

RHIC/ATLAS Computing Facility The Challenge of Keeping Up With the Data

The immense amount of data emerging from the Relativistic Heavy Ion Collider (RHIC) gives the staff at the RHIC/ATLAS Computing Facility (RCF/ACF) plenty of work to do. In five years of running, the four RHIC experiments have taken digitized “snapshots” of billions of particle interactions — data-dense “pictures” that may reveal more details about the early structure of the universe and the fundamental properties of matter.

During RHIC’s most recent run, the experiments collected a total of 675 terabytes of data — enough to fill roughly one million compact discs. As the ions were colliding, the RCF received data from the experiments at rates in excess of 200 megabytes (MB) per second — equivalent to transferring the contents of a CD in a mere three seconds. All those terabytes were stored on robotically manipulated tapes for later analysis.

Now, the 3,300 processors making up the RCF’s RHIC Linux Farm are crunching the numbers. Year-round, the RCF/ACF staff are working 24 hours a day, seven days a week, providing both hardware and software support for users.

“When needed, they repair, replace, or upgrade facility hardware and deploy and upgrade system software,” said Bruce Gibbard of the Physics Department, who heads the facility. “The staff also uses sophisticated software to monitor computer system usage, performance, and status, and make sure data back-up, e-mail, and web services are working smoothly.”

To speed the RHIC data analysis, RCF processors will at times be augmented by computing resources from collaborating sites around the world using the latest rendition of large-scale computer networking, known as the Grid. The Grid keeps track of all the net-



A bird's eye view showing part of the multi-million dollar RHIC/ATLAS Computing Facility, with Ognian Novakov (right) of the Physics Department and Jim Burkavage of Sun Microsystems monitoring the performance of the 7-petabyte robotic tape storage system.

worked computers, and distributes jobs among them.

During the latest RHIC run, the PHENIX experiment used Grid technology to transfer nearly 270 terabytes of data to the RIKEN Institute in Japan using Grid-aware software tools at an average rate of 100 MB per second. This is equivalent to transferring the entire contents of a CD halfway around the world every seven seconds.

Shouldering ATLAS Data

At the same time that they are minding the machines and users that make sense of RHIC’s data, the RCF/ACF staff members are also gearing up for another large-scale high-energy physics experiment: ATLAS. ATLAS is one of the detectors located at the Large Hadron Collider (LHC), a new accelerator complex now under construction at the European Center for Nuclear Research (CERN). It was designed to analyze the thousands of particles streaming from proton-proton or heavy-ion collisions, some with as much as 30 times the

energy as the collisions occurring at RHIC. ATLAS is being built by a large international collaboration and is due to come online in 2007.

“The computing needs of ATLAS will be enormous by today’s standards,” Gibbard said. ATLAS is expected to collect five to eight petabytes of data per year — the equivalent of 7.5 million CDs of data.

“Individual scientific laboratories do not have the human or computing resources required by this demand,” Gibbard said. “That’s why the international physics computing community worked together to develop the new computing tools of the Grid, as well as a highly distributed, Grid-based data-analysis infrastructure.”

Hundreds of thousands of computers distributed worldwide with hundreds of petabytes of tape and disk-storage capacity and state-of-the-art networking will be linked to meet the demand. Resources currently available to ATLAS at BNL include 200 terabytes of

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NSLS to Examine Pieces of Star Dust

This February, BNL is hosting a series of very exciting experiments — the analysis of space dust collected by NASA’s Stardust spacecraft, which, after nearly seven years collecting cosmic matter during its travels through the solar system, landed safely in Utah on January 15. The experiments are taking place at the Lab’s National Synchrotron Light Source (NSLS), a facility that uses x-ray, ultraviolet, and infrared light for research.

Launched on February 7, 1999, Stardust’s mission was to collect dust and carbon-based compounds from a passing comet, as well as tiny amounts of interstellar dust streaming toward Earth from deep space. Its delivery of this material marks the first time since Apollo 17 that a NASA spacecraft has successfully brought back a space-matter sample.

At the NSLS, a portion of that teaspoonful-sized amount of comet and star dust will be studied to determine its chemical composition and properties. Because the NSLS offers a variety of research techniques, scientists studying the Stardust sample will be able to maximize the amount and type of information they learn. This information could help answer some very important, very fundamental questions about the formation of the solar system and Earth.

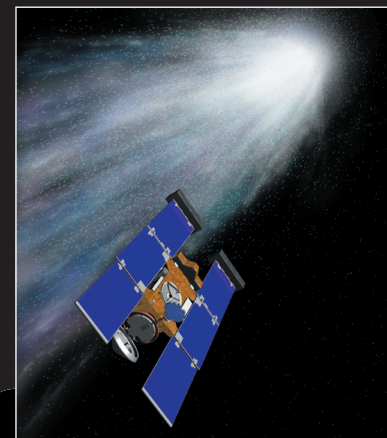
The first samples from Stardust are expected to arrive at the NSLS early in February. On arrival, the dust particles are suspended within the “aerogel” substance used to capture them in space.

Scientists will study the chemical composition of the aerogel-encased particles using extremely tiny, bright beams of x-rays. The x-ray beams are an excellent tool for analyzing the particles, which are just 10-20 millionths of a meter in diameter — so small that five can fit across the width of a human hair.

If particles can be extracted from the aerogel, scientists will use a powerful x-ray imaging device to collect detailed images of some of the smallest particles as well as determine their elemental makeup. In particular, the scientists are looking for the element carbon, which could indicate that the particles contain organic compounds — compounds that may have formed at the birth of our solar system.

In a concurrent set of studies, other scientists will use infrared light to identify specific minerals within the particles, as well as identify any organic compounds that are detected. These infrared techniques can yield information that may be compared with infrared-based astronomical observations of distant interstellar dust clouds, including clouds thought to be involved in the formation of planetary systems such as Earth’s.

— Laura Mgrdichian



Stardust flew by Comet Wild2 and, for the first time ever, brought pristine samples of cometary material back to Earth.

News Flash . . . Stardust Samples Arrive at NSLS

As the Bulletin went to press on Wednesday, February 1, Lindsay Keller of NASA and George Flynn of the State University of New York at Plattsburgh were expected to arrive on Thursday, February 2, with some Stardust samples. Keller,

who leads the group of scientists who will perform optical studies of the Stardust samples, is a lunar and planetary scientist with NASA’s Johnson Space Center. Co-investigator Flynn is leading a worldwide group of scientists who will perform chemical

composition measurements on the comet samples collected by Stardust. Because the infrared (IR) ring at the National Synchrotron Light Source (NSLS) is up and running, the samples will be studied first at IR beam lines U10A and U10B until Sunday evening. The

samples will be studied at the NSLS’s x-ray beam line X26A next week, and at X1A1 later in the cycle. For more detailed information, see [www.nsls.bnl.gov/newsroom/news/2006/01-Star dust.htm](http://www.nsls.bnl.gov/newsroom/news/2006/01-Star%20dust.htm). — L. M.

Yannis Semertzidis Named APS Fellow

Yannis Semertzidis, a physicist in the Physics Department, has been elected a Fellow of the American Physical Society (APS), a professional organization with about 43,000 members. The APS Fellowship program recognizes members who have made significant contributions in the field of physics. Semertzidis’s citation reads: “For leadership in the development of electrostatic quadrupoles and transient magnetic field measurements and for analysis of the muon g-2 experiment.”

In the muon g-2 experiment (see photo at right), an international team of physicists used a superconducting magnet that is the world’s largest in diameter and an intense beam of protons from BNL’s Alternating Gradient Synchrotron to refine one of high-energy physics’ most precise measurements: how the spin motion of subatomic particles called muons is affected as they move through a magnetic field. In 2004, the muon g-2 team announced that the measurements disagreed with theory as described in the Stan-

dard Model of particle physics, suggesting that exciting new physics discoveries may be on the horizon. More experiments will be needed to verify the discrepancy.

Semertzidis’s many contributions included a new quadrupole design and other improvements that he made with his electrostatic quadrupole team, making the experiment more reliable, economical, and flexible. In addition, Semertzidis helped to improve the accuracy of the results by eliminating

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Joseph Rubino 01/03/2006

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 Christine Carter, Ext. 2873.
- Additional information for Hospitality Committee events may be found at the Lollipop House and the laundry in the apartment area.
- The Recreation Building (Rec. Hall) is located in the apartment area.
- Contact names are provided for most events for more information.
- Calendar events flagged with an asterisk (*) have an accompanying story in this week's Bulletin.

— EACH WEEK —

Weekdays: Free English for Speakers Of Other Languages Classes

Beginner, Intermediate, Advanced classes. Various times. All are welcome. Learn English, make friends. See www.bnl.gov/esol/schedule.html for schedule. Jen Lynch, Ext. 4894.

Mondays & Wednesdays: Pilates

Mondays at noon, Wednesdays at 5:30 p.m., both in Rec. Hall. 9-week session, \$60 for once a week, \$70 for twice a week. Registration is required. Christine Carter, Ext. 5090.

Mondays & Thursdays: Kickboxing

\$5 per class. Noon-1 p.m. in the gym. Registration is required. Christine Carter, Ext. 5090.

Mon., Wed., & Fri.: Tai Chi

Noon-1 p.m., Brookhaven Center North Rm. Adam Rusek, Ext. 5830, rusek@bnl.gov.

Tues. & Thurs: Aerobics

5:15-6:30 p.m., Rec. Hall. 10 classes for \$40, or \$5 per class, pay as you go. Pat Flood, Ext. 7866.

Tues. & Thurs: Aqua Aerobics

5:15-6:15 p.m. \$20 to attend once a week, \$40 to attend twice a week. For more information, call Ext. 2873.

Tues. & Thurs: Jazzercise

Noon-1 p.m., Rec. Hall. \$88 for twice-a-week eight-week session, you may use the membership at several Jazzercise locations. Christine, Ext. 5090.

Tues. & Thurs.: Ving Tsun Kung Fu

Noon-1 p.m., Brookhaven Center, North Room. \$80/month or \$10 per class, pay as you go. Taught by Master William Moy. Scott Bradley, Ext. 5745 or bradley@bnl.gov.

Tue., Thu. & Fri: Upton Nursery School

8:30 a.m.-noon, Rec. Hall. 2- and 3-day programs available. Kati, 821-4131.

Tuesdays: Welcome Coffee

10 a.m.-noon, Rec. Hall. First Tuesday of every month is special for Lab newcomers and leaving guests. Lisa Yang, 979-3937.

Tuesdays: BNL Music Club

Noon, North Room, Brookhaven Center. Come hear live music. Joe Vignola, Ext. 3846.

Tuesdays: Jiu Jitsu Club

6:30-7:30 p.m. in the gym. All levels, ages 6 and above. \$10 per class. Tom, Ext. 4556.

Tuesdays: Toastmasters

1st and 3rd Tuesday of each month, 5:30 p.m., Bldg. 463, room 160. Guests, visitors always welcome. www.bnl.gov/bera/activities/toastmasters/.

Tues., Wed. & Thurs: Rec Hall Activities

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

Wednesdays: On-Site Play Group

10 a.m.-noon. Rec. Hall. An infant/toddler drop-in event. Parents meet while children play. Fang Dong, 871-5362.

Wednesdays: Weight Watchers

Noon-1 p.m. Michael Thorn, Ext. 8612.

Wednesdays: Yoga

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

Wednesdays: Ballroom Dance Class

\$30/pers./6-weeks. Brookhaven Center, N. Ballroom. Beginner rumba, 6 p.m., adv. foxtrot, 7 p.m. Instructor: Giny Rae. John Millener, Ext. 3853; Madeline Windsor, Ext. 5069.

Thursdays: Reiki Healing Class

Noon-1 p.m., Bldg. 211 Conference Rm. Nicole Bernholz, Ext. 2027.

Fridays: Family Swim Night

5-8 p.m. BNL Pool. \$5 per family.

Fridays: BNL Social & Cultural Club

6-9 p.m., North Ballroom, Brookhaven Ctr., dance lessons, 9-11:30 p.m. general dancing. Rudy Alforque, Ext. 4733, rudy@bnl.gov.

RHIC/ATLAS Computing Facility (cont'd)

tape and disk storage, 700 Linux Farm processors, and a high-speed network infrastructure. A 2.4 petabyte robotic tape storage system will come online in early 2006.

Besides providing a large portion of the overall computing resources for U.S. collaborators in ATLAS, BNL is also the central hub for storing and distributing ATLAS experimental data among U.S. collaborators.

"The ACF staff will play an important role in developing

the next generation ATLAS Grid production tools. They'll also operate a support center to assist U.S. collaborators in using Grid-based resources," Gibbard said.

Together, the people and the machines they run will delve into the mysteries of matter, perhaps uncovering that needle in a Petabyte that offers new insight on the world around us.

— Karen McNulty Walsh

For more information, see www.acf.bnl.gov/GuidedTour/.

The RCF/ACF staff will again be participating in a large, international physics computing conference held approximately every 18 months known as Computing in High-Energy and Nuclear Physics, or CHEP, February 13-17, 2006, in Mumbai, India.



(From front) Richard Hogue, Chris Hollowell, and Alex Withers of the Physics Department service the RHIC/ATLAS Linux Farm of 4000+ processors that provide the bulk of the computational and storage resources for RHIC experiments as well as for U.S. participants in the future ATLAS experiment at CERN.

In Memoriam

Bernard Cappel, who, as a senior stationary engineer, joined the Plant Engineering Division on February 20, 1967, and retired on May 7, 1983, died on December 9, 2003. He was 85.

Philip Reany, who joined the Central Shops Division as a metalworker on January 20, 1958, and retired as a master metalworker and group leader September 10, 1982, died at age 85 on September 19, 2005.

Theodor Teichmann, who first came to the Department of Applied Science on May 1, 1978, as a visiting physicist, and retired from the Department of Nuclear Energy on July 21, 1995, as a scientist, died at age 82 on September 29, 2005.

Rose Woodson, who worked at BNL during the summers of 1967-70, joined Staff Services as a matron on May 17, 1971, and retired as a resident services supervisor on December 31, 1990, died on October 8, 2005, at the age of 84.

Elizabeth Barnes, who joined the Biology Department as a laboratory aide trainee on January 3, 1966, and retired on December 30, 1977, as a research services assistant III, died on October 30, 2005. She was 93.

Evelyn Ritter, who, on August 15, 1960, came to BNL as a research laboratory assistant IV in the Chemistry Department, retiring as a technical associate I on September 30, 1995, then continuing as a guest researcher until December 31, 1999, died at 65 on November 11, 2005.

Yannis Semertzidis Named APS Fellow

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significant background interference caused by the high rate of experimental data, and he invented a new method of detecting background interference of unknown origin that might distort experimental accuracy.

A native of Greece, Semertzidis earned a B.S. in physics from Aristotle University of Thessaloniki, Greece, in 1984. He went on to earn an M.S. and Ph.D. in physics from the University of Rochester, in 1987 and 1989, respectively. He joined BNL as an assistant

physicist in 1992. He was also a Fellow at CERN, the European Organization for Nuclear Research in Switzerland, from 1993 to 1995. In 2003, Semertzidis received the Brookhaven Science & Engineering Award.

Semertzidis is the initiator and co-spokesperson of a proposal to build a magnetic storage ring at BNL for an experiment that might elucidate a question that has puzzled scientists for decades: the reason why there appeared to be more matter than anti-matter in the

universe immediately after the Big Bang. The experiment would search for the electric dipole moment — a technical measurement involving electric charges — of a subatomic particle, called a deuteron, using a small accelerator. If the experiment is successful, it also will help physicists explore models of physics beyond the Standard Model. — Diane Greenberg

For more details on Semertzidis's contributions, see www.bnl.gov/bnlweb/pubaf/pr/PR_display.asp?prID=06-02.

Pick a Summer Student

Student applications for the summer 2006 undergraduate science internship programs sponsored by DOE's Office of Workforce Development for Teachers & Scientists are now available for review on an electronic database. Contact Kathy Gurski of the Office of Educational Programs (OEP) at Ext. 4503 or gurski@bnl.gov for the database address and passwords.

Selections for the first round choices must be submitted by February 28. Students will be here for ten weeks, from June 5 to August 11. Stipends, housing, and travel are funded through OEP with a \$1,000 cost share requested from the hosting department. See www.bnl.gov/scied/ for more information.

Robert Fuchs, who joined BNL on September 22, 1947, as a clerk A in the Fixed Assets Section of what, in 1960, became the Reactor Division, and retired as a staff specialist on December 31, 1983, died on November 9, 2005. He was 87.



David Yu of the Physics Department inspects the newly acquired 2.4-petabyte robotic tape storage system that will provide increased storage capacity for RHIC and ATLAS computing activities in 2006.

Supercomputing at RHIC

RHIC research demands supercomputing power for a variety of needs.

Two new supercomputers, known as QCDOC machines, for quantum chromodynamics (QCD) on a chip, perform the complex calculations of the theory that describes the interactions of quarks and gluons and the force that holds atomic nuclei together. Each QCDOC is capable of 10 trillion arithmetic calculations per second. These are highly customized systems designed and optimized for a few highly specialized purposes, for example, theoretical calculations and model simulations.

RHIC computing also needs Linux Farms of processors, which differ from QCDOCs in both nature and purpose. A Linux Farm is made up of commodity hardware, which is available commercially, rather than the customized hardware making up a QCDOC. A Linux Farm is a cluster of independent servers made up of processors and large storage capacity disks. It is highly configurable and can serve multiple purposes, such as data processing and analysis, searching, graphic rendering, and web-hosting.

Both QCDOCs and Linux Farms can be considered "supercomputers" in the sense that the power of individual pieces is harnessed together to increase the ability of the collective to perform multiple tasks in parallel. — K.M.W.

TIAA-CREF One-on-One Retirement Counseling

A TIAA-CREF consultant will visit BNL on Tuesday, February 7; Monday, February 13; and Tuesday, February 28, to answer employees' questions about financial matters.

The consultant will help you: understand the importance of protecting your assets against inflation, find the right allocation mix for you, learn about TIAA-CREF retirement income flexibility, and compare lifetime income vs. cash withdrawal options. For an appointment, call Kathy Murphy, (866) 842-2053, Ext. 4625.

Financial Assistance Workshop, 3/13 'Tax Assistance for Visiting Foreign Nationals'

A "Tax Assistance for Visiting Foreign Nationals" workshop will be presented by Mark Israel, BNL Financial Officer; and Deborah Johnson, BNL's Director of Internal Audit and Oversight, on Monday, March 13, at noon in Berkner Hall, Room B. To register, contact the Recreation Office, Ext. 2873.

Podiatry Screening, Consultation, 2/16, 3/17

Sponsored by the Human Resources and Occupational Medicine Division's Health Promotion Program, a podiatry screening and consultation service will be available to eligible BNL employees on Thursday, February 16, and Friday, March 17, from 10 a.m. to 1 p.m., in the Occupational Medicine Clinic, Bldg. 490.

A 3-D computerized scanner will be available, as will information on 'shockwave therapy' for heel pain and the latest treatments for chronic plantar warts and nail fungus. This free service is provided by Ben Dimichino, DPM, and Brian Fanno, DPM, of Comprehensive Podiatry Associates, P.C. Space is limited. For an appointment, contact Michael Thorn, mthorn@bnl.gov or Ext. 8612.

BNL Honors 202 BNL VIPs

At the December reception honoring BNL's 2005 Very Important Persons (VIPs) — employees who during the year had celebrated their 25th, 30th, 35th, or over-35th Service Anniversary at the Lab — 202 VIPs were invited.

Peter Bond, Interim Deputy Director for Science & Technology, congratulated attendees on their record of service. "Long-term employees are the backbone of the Lab and provide a needed perspective through the ups and downs over the years," he said. "Thank you all for your many contributions to BNL."

Making up the 202 invitees were: 67 VIPs who had served BNL for 25 years, 42 for 30 years, five for 35 years, 47 for 36-to-39 years, 10 for 40 years, 23 for 41-to-44 years, and eight star VIPs who had celebrated anniversaries of 45 years or more. Of these, 45 years had been served by Arnold Aronson of the Energy Sciences & Technology Department, Joseph Glenn III of the Collider-Accelerator Department (CA-D); Harald Hahn of CA-D, and Robert Palmer of the Physics Department; 46 years by Nicholas Samios of the Director's Office; 47 years by John Sondericker of the Magnet Division; and 48 years by George Dioguardo of the Procurement & Property Management Division and Leonard Newman of the Policy & Strategic Planning Directorate.



Many of the attendees at BNL's VIPs of 2005 reception are pictured above. Photos by Roger Stoutenburgh.



CALENDAR (continued)

— WEEK OF 2/6 —

Thursday, 2/9

*Diabetes Talk by Amy Shapiro

Noon. Berkner Hall, Room B. All are welcome. See notice below. Michael Thorn, Bldg. 490, or e-mail mthorn@bnl.gov.

Saturday, 2/11

Bus to Museum of Natural History

All seats on the bus are taken. For other BERA trips, get information from the BERA Store in Berkner Hall, or at www.bnl.gov/bera/.

Sunday, 2/12

*Valentine's Dance & Soup Party

5 p.m. Recreation Hall in the apartment area. Visitors, guests and their families are cordially invited by the Hospitality Committee to come to a Valentine's Dance and Soup Party. Soup, bread, and dessert will be provided; bring a dish to share with six other people. A DJ will play music from the 50s to the present. Lisa Yang, 878-3937 or lisayang@optonline.net.

— WEEK OF 2/13 —

Tuesday, 2/14

Forsyth Atlantic Voyage Video

Noon. Berkner Hall. Sponsored by the Brookhaven Retired Employees Association (BREA). All are invited to the free showing of "Fiona's Atlantic Adventure," a video of retiree Eric Forsyth's recent year-long voyage around the Atlantic in his yacht Fiona.

Wednesday, 2/15

BSA Noon Recital — Trio Cento

Noon. Berkner Hall. All are welcome to the performance of the Trio Cento, sponsored by BSA. The recital features local prize-winning harpist Ruth Bennett, who joins with flute and viola in a varied selection of works for these instruments, including music by Debussy, Natra, and Piazzola. BSA recitals are free and open to the public. Visitors to the Lab of 16 and over must carry a photo ID.

412th Brookhaven Lecture

4 p.m. Berkner Hall. Peter Varnier of the Nonproliferation & National Security Department will talk about advanced neutron detection methods that provide new tools for countering nuclear terrorism. All are welcome to this free public lecture. Visitors to the Lab of 16 and over must carry a photo ID.

— WEEK OF 2/20 —

Monday, 2/20

Presidents' Day Holiday

The Lab will be closed in honor of the Presidents' Day holiday. No Bulletin will be printed on Friday, February 24.

Saturday, 2/25

Gathering of the Slides IV Concert

7:30 p.m. Berkner Hall. "The Gathering of the Slides IV," a blues concert. Tickets cost \$15 each. Buy tickets at the BERA Store in Berkner Hall, from ticketweb.com, or at the door. See also notice, page 4.

Roll Up Your Sleeve: Blood Drive, 2/16

To replenish Long Island's blood supply, BNL is holding a blood drive on Thursday, February 16, from 9:30 a.m. to 3 p.m. in the Brookhaven Center. Donors must be from 16 to 75 years of age, in good health, and weighing over 110 pounds. Restrictions may apply to individuals from the United Kingdom and Europe. Donors should have photo identification and know their social security number. To make an appointment, contact Susan Foster at Ext. 2888 or e-mail donateblood@bnl.gov. In your message, include your name, phone extension, and preferred time to donate.

2006 Goldhaber Prize: Call for Nominations

Brookhaven Women in Science (BWIS) is now accepting nominations for the 2006 Gertrude S. Goldhaber Prize. This award honors the late Gertrude Scharff-Goldhaber, the renowned nuclear physicist who, in 1950, became the first woman Ph.D. appointed to BNL's staff. She was also a founding member of BWIS.

The \$1,000 award is granted to a female graduate student in physics, who is recognized for her substantial promise and accomplishment. She will be expected to give a seminar on her work at the award ceremony in the spring. To be eligible, she must be an enrolled physics graduate student who is a candidate for a doctoral degree, but she should not be graduating with that degree before spring 2006. She must either be enrolled at Stony Brook University, or she should be performing her thesis research at BNL.

BNL staff and members of the faculty of the Department of Physics and Astronomy at Stony Brook University can make nominations before February 21, 2006. For more information or to obtain copies of the nomination form, contact Vinita Ghosh, Ext. 6226, or ghoshvj@bnl.gov.

Dietician Amy Shapiro Talks on Diabetes, 2/9

All are welcome at a noon talk on "Diabetes — the Basics You Need to Know," by registered dietician and diabetes educator Amy Shapiro, in Berkner Hall, Room B, on February 9. Register for the talk by completing the form sent to each employee and returning it to Michael Thorn, Bldg. 490, or e-mail mthorn@bnl.gov.

Daffodil Days

BERA will again sell daffodils to benefit the American Cancer Society, proceeds to be used to help in the fight against cancer. The donation is \$10 for a bunch of 10 fresh-cut daffodils.

Delivery will be made during the week of March 20. Your prepaid order can be made at the BERA Sales Office, weekdays, 9 a.m.–3 p.m.

Reimbursement Account Deadline, 3/31

According to the Internal Revenue Service, contributions to health care or dependent day care accounts made during calendar year 2005 will be forfeited if they are not used by March 31, 2006. So, do not forget to use up balances within all 2005 reimbursement accounts by claiming expenses incurred in 2005. To do so, submit claim forms by March 31, 2006.

Remember to Give To BNL's Food Drive



No time to shop? Send a check made out to BNL Food Drive, care of Rita Kito, Bldg. 460, or Linda Rundlett, Bldg. 185.

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

Wanted: BERA Board Nominees

A Nominating Committee of active BERA participants has been appointed by the BERA Executive Board to select a slate of four candidates to run for the 2006 BERA Board elections scheduled for the last week in March.

BERA Nominating Committee 2006

Bill Schoenig	bills@bnl.gov	Ext. 2377
Vera Meier	vmeier@bnl.gov	Ext. 5843
Andy Seelin	seelin@bnl.gov	Ext. 3024
Maureen Fazio	fazio@bnl.gov	Ext. 5179
Luis Nieves	nieves@bnl.gov	Ext. 4897
Tom Baldwin	baldwin@bnl.gov	Ext. 4556
Jim Desmond	desmond@bnl.gov	Ext. 4837
Jo Ann Reed	reed@bnl.gov	Ext. 7009
Rich Conte	conte@bnl.gov	Ext. 5741

An employee, facility user, visitor or guest who wishes to propose or become a nominee is encouraged to do so by contacting one of the Nominating Committee members before Friday, February 24. Proposers are asked to make certain that the person being proposed will accept the nomination if selected by the committee. For more information, call Christine Carter, Ext. 2873.

Adult Swimming Lessons, 3/1-4/19

BERA has arranged for adult swimming lessons to be offered at the BNL pool. Each adult will be scheduled for one lesson a week on Wednesdays, between 5:30-6:30 p.m., for eight weeks, March 1 to April 19, with no make-up classes. The class is open to employees, those with visitor or guest appointments, facility users, retirees, and their immediate family members who are at least 17 years of age. The fee is \$80 — send a check made out to BERA by February 24. Registration forms are available at BERA Store, Ext. 3347 or at www.bnl.gov/bera/. Call Sue Dwyer, Ext. 3147 or 3496, Monday-Thursday, 4:30-8:30 p.m. or Christine Carter, Ext. 5090, for more

Valentine's Dance Party, 2/12

The Hospitality Committee invites all to a Valentine's Dance & Soup party with DJ music on Sunday, February 12, at 5 p.m. in the Recreation Hall, Bldg. 317. A variety of home-made soups, bread, and desserts, will be supplied by the committee. Bring a dish to share with six people. For more information call Lisa Yang, 878-3937 or lisayang@optonline.net.

Classified Advertisements

Placement Notices

The Lab's placement policy is to select the best-qualified candidate for an available position. Candidates are considered in the following order: (1) present benefits-eligible employees within the department/division and/or appropriate bargaining unit, with preference for those within the immediate work group; (2) present benefits-eligible employees within the Laboratory; and (3) outside applicants. In keeping with the Affirmative Action Plan, selections are made without regard to age, race, color, religion, national origin, sex, disability or veteran status. Each week, the Human Resources Division lists new placement notices, first, so employees may request consideration for themselves, and, second, for open recruitment. Because of the priority policy stated above, each listing does not necessarily represent an opportunity for all people. Except when operational needs require otherwise, positions will be open for one week after publication. For more information, contact the Employment Manager, Ext. 2882. Access current job openings on the World Wide Web at www.bnl.gov/HR/jobs/.

LABORATORY RECRUITMENT - Opportunities for Laboratory employees.

TB3653. SR. STAFF SPECIALIST (A-8, reposting) - Requires a bachelor's degree in accounting or business administration or equivalent, plus at least ten years' related experience. In addition, requires excellent oral and written communication skills, proficiency in Excel and other MS Office products, and experience with PeopleSoft. Extensive administrative experience should include financial performance, contract administration, coordination of program funding, grant preparation, and financial reporting. Will be responsible for assisting in the overall management of the administrative business activities including budgets, subcontracts, and grant preparation for DOE and other federal agencies. Medical Department.

OPEN RECRUITMENT - Opportunities for Laboratory employees and outside candidates.

MK3804. POSTDOCTORAL RESEARCH ASSOCIATE - Requires a Ph.D. in a relevant field such as electrical engineering (electronics background or minor a plus), three years' relevant experience in nuclear detection systems, and excellent oral and written communication skills. Familiarity in testing CZT (cadmium zinc telluride) as a material for detector applications, including experience and proficiency with the design of read-out circuits and data acquisition systems and the integration of detectors with appropriate circuits, is highly desirable. Familiarity and skill with ASIC designs, FPGA logic, and control systems for nuclear detectors is also useful. Nonproliferation & National Security Department.

MK3805. POSTDOCTORAL RESEARCH ASSOCIATE - Requires a Ph.D. in a relevant

field such as electrical engineering (electronics background or minor a plus), three years of relevant experience in silicon/CZT (cadmium zinc telluride) or other semi-conductor crystal evaluations, and excellent oral and written communication skills. Familiarity in testing CZT as a detector material for possible detector applications, including experience and proficiency in clean room techniques, scanning electron microscopy techniques, use of NSLS beam lines as crystalline investigation tools, single crystal polishing techniques, and thermal diffusion deposition techniques is highly desirable. Familiarity with crystal growing techniques and a firm materials science understanding of semi-conductors for detector applications are essential components of the position. Nonproliferation & National Security Department.

MK3752. POSTDOCTORAL RESEARCH ASSOCIATE - Requires a Ph.D. in electrochemistry, chemical engineering, mechanical engineering or chemistry with experience in nanoparticle synthesis, electrochemical techniques, scanning tunneling microscopy, and electrochemical reactor design. The research program will involve tasks from the following two projects: "Metal and metal oxide-supported platinum monolayer electrocatalysts for oxygen reduction," and "Low platinum loading fuel cell catalyst." Under the direction of R. Adzic, Chemistry Department.

MK3429. POSTDOCTORAL RESEARCH ASSOCIATE - Requires a Ph.D. in physics, materials science or a closely related field, demonstrated ability to perform independent research on thin films, surfaces, or nanostructures using scanning tunneling microscopy (STM) is expected. In addition, documented experience in STM imaging, tunneling spectroscopy, sample and tip preparation is required. Experience in ultra-high vacuum epitaxial growth of thin films or nanostructures by magnetron sputtering or thermal/electron beam evaporation is desired. Research will focus on the preparation of TiO₂ with films and nanostructures, and investigation of the mechanisms of substitutional doping of TiO₂ with different impurities. Under the direction of E. Sutter, Center for Functional Nanomaterials.

NS3910. SECURITY POLICE OFFICER II (2 positions) - Requires an AAS in criminal justice plus relevant working experience; or several years' police or security experience; or military security background. Must successfully pass a physical examination (including drug/alcohol screening) and a psychological examination. Must run 1/2 mile in 4.40 minutes and run a 40 yard prone-to-running dash in 8.30 seconds (this standard must be completed successfully on an annual basis). Must be able to obtain a Q-level security clearance, which requires that you be a U.S. citizen, have no felony convictions or other serious offenses, and have an honorable discharge from military, if served. Also requires a valid drivers' license and the ability to work shifts. Safeguards & Security Division.

NS2678. PHYSICS ASSOCIATE IV (P-1) (2 positions) - Requires a BS in physics; and excellent written and oral communication skills. Background experience in



Send a Love Note to Your Valentine

Is there a special message you'd like to send to your valentine? Are you looking for a valentine? You can have your Valentine's Day message printed in The Bulletin on February 17.

Send your 15-to-20 word "love note" to The Bulletin, Bldg. 134, by Friday, February 10. If you use paper, use a Sales & Notices Bulletin classified ad form, but mark it "Valentine's Day." If you use the forms on the web, use the form for "Miscellaneous," and mark it "Valentine's Day" at the beginning of the message. Or, you may e-mail your message to bulletin@bnl.gov. You must include your name and life number and extension or home phone, but your name will not be printed unless it is clearly part of the message. Copy must be deemed tasteful. All "love notes" will be accepted at The Bulletin's discretion. Only one message per employee, please.



Blues Concert, 2/25

'The Gathering of the Slides IV'

"The Gathering of the Slides IV," a blues concert featuring the Kerry Kearney Band, the Kane Daily Band, and Dee Harris will be held on Saturday, February 25, at 7:30 p.m. in Berkner Hall. Sponsored by the BNL Music Club, the concert is open to the public. All visitors to the Lab age 16 and over must bring a photo ID.

Back for a fourth year at BNL, the Kerry Kearney Band

musicians bring down the house with their unique, high-energy sound.

Tickets cost \$15 each and may be bought from the BERA Store, from ticketweb.com, or at the door. Advance purchase is recommended because "The Gathering of the Slides" concerts have been sold out in the past. For more information about the concert, call Ext. 3846.

Defensive Driving, 3/4

The next six-hour defensive driving courses will be offered after tomorrow's class will be held on the Saturdays of March 4, April 8, and June 10, 9 a.m.-3:30 p.m., in Berkner Hall.

At \$30 per person, the course is open to BNL, BSA and DOE employees, BNL facility-users and other guests, and their families.

To register, send a check made out to: NYSTA, in care of Don Kelley, P.O. Box 185, Selden, NY 11784. (732-2498) Include your phone number and the class date on the check.



Kerry Kearney

Sports, Hobbies & Pets

BABY CHICKS - days old, for sale mid Feb., call to reserve. BNL pager 7242 or 849-4256.
SNOWBOARD BINDINGS - all-metal construction, will fit boot size from 10 to 12, overall good shape. \$25. Ext. 3319.

Audio, Video & Computers

LAPTOP - Toshiba Satellite. A45-S121, 2.8GHz, 256MB RAM, 40GB, 15", cd/dvd-rom, wireless card, case. \$500. Anne, Ext. 2209.
TV - Sony, 53-inch, Model KP53S25, 20 w audio power, 2-tuner. \$800. 289-1824.

Tools, House & Garden

SAW - router, Rockwell Spellman, model 537b, w/table. \$100. 289-1824.
SHED - Rubbermaid model 44008, approx. 14x11, you pick up. \$500. 289-1824.

Miscellaneous

AQUARIUM - 45 gal., incl. all related equip., custom built solid oak stand w/matching canopy, more. \$250. Bill, 886-1182.

ELECTRIC HEATER - Honeywell basebrd. heater, adjustable thermostat, 2 heating levels, 1000/1500W, 40" long, \$25. Ext. 3217.
FISH TANK - 75 gal., stand, hood, sand, all related equip., \$150. Steve, 265-4811.

MATTRESSES - unused, full size w/box spring, Stearns Foster Serta Supreme, \$50; 1 bunkbed, \$35. Mary, 928-5185.

SCOOTER - pwr., heavy duty, 300 lb cap., cane holder, built-in batt. charger, needs batt., like new, \$1,200. Kathy, 981-5993.

SHED - 2 yrs. old, damaged in car accident, free, you pick up. Joann, Ext. 5209.

TICKETS - 2 for Queen & Paul Rodgers at Nassau Coliseum, Sun., 3/12, 8 p.m. sec 218, row F, seats 9 & 10. \$291. Beth, Ext. 4144.

TRACTOR - John Deere, 1941, Model A, restored to like new cond., converted to 12v, new batt. \$4,500. Bill, 886-1182.

Happenings

SBU UNIVERSITY CAFE - 2/12, 2 p.m. Lisa Moscattello, Fred Lieder concert, James O'Malley opens. \$20. (\$15 student). 632-6027. gpalala@notes.cc.sunysb.edu

GOSPEL CONCERT - Tomorrow, Sat. Feb. 4, 7 p.m., Vail-Leavitt Music Hall, Peconic Ave. R'head. DC Hatcher & Holy Family, Community Baptist Church, Medford; African Drummers; Shepherd's Singers; Tkts. \$10; call 722-4469.

Wanted

SCIENCE FAIR PROJECTS - loan or gift of past science fair projects to use for library help days. Susan, Ext. 5461.

Lost & Found

LOST: GLASSES - bright colored case w/ prescription. glasses & clip-ons. Poss. lost by Bldg. 30, noonish, Wed., 1/25. Sharon, Ext. 2493.

Car Pools

BAYPORT - driver seeking carpool in the Bayport area. Richard, Ext. 3239.

Free

WEIGHT BENCH - weights, you pick up in Bellport. Donald, 286-1396.

WEIGHT BENCH - model 2500DL system. Joe, 751-2117.

OnTheWeb, the Bulletin is located at www.bnl.gov/bnlweb/pubaf/bulletin.html. A calendar listing scientific and technical seminars and lectures is found at www.bnl.gov/bnlweb/pubaf/calendar.html.

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