

Pushing the Boundaries Of High-Temperature Superconductors

A collaboration led by scientists at BNL has revealed a new mechanism that explains why adding calcium to a high-temperature superconductor increases its current-carrying capacity. The findings refute the current explanation and open the door for similar additives with potentially better current-boosting abilities. The study, which was supported by the Office of Basic Energy Sciences within DOE's Office of Science, is published in the May 26, 2005, edition of *Nature*.

In theory, high-temperature superconductors conduct electricity with no resistance. But the most practical, inexpensive high-temperature superconducting materials — those suitable for applications such as electronic devices and power lines — are made of many tiny crystalline grains. The boundaries between grains act like barriers to electric charge carriers, impeding the flow of current.

This is the case for the superconducting material in this study, known as YBCO for its constituent elements: yttrium, barium, copper, and oxygen.

"At YBCO grain boundaries, calcium atoms replace some of the barium and copper atoms," said the paper's lead author, Robert Klie of BNL's Center for Functional Nanomaterials (CFN). "Where the atoms are tightly packed, a calcium atom replaces a larger barium atom, relieving the strain. In loosely packed areas, the calcium replaces a smaller copper atom, which relaxes strained areas that are nearby."

The substitutions

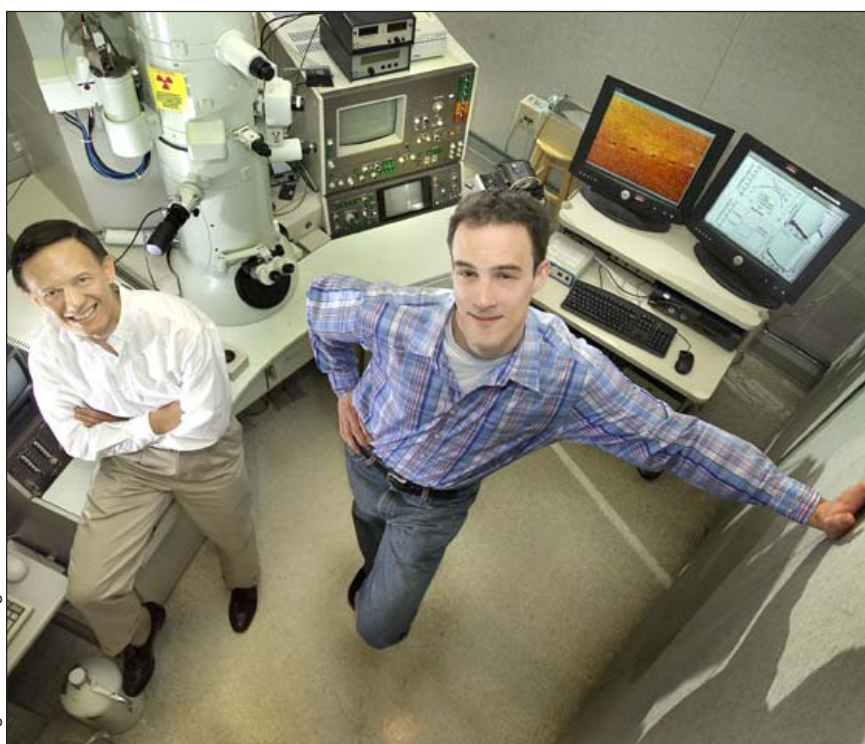
regulate the atomic structure at the boundaries, providing additional "pathways" for electric charge carriers to pass from grain to grain.

"This finding is surprising because we thought only calcium could improve the grain-boundary conductivity of YBCO, but our discovery means that similarly sized elements could be equally or more effective," said Klie.

Klie and CFN's Yimei Zhu, one of the paper's co-authors, made the discovery using the scanning transmission electron microscope at Oak Ridge National Laboratory.

As part of this ongoing collaborative research, the YBCO sample was fabricated at the University of Göttingen in Germany and its electronic properties were previously measured at Brookhaven by Zhu's group. The collaboration also includes researchers from Vanderbilt University, the University of California at Davis, and The University of Tokyo.

— Karen McNulty Walsh



Yimei Zhu (left) and Robert Klie

For the full press release and related links on this research, see Newsroom Archives on the BNL Homepage, at www.bnl.gov/bnlweb/pubaf/pr/PR_display.asp?prID=05-60.

Future Space Scientists in Training at BNL's NSRL

How does deep-space radiation affect the brain? The heart? What is the danger of developing cancer during long space voyages — and how can we best shield against it?

These and other questions about health and space travel were examined by a group of 15 graduate students, post-doctoral fellows and working scientists participating in the National Aeronautics & Space Administration (NASA) Summer Student Program, which was held

earlier in June for its second year at BNL. Sponsored by NASA, and organized and managed by BNL, Loma Linda University (LLU) Medical Center, and Universities Space Research Association, a consortium of universities, research organizations, and governmental groups involved in space research, the program's goal is to provide a "pipeline" of researchers for the nascent field of space radiobiology.

"We need a better understanding of the effects of ionizing radiation found in long-distance and long-term space flights, and how we can best shield against it," explained Marcelo Vazquez, BNL Medical Department, who co-directed the program with Gregory Nelson, LLU, and is also the National Space Biomedical Research Institute/NASA Space Radiation liaison. "There is a strong need for scientists dedicated exclusively to this field who will ask the best questions and seek good answers."

The three-week residential program was held at BNL's NASA Space Radiation Laboratory (NSRL) and Medical Department. NSRL is a unique scientific facility that simulates the harsh radiation environment of outer space.

For more details on the program and related links, see www.bnl.gov/bnlweb/pubaf/pr/PR_display.asp?prID=05-63.



Daniela Trani, Temple University, a student in BNL's NASA Space Radiation Summer School

DOE's Office of Science Honors BNL Cites 2004 Pollution Prevention Workshop

DOE's Office of Science recently honored BNL for pollution prevention and environmental stewardship in 2004. During an April meeting with Office of Science Director Raymond Orbach, Lab Director Praveen Chaudhari accepted a "Noteworthy Practices" award for BNL's Fleet Managers Pollution Prevention Workshop, held in May 2004.

The one-day, free workshop was hosted by BNL and its Community Advisory Council (CAC) — a group of about 30 member organizations representing business, civic, education, employee, community, and environment and health. At the workshop, local businesses and government agencies learned how BNL successfully uses technologies such as alternative-fuel vehicles, vegetable-based hydraulic fluids, and re-refined motor oil to economize and be earth-friendly in managing large numbers of vehicles.

"I was very pleased that the Office of Science recognized Brookhaven Lab for pollution prevention and environmental stewardship," said Chaudhari. "This award was special because it recognized the teamwork between the CAC and BNL, and highlights BNL's value as a resource to the local community."

A top priority for our employees is to keep Brookhaven's science and operations at the forefront while minimizing the impact on the environment. We encourage this not only at the management level, for example, by observing international standards such as ISO 14001, but also by annual awards recognizing employees for their special efforts. As a result, the standards of pollution prevention and environmental stewardship at BNL are extremely high."

For a related story on Lab employee awards for outstanding contributions in this area, see page 2.

This award . . . highlights BNL's value as a resource to the local community . . .

Cosmic Ray-Induced Genetic Defects Unlikely to Affect Astronauts' Children



Richard Setlow, with one type of fish he uses in his research

Male astronauts exposed to cosmic rays in space are not likely to pass on possible mutations caused by the rays to their offspring, according to a study by a collaboration that includes Richard Setlow of BNL's Biology Department. The results are published in the April 26, 2005, issue of the *Proceedings of the National Academy of Sciences*.

"We concluded that one hazard to male astronauts as a result of exposure to cosmic rays — high-energy, heavy nuclei that zoom in from deep space — is probably temporary sterility, which would not significantly affect their future offspring," said Setlow.

To test how cosmic-ray exposure might affect the children of astronauts, Setlow and his collaborators used Medaka fish, which are small freshwater fish native to Japan, South Korea, and China. The group exposed male Medaka to one of two types of high-energy nuclei — iron and carbon — that simulate cosmic rays. The iron-nuclei exposures were performed at BNL's Alternating Gradient Synchrotron facility, and the carbon exposures were carried out at

the National Institute of Radiological Sciences in Chiba, Japan.

The group found that, in total, mutations resulting from exposure to iron and carbon nuclei occurred somewhat more frequently than mutations in fish exposed to gamma rays, which served as a control group. But within the total, dominant lethal mutations occurred far more frequently than color mutations. This indicates that sperm cells in male astronauts exposed to cosmic rays are more likely to die — causing temporary sterility — than undergo a non-lethal mutation that could pass on to children.

This research was supported by the National Aeronautics & Space Administration and the Ministry of Education, Culture, Sports, Science and Technology in Japan. The experiments were approved by BNL's Institutional Animal Care & Use Committee and The University of Tokyo Animal Bioscience Committee.

— Laura Mrgrdichian
For the full press release on this research, see Newsroom Archives on the BNL Homepage, at www.bnl.gov/bnlweb/pubaf/pr/PR_display.asp?prID=05-43.

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 Chris Carter, Ext. 2873.
- Additional information for Hospitality Committee events can be found at the Recreation Bldg. and at the laundry, both 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, and 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: BNL Gospel Choir

5:15-7 p.m. Berkner Hall. All faiths are welcome. www.bnl.gov/bera/activities/choir/.

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 Room. Adam Rusek, Ext. 5830 or rusek@bnl.gov.

Tuesdays: Welcome Coffee

10-11:30 a.m., Rec. Hall. First Tuesday of every month is special for Lab newcomers and leaving guests. Meet in the gazebo in the apartment area. Cindy Ottemann, 849-2646.

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/default.htm.

Tues., Wed. & Thurs: Rec Hall Activities

5:30-9:30 p.m. General activities, large-screen TV, ping pong, chess, games, and 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. Meet in the apartment area playgroup. Kati Petreczky, 821-4131.

Wednesdays: Weight Watchers

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

Wednesdays: Yoga

Noon-1 p.m., Brookhaven Center. Free. Ila Campbell, Ext. 2206, 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. at the 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.

— THIS WEEKEND —

Fri., 6/24

***2005 RHIC & AGS Users' Meeting**

See www.bnl.gov/rhic_ag/users_meeting/ for a list of workshops.

Saturday, 6/25

Hospitality Summer Fun Picnic

4:30 p.m. Gazebo in the apartment area. All are invited. The Hospitality Committee will provide a DJ, drinks, and plenty of watermelon. Participants should bring a salad, main dish, or desert to serve 6-8 people to share. Cindy Ottemann at cjottabb@optonline.net or 849-2646.

— WEEK OF 6/27 —

Monday, 6/27

All-Employee Meeting Rescheduled

BNL Director Praveen Chaudhari has rescheduled the meeting to 7/20/05.

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.

Tuesday, 6/28

Lunch Talk: Avoiding Falls

Noon-1 p.m. Berkner Hall, Room C. Safety at Home talk on avoiding falls. All are welcome.

Wednesday, 6/29

Noon Recital: Pianofest

Noon. Berkner Hall. Paul Schenly with soloists from the Pianofest workshop. All are welcome. Visitors to the Lab of 16 and over must carry a photo I.D.

Four BNLers Win Environmental Stewardship Awards

At the annual Earth Day Awards Ceremony held on April 22 by George Goode, Manager of the Environmental and Waste Management Division, Goode and Peter Bond, Interim Deputy Director for Science & Technology, presented four BNL employees with Environmental Stewardship Awards for demonstrating an outstanding effort in pollution prevention, waste minimization, or conservation. The four were: Mary Ann Corwin, National Synchrotron Light Source Department (NSLS); Michael Kindya, Plant Engineering Division (PE); Michael

Paquette, PE; and Joel Scott, Collider-Accelerator Department (C-AD) (see below). Also at the ceremony were students and art teachers from local elementary schools who participated in the Lab's "Your Environment" art contest. The children had created posters relating to the protection of Long Island's environment. The winners, who received awards presented by Jim Tarpinian, Assistant Laboratory Director for Environment, Safety, Health and Quality; and Goode, will see their posters reproduced in the Lab's next Site Environment Report.



Roger Stoutenburgh D4600405

George Goode (left) and Peter Bond (right) present the awards to (from left) Joel Scott, Mary Ann Corwin, Michael Paquette, and Michael Kindya.

(Below, back, from left) BNL's George Goode, Jim Tarpinian, and Peter Bond congratulate the winners in BNL's "Your Environment" art contest: (front, from left) Angelina Tice of Coram Elementary School, Julia Freed of Dayton Avenue Elementary School, Samantha Valentine of Ridge Elementary School, and Amber McIntyre of West Middle Island Elementary School.

Mary Anne Corwin

Mary Anne Corwin, who heads the User Administration Office at the National Synchrotron Light Source (NSLS), was awarded for leading the effort to create a virtually "paperless office." By using the Lab's web-based Guest Information System and the NSLS Proposal, Access, Safety and Scheduling (PASS) System, considerable resources were saved by reducing the use of paper copies, improving records retention methods, and recovering office space.

Michael Kindya

Michael Kindya of the Plant Engineering Division is in charge of receiving, transferring, and handling millions of gallons of fuel oil each year. He makes sure that all BNL procedures are followed and that all equipment is cleaned after each fuel-oil discharge. He is also responsible for the inspection of all berm areas in the fuel-oil tank farm. As noted by his peers, no one takes their environmental responsibility toward their duties more seriously.

Michael Paquette

Michael Paquette, Plant Engineering Division, leads a project to replace and upgrade BNL's emergency exit signs with light-diode-emitting (LED)-based signs, which are cost-effective and low maintenance. Since 1999, all of the 831 tritium-based signs, which were replaced as a pollution-prevention measure, have been shipped off site for recycling. The replacement of the rest of the signs, which are incandescent- and fluorescent-based, is ongoing.



Roger Stoutenburgh D4570405

Joel Scott

Joel Scott, Collider-Accelerator Department (C-AD), was selected for his wide variety of contributions in the environmental stewardship area. These include: setting up and coordinating the disposal of depleted uranium shield blocks and uranium calorimeters and also a way to dry radioactive resins to be used as waste containers instead of needing separate disposal, and working with C-AD engineers to return used gel-cell batteries to manufacturers.

In Memoriam

Readers are reminded that news of a retiree's death reaches BNL only when a family member or a friend sends the information to the Human Resources & Occupational Medicine Division or to the Bulletin, which can lead to a delay in the memorial announcement. Anyone who has such news is requested to contact Joyce Wund, jwund@bnl.gov or Ext. 7516. If an announcement of dates and times of services or memorial gatherings can be placed on the BNL homepage and/or published in the next Bulletin in time for friends and colleagues to attend, contact Ext. 2345 or bulletin@bnl.gov.

Ernest Kutschera, who joined the Plant Engineering Division on May 6, 1968, as a refrigerator and air-conditioning engineer, and left the Lab on May 30, 1981, died at age 83 on December 19, 2004.

Anthony Schiavone, who became an experimental machinist in the Central Shops Division on January 31, 1983, died on December 22, 2004. He was 49. He was named a tool & instrument maker in November 1983. He left the Lab on March 25, 1994.

George Westwater, who joined the Physics Department as a principal technician on September 26, 1983, died on February 12, 2005, at age 49. He moved to the Collider-Accelerator Department in 1998, leaving as a senior technical specialist on September 29, 2001.

Judson Davis, who joined the Department of Nuclear Energy on February 20, 1958, as a technician A, died on February 28, 2005, at age 82. He moved to the Department of Applied Science in 1969 and, as a senior technical associate, left the Lab on April 30, 1981.

Robert Horton, who joined the Alternating Gradient Synchrotron Department on December 28, 1964, as a junior technician, and retired on December 31, 1999, as a senior technical specialist, died on January 19, 2005, at the age of 66.

Elizabeth Holland, who arrived as a clerk A on September 6, 1960, in what became the Technical Information Division, was promoted to Assistant Librarian in 1963, and retired on October 31, 1977, died on April 5, 2005. She was 89.

'Getting Ready for Retirement' Talk, 7/7

On Thursday, July 7, from noon to 1 p.m. in Berkner Hall, a TIAA-CREF representative will present "Getting Ready for Retirement," a workshop sponsored by the Human Resources & Occupational Medicine Division.

The workshop will answer some important questions for developing a sound financial strategy for retirement. For example: How much income will you need? Where will it come from? Is there a shortfall? Do you need to save more? How will you pay yourself in retirement to meet your needs? What income options fit your situation the best?

The representative will also discuss:

- Systematic withdrawal and other income options
- Web tools and individual retirement-counseling options
- The importance of examining your asset allocation
- Taxation and avoiding penalties
- Lifetime income
- Techniques to keep your retirement strategy on target.

Check your mailbox for registration forms. Return completed forms to Joyce Wund, Bldg. 185, by Monday, June 27.

Your Doctor Ordered a Blood Test? Have Your Blood Drawn at the OMC

Active BNL employees can have most blood tests ordered by a personal physician drawn at the Occupational Medicine Clinic (OMC) by skilled certified phlebotomists. Having your blood drawn at the OMC saves time, eliminates a co-payment, and decreases the charge to the Lab's health plans.

To have your blood drawn, stop by the OMC on weekdays from 8:30 to 11:45 a.m. or from 1 to 3:30 p.m. Be sure to bring your doctor's prescription and your insurance card. For more information, call Ext. 3675.



Roger Stoulenburgh 05/22/05

A Special Souvenir of Lab History — Electrical Shop Members From 1980

Employees of the electrical shop are responsible for meeting all site and scientific support electrical requirements and needs. They also perform testing of fire alarms, routine maintenance and repairs. Like many groups, they have a long history, but, unlike many groups, they can easily look back on the people who built their history, thanks to an unusual tradition.

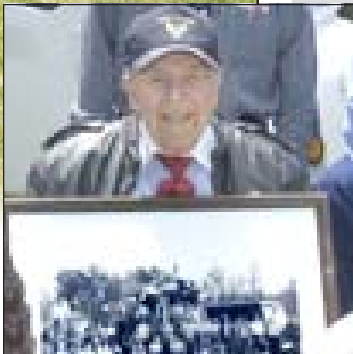
It all started on May 9, 1980, when a generation of the Lab's senior electricians was about to retire and George Scott, the supervisor at that time, together with the employees of the electrical shop, decided to document history by having a photo taken. At that moment, no-one realized that a new tradition had been born. However, five years later, again on May 9, the group had another photo taken.

"After that, we wanted to continue the series, and we had a photo taken every five years on May 9," said John Read, Electrical Supervisor. Another part of the tradition was the weather, he said, which is always fine enough to take the photo outside. This year, the 25th year of the tradition, was no exception. Employees from the electrical shop met outside Bldg. 452 for the photo. However, this time was very special because Joseph

Disparti (inset), who started at the Lab in 1955 and retired from the electrical shop in 1981, visited BNL and joined the group for the photo. Of note, seven employees who were in the original 1980 photo still work in the shop and are in this photo.

Now, all the photos are mounted on a wall in the electrical shop supervisor's office in Bldg. 452 where anyone can see them. "They remind us of Lab tradition and the many jobs we worked on together," says Peter Eterno, Acting Electrical General Supervisor. "We've seen many changes in staffing and technology over the past 25 years, but the electrical shop employees continue to be a hard-working, congenial group that performs quality work that is vital to science and the operations of the Laboratory."

— Jane Koropsak



Recital

Pianofest at BNL, 6/29

At noon Wednesday, June 29, all are invited to hear performances by outstanding young pianists brought to the Berkner Hall stage by Pianofest director, Paul Schenly.

Pianofest alumni from past BSA Noon Recitals have made their mark at the national and international level: Anthony Molinaro won the Walter F. Naumberg International Piano Competition; Orion Weiss was awarded the Irving S. Gilmore Young Artist Award and an Avery Fisher Career Grant; Van Cuong won the World International Piano Competition in Cincinnati; Konstantin Soukhovetski won the Hilton Head Competition and Gilles Vonsattel won first prize in the Naumberg International Piano Competition.

Noon recitals are free and open to the public. All visitors to the Lab age 16 and over must bring a photo ID.

PIANOFEST

IN THE HAMPTONS

Arrivals & Departures

Arrivals

Lim Seok Chang Env. Sci.

Departures

Larry Fulkerson Physics
Stephen Kahn Physics

Correction

In the Bulletin of June 17, 2005, Ronald Hauser of the Central Fabrication Services Division was inadvertently included among the Departures. The Bulletin regrets the error.

Farmer's Market Vendors Wanted

BERA is looking for new vendors to participate in this year's Farmer's Market at BNL. The market is held every Wednesday from mid-July to mid-November, 11:30 a.m.-1:30 p.m., on the lawn in front of Berkner Hall. Home-made pies, cakes, cookies, and breads; potted flowers, vegetables and herbs; as well as crafts are available. If you, or someone you know, would like to participate, call Joanne Rula, Ext. 8481.

Get Home Safety Tips

To highlight the Lab's special safety effort this National Safety Month, which has the theme of "Safety: Where we live, work, and play," all are invited to a series of talks to learn about and share tips on safety in the home. The talks will all be held from noon to 1 p.m., in Berkner Hall, Room C.

Tues., 6/28, Avoiding Falls
Wed., 6/29, ATVs, Scooters
Thur., 6/30, Grilling, Cooking

Mentor a Student

Members of the Lab scientific community are asked to consider becoming a mentor for a High School Science Research Student. The six-week high-school program, which begins on July 6, allows talented high school juniors and seniors to participate in a full-day research program at no cost to the sponsoring department.

For applications, contact Mel Morris, Ext. 5963 or mmorris@bnl.gov.

Weight Watchers

See Calendar for Wednesday, June 29. A new series starts at noon.

One-on-One Retirement Counseling

A TIAA-CREF consultant will visit BNL on Wednesday, July 6; Monday, July 11; Wednesday, July 13; Thursday, July 14; and Tuesday, July 26; to answer questions about financial matters, such as: understanding the importance of protecting assets against inflation, finding the right allocation mix, learning about TIAA-CREF retirement income flexibility, and comparing lifetime income vs. cash withdrawal options. To schedule an appointment, call Kathy Murphy, (866) 842-2053, Ext. 4625. (Not the on-site Ext. 4625.)

Service Anniversaries

The following employees celebrated service anniversaries during April 2005.

40 Years

Bonnie Hulse HR&OM

35 Years

Kenneth Wokosky C-A

30 Years

Joel Scott C-A

25 Years

John Bohenek NSLS

Pamela Manning C-A

20 Years

Edward Whittle Biology

Frances Hille Budget Office

Juan Aguilar Plant Eng.

Regis Saitta PPM

Vera Meier Staff Svcs.

Kelly Smith Director's Office

Joseph Gallitelli ESD

Anthony Shane PPM

Thomas Tallerico C-A

Lynanne Di Filippo C-A

Daniel Oldham Magnet Division

Eileen Morello NSLS

10 Years

Joseph Saetta C-A

George Meade C-A

Sonya Mc Bee EENS

Diana Hubert HR&OM

John Coccores Plant Eng.

Zhijian Yin NSLS

Daniel Ahearn Plant Eng.

Gary Miglionico C-A

Calendar

(continued)

Wednesday, 6/29 (cont.)

Lunch Talk: ATVs, Scooters, etc.

Noon-1 p.m. Berkner Hall, Room C. Safety at Home talk on ATVs, Scooters, etc. All are welcome.

Weight Watchers' Series Starts

Noon-1 p.m. Brookhaven Center. Register for the ten weekly Weight Watcher sessions that starts today. Cost is \$89. Michael Thorn, Ext. 8612.

Thursday, 6/30

Lunch Talk: Grilling, Cooking

Noon-1 p.m. Berkner Hall, Room C. Safety at Home talk on grilling and cooking. All are welcome.

— WEEK OF 7/4 —

Mon.-Tues., 7/4-5

Lab Closed for Independence Day

The Lab will be closed on July 4 and 5 to honor Independence Day. No Bulletin will be published on 7/8.

Tuesday, 7/5

BERA Sponsors Trip to Culinary Institute of America

8 a.m. Brookhaven Center. Luxury coach up Hudson Valley to Hyde Park. After great three-course luncheon in the Ristorante Caterina de' Medici, tour the Institute, then relax on return trip. \$42 includes all. Buy from BERA Store, 9 a.m.-3 p.m.

Sunday, 7/10

Start of Summer Sundays

10 a.m.-3 p.m. BNL invites all employees and the general public to visit the Lab on Summer Sundays. As well as the Whiz-Bang Science Show, artifacts from Camp Upton, and the Brain Teaser exhibit in Berkner Hall, visitors will be taken on tours of different facilities each week, starting on 7/10 with the National Weather Service. See a tornado simulator, Doppler radar, and computer tracking. A weather balloon will be launched at 3:30 p.m. All are welcome. Visitors age 16 and over must bring a photo ID.

— WEEK OF 7/11 —

Friday, 7/15

Great Adventure! Two for the Road!

7 a.m. - about 10 p.m. Meet at Brookhaven Center for coach to Great Adventure park. A second coach is now almost filled. \$30 per person includes bus fare. Buy tickets from BERA Store, Ext. 3347.

Sunday, 7/17

Summer Sunday: Life Sciences

10 a.m.-3 p.m. Berkner Hall. See also 7/10. Visit and learn about selected research in BNL's Life Science program: DNA sequencing, the Scanning Transmission Electron Microscope, determining a molecule's structure, and detecting heavy metals in soils.

— WEEK OF 7/18 —

Wednesday, 7/20

Noon Recital: Pianofest

Noon. Berkner Hall. Pianofest Director Paul Schenly returns with soloists from the Pianofest workshop in the Hamptons. All are welcome. Visitors to the Lab of 16 and over must carry a photo I.D.

All Employee Meeting, Rescheduled

1:30-3:30 p.m. Berkner Hall. Lab Director Praveen Chaudhari calls an all-employee meeting. All are welcome.

Sunday, 7/24

Visit BNL's Chemistry, Nanoscience

10:30 a.m.-3 p.m. On this Summer Sunday visit, learn about BNL research on addition, ultra-fast chemical reactions, the study of materials one-billionth of a meter small. And create your own chemical reaction — make slime!

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.

