

## NSLS Users' Meeting 2000 Emphasizes Users' Vital Role at BNL

More than 260 users of BNL's National Synchrotron Light Source (NSLS) were on hand at the annual meeting, which took place at the Lab May 22-24, to participate in workshops, a poster session, vendor exhibits, lectures, and a variety of social interactions.

At the opening session, Laboratory Director John Marburger emphasized the importance of the NSLS within the framework of Brookhaven as a "multi-facility" lab.

"Brookhaven now has two major science facilities in operation: the Relativistic Heavy Ion Collider and the National Synchrotron Light Source. Both are important, but the NSLS serves by far the largest number of users and spans the widest spectrum of science. Our track record for keeping the NSLS available and useful is very good, and we are determined to maintain the quality and accessibility of this important facility. We will need all the help we can get from our users to make this possible."

The NSLS produces very intense and highly focused beams of light — including x-rays and ultraviolet and infrared radiation — which can be used for state-of-the-art research in the agricultural, biological, chemical, environmental, geological, materials, medical, pharmaceutical, and physical sciences. Its importance was emphasized by the range of applications covered in the scientific workshops that proceeded and followed the main users' meeting, from analyzing soil contaminants to solving protein crystal structures to observing chemical reactions at the molecular level.

After his welcoming remarks, Marburger introduced Richard Osgood Jr., BNL's new Associate Laboratory Director for Basic Energy Sciences (see



At the meeting: (from left) John Marburger, BNL Director; Mark Chance, Albert Einstein College of Medicine and NSLS Users' Group Chair; Barbara Illman, U.S. Department of Agriculture (USDA) Forestry Service; and Arthur Bienenstock, Office of Science & Technology Policy Associate Director for Science.

story below). Then, to give attendees an insider's view on Presidential science policy, Arthur Bienenstock, Associate Director for Science in the President's Office of Science and Tech-

nology Policy, gave the keynote address.

Bienenstock emphasized that the presidential administration has a real concern about the funding lag experi-

enced by the non-biological sciences over the past 25 years, but reminded attendees that their direct efforts could affect change.

(continued on page 2)



The 2000 Users' Meeting Planning Committee: (from left) Mark Chance, Albert Einstein College of Medicine; Linda Feierabend, BNL; Chris Jacobsen, SUNY at Stony Brook (USB); Mary Anne Corwin, BNL; Simon Bare, Universal Oil Products; Nancy Wright, BNL; and Peter Stephens, USB.

### RHIC Fest Today!

Now there's even more reason to celebrate the success of the Relativistic Heavy Ion Collider (RHIC): "Having achieved collisions at 66 GeV per beam and getting initial data at all four detectors, we are extending the period of RHIC's first run to the morning of September 19," said Satoshi Ozaki, Associate Laboratory Director for RHIC. So come celebrate!

**TODAY!  
3 to 6:30 p.m.  
in front of Berkner Hall**

All BNL staff, facility-users and visitors are welcome to enjoy food, wine, beer, soft drinks, and entertainment by the Isotope Stompers, a New Orleans style Jazz Band founded at BNL.

## Richard Osgood Jr. Associate Director For Basic Energy Sciences

Richard Osgood Jr. has been named Associate Laboratory Director (ALD) for Basic Energy Sciences (BES), effective May 15. Osgood succeeds Denis McWhan, who has retired from this position and is returning to research.

Upon naming Osgood for this position, BNL Director John Marburger said, "Professor Osgood has had over 33 years of experience in basic research in the fundamental properties of matter using a wide range of experimental tools, from femtosecond lasers to synchrotron sources to many methods of materials synthesis. I look forward to working with him to enhance and expand the BES programs at BNL."

Marburger also thanked McWhan "for his ten years of service to BNL, first as Chair of the National Synchrotron Light Source (NSLS) Department, and then as ALD for BES programs."

In his new position, Osgood oversees DOE's basic energy programs at BNL and is in charge of the Chemistry (continued on page 2)



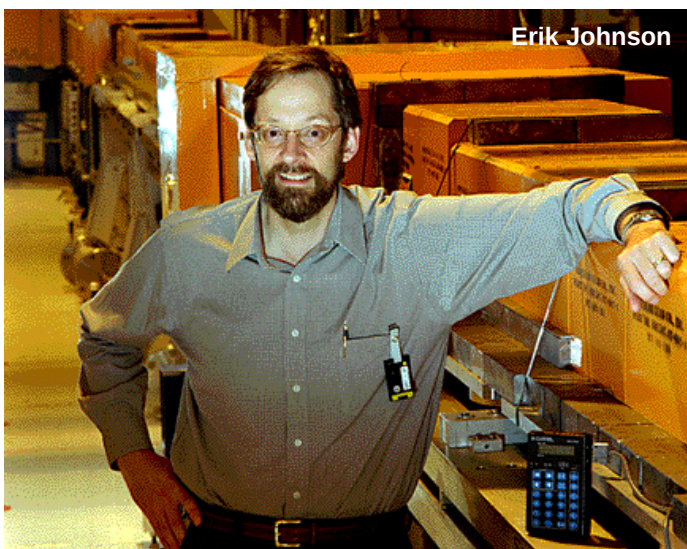
### 356th Brookhaven Lecture

## Wedding Lasers and Accelerators: The BNL DUV-FEL

In a very good marriage, the two partners' strengths are apparent in the union. Lasers and accelerators each have properties that make them valuable scientific tools of investigation. But, by marrying these two instruments, scientists will be able to achieve new research goals, including the visualization of certain chemical reactions, that cannot be done using a laser or an accelerator separately.

Erik Johnson, National Synchrotron Light Source Department (NSLS), will discuss the benefits of combining laser and accelerator technology when he presents the 356th Brookhaven Lecture, "Wedding Lasers and Accelerators: the BNL DUV-FEL," on Wednesday, July 19, at 4 p.m. in Berkner Hall. Johnson will be introduced by NSLS Chair Michael Hart.

As Johnson will explain, the BNL Deep Ultra-Violet Free Electron Laser (DUV-FEL) uses a free electron laser with high-gain harmonic generation, to retain the properties of the



laser with the wavelength reach of an accelerator. The project is the next stepping stone between the successful demonstration of high gain harmonic generation at BNL last year in the infrared spectrum, and an ultimate x-ray free electron laser.

After receiving his Ph.D. in Chemical Engineering from Cornell University in 1985, Johnson joined the NSLS. He became Project Manager for the Source Development Laboratory in 1994, and Head of the NSLS Experimental Systems Group in 1998.

Refreshments will be offered before and after the lecture. To join the lecturer for dinner off site, contact Kathy Lovero, Ext. 7188. — John Galvin

### 2000 Sambamurti Lecture, 11 a.m., July 21

## How Tasty Are Muons in a Donut?

Experiment 821 (E821) has collected data on more than ten billion decays of muon particles circulating in a donut-shaped storage magnet.

To describe E821 and explain how and why this enormous amount of data has been taken and is now being analyzed, one of the experimentalists, Associate Scientist Ralf Prigl of the Collider-Accelerator Department, will give the 2000 Sambamurti Memorial Lecture. Prigl will give his talk

at 11 a.m. on Friday, July 21, in the Physics Large Seminar Room, Bldg. 510. Students and summer visitors are especially encouraged to attend.

As Prigl will explain, E821 is designed to advance one of high-energy physics' most precise measurements, known as muon g minus 2 (g-2), which gauges the strength of an effect made by certain forces on the muon particle's magnetism.

(continued on page 3)



Photographs on this page by Roger Stoutenburgh

NSLS Users (cont'd)

Members of the NSLS Users' Executive Committee (UEC) are trying to do just that, according to Mark Chance of Albert Einstein College of Medicine and this year's UEC Chairman. He described the joint effort of leadership from all four DOE synchrotrons to lobby members of Congress for increased synchrotron funding.

NSLS Chair Michael Hart described the successes of 1999, which, despite limits in funding, included increases in beam brightness and stability; preparatory work toward moving permanently to a new, higher ring energy at 2.8 billion electron volts (GeV); and the expansion of infrared beam lines to bring the total number to six.

The infrared beam lines are one component of a major upgrade of the vacuum ultraviolet (VUV) ring. During fiscal year 1999, a new undulator-based, high-resolution, angle-resolved photoemission beam line was commissioned and has already been used to demonstrate the breakdown of Fermi liquid behavior in high-temperature superconductors.

On the x-ray ring, the National Institute of General Medical Sciences is funding the construction and operation of a new beam line (X6A) for protein crystallography. This follows the National Institutes of Health's establishment of a research resource to support the operation of five other protein crystallography beam lines.

Future plans include developing the next generation of hybrid in-vacuum small gap undulators (IVUN) to increase the number of insertion devices at the NSLS to nine. A microfocus beam line has been developed on the existing IVUN (X13B). Hart commented on how the development of small gap undulators at the NSLS has been crucial to the design of a number of next-generation light sources that are either under construction or planned.

Other Highlights

At the meeting, new general members were elected to two-year terms on the UEC, including: Simon Bare, Universal Oil Products; Leemor Joshua-Torr, Cold Spring Harbor Laboratory; and Michael Vaughan, State University of New York at Stony Brook.

Meeting attendees were given a "Disneyesque" virtual ride through protein crystallography beam line X12C by Robert Sweet, Biology Department. Using dual projection, home-built Web tools, and freely available Web-Cams and Audio Chat to provide "telepresence," he and Biology's John Skinner (on screen at the NSLS) demonstrated the capability for remote operation of synchrotron beam lines, which they have developed with support from DOE's Office of Biological and Environmental Research and the National Center for Research Resources of the NIH.

Sweet and Skinner believe this approach would be especially powerful for other applications because it employs only conventional Web browsers at the remote sites.

Other scientific highlights included



The Science Advisory Committee User Forum: (from left) Al Sievers, Cornell University, Michael Hart, BNL; Ernest Fontes, Lucent Technologies, Inc.; John Marburger, BNL, Barbara Illman, USDA/Forestry Service, Chair Sol Gruner, Cornell; Martin Blume, American Physical Society and BNL; and Sunil Sinha, Argonne National Laboratory. Not present, Samuel Krinsky, BNL. Photos by Roger Stoutenburgh



Peter Bond, BNL; Denis McWhan, retired BNL; Jerry Hastings, BNL.



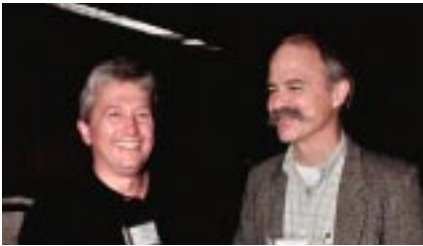
David Rognite, Blake Instruments; William Warburton, X-Ray Instrumentation Assoc.; Dieter Schneider, BNL.



Igor Pogorelsky, BNL; Ilan Ben-Zvi, BNL; Martin Blume, American Physical Society and BNL.



Chi Chang Kao, BNL; John Hill, BNL; Michael Hart, BNL.



Janos Hajdu, Uppsala University, Sweden; Robert Sweet, BNL.



Wolfgang Caliebe, BNL; Cecelia Hanke-Sanchez, BNL.



John Sutherland, BNL; Peter Johnson, BNL.



Nick Gmur, BNL, Leonid Flaks, Los Alamos National Laboratory and BNL; Peter Takacs, BNL.

an outline of the potential uses of femtosecond x-rays, by Janos Hajdu, Uppsala University, Sweden.

NSLS's Igor Pogorelsky described the promising potential for generating these rays using the BNL Accelerator Test Facility (ATF). In a proof of principle experiment, Pogorelsky's team had produced the highest photon yield ever demonstrated via laser Thomson scattering on relativistic electron beams.

As he reported, in the next experiment, they expect to produce x-ray pulses a thousand times more intense and shorter than the conventional syn-

Jean Jordan-Sweet, IBM; Terrence Jach, NIST; Ernest Fontes, Cornell University; Kenneth Evans-Lutterodt, Lucent Technologies, Inc.



chrotron sources. This will enable a new spectrum of multi-disciplinary, ultrafast x-ray studies and applications.

The day concluded with a Science Advisory Committee (SAC) User Forum, chaired by Sol Gruner, Cornell University. The SAC advises the NSLS Chair on the present status and future directions of NSLS programs. With the user community and NSLS staff, they are exploring more ways to support the expanding number of NSLS users.

Ideas included new beam lines for environmental and biological sciences, new accelerator or free electron laser sources for BNL, as well as maintaining the momentum of the NSLS as the most used synchrotron source in the world.

— Karen McNulty

Arrivals & Departures

Arrivals

Gintautas Buzorius ..... Env. Sci.  
Nicholas L. D'Imperio .. Data Int. Com.  
Charles D. Meusen .. Information Tech.  
Gene E. Van Buren ..... Physics

Departures

Hans G. Dilly-Hartwig ..... Biology  
Slawomir Kwiatkowski ..... C-A  
Hal A. Lewis ..... Biology  
Jeremiah Magee ..... Plant Eng.  
Ronald R. Mayo ..... C-A  
Jon R. Merkel ..... Rad. Control.  
Jinhu Song ..... C-A  
Lawrence E. Toler ..... Physics  
Ralph T. Wiedmann ..... Chemistry

Empire State College's On-Site Degree Program

Starting this fall semester, Empire State College (ESC) will offer degree programs on site at BNL. A comprehensive college of arts and sciences within the State University of New York, ESC will offer associates' and bachelor's degrees in science, mathematics, and technology.

The college has a flexible curriculum, uses individualized degree programs, and actively fosters each student's participation in planning his or her education. Students pursue degrees with mentor guidance, indi-

vidual projects, small group study, and independent research assignments. Life and work experience can satisfy degree requirements, allowing degrees to be completed more quickly. Formal registration with ESC is required to attend this on-site program.

An informational meeting will be held on Wednesday, July 19 at 5 p.m. in the South Room of the Brookhaven Center. If you are interested but cannot attend, then e-mail Marilyn Pandorf, pandorf@bnl.gov, or Starr Munson, munson@bnl.gov, by July 21.

Richard Osgood (cont'd)

Department, the NSLS and the Center for Neutron Sciences (CNS). With a collective staff of 260, the BES directorate has an annual budget of about \$76 million.

"I've done research in chemistry using lasers, surface science and condensed matter physics, all areas that are part of BES," said Osgood. "But I still have much to learn, especially in the area of neutron science. I'm grateful to all my staff for assisting me in these early days at the Lab. In particular, I'd like to say thank you to my predecessor Denis McWhan. He has been a delight to work with, and he has helped me tremendously in learning about this directorate. Also, Michael White, Michael Hart, and Jerry Hastings have been most helpful."

New Challenges

Osgood said he faces several challenges in his new position. Since the Laboratory's High Flux Beam Reactor — the major source of neutrons for the CNS — was closed in November 1999, a priority will be to develop a new plan for neutron science at BNL. Osgood also plans to upgrade many beam lines at the NSLS and explore new operating modalities to keep it at the forefront of synchrotron research. The NSLS attracts 2,400 researchers from around the world each year — the largest user-base of U.S. synchrotron light sources (see story, page 1).

Additionally, Osgood will aggressively recruit new talent to all the BES departments, and he plans to form collaborations with other departments and directorates at the Lab to broaden the scope of talent for working on interdisciplinary projects. Since funding for BES has been flat in recent years, Osgood plans to increase support for his directorate from DOE and to start new initiatives with funding from sources such as the National Institutes of Health and the U.S. Department of Defense.

Osgood believes two new areas of scientific inquiry will be important to the future of BES. One is nanoscience, which is the study of the unique physics and chemistry of ultra-small structures — on the scale of one-billionth of a meter — with possible future applications in molecular electronics, computer chips, and tiny electronic devices. In addition, he anticipates that the free electron laser currently being tested at BNL will be an important accelerator technology that will complement experiments performed at the NSLS.

Osgood's professional background is matched to a wide range of current and future BES research. Known for his research in laser physics, chemical physics, and materials science, he is a Fellow of the Optical Society of America (OSA), the American Physical Society, and the Institute of Electrical and Electronic Engineers. He was awarded the OSA R. W. Wood Prize in 1991.

Osgood earned a B.S. from the U.S. Military Academy in 1965, an M.S. in physics from Ohio State University in 1968, and a Ph.D. in physics from the Massachusetts Institute of Technology (MIT) in 1973. After working at MIT's Lincoln Laboratory from 1973 to 1981, he joined Columbia University as an associate professor in the Department of Electrical Engineering. He currently retains an appointment as Higgins Professor of Electrical Engineering and Applied Physics at Columbia.

Osgood has served as Vice Chairman of the Brookhaven Science Associates' Science and Technology Steering Committee, 1998-2000, and he has served on many national scientific committees, including DOE's Basic Energy Sciences Advisory Committee.

— Diane Greenberg

Muon Lecture (cont'd)

Three of the four known forces that govern the interactions of matter and energy are believed to cause this effect: the weak force, which is responsible for particle decay involving neutrino particles; the strong force, which holds an atom's nucleus together; and the electromagnetic force, in which electricity and magnetism are combined.

As Prigl will recall, in experiments at CERN, Switzerland, during the 1960s and 1970s, g-2 was measured to extraordinary precision. These results helped researchers learn more about muon behavior and validate the theory of quantum electrodynamics (QED), which links the theories of electrodynamics, quantum mechanics, and relativity.

Possible New Physics

In the present AGS experiment, some 70 researchers from BNL and 11 institutions in Germany, Japan, Russia and the U.S. are using new technology to measure g-2 twenty times more accurately than the last CERN experiment, making it sensitive to the tiny effect from the weak force.

At this level of precision, agreement with the expected value would be a major success for the established theory of elementary particles and forces —the standard model (SM).

Agreement would impose a severe constraint on theoretical efforts that try to reach beyond the SM to answer the many fundamental questions that it leaves open, such as why particles like muons exist and what exactly they are.

On the other hand, as Prigl will explain, a significant deviation from the SM value could reveal breakthrough information on the laws of physics.

While Prigl joined BNL as an assistant scientist in the AGS in 1996, he had already been associated with E821 for some years because he did his thesis and then a postdoctoral fellowship on the nuclear magnetic-resonance (NMR) probe system designed to measure the magnetic field inside the E821 muon storage ring. He earned his 1990 M.S. in physics at the Max Planck Institute for Medical Research in Heidelberg and received his 1994 Ph.D. at the University of Heidelberg.

In May 1994 Prigl joined E821 researchers at Yale University for two years, continuing to work on the Heidelberg-Yale NMR system and participating in another muon experiment at Los Alamos National Laboratory. After moving to BNL in 1996, he was named Associate Scientist in 1998.

The Sambamurti Memorial Lecture was established in 1992 to commemorate the work of Aditya Sambamurti, a young BNL physicist who died of cancer in 1992, at age 31. Each year, an outstanding young physicist whose professional interests overlap those of Sambamurti is selected to deliver the lecture.

— Liz Seubert



Pictured above are 24 of the 33 employees who will represent BNL at the 31st National Training Program sponsored by the Federally Employed Women (FEW) Organization. Coordinating BNL participation is BNL Diversity Office's Sol Rosario (seventh from left).

Representing almost every BNL department and division, 33 female Laboratory employees will be attending the 31st National Training Program sponsored by the Federally Employed Women (FEW) Organization.

According to Sol Rosario, BNL Diversity Office, and coordinator of this event for BNL employees, the theme of this year's program, "Bridging the Information Gap for Success," aims to enhance career opportunities, as well as the quality of life for program participants.

Held this year in New Orleans, Louisiana, the program will run from Monday through Friday, July 17-21, and will feature well over one hundred workshops with topics ranging from Career Enhancement and Communication Skills, to Legislative and Legal issues.

In conjunction with FEW's program workshops, several federal agencies will be hosting special training sessions during the week, including the U.S. Departments of Agriculture, Defense, Treasury, Interior, and the Army, Navy, National Guard, as well as the Department of Veterans Affairs and NASA.

As an organization, FEW strives to: eliminate sex discrimination in the federal government; enhance opportunities for the career advancement of women; establish and maintain with federal agencies, a working relationships that advocates the fair application of equal employment opportunity and personal laws, policies, procedures, and practices; and to improve the quality of life for women by influencing Congressional and Administration actions.

"We anticipate that the BNL employees attending this year's National Training Program will gain professional and personal growth," said Lorraine Merdon, who heads the BNL Diversity Office, "and that they will share that growth and information with employees here at BNL upon their return."

Those who will attend the program have held several meetings to plan how to get the most out of this event. Several post-training meetings are also planned to share the new information. To learn more about this year's training program and the FEW Organization, contact Rosario, Ext. 6253, or go to [www.few.org](http://www.few.org). — John Galvin

Environmental Stewardship Policy Awareness



BNL's Environmental Management System (EMS) is being audited during July-October. During this time in particular, all Lab employees should be prepared to answer any questions that he auditors might ask.

To help employees understand how BNL's EMS policy commitments apply to each person on site and to give sample questions and answers that all employees should be prepared to answer, a five-part column will appear in the Bulletin, starting with this article. Your answers should be

specific to your own work.

**Policy:** BNL is committed to complying with applicable environmental requirements.

*Sample questions and answers:*

- Q:** What environmental hazards are associated with your work?  
**A:** I use chemicals when I conduct benchtop experiments, and the waste chemicals are hazardous.  
**Q:** What environmental requirements (permits, Standards Based Management Systems [SBMS], internal procedures) control these hazards?  
**A:** The SBMS Hazardous Waste Management Subject Area.  
**Q:** What are your responsibilities for making sure these requirements are satisfied?  
**A:** I store the waste in a satellite accumulation area that complies with the SBMS Subject Area.

For more information, contact your management representative on EMS (see SBMS Support Services Directory, <https://sbms.bnl.gov/ypages/yp00d011.htm?L=M>).

Coming Up  
27th Pegram Lecture

On Thursday, July 27, from 12:30 to 6:30 p.m. in Berkner Hall, Edward Tufte, Yale University, will talk on "Presenting Data and Information," as the 27th Pegram Lecture.

Tufte, called the "da Vinci of data" by *The New York Times*, is well known for his courses on the visualization of data and as the author of seven books, including *The Visual Display of Quantitative Information*, *Envisioning Information* and *Visual Explanations: Images and Quantities, and Evidence and Narrative*.

A full house is expected, so advance registration is requested. The registration fee includes a copy of Tighe's books, a poster, and refreshments. Send a check made out to BSA for \$20 to Melanie Covitz, Bldg. 179B, by July 24.

This event, sponsored by Brookhaven Science Associates, is open to the public.

Parents — Meet Upton Nursery School Teachers on July 18



Upton Nursery School teachers Rooshi Khalid (left) and Laura Williams will answer questions about the Upton Nursery School on Tuesday, July 18, first, from 11 a.m. to noon at the Recreation Building in the apartment area, then from 12:10 p.m. to 1 p.m. at Berkner Hall Cafeteria.

Upton Nursery School is a small, parent-run, cooperative nursery school that meets in the Recreation Building in the apartment area on Mondays, Tuesdays and Thursdays, 8:30-11:30 a.m.

The school is now accepting registration for children of two-and-a-half to four years old for the 2000-2001 school year, which starts in September. Children must be toilet trained.

The school provides small, friendly classes with a multicultural focus. Children who do not speak English are welcome. Classes are led by a teacher with credentials in early childhood development, and parents are involved as "help-

ing parents" one morning per month. Additional teachers or assistants provide extra support, depending on enrollment. Activities encourage language and social development, large and small motor skills, group cooperation, and sharing.

Monthly tuition is \$110. Through the years, children of BNL employees, facility users, guests, on-site contractors, and their families have been going to the preschool since 1965. If you are interested, come to meet the teachers on Tuesday, July 18. For more information, contact Shelly Shumway, 732-1367, or [shelly.shumway@yahoo.com](mailto:shelly.shumway@yahoo.com).

BROOKHAVEN BULLETIN

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On the World Wide Web, the Brookhaven Bulletin is located at [www.pubaf.bnl.gov/bulletin.html](http://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](http://www.pubaf.bnl.gov/calendar.html).

# Equipment Demos

## Rent-a-PC Demo, 7/18

Rent-a-PC will be in Berkner Hall on Tuesday, July 18, 11 a.m.-2 p.m., to discuss short-term computer rentals for BNL employees. Rent-a-PC provides desktops, notebooks, LCD projectors, servers, etc., for a day, a week, a month or more. They offer immediate availability as well as local delivery, setup and on-site support. Equipment is pretested, delivered and installed with a “no excuses” guarantee. For more information, call 273-8888.

## CTP Wireless, 7/20

On Thursday, July 20, in Berkner Hall, 10 a.m.-2 p.m., CTP Wireless will discuss the AT&T corporate cellular rate that it offers BNLeers.

Service plans include one with air-time rates of 20 cents per minute and 40 minutes of airtime at \$19.99 per month, 20 percent off airtime charges, and unlimited off-peak airtime for an additional \$4.99 per month. Another plan includes 250 minutes any time for \$29.99 per month with 500 free off-peak minutes for 12 months. Free features include a digital phone with caller ID, voice mail with notification, numeric paging, and more. For more information, call Dennis Lamm, 585-2900.

## GLOBE@BNL

BERA's gay and lesbian club, GLOBE@BNL, will hold its monthly meeting today, July 14.

For more information and the meeting's location, call Mike Loftus, Ext. 2960, or Chris Gardner, Ext. 4537, or go to the club's Web page at <http://homestead.juno.com/bnlglobe/files/home.html>.

Classified  
Advertisements

**OPEN RECRUITMENT** – Opportunities for Laboratory employees and outside candidates.

**MK9002. POSTDOCTORAL RESEARCH ASSOCIATE** – Requires a Ph.D. or equivalent degree in physics, chemistry, biophysics or related field. Experience with lasers, optical systems, DNA, and computer software desirable. Research will involve developing a new method for quantifying damage to DNA by ionizing radiation and other physical and chemical agents. Under the direction of J. Sutherland, Biology Department.

**MK8197. POSTDOCTORAL RESEARCH ASSOCIATE** – Requires an Ph.D. in experimental physics or materials science in the field of grain boundaries and nanostructure, expertise in the processing and electromagnetic/structural characterization of superconducting and magnetic materials. Research involves the processing and characterization of grain boundaries in high temperature superconducting films and bulk bicrystals, setup of high-resolution magneto-optical imaging systems, investigation of the correlation of transport properties and microstructure of superconducting and magnetic materials. Under the direction of Q. Li, Environmental Sciences Department.

**NS8685. REAL-TIME PROGRAMMER** – Requires an MS degree or equivalent experience in computing, electrical engineering or related field and several years C and real-time programming experience. Familiarity with VME hardware, writing device drivers, interfacing with hardware and configuration of CPU boards is necessary; Vxworks and Epics experience is beneficial. Will be part of a team that will design and implement a control system using Epics. Spallation Neutron Source Project/Collider-Accelerator Department.

**NS8684. CRYOGENIC SYSTEMS GROUP LEADER** – Requires an advanced degree in engineering, physics, or related technical field and at least ten years experience leading multi-personnel efforts in a laboratory environment or an equivalent setting. Knowledge of cryogenic systems for superconducting magnets and related hardware is necessary, as well as knowledge of cryogenic safety standards, pressure vessel design, vacuum systems, instruction, and control systems. Excellent written and verbal communication skills, computer proficiency, and the knowledge to help define and guide technical and safety training for the facilities is required; experience with the preparation of cost estimates and management of budgets and schedules is necessary. Collider-Accelerator Department.

**NS7893. ENTERPRISE SERVICE CENTER SPECIALIST** – Requires an AAS degree in electronics, computer science, or the equivalent technical school certification, Microsoft operating system or office suite products certifications or the ability to obtain such certifications; excellent customer service and communication skills; and the ability to function as a team player in both internal and external situations. A minimum of two years' experience working on Windows NT or UNIX in resolving service-desk related issues is required, as experience in the repair and troubleshooting of computer system hardware, printers, modems and other peripheral devices. Knowledge of problem management tracking system, internet browsers, web publication software, off-the-shelf applications such as virus eradication, disk repair, etc.; network administration and network connectivity skills in one of more of the following: WinNT, Win2000,

Free Summer Sundays Continue Through August 27

# Biology Is This Sunday's Featured Facility



Biology's Ed Whittle (left) and John Shanklin work on plant enzyme functions.

Summer Sunday visitors to BNL will find a fascinating tour scheduled for this Sunday, July 16, when the Biology Department opens its doors to display some of the world-class research being done by biologists from BNL and other institutions. For example, every year, at least 60 visiting biologists come to join BNL colleagues and do their experiments at the Scanning Transmission Electron Microscope known as STEM. This powerful instrument is one of only three in the world that can image single atoms by magnifying samples ten millions times their original size. BNL biologists also conduct unique investigations in the National Human Genome Project, discovering how DNA can be sequenced or copied. In the greenhouses, visitors will see forefront research flourishing on plant oils and growing cotton with longer, stronger fibers.

In addition to tours of Biology, guided bus tours of the Lab site will run continuously. The Whiz Bang Science Show, a lively, interactive demonstration of basic scientific principles, is presented four times between 10 a.m. and 3 p.m. Also on view, housed in a Camp Upton chapel, is the Camp Upton Historical Collection, which contains the history of the site during its pre-Lab days as a U.S. Army camp during World Wars I and II. Organized by BNL's Museum Programs of the Community Relations Office, BNL's Summer Sunday tours run from 10 a.m. to 3 p.m., but visitors must arrive before 3 p.m. The tours are free and open to the public, and no reservations are needed.

UNIX or Novel is also necessary. Information Technology Division.

**DD8392. OFFICE SERVICES POSITION (Part-time)** – Requires excellent communication and customer service skills, and knowledge of Microsoft Office products. Will provide primary support to the Housing Office and act as backup to Transportation and Division Offices, as required, during the 4 p.m. to midnight shift. Duties will include reservations, check-in/checkout of customers, data management and report generation. Will act as liaison with all residents and assist in the scheduling of housekeeping and maintenance services. Staff Services Division.

**NS8978. FACILITIES/TECHNICAL OPERATIONS POSITION (Reposting)** – Requires several years experience supporting a medium to large scale UNIX facility and knowledge of UNIX commands for system monitoring and troubleshooting. Primary responsibility will be the monitoring and correcting of real-time facility problems during off shift hours as well as providing help desk support for users, assisting administrators with the completion of reports necessary to document equipment or system malfunctions, preparing and executing computer runs necessary to maintain transitional magnetic tape libraries and operating subsystem computers, and, under supervision, will operate computer consoles. Will be responsible for training future lower-level staff. RHIC/US ATLAS. Computing Facility/Physics Department.

# Volunteers Needed

Are you healthy and at least 20 years old? Then you are invited to participate in a PET imaging study here at BNL. Subjects will be paid for their participation and their confidentiality will be maintained. Transportation can be provided if necessary. For more information, call Naomi Pappas, Ext. 5015, or toll free from off site, 1-888-352-7320.

## BNL Food Drive

The July Food Drive is on all next week. Don't let your memory let you down — tie a knot in your Kleenex, wear an elephant pin, whatever it takes — please give something, as needy kids and adults in Brookhaven Town depend on your generosity. Donations will be picked up from the food deposit bins in each building all next week. Or, send personal checks to BNL Food Drive, care of Rita Kito, Bldg. 460, or Donna Wadman, Bldg. 129.

