Blevins, Ext. 5530, blevins1@bnl.gov.

cluding an hour of work time, by volunteering for a variety of United Way member agencies during the campaign (see box above). And, as Marburger announced at the kickoff breakfast, BSA will provide a matching financial contribution for BNL volunteer time, up to a cumulative total of \$10,000 for all BNL employees.

For more information, see <http://www.bnl.gov/bnlweb/unitedway.html>, or contact Patti Bender, Ext. 3145, bender@bnl.gov, or Beth Blevins, Ext. 5530, blevins1@bnl.gov.

— Karen McNulty

GLOBE@BNL Meeting

Since becoming an official BERA club, GLOBE@BNL, the gay, lesbian, and bisexual employee club, will have its first meeting tonight, Friday, December 3, at 7 p.m. Call Mike Loftus, Ext. 2960, for the meeting's location.

The club is open to BNL, BSA, and DOE employees, retirees, facility users, on-site contractors, and their immediate family members. For more information, call Loftus, or see <http://members.aol.com/bnlglobe/home.html>.

Gym Schedule

11 a.m.-2 p.m.	
Mon, Wed., Fri.	basketball, badminton
Tues. Thurs.	soccer, volleyball, badminton
4:30 p.m. to 9 p.m.	
Mon., Wed.	volleyball
Tues.: 5:15-6:15 p.m.	cardio kickboxing
6:15-9:15	tennis
Thurs.	basketball
Fri. 5:30-7:30 p.m.	soccer
7:30-9 p.m.	general activities
Gymnasium & Weight Room	
Mon.-Fri.	11 a.m.-2 p.m.
	4:30 p.m.-9 p.m.
Sat.	10-5 p.m.
Sundays: Gym and Pool Closed	

Rifle & Pistol Club

The BNL Rifle & Pistol Club's next monthly meeting will be on Wednesday, December 8, at noon in the AGS second-floor conference room, Bldg. 911. For more information, call Ted Robinson, Ext. 5489, or the club's hotline, Ext. 2658; or go to its Web page at www.berahome.bnl.gov/clubs/rpc/rpc.html.

No Bulletins 12/24, 31

In observance of the Christmas Day and New Year's Day holidays, the Lab will be closed on the afternoon of Thursday, December 23, as well as on Friday, December 24. It will also be closed on Friday, December 31. Therefore, no Bulletins will be published on the Fridays of December 24 and 31.

Health Lecture Dec. 7

On Tuesday, December 7, from noon to 1 p.m., Judy Marshel will talk on "Maximizing Your Health With Vitamins, Minerals and Herbs," in Berkner Hall. Marshel, whose Ph.D. is in natural health, has 24 years' experience in traditional and complementary nutrition, weight control and vitamin, mineral and herb protocols. An international speaker, she has hosted her own weekly radio show and has appeared on CNN and WINS.

To register for this lecture, complete the form sent to all employees and return it to Health Promotion Specialist Mary Wood, Bldg. 490, before December 7. The program will be audiotaped and available from the Research Library. For more information, contact Wood, Ext. 5923 or wood2@bnl.gov.

Travel Discounts

The on-site Omega Leisure Travel Office in Berkner Hall is holding a winter sale on airline tickets. Domestic flights are discounted by 25 percent, and international flights by 30 percent. For further information, call Carol Mancuso, Ext. 5918.

Give the Gift of Life: Give Blood, Dec. 8, 9

Blood is always needed, but over the holidays accidents increase and the need for blood becomes even more crucial. To help stock Long Island's blood supply, BNL is holding a Blood Drive on Wednesday and Thursday, December 8 and 9, from 9:30 a.m. to 3 p.m. in the Brookhaven Center.

To make an appointment, contact BNL Blood Drive Chair Susan Foster, Ext. 2888, or e-mail donateblood@bnl.gov with your name, extension, and preferred time to donate.

Free Pizza

The BERA MicroComputer Club will hold its annual holiday party from noon to 1:30 p.m. on Wednesday, December 8, in Berkner Hall, Room D. The club will serve "soft-sector disks" (pizza) to everyone.

Anyone interested in becoming a member is invited to join this free celebration to learn about the club. The annual dues of \$15 will be waived for the first year. Call Steven Stein, club president, Ext. 5694, to make reservations by December 7. For more information, check the club Web site at www.bnl.mcc.bnl.gov.

BROOKHAVEN BULLETIN

Published weekly by the Media & Communications Office for the employees, facility-users and retirees of BROOKHAVEN NATIONAL LABORATORY

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On the World Wide Web, the Brookhaven Bulletin is located at www.pubaf.bnl.gov/bulletin.html. A Weekly Calendar listing scientific and technical seminars and lectures is found at www.pubaf.bnl.gov/calendar.html.

Year 2000 Holidays*

Holiday	Holiday Observed	
	Day	Date
New Year's Day	Friday	December 31, 1999
Floating Holiday (Martin Luther King Jr. Day)	Monday	January 17
Presidents' Day	Monday	February 21
Memorial Day	Monday	May 29
Floating holiday	Monday	July 3
Independence Day	Tuesday	July 4
Labor Day	Monday	September 4
Veterans Day	Friday	November 10
Thanksgiving Day	Thursday	November 23
Day after Thanksgiving	Friday	November 24
Christmas Eve (1/2 day)	Friday	December 22
Christmas Day	Monday	December 25

* Note: No Bulletin will be published the Friday of the weeks containing these holidays.

Survey Coming Up — Check Your Preference

To achieve the most reader contentment possible, we will publish a Bulletin survey next week. Readers are invited to fill it out and return it. No-show replies will be accepted as affirmations of near perfection, but we hope for constructive input.

Wanted for Basketball

The BERA Basketball Club needs captains. The sign-up sheet is in the gym. Contact Mitchell Williams, Ext. 7160, or Jim Desmond, Ext. 4837.

Calling All Carollers

The BNL Choral Group will present its annual holiday concert in the cafeteria on Wednesday, December 23. Rehearsals are held from noon to 1 p.m. on Tuesdays and Thursdays, in Berkner Hall. Join in — all employees, retirees, facility users, on-site contractors and family members are welcome: sopranos, altos, tenors and bases are needed. For more information, e-mail Bob Miltenberger at miltenb@bnl.gov, or call Liz Seubert, Ext. 2346.



LABORATORY RECRUITMENT - Opportunities for Laboratory Employees

NS8309. QA ANALYST POSITION - Requires a bachelor's degree in computer science or business administration and/or related experience, and excellent verbal and written communication skills. Will be responsible for working with customers and the BIS development staff to develop system specifications, re-engineered processes, and data/reporting requirements. Department/Division administrative experience is highly desirable; PeopleSoft experience is a plus. Business Information Systems Group. Financial Services Division.

DD7824. ADMINISTRATIVE POSITION - Requires a bachelor's degree or equivalent experience, excellent oral and written communication skills and a knowledge of Lab policies and procedures; data base experience highly desirable. Will administer the Biology Department's structural biology crystallography user program. Responsibilities include scheduling of experiments on five NSLS beamlines compiling and reporting data to funding agencies, coordinating workshops and training courses, and developing and maintaining a web site. Biology Department.

OPEN RECRUITMENT - Opportunities for Laboratory Employees and Outside Candidates.

MK8192. POSTDOCTORAL RESEARCH ASSOCIATE - Requires a Ph.D. in materials science or electrochemistry with experience in electrodeposition of metals preferred. Research involves the investigation of electrodeposition of ultra-thin metal films on foreign substrates in a layer-by-layer growth, characterization of deposits by scanning probe techniques and x-ray absorption techniques and determination of electrocatalytic properties of thin-film electrodes for oxidation carbon monoxide and hydrogen. Under the direction of R. Adzic. Department of Applied Science.

MK8441. POSTDOCTORAL RESEARCH ASSOCIATE - Requires a Ph.D. in physics or chemistry with an emphasis on optical science; experience in short pulse lasers and ultra-high vacuum techniques is desirable. Primary responsibilities will include working on advanced light source development. The research involves utilizing a novel approach for generating and detecting attosecond light pulses with the ultimate application in short wavelength free-electron lasers. Under the direction of E. Johnson. National Synchrotron Light Source Department.

MK8443. POSTDOCTORAL RESEARCH ASSOCIATE - Requires a Ph.D. in physics and desired experience including: accelerator instrumentation, s-band RF generation equipment, control and feedback, sub-picosecond time and frequency domain measurement of electron pulse length and jitter, integration of conventional laser transport and diagnostics in an accelerator facility. Will work on the development of the DUV-FEL. Under the direction of W. Graves. National Synchrotron Light Source Department.

MK8444. POSTDOCTORAL RESEARCH ASSOCIATE - Requires a Ph.D. in physics and desired experience including: emittance minimization in photocathode sources, physics of magnetic pulse compression/coherent synchrotron radiation, transport and error analysis of space-charge dominated beams, high-grain, and single pass FEL dynamics. Under the direction of W. Graves. National Synchrotron Light Source Department.

MK8445. POSTDOCTORAL RESEARCH ASSOCIATE - (2 positions) Requires a Ph.D. in physics and desired experience including: physics of high brightness electron beams, light optics, electron beam diagnostic instrumentation and operation of accelerators. Work will involve high gain harmonic generation FEL experiments at the ATF and the DUV-FEL. Under the direction of L-H Yu. National Synchrotron Light Source Department.

DD7834. TECHNICAL POSITION - (reposting) Will work in a small group upgrading and maintaining a diverse range of equipment. System responsibility will include high power pulsed RF acceleration systems and high current magnet power supplies. All systems use PLC and/or VME control systems. Requires a thorough understanding of analog and digital circuitry, power electronics, and RF techniques. Must be able to use standard test equipment and be able to

work from schematics, rough drawings and verbal instructions. Must also have experience prototyping circuits, building chassis, and safely handling bench and power tools. BS in electronic technology or equivalent required. National Synchrotron Light Source Department.

DD8442. DRAFTING POSITION - (term appointment) Requires significant experience with AutoCad in Windows 95/NT environment as well as familiarity with the ANSI Y14.5 Drafting Standards. Must be able to work with minimal guidance from engineers to prepare working drawings from layouts. Knowledge and/or experience in the areas of machine shop practice, welding, vacuum systems, cryogenic systems and magnetic components are highly desirable. National Synchrotron Light Source Department.