

## BNL Wins R&D 100 Award for X-ray Focusing Device

A BNL team led by National Synchrotron Light Source (NSLS) Department physicist Zhong Zhong has won a 2006 R&D 100 award for developing the first device able to focus a large spread of high-energy x-rays. The device, called a Sagittal Focusing Laue Monochromator, could be used in about 100 beamline facilities around the world to conduct scientific research in physics, biology, nanotechnology, and numerous other fields. Funding to support the award-winning device came from the Office of Basic Energy Sciences within DOE's Office of Science.

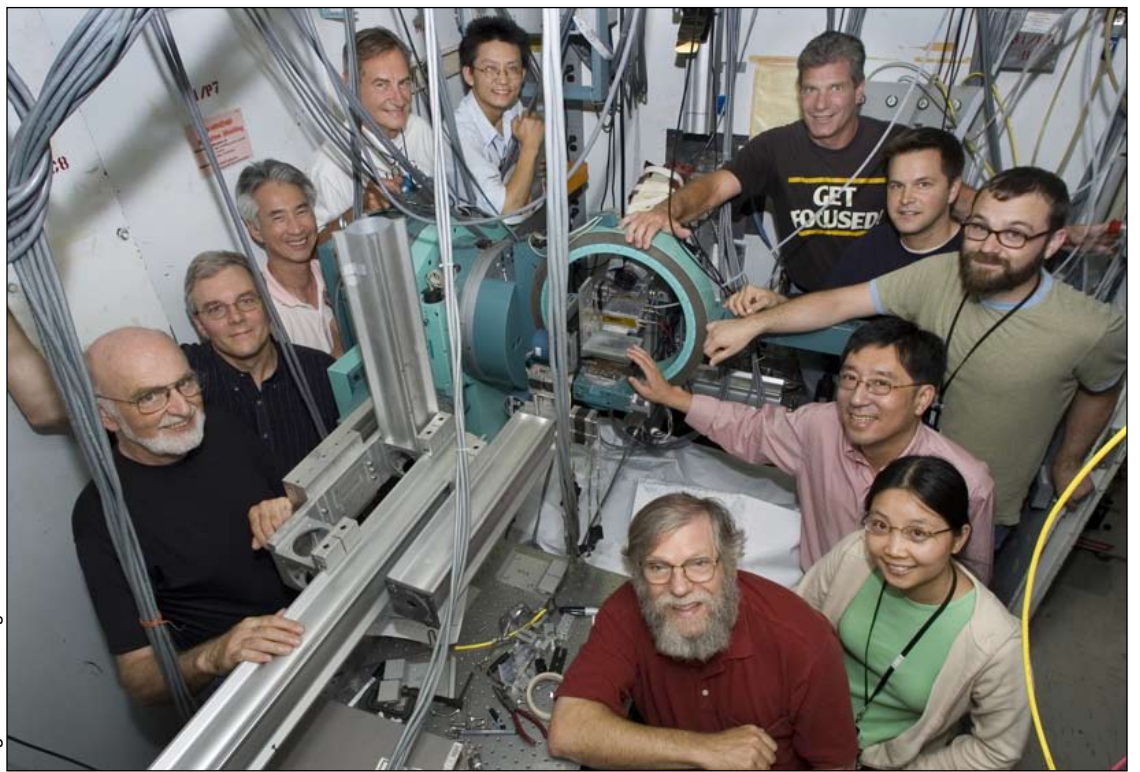
R&D 100 Awards are given annually by *R&D Magazine* to the top 100 technological achievements of the year. Typically, these are innovations that transform basic science into useful products. The awards will be presented in Chicago on October 19.

Helping Zhong to develop the focusing device were: scientists NSLS Chair Chi-Chang Kao;

Peter Siddons, NSLS; Hui Zhong, NSLS; Jonathan Hanson, Chemistry Department; Steven Hulbert, NSLS; and Dean Connor and Christopher Parham NSLS technical collaborators; NSLS technicians Anthony Lenhard, Shu Cheung, and Richard Greene; and former BNL scientist Jerome Hastings, who is now working at the Stanford Linear Accelerator Center.

"I congratulate the researchers who have won this award, which highlights the power and promise of DOE's investments in science and technology," Secretary of Energy Samuel W. Bodman said about the BNL team. "Through the efforts of dedicated and innovative scientists and engineers at our national laboratories, DOE is helping to enhance our nation's energy, economic and national security."

As x-rays are produced at light sources, they spread out, or diverge. X-rays produced by a beamline with a 5 milliradian  
*(continued on page 2)*



In front of the Sagittal Focusing Laue Monochromator, the first device to be able to focus a large spread of high-energy x-rays, are the R&D 100 Award-winning team led by the National Synchrotron Light Source Department's Zhong Zhong. They are: (clockwise, from left) Jonathan Hanson, Steven Hulbert, Shu Cheung, Anthony Lenhard, Zhong Zhong, Richard Greene, Christopher Parham, Dean Connor, Chi-Chang Kao, Hui Zhong, and Peter Siddons. Not pictured: Jerome Hastings.

## Scientists Take 'Snapshots' Of Enzyme Action

**Results advance understanding of how toxic compounds are eliminated from the body**



Subramanyam Swaminathan



Subramaniam Eswaramoorthy

Scientists at BNL, the New York Structural Biology Center, and SGX Pharmaceuticals, Inc., have determined the atomic crystal structure and functional mechanism of an enzyme essential for eliminating unwanted, non-nutritional compounds such as drugs, industrial chemicals, and toxic compounds from the body. The detailed mechanism of action will help scientists understand how these compounds are eliminated and what goes wrong in cases where normal metabolism fails.

Published in the June 27, 2006, *Proceedings of the National Academy of Sciences*, this research, which was funded by the National Institutes of Health, was conducted at the National Synchrotron Light Source, supported by the Office of Basic Energy Sciences within DOE's Office of Science.

According to the Biology Department's Subramaniam Eswaramoorthy, the lead author, and Subramanyam Swaminathan, who led the research, most non-nutritional, foreign substances such as drugs and industrial chemicals are insoluble in water. The body uses two main groups of enzymes — flavin-containing monooxygenases (FMOs) and cytochrome P450s — to convert these compounds to soluble

forms that can be easily excreted.

"For FMOs, the end result — that an oxygen atom gets added to make these compounds soluble — is simple," Swaminathan says, "but the reactions require additional participants, or cofactors."

In order to understand the molecular mechanism, the scientists used high-intensity x-ray beams at the National Synchrotron Light Source (NSLS) to identify the positions of individual atoms and produce crystal structures of the enzyme, the enzyme plus its cofactor, and the enzyme plus the cofactor plus the compound to be oxidized (the substrate).

"These crystal structures give step-by-step snapshots of different stages of the catalytic action," Swaminathan explains. "Our finding shows that the substrate and cofactor are binding to the enzyme alternately, not together as was previously believed."

"With this back-and-forth, alternating binding, the process repeats over and over for continuous turnover of the product," Swaminathan explains.

The details of this process may help scientists understand what happens in cases where compounds are not properly metabolized, and possibly develop corrective measures.

*(continued on page 2)*

## International Symposium at BNL Honors the Late Eugene Cronkite

To honor the life and career of the late Eugene (Gene) P. Cronkite, MD, Senior Scientist Emeritus, and a former Medical Department Chair, an international symposium entitled "Pathophysiology and Molecular Biology of Hematopoiesis, Malignancy and Radiation Response," was held on May 10-12 at BNL.

The six subjects of discussion at the symposium: leukemogenesis, management of hematologic disorders, regulation of hematopoiesis, low-dose radiation effects, accidental exposure to ionizing radiation, and stem cell and cytokine response to radiation, were selected from Cronkite's many seminal contributions as being of continuing importance to present day medical research and clinical treatment. A special tribute is due for the discovery of bone marrow (hematopoietic) stem cells' circulating in the peripheral blood.

Cronkite came to BNL in 1954, having served on active duty from 1942 in the U.S. Navy Medical Corp, which he had joined after completing his medical education. While at the Lab, he remained in the active Naval Reserve, retiring as a Rear Admiral. In the Medical Department, he played a crucial role in developing major research programs in hematology and radiation biology. He remained active at BNL as a working research collaborator until his death on June 23, 2001.

A key in organizing the symposium, Victor (Vic) Bond, honorary chair of the coordinating committee, came to the Lab as an M.D. from the U.S. Navy as the same time as Cronkite. Bond chaired Medical 1962-67 and served as Associate Director 1967-84; he also returned to BNL as a research collaborator after retiring as a senior scientist in 1994 and worked closely with Cronkite for four more years. The Symposium was organized by Arland (Red) Carsten, Ludwig Feinendegen, and Walton Shreeve, all BNL retired staff members and now research collaborators; Nicholas Dainiak from Bridgeport Hospital, Yale University Medical School who also presided over the scientific program committee; Theodor Fliedner from the University of

Ulm, Germany; Toru Inoue, Biological Safety Research Center, National Institute of Health, Japan; Richard Shadduck of the Western Pennsylvania Cancer Institute; and Kanti Rai, Long Island Jewish Medical Center and President of the American Society for Hematology, who served as committee chair.

After welcoming remarks from Fritz Henn, BNL Associate Director for Life Sciences, Rai gave an overview of  
*(cont. on page 2)*



**CALENDAR**  
OF LABORATORY EVENTS

- The BERA Sales Office is located in Berkner Hall and is open weekdays from 9 a.m. to 3 p.m. For more information on BERA events, contact Andrea Dehler, Ext. 3347, or 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](http://www.bnl.gov/esol/schedule.html) for schedule. Jen Lynch, Ext. 4894.

**Mondays: CIGNA Rep On Site**

10 a.m.-3 p.m. CIGNA's Janice Petgrave is in Bldg. 185, to assist CIGNA medical plan participants with claims issues. Call Linda Rundlett, Ext. 5126, for 30-min. appointment.

**Mondays: BNL Social & Cultural Club**

Noon-1 p.m., Brookhaven Center, South Room, free beginners dance lessons. Rudy Alforque, Ext. 4733, [alforque@bnl.gov](mailto:alforque@bnl.gov).

**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](mailto:rusek@bnl.gov).

**Tues., Thurs. & Fri: Ving Tsun Kung Fu**

Noon-1 p.m., Brookhaven Center, North Room. Taught by Master William Moy. Tuition. Scott Bradley, Ext. 5745 or [bradley@bnl.gov](mailto:bradley@bnl.gov).

**Tue., Thu. & Fri: Upton Nursery School**

On Summer Recess. Call Ext. 5090 for information on Sept. enrollment.

**Tuesdays: Welcome Coffee**

10 a.m.-noon, apartment area gazebo. 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/](http://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, apartment area gazebo. An infant/toddler drop-in event. Parents meet while children play. Fang Dong, 871-5362.

**Wednesdays: Market Day**

11:30 a.m.-1:30 p.m., Berkner Hall parking lot. Fresh vegetables, plants, arts & crafts, and more. Joanne Rula, Ext. 8481.

**Wednesdays: Weight Watchers**

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

**Wednesdays: Yoga**

Noon-1 p.m., B'haven Center. Free. Ila Campbell, Ext. 2206, [ila@bnl.gov](mailto:ila@bnl.gov).

**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**

Noon-1 p.m., Brookhaven Center, South Room, free beginners dance lessons. Rudy Alforque, Ext. 4733, [alforque@bnl.gov](mailto:alforque@bnl.gov).

**In Memoriam**

**Charles Staal**, who joined the then Proton Synchrotron Division as a technician B on April 16, 1956, and left the Alternating Gradient Synchrotron Department as a senior technical specialist on June 30, 1992, died on November 1, 2002, at age 75.

**Martin Kissen**, who joined BNL during 1947-48 as an operating engineer A, then became a stationary engineer, senior, in the Plant Engineering Division from January 30, 1980, until he retired on March 7, 1993, died on February 23, 2003, at age 78.

**William Jordan**, who arrived at BNL's Mechanical Engineering Department on October 31, 1960, as a designer, and retired from the National Synchrotron Light Source Department as a senior design engineer on July 6, 1992, died at age 72 on May 19, 2003.

**Alan Thorndyke**, who, as a scientist, joined the Physics Department on July 8, 1947, taking life number 868, and retired on May 31, 1981, as a senior physicist with tenure, died on February 16, 2006. He was 87.

**Patricia Lebitski**, who joined the Physics Department as a secretary on December 17, 1968, and retired as a senior executive secretary on May 31, 1989, died on February 25, 2006. She was 79.

**Alfred Eamotte**, who came to the Lab's Central Shops Division as a machinist on November 5, 1962, and retired as a tool & instrument maker on May 10, 1974, died at 92 on March 2, 2006.

**Roger Adams**, who joined the then Proton Synchrotron Division as an associate electrical engineer on June 10, 1953, and retired as an Alternating Gradient Synchrotron Department electrical engineer on November 30, 1981, died on March 7, 2006, at 88.

**Anthony Russo**, who took a position as a rigger in the Plant Engineering Division on July 12, 1954, and retired on September 29, 1975, died at the age of 91 on March 18, 2006.

**Symposium Honors Gene Cronkite**

(cont'd)



Roger Stoutenburgh D1380506

Cronkite's contributions, and then chaired the Leukemogenesis session. Other sessions were chaired by Kenneth Anderson, Dana-Farber Cancer Institute; and by Dainiak, Feinendegen, Fliedner, Inoue, Shaddock, and Shreeve. Each of the six sessions presented four to five lectures and ended with an extensive discussion of the session topic. About 70 individuals attended the science sessions, which took account of present day cutting edge research in each field largely based on Cronkite's fundamental work. The symposium proceedings will be published as a special issue of *Experimental Hematology*, the official journal of the Society for Experimental Hematology, one of the societies of which Cronkite had been president.

At the festive dinner party, Rai introduced Carsten to talk on "Gene Cronkite: The Man and His Science." Rai then guided the vignettes provided by friends and colleagues giving in all a vivid account of Cronkite's life and work.

As Carsten discussed among his remarks, more than 500 publications and many national and international awards document Cronkite's research achievements. Cronkite was a major force in establishing the BNL Medical Department as a world-class center of advanced biomedical research feeding into clinical medicine. Recognized for his contributions to the fundamental understanding of the biology of leukemia and its related diseases, he was elected to the National Academy of Sciences in 1981 and honored in 1989 with the Robert de Villiers Award by the Leukemia Society of America.

Cronkite also drew many young scientists from all continents to work at BNL, and many of those he mentored not only established outstanding research programs on their return to their own countries, but also played important roles in educating a successor generation of first class researchers and clinicians in the "Cronkite" fashion.

— Liz Seubert

**BNL Wins R&D 100 Award**

(cont'd)

divergence, for example, will spread to 5 millimeters (mm) by the time they are 1 meter away from their source, and to 50 mm when 10 meters away. This is a problem for light source scientists, who want the highest possible x-ray flux on a small spot, which requires a well-focused beam.

Previous x-ray focusing technologies relied on mirror-like surface reflections, but this required large surfaces and caused technical difficulties in error control and limitations on the energy of the x-rays that could be focused. The device developed by Zhong's team, however, does not rely on a crystal surface to reflect the beam. Instead, it sends the x-rays directly through a set of silicon Laue crystals, named for German physicist Max von Laue. The result is a 1,000-fold increase in beam intensity, as well as high-energy resolution, reduced costs and ease of operation, Zhong said.

The device consists of two thin bent crystals mounted on a slide, with the first one diffracting upward and the second one diffracting downward to focus the beam horizontally. It is the first device that can focus a large divergence of high-energy x-rays, handling a beamline with a divergence as great as 20 milliradian.

"This is a very elegant solution to an existing problem," said Zhong, who started working on the project in 2001. The first version of the device is installed at the NSLS beamline X17B1 and is gaining interest from members of other BNL beamlines and scientists at light sources around the world.

— Kendra Snyder

**Scientists Take 'Snapshots'**

(cont'd)

One example is a condition called trimethylaminuria, also known as "fish odor syndrome," which results from defective FMOs. Affected individuals are unable to oxygenate trimethylamine, a byproduct of protein digestion released by bacteria living in the gut. People with the disorder release trimethylamine through breath, sweat, and urine, producing a fish-like odor that can be embarrassing and result in psychological effects such

as withdrawal and depression.

People with defective FMOs might also suffer additional side effects from drugs, industrial compounds, or other chemicals.

"Our next goal is to identify the substrate specificity of this enzyme by biochemical and structural studies," comments Swaminathan.

— Karen McNulty Walsh  
For more details on this research, see [www.bnl.gov/bnlweb/pubaf/pr/PR\\_display.asp?prID=06-76](http://www.bnl.gov/bnlweb/pubaf/pr/PR_display.asp?prID=06-76).

**Fidelity Investment Counseling, 8/31**

A Fidelity Investment representative will be available on Thursday, August 31, to hold sessions at BNL with individual employees interested in learning more about their retirement-savings and investment options. Schedule one of the 30-minute appointments by calling (800) 642-7131.

**Arrivals & Departures**

- Arrivals —
- Masahiro Okamura ..... C-A
- Departures —
- Michael Appel ..... NSLS
- Jo-Ann Lawton ..... Fiscal

**Meet bnl-announce**

**Get e-mail about BNL news, lectures, concerts, etc.**

Would you like to receive BNL press releases about science and major administrative news, notice of major lectures, concerts, and other Lab events — e-mailed to you? BNL's Media & Communications Office maintains an e-mail news service called bnl-announce.

To subscribe to this news service, go to <http://lists.bnl.gov/mailman/listinfo/bnl-announce-l> and follow the on-screen instructions.

**Friday Fun at the Science Learning Center**

The BNL community and their families are invited to the Science Learning Center (SLC), Bldg. 935, Railroad Ave. and E. Fifth St., today, Friday, August 11 and Friday, August 25, from noon to 1:30 p.m. to explore the many interactive exhibits and to visit the 3D visualization theater. See what makes the SLC such a popular visit for more than 25,000 elementary school children each year. The SLC also offers a limited selection of science-related toys for sale. An adult must accompany children under 14 years old.

**BNL Radio Communications Announces New, Easier, Beeper System**

Have you ever paged someone at BNL using Ext. 3456 and wondered whether you should key in a callback number or speak your message?

No more!

Soon, when you call Ext. 3456, a series of voice prompts will guide you through the paging process.

The changeover is scheduled for next week, the exact date and time to be announced. For a short time during the changeover, paging operations will be interrupted. Below is a brief summary of a call progress.

**Using the new BNL Voice/Numeric Paging System**

- 1) User dials 3456 or 344-3456 to access the paging terminal
  - 2) System answers with "At the tone enter the pager number" voice prompt
  - 3) After the single tone, user enters the 4-digit pager number.
  - 4) Depending on the pager type being called, the system presents one of the following prompts.  
If the pager is numeric:  
"At the tone please key in your number"  
If the pager is voice:  
"At the tone please speak your message"
  - 5) Depending on the prompt, the caller either keys in the callback number or speaks the message to be delivered.
  - 6) System accepts the message and acknowledges with a "thank you," and the caller hangs up.
- Direct your questions and/or comments to [radiosupport@bnl.gov](mailto:radiosupport@bnl.gov) or Ext. 4243.

**CIGNA Representative On Site, Mondays**

Each Monday, Janice Petgrave of CIGNA Healthcare will be available in Human Resources, Bldg. 185, to assist CIGNA medical plan participants with claims issues, 10 a.m.-3 p.m. Be sure to bring all pertinent documentation. For a 30-minute appointment, call Linda Rundlett, Ext. 5126.

## WWII Tuskegee Airman Lee Hayes Draws Profound Audience Response

Talk given August 3 available on WBNL



Joseph Rubino D010806

Standing behind Tuskegee Airman Lee Hayes are: (from left) Wayne Boyd, Plant Engineering Division; Joe Vignola, Radiological Control Division; and Rosa Palmore, BNL Diversity Office.

At noon on August 3, a packed audience in Berkner Hall plunged into some of the gripping experiences recalled by World War II Tuskegee Airman Lee Hayes as he talked about his achievements and challenges during the war. Hayes, a resident of Amagansett who worked at BNL from 1958 to 1966, served in an all-black bomber squadron at Tuskegee Army Air Field in Alabama. He was among 994 precedent-breaking black soldiers at Tuskegee who passed rigorous tests between 1942 and 1946 to become pilots in the then-segregated armed forces.

The idea for the talk came from a friend of Hayes, Wayne Boyd, Plant Engineering Division, who suggested to Joe Vignola of the Radiological Control Division that many BNLers would appreciate learning living history from Hayes. Vignola agreed, and set about organizing the talk, joined in sponsorship by BERA and the Diversity Office. Hayes' laconic tales, all the more vivid for his understated and often humorous approach, drew an overwhelming response from his listeners.

### See It on WBNL!

A video recording of the Lee Hayes talk can be seen at [www.bnl.gov/video](http://www.bnl.gov/video). Many such recordings are available at WBNL, which provides streaming video of selected Lab events, conferences, etc.

### Defensive Driving Tomorrow, 8/12

Seats remain for the six-hour Defensive Driving (Point & Insurance Reduction) course to be held tomorrow, Saturday, August 12, in Room B, Berkner Hall, 9 a.m.- 3:30 p.m. The course is open to BNL, BSA, and DOE employees, facility-users, and their families, at \$30 per person. To register, call Edward Sierra at 821-1013 and leave a voicemail with your telephone number. For further information, call Sarah Wiley, Ext. 4207.

### On-Site College Course: Intro to Psychology

A three-credit college course, "PC11 - Introduction to Psychology" will be given on site for fall 2006. It will satisfy requirements for most Suffolk County Community College degrees. No prerequisites are required. BNL offers employees tuition advances or reimbursements at 75 percent for undergraduate courses. For information, contact Starr Munson, [munson@bnl.gov](mailto:munson@bnl.gov) or Ext. 7631.

### Back to School Supply Drive

BNL is helping needy children of Brookhaven Town by sponsoring a "Back to School Supply Drive." Contribute new school supplies or a monetary donation to the Quality of Life/BERA/Recreation Office, Bldg. 179B, Ext. 5090.

### Hispanic Heritage Club Salsa Picnic, 8/19

The BERA Hispanic Heritage Club invites all Lab employees, retirees, visitors, and their family and friends to attend its 4th annual "Salsa Picnic" on Saturday, August 19, 11:30 a.m.-5:30 p.m. at the BNL gazebo picnic grounds. The event is free; hot dogs will be provided — and DJ Alex will play popular and Latin music to dance the afternoon away. A 50/50 raffle will also be held.

Bring your own picnic, beverage, chairs and umbrella — and a favorite dish to share. Grills will be available. Bring your sports equipment. For children: musical chairs, a dance contest, face painting and prizes are planned. All who are 16 or over must bring a photo I.D. For more information, contact Carmen Narvaez, Ext. 3254 or [narvaez@bnl.gov](mailto:narvaez@bnl.gov), or Yvette Malavet-Blum, Ext. 5591 or [Malavet@bnl.gov](mailto:Malavet@bnl.gov).

### One-on-One Retirement Counseling

A TIAA-CREF consultant will visit BNL on Wednesday and Thursday, August 16 and 17, to answer employees' questions about financial matters. The consultant will help BNLers to understand the importance of protecting assets against inflation, find the right allocation mix, learn about TIAA-CREF retirement income flexibility, and compare lifetime income vs. cash withdrawal options.

For an appointment, call Arlene Lyons, (866) 842-2053, Ext. 4629. (Not the on-site Ext. 4629.)

### Vehicle Auction Under Way

The Government Services Administration will offer 19 motor vehicles, located at Warehouse T-87, for public auction from Monday through Monday, August 7 through 14, during which time anyone may bid on the vehicles. Photos of each vehicle, with pertinent information, are available at [www.gsauctions.gov](http://www.gsauctions.gov). To inspect the vehicles, call Jerry Quigley, Ext. 4527. For more information, contact Rosalie Alongi, Ext. 5138, [ralongi@bnl.gov](mailto:ralongi@bnl.gov).

## SBU's Lima Wins Scharff-Goldhaber Prize



Roger Stoutenburgh D5310606

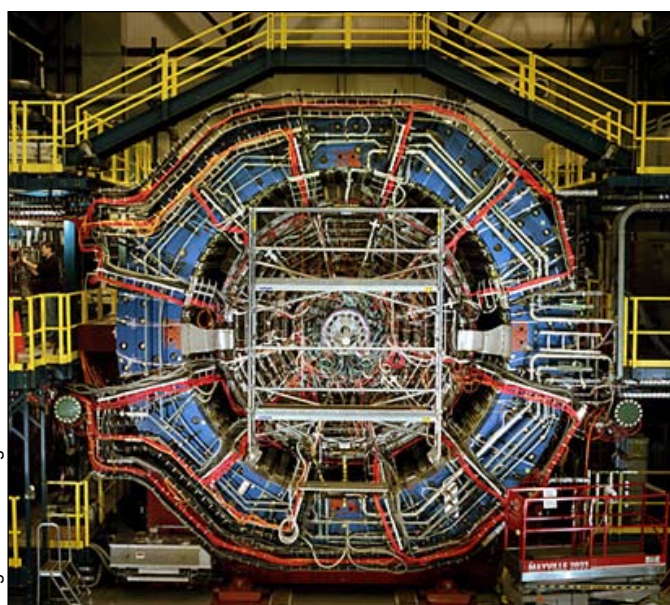
With Enju Lima (center, front) are (from left) Maurice Goldhaber, Scientist Emeritus at Brookhaven Lab and the widower of Gertrude-Scharff Goldhaber; Loralie Smart, BWIS Coordinator; Chris Jacobsen, an SBU physics professor who, along with Lima's SBU thesis advisor Janos Kirz (unavailable for the photo), nominated her for the Goldhaber Award; and Vinita Ghosh, BWIS Scholarship Committee.

Enju Lima, a graduate student at Stony Brook University (SBU), has been awarded the 2006 Gertrude Scharff-Goldhaber Prize, consisting of \$1,000. Administered by Brookhaven Women in Science (BWIS), the prize was established to recognize substantial promise and accomplishment by women graduate students in physics who are enrolled at SBU or who are performing their thesis research at BNL. Established in 1992, the prize honors the outstanding contributions of the late nuclear physicist Gertrude Scharff-Goldhaber, who, in 1950, became the first woman Ph.D. physicist appointed to the Brookhaven staff. She became a founding member of BWIS.

Lima earned a B.S. in nursing in Korea, and she worked in both Korea and at Mt. Sinai Hospital in New York as a nurse before she returned to school, eventually earning a B.S. in physics from Hunter College in 1999. She then pursued her studies at SBU, where she expects to earn her Ph.D. in physics this summer. She plans to continue her research at the postdoctoral level at the European Synchrotron Radiation Facility in Grenoble, France.

Lima did her thesis research at BNL's National Synchrotron Light Source and Lawrence Berkeley National Laboratory's Advanced Light Source, both DOE facilities, where she used powerful x-rays to view the structure of yeast cells. The goal of her collaborative research project is to improve a technique using an x-ray microscope that will make it capable of viewing biological cells in 3-D at a resolution that would provide an unprecedented level of detail about a biological cell's structure. At the award ceremony, Lima gave a talk on her research, titled, "X-ray Diffraction Microscopy of Biological Samples." — Diane Greenberg

## Employee Lunchtime Tour, 8/18 See BNL's STAR Detector



Roger Stoutenburgh CN3-22-01

On Friday, August 18, take the employee lunchtime tour to see STAR, one of the huge detectors at the Relativistic Heavy Ion Collider. The group will explore "inner space" at STAR with Bill Christie of the STAR experiment and hear about its exciting discoveries regarding the most basic building blocks of today's universe. Meet the group at noon in the upper lobby of Berkner Hall for transportation to STAR; you will be returned to Berkner by 1 p.m.

## Attention Parents of 3- and 4-Year Olds: On-Site Nursery School Enrollment Underway

Enroll your child now in the Upton Nursery School, a not-for-profit, cooperative pre-school that meets at the Recreation Building in the apartment area and provides a warm, caring, and stimulating environment for 3- and 4-year-old children. The school offers certified and caring teachers, social and language development, academic readiness for kindergarten, and a multicultural student body. Classes are forming now for the fall 2006-2007 school year.

To register your child or for more information, contact Katalin Petreczky, 821-4131, [julika@optonline.net](mailto:julika@optonline.net), or visit the school's website at [www.bnl.gov/nurseryschool](http://www.bnl.gov/nurseryschool).

## CALENDAR

### — THIS WEEKEND —

Today, Friday, 8/11

#### \*Science Learning Center Open

Noon-1:30 p.m. Explore interactive exhibits at BNL's Science Learning Center, Bldg. 935. Children under 14 must be accompanied by an adult.

### — WEEK OF 8/14 —

Wednesday, 8/16

#### Talk on Estate Planning

Noon-1 p.m. Berkner Hall, Room B. Nancy Burner to give Elder Law lecture on "Estate Planning With Retirement Funds: What You Need to Know." All are welcome. Contact Michael Thorn, Ext. 8612 or [mthorn@bnl.gov](mailto:mthorn@bnl.gov).

### — WEEK OF 8/21 —

Friday, 8/25

#### Science Learning Center Open

Noon-1:30 p.m. Explore interactive exhibits at BNL's Science Learning Center, Bldg. 935. Children under 14 must be accompanied by an adult.

### — WEEK OF 8/28 —

Monday, 8/28

#### IBEW Meeting

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

### — WEEK OF 9/4 —

Monday, 9/4

#### Labor Day Holiday. Lab Closed.

No Bulletin this week.

Tuesday, 9/5

#### Coach Trip to U.S. Tennis Open

8:30 a.m. Leave BNL for the National Tennis Center. \$66 covers coach fare, \$46 ticket for day session. Buy tickets at BERA Store, Berkner Hall.

Wednesday, 9/6

#### BSA Noon Recital

Noon. Berkner Hall. The Synergy Brass Ensemble will perform. All are welcome to this free concert, sponsored by BSA. Visitors to the Lab of 16 and over must carry a photo ID.

Saturday, 9/9

#### West Point Army Football Trip

BERA trip. \$25 includes coach and ticket to game vs. Kent State. Coach leaves BNL at 9 a.m., returns after the game. Buy tickets at the BERA Store.

### — WEEK OF 9/11 —

Monday, 9/11

#### Pegram Lecture - First of Two

4 p.m. Berkner Hall. Neal Lane of Rice University will give the first of two Pegram Lectures, on "Confessions of a President's Science Advisor." All are welcome to attend this free lecture, which is sponsored by BSA and open to the public. Visitors of 16 and over must carry a photo ID.

Tuesday, 9/12

#### Pegram Lecture - Second of Two

4 p.m. Berkner Hall. Neal Lane of Rice University will give the second of two Pegram Lectures, on "The End of an Era — Science in a 'Flat World.'" All are welcome to attend this free lecture, which is sponsored by BSA and open to the public. Visitors of 16 and over must carry a photo ID.

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](mailto:bulletin@bnl.gov). Write "Bulletin Calendar" in the subject line.

