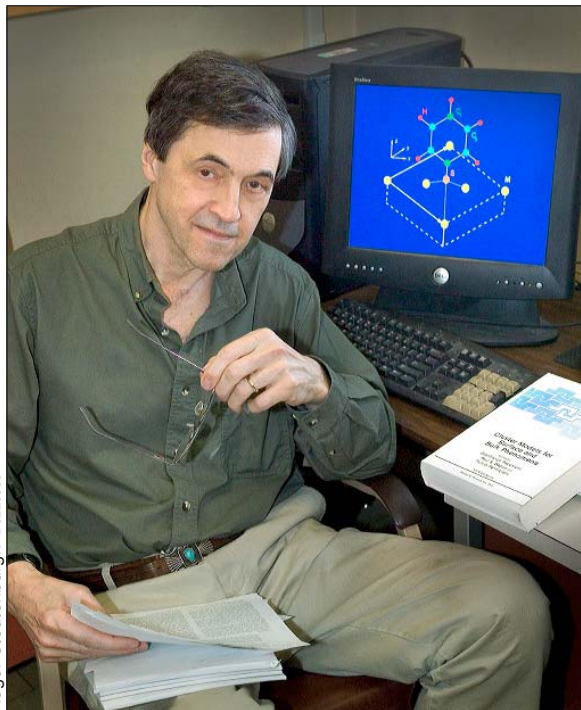


Moving Electrons At Molecular, Nanometer Scales

*Possible applications for solar cells
and other small-scale circuits*



Marshall Newton

Learning how to control the movement of electrons on the molecular and nanometer scales could help scientists devise small-scale circuits for many applications, including more efficient ways of storing and using solar energy.

Research in this field by Marshall Newton of BNL's Chemistry Department is funded by the Office of Basic Energy Sciences; Division of Chemical Sciences, Geosciences & Biosciences; within DOE's Office of Science. On March 14, Newton presented a talk at the 229th National Meeting of the American Chemical Society, in San Diego, California, highlighting the theoretical techniques used to understand the factors affecting electron movement.

"Electron donor/acceptor interactions govern a huge number of microscopic processes that everything and everybody is dependent upon," says Newton, "from the movement of electrons in electronic devices to the separation of charges necessary for life processes such as nerve cell communication and photosynthesis."

Theoretical chemists like Newton work on developing models to understand these interactions in molecular systems, where complex molecules with arbitrary shapes communicate electronically over long distances. Measuring the electronic conductance, or the strength of electron transfer, is one essential part

of understanding how the electrons move.

Newton is particularly interested in learning how the atomic nuclei that exist in the surrounding environment affect the electrons' flow. "The nuclei produce what we call vibronic interactions, which can inhibit or facilitate the flow of the electrons," Newton says. "So we need to understand this effect of the electrons' 'environment' if we want to control the flow."

For example, Newton says, "If you are trying to move charge or energy down a wire, you ideally want it to move down a particular linear pathway. If you understand what factors aid or hinder conductance, it should be possible to align the conducting properties in one direction and inhibit them in other directions to achieve that goal."

Through collaborations with experimentalist colleagues, among them, John Smalley and Steve Feldberg of BNL's Chemistry Department (see, for example, "A Nanowire With a Surprise," in the Bulletin of March 25), Newton regularly has a chance to test his theoretical analyses against actual experimental results.

"The more we look into these processes theoretically and experimentally, the more complicated the picture becomes. But we think we are getting a good understanding of the key variables that control events at this scale — what promotes good electronic communication and what may inhibit it," he says.

With that understanding, it might be possible to design molecular systems to achieve particular goals, such as improving upon photosynthesis — a research initiative actively supported by DOE's mission to secure America's future energy needs. One of the first steps in photosynthesis is getting charges separated, then using that energy to make chemical energy you can store for later use. But surpassing nature's design remains a major challenge.

According to Newton, such rational chemical design is far from impossible: "Synthetic chemistry is open-ended. If you have an idea about a type of molecule you want to build, you can do it, guided by theoretical understanding to direct your design," he says. — Karen McNulty Walsh

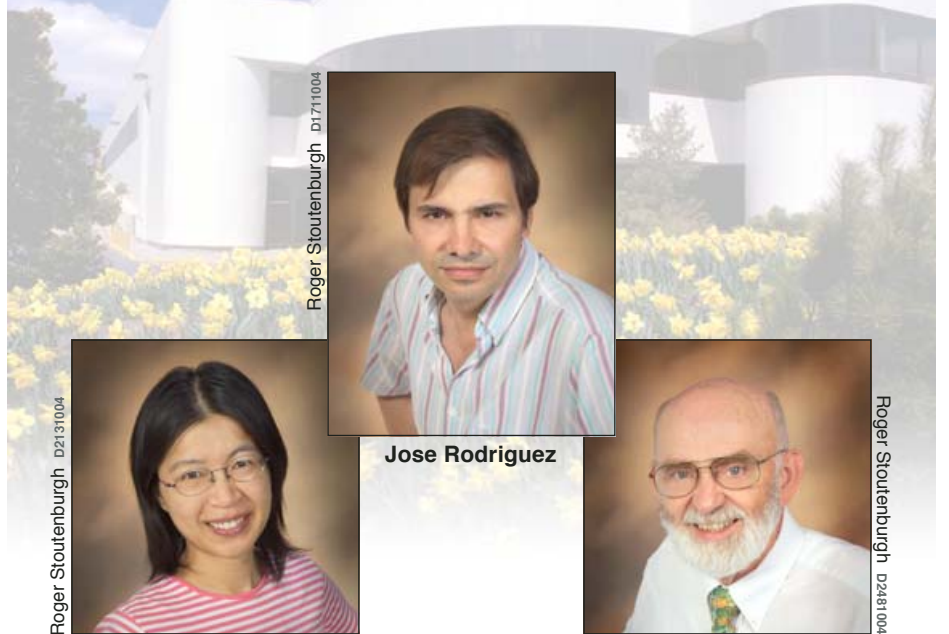
Center for Functional Nanomaterials



Site Dedication • Today, 4/15 • 3 p.m.

U.S. Representative David Hobson (R-Ohio), Chairman of the House Appropriations Subcommittee on Energy and Water Development, and Raymond Orbach, Director of the Department of Energy's Office of Science, will be among dignitaries participating in the site dedication for the Center for Functional Nanomaterials, today, April 15, at 3 p.m. on Technology Street, just south of the credit union. All are welcome to attend.

Ceria Nanoparticle Experiments at NSLS Promise Cleaner Fuel Future



Xianqin Wang

Jose Rodriguez

Jonathan Hanson

Experiments on ceria (cerium oxide) nanoparticles carried out at BNL may lead to catalytic converters that are better at cleaning up auto exhaust, and/or to more-efficient ways of generating hydrogen — a promising zero-emission fuel for the future. Jose Rodriguez of the Chemistry Department presented results from two studies exploring the composition, structure, and reactivity of these versatile nanoparticles during the 229th National Meeting of the American Chemical Society on March 15 in San

Diego, California. This research was funded by the Office of Basic Energy Sciences within DOE's Office of Science.

After using a novel technique to synthesize the ceria nanoparticles, Rodriguez and coworkers Xianqin Wang and Jonathan Hanson, also both of Chemistry, used beams of x-rays at the National Synchrotron Light Source (NSLS) to study how their composition, structure, and reactivity changed in response to doping with zirconium in one case, and impregnation with gold in another.

"In a catalytic converter, ceria acts as a buffer, absorbing or releasing oxygen depending on the conditions of the engine to maintain the catalyst in its optimum operating condition for converting harmful emissions such as carbon monoxide and nitrogen oxide to carbon dioxide and nitrogen gas," Rodriguez said. Others have found that adding zirconium improves ceria's ability to store and release oxygen.

The studies at the NSLS explain why zirconium changes the ceria's
(continued on page 2)

403rd Brookhaven Lecture, 4/20

Saskia Mioduszewski Presents 'Probing the Matter Created at RHIC'

Physicists from around the world are using the Relativistic Heavy Ion Collider (RHIC) to explore some of nature's most basic and intriguing ingredients and phenomena.

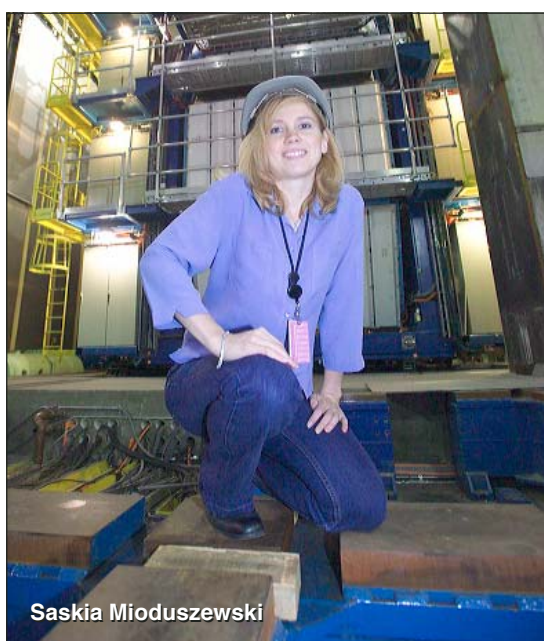
At RHIC, two beams of gold ions (atoms that have had their electrons stripped off) travel at nearly the speed of light — what Einstein called relativistic speeds — in opposite directions around RHIC's 2.4-mile, two-lane "racetrack." At six intersections, the lanes cross and ions collide at such high speeds that fascinating things happen.

It is the conditions that are created as a result of these collisions — conditions that exist for only a brief period (approximately 10^{-22} seconds) following

each collision — that physicists are interested in studying.

To learn how and why researchers analyze these collisions, join Saskia Mioduszewski, an associate scientist in the Physics Department, on Wednesday, April 20, at 4 p.m. in Berkner Hall, where she will present the 403rd Brookhaven Lecture, "Probing the Matter Created at RHIC." Mioduszewski will be introduced by Sally Dawson, Acting Chair of the Physics Department.

In her talk, Mio-



Saskia Mioduszewski

duszewski will discuss the results from RHIC's experimental collaborations and how researchers hope to create a form of matter in which the basic building blocks of matter — quarks and gluons — interact freely in what is called quark-gluon plasma. Researchers believe that quark-gluon plasma existed at the birth of the early universe.

As Mioduszewski will explain, characterizing the state of matter produced in the collisions is challenging because of its very short duration. She

will describe the sophisticated probes that researchers have developed to meet this challenge.

Mioduszewski received B.S. degrees in physics and mathematics from North Carolina State University in 1994, and a Ph.D. in nuclear physics from the University of Tennessee in 1999. In January 2000, she came to BNL as a postdoctoral research associate to work on the PHENIX Experiment at RHIC. And, in 2004, Mioduszewski received the Presidential Early Career Award for her research on the PHENIX experiment.

To join Mioduszewski for dinner at an off-site restaurant after the talk, contact Jo-Ann Nasta, Ext. 8594, or nastaja@bnl.gov.

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 & Wednesdays: Pilates

Mon., Noon-1 p.m. in the Rec. Hall; Wed., 5:30-6:30 p.m. in the Rec. Hall. Christine Carter, Ext. 5090.

Mon., Tues., & Thurs.: Kickboxing

\$5 per class. Mon., noon-1 p.m. in the gym; Tues., 5:15-6:15 p.m. in the gym; Thurs., noon-1 p.m. in the gym; Thurs., 5:15-6:15 p.m. in Brookhaven Ctr. North Room. 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. 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.

Tuesdays & Thursdays: Aerobics

5:15-6:30 p.m., \$5 per class or \$40 for ten classes. Rec. Hall. Pat Flood, Ext. 7886.

Tuesdays & Thursdays: Aqua Aerobics

5:15-6:15 p.m. Eight-week session. \$20 to attend once a week; \$40 to attend twice a week. Ext. 2873 for more information.

Tuesdays & Thursdays: Jazzercise

Noon-1 p.m., Rec. Hall. Preregistration is required. Christine Carter, Ext. 5090.

Tues., Thurs., Fri.: Upton Nursery School

8:30-11:30 a.m. Rec. Hall. Two- and three-day program avail. 727-8082 or Ext. 5090, for information.

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. 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.

Wednesdays: Open Chess Night

5-8 p.m., Rec. Hall. Christine Carter, Ext. 5090.

Wednesdays: Dance Lessons

5:15-8 p.m. Brookhaven Ctr., North Room. BNL Ballroom Dance Club hosts lessons, beginner to adv. John Millener, Ext. 3853.

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 —

Today, Friday, 4/15

CFN Site Dedication

3 p.m. Technology St., south of the credit union. U.S. Representative David Hobson, DOE Office of Science Director Raymond Orbach, others, will participate in dedicating the Center for Functional Nanomaterials site. All are welcome. See also age 1.

Sunday, 4/17

*International Potluck, Dance

5 p.m. Recreation Hall in the apartment area. The Hospitality Committee invites the Lab community to a potluck and dance event. Bring a potluck dish to share. See details in notice, page 3. Contact Cindy Ottemann, cjottabb@optonline.net or 849-2646.

New on the Web...

This month, the Brookhaven Center for Translational Neuroimaging unveiled a new website, located at <http://www.bnl.gov/ctn>. The website describes the wide range of research programs encompassed by the Center including Positron Emission Tomography, Magnetic Resonance Imaging, addiction research, eating disorder research, and more.

Women's History Month Sum Up

During March, BNL's Diversity Office and Women's Program Advisory Committee helped celebrate Women's History Month. Guest speaker Kathy Martinez gave a noontime talk in Berkner Hall highlighting her work as Deputy Director of the World Institute on Disability. Through her talk, Martinez, who has been blind from birth, demonstrated that, by educating her audiences in using humor and practical approaches in working with the disabled, she fulfills the 2005 Women's History theme of how women change the world.

In addition to organizing the Berkner Hall display "Women Change America," the committee distributed information on the upcoming Federally Employed Women's National Training Program to be held in Reno, Nevada, July 18-22, and held a book raffle in which LaRosa Collins, Michelle Miller, and Beth Lin were winners of Maya Angelou's *Hallelujah! The Welcome Table*.

Wanted: Lab Historical Equipment, Memorabilia

On August 14, Summer Sundays, the days when the general public is invited to come and visit the Lab, will be in full swing. As usual, on each Sunday, starting July 10, a particular facility or theme will be featured. August 14 will be "Celebration Summer Sunday," and the spotlight will be on the history of the Lab and the site. The Summer Sundays organization team is looking for unique old items, such as old equipment and memorabilia, that can be borrowed and displayed for that day. If you can help, contact either Barbara Blenn, Ext. 4458 or Mark Davis, Ext. 2165.

Celebrating Richard Feynman — BSA Sponsors Book Readings, Drumming, 5/11

In honor of the 2005 World Year of Physics, on the birthday of Nobel-Prize winning physicist Richard Feynman (1918-1988), BSA, the company that manages BNL, will sponsor readings by film and television actor Norman Parker from Feynman's bestselling books, and a drumming performance and reminiscences of what it was like to drum with Feynman by Ralph Leighton and Tom Rutishauser. The event, called "A Celebration of Richard Feynman," will be held on Wednesday, May 11, at 4 p.m. in Berkner Hall. The event is free and open to the public. All visitors to BNL age 16 and over must bring a photo ID.

Ceria Nanoparticle Experiments *(cont'd.)*

structure to increase the number of oxygen "vacancies" — or places for oxygen uptake and release.

Furthermore, Rodriguez says, "The ceria nanoparticles we studied have much better performance, higher chemical reactivity, than the bulk form of ceria currently used in catalytic converters."

Thus, this research holds promise for more efficient catalytic converters — and cleaner air.

In the second study, Wang, Hanson, and Rodriguez deposited gold on the surface of ceria nanoparticles and used x-rays at the NSLS to determine the catalyst's "active phase" — the conformation responsible for the catalytic activity — in the conversion of water and carbon monoxide to hydrogen gas and carbon dioxide.

This "water-gas shift" reaction is important for generating hydrogen, which can be used for chemical transformations and as a fuel in a hydrogen-based economy. Hydrogen is one of the leading energy sources being investigated by scientists sponsored by DOE as part of its mission to ensure the nation's future energy needs.

"In both cases, we are learning about the fundamental conditions necessary for optimal operation of the catalysts," Rodriguez said. "This kind of knowledge eventually will lead to a rational design of even more effective catalysts." — Karen McNulty Walsh

Coming Up National Synchrotron Light Source Annual Users Meeting

The 2005 National Synchrotron Light Source Annual Users' Meeting will be held at BNL from Monday to Wednesday, May 23-25.

To avoid a late fee, register by Friday, April 29. After that date, the last date to register, with a late fee, is Friday, May 6. More information is available at www.nsls.bnl.gov/users/meeting/.

DOE Five-Year Environmental Review

DOE is conducting a Five-Year Review for the BNL site, as required by the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). This is the first Five-Year Review of all the remediation work performed at the BNL site. More information is at www.bnl.gov/erd/.

BSA Distinguished Lecture, 4/18

On Monday, April 18, at 4 p.m. in Berkner Hall, James Barber, Imperial College, London, will talk about photosynthesis and future energy needs in a BSA Distinguished Lecture. All are welcome to attend this free public lecture, which is sponsored by BSA. Visitors to the Lab of 16 or older must carry a photo ID.

BWIS Talk on Cancer-related Studies, 4/26

Sponsored by Brookhaven Women in Science, Lisa Diedrich, Assistant Professor in the Women's Studies Program at Stony Brook University, will give a talk titled "Complexity and Cancer: Towards an Interdisciplinary Methodology," on Tuesday, April 26, at noon in Berkner Hall. In her talk, Diedrich will discuss an interdisciplinary methodology that has emerged from her training in three fields of study: women's studies, cultural studies, and science.

All BNLers are welcome to the talk. For more information, call Lynne Ecker, Ext. 2538.

Two Talks on Cancer Awareness, 4/27, 5/3

The Health Promotion Program of the Human Resources & Occupational Medicine Division is sponsoring two talks on cancer. Register for either or both with Michael Thorn, Bldg. 490 or mthorn@bnl.gov.

Testicular Cancer & Self-Exam, 4/27

Howard Adler, M.D., Assistant Professor of Clinical Urology & Director of Stony Brook University Hospital's Prostate Care Program will talk on "Testicular Cancer and Self-Exam," on Wednesday, April 27, noon-1 p.m. in Berkner Hall. All are welcome.

Talk on Breast Health and Cancer Awareness, 5/3

Doris Weisman, NP, MS, Clinical Instructor in the Stony Brook University's School of Medicine & Clinical Assistant Professor in the School of Nursing, will give a talk on "Breast Health and Cancer Awareness: Early Detection Plan," on Tuesday, May 3, noon-1 p.m. in Berkner Hall, Room B. Time will be reserved for questions and answers. All are welcome, but space is limited. Register early.

Research Library Open House, Today, 4/15

In celebration of National Library Week, April 10-16, all are invited to an Open House today, April 15, from 10 a.m. to 3 p.m. at the Research Library, Bldg. 477, for an overview of information resources. For more information, call the Research Library, Ext. 7761 or 3487, and see the Library's Home Page at www.bnl.gov/isd/reslib/.

Asian Pacific American Association News

May is National Asian Pacific American Heritage month. Due to the many meetings at Berkner Hall in May, the BERA Asian Pacific American Association (APAA) will celebrate their heritage over April and May.

Events will include:

- a month-long poster display in Berkner Hall lobby
- a joint BERA/APAA bus trip on **Saturday, April 30**, to the Japanese Cherry Blossom Festival at the Brooklyn Botanical Garden, 8 a.m.-5 p.m. (This trip is now sold out.)
- "Martial Arts Expo," open to the public, **Saturday, May 7**, 6:30-9 p.m. at Berkner Hall. All visitors to BNL age 16 and over must bring a photo ID. Tickets are \$10/adult, \$5/children 12 years and under, at the BERA Store.

At the Martial Arts Expo, Long Island studios and BNL groups will demonstrate martial arts such as kung fu, tai-chi, jiu jitsu, karate, and kendo. Originated in China, Korea, and Japan, the martial arts include various forms of self-defense based on ancient techniques that include both mental and physical discipline.

The groups featured will be: the BERA Jiu Jitsu Club; BERA Tai-Chi Club; Island Jiu Jitsu, Inc.; Ken Zen Institute of Long Island; Ryu Shu Kan: Long Island's Family Karate Center; Shaolin Kung Fu Studios, Inc.; Wing Chun Original of Long Island; and the Yuan-Ji Society.



From BNL to Italy — Students Learn About BNL's Research Via Web Conference

Lino Miceli, an associate physicist who works at the Laser Electron Gamma Source in the Physics Department, recently explained BNL's research and his role as a scientist to a fifth-grade class in Lamezia Terme, a small town in southern Italy. But Miceli did not have to travel to Italy. With the help of the Office of Educational Programs' (OEP) Scott Bronson and Gail Donoghue, Miceli spoke to the students via the web, while the onlookers in OEP were able to see the students and their principal, Maria Miceli — Lino Miceli's sister — on a big projection screen (see right).

"Without the Internet, a school like this one in a small town in Italy would be closed to the scientific world," Lino Miceli said. "Physicists use this type of web communication all the time,

but I thought it would be a good opportunity to help these young students from across the world to learn about science firsthand from a physicist."

Donoghue participated in the event, which she hopes to duplicate again, but with adding students in the BNL Science Museum to the web conference. She believes the event is especially appropriate to celebrate the World Year of Physics. Bronson managed the technical aspects of the program.

"We used the Virtual Room Video-conferencing System, which can connect many participants simultaneously," Bronson said. "This past January, we piloted a web-based high school workshop in support of the MECO [Muon to Electron Conversion] experiment, one of the Rare Symmetry Violating



Joseph Rubinio D04040305

Processes experiments. The workshop hosted teachers and students at BNL, New York University, and the University of Houston. The positive feedback

and success of that pilot has encouraged us to try innovative educational research experiments like the one today." — Diane Greenberg

BERA Golf Association

The BERA Golf Association is now accepting applications for the 2005 golf league. This year there will be both individual and team divisions.

To obtain an application, visit the club website at www.bnl.gov/bera/activities/golf/ or contact Jeff Williams, Ext. 5587 or jwilliams@bnl.gov.

Arrivals & Departures

Arrivals

None

Departures

Gail Brown	ES&T/NE
Elisabeth Deazley	Ctrl. Fab.
Stanley Doskoze	Ctrl. Fab.
Christopher Cleary	Ctrl. Fab.
Mark Cohen	Ctrl. Fab.
Ora Colson	RO/EWMS
Timothy Connolly	Ctrl. Fab.
Thomas Imperial	Ctrl. Fab.
Luis Jaramillo	Diversity
Lisa Muench	Chemistry
Bruce Yanofsky	Ctrl. Fab.

In The Cafeteria...

April's tastings are Popeye's favorite spinach on 4/21; and homemade low-fat muffins on 4/28. In May, watch for International Pickle Week, and the *Cinco de Mayo* special.

In The Center Club...

Every Wednesday is Ladies Night with half-priced appetizers from 5 to 7 p.m. and free chips and salsa with every dinner entrée or first pitcher of beer (For four-person groups).

Take Daughters, Sons to Work, 4/28

Lab community parents of children ages 10-15 are invited to bring their child or children to participate in BNL's annual "Take Our Daughters & Sons to Work Day," to be held on Thursday, April 28. Contact Liz Gilbert, Ext. 2315 or gilbert@bnl.gov for more information.

Lifeguard Openings

Lifeguard positions are open for the BNL swimming pool. Qualifications include LGT-Lifeguard Training and CPR for professional rescuer. Availability on weekends — Saturdays and Sundays — is essential. Contact Christine Carter, 344-5090, or ccarter@bnl.gov.

Weight Watchers

Register for Weight Watchers on Wednesday, April 20, noon-1 p.m. in the Brookhaven Center. Each series of 10 weekly meetings costs \$89. Meetings are on Wednesdays at noon. All are welcome.

Native American Cookbook in BERA Store

Stop by the BERA Store in Berkner Hall to pick up a copy of *Wisdom of Elders*, a 70-page, soft bound cookbook filled with American Indian food recipes, tribal profiles, methods for preparation, and colorful ideas for menu planning. All proceeds go to the National Society for American Indian Elderly. For more information, contact Kate Durnan, (520) 383-6075, kated@todhs.com.

Upton Nursery School

All BNL parents of three- to five-year-olds are invited to Upton Nursery School's Open House on Tuesdays, April 12 and 19, 9 -11:30 a.m., at the Recreation Building in the apartment area. The school's certified and caring teachers provide social and language development and academic readiness to a multinational student body.

Classes are forming now for the fall Pre-K children, with two and three-day morning schedules available. Drop in or call 727-8082 for information.

BERA Volleyball League

2004-05 Final Standings

Open League A

UCB Roof Co.	80 - 20
EZ Pass	66 - 34
Far Side	35 - 65
Jet Setters	19 - 81

Open League B

Shankadelic	45 - 15
Easy Spikers	44 - 16
Late Entry	35 - 25
PHENIX Fire	22 - 38
Setting Ducks	22 - 38
What Ball, Where?	12 - 48

Mixed League 2

Ball Hogs	36 - 21
New Blood	34 - 23
Another Round	30 - 27
Nuts and Bolts	27 - 30
Goodtimers	25 - 32
Court Jesters	19 - 38

Mixed League 3

Upton Ups	73 - 27
Last Minute	68 - 32
Newbies	48 - 52
Volley of the Dolls	11 - 89

2005 BERA Summer Camp, Swimming Lessons Register Your Child by Today, Friday, 4/15

Summer Camp

The BERA/Recreation Office will again offer summer camp for the children of employees living on site, and also those from off site. The summer camp consists of a general recreation program that is held in the Recreation Building in the apartment area, from Thursday, June 30, through Friday, August 26. Children enjoy sports, arts and crafts, daily gym & swim time, and weekly swimming lessons. You may sign up your 5- to 14-year-old child for any or all of the eight weeks. Space is limited and all applications must be received by Friday, April 15.

Swimming Lessons

BERA/Recreation Swimming Lessons will be held at the BNL pool from Thursday, June 30, to Friday, August 26. The program is open to children and grandchildren of BNL employees and retirees. Children must be a minimum of 42 inches tall to participate. Space is limited and all applications must be received by Monday, June 6.

For information and applications, go to the BERA website, or stop in at the Recreation Office in Building 179B. Christine Carter and Joanne Rula will be happy to assist you and answer your questions.

Fidelity Investment Counseling, 4/26

A Fidelity Investment representative will be at the Lab on Tuesday, April 26, to hold sessions with individual employees interested in learning more about their retirement savings and investment options. Schedule one of the 45-minute appointments by calling (800) 642-7131.

BERA Rifle & Pistol Club Open Shoot, 4/18

Members of the BERA Rifle & Pistol Club invite all BNLers who are interested to attend the "Open Shoot" event that the club will hold on Monday, April 18, 6-11 p.m., at Smithtown Veterans Hall. To attend, contact Jim Durnan, Ext. 5993; Rich Conte, Ext. 5741, or Roy D'Alsace, Ext. 3973.

Joe Hampton, the Kingpins in Concert, 5/13 Singer-Songwriter Caitlyn Amanda Opens Show

Joe Hampton and the Kingpins, a local band that plays a mix of classic rock, blues, and original songs and has appeared in many Long Island venues, including the Riverhead Blues Festival, will appear in concert on Friday, May 13, at 8 p.m. in Berkner Hall. The show will be opened by 16-year-old Caitlyn Amanda, recently featured on radio stations WUSB 90.1 and WLIU 88.3 FM. 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. Tickets are \$8 in advance at the BERA Sales Office, \$10 at the door.

International Potluck, Dance, 4/17

The Hospitality Committee invites all BNLers to join them for an international potluck dinner and dance on Sunday, April 17, at 5 p.m. in the Recreation Building. There will be demonstrations of several kinds of international dances, and a chance for everyone to try the dances. Bring a potluck dish to share with six or more people. Wear your nation's costume (optional, of course) and join the Committee for a fun evening. For more information, contact Cindy Ottemann, 849-2646, or cjottabb@optonline.net.

One-on-One Retirement Counseling

A TIAA-CREF consultant will visit BNL on Tuesday, April 19, to answer employees' questions about financial matters such as understanding the importance of protecting assets against inflation, finding the right funding allocation mix, etc. For an appointment, call Kathy Murphy, 866-842-2053, Ext. 4625 (not the on-site Ext. 4625).

At BERA Store: Trips, Ball Game Tickets, More

Tickets are on sale now at the BERA Sales Office, weekdays, 9 a.m.-3 p.m., for Long Island Ducks (\$10); and the Mets (5/13-\$40, which includes coach bus transportation). Also, check out BERA trips, such as to Nascar at Dover, on June 5, and the Culinary Institute of America, July 5.

Calendar

(continued)

— WEEK OF 4/18 —

Monday, 4/18

*Start of Earth Day Week Celebrations.

See program on page 4.

Noon, Berkner Hall. Environmental speaker, Karl Fridenberger of Organic Care. All are welcome.

11:30 a.m.-1:30 p.m., Berkner Hall lobby, all week. Environmental Pledge Tree, Twice Is Nice, Wildlife, and Student Art displays.

BSA Distinguished Lecture

4 p.m. Berkner Hall. James Barber, Imperial College, London, U.K., will talk about "The Structure and Function of Photosystem II." All are welcome.

Tuesday, 4/19

Coherent Laser Measurement Demo

11 a.m.-2 p.m., Berkner Hall. Coherent Laser Measurement and Control representatives will demo laser power and energy measurement, laser beam diagnostics and spectral analysis. Jeff, (585) 264-1448, jeff.kondziela@coherent.com

*Office Supply Swap, BNL Music Club

11:30 a.m.-2 p.m. Berkner Hall lobby. See Earth Day program on page 4.

Wednesday, 4/20

Hybrid Car Expo; 'Dirty Sock' Contest

11 a.m.-2 p.m., Berkner Hall North Parking lot. See Earth Day, page 4.

*403rd Brookhaven Lecture

4 p.m. Berkner Hall. Saskia Mioduszewski, Physics Department, will talk on "Probing the Matter Created at RHIC." See story, page 1.

Thursday, 4/21

*L.I. Transportation Mngmt./NuRide

Noon-1 p.m., Brookhaven Center, South Room. Register at <http://info.nuride.com/bnl>. Lunch provided. Cut commuting costs, reduce air emissions, earn cash incentives. See Earth Week, page 4.

FRIDAY, 4/22

Earth Day Celebration Presentations

3:30-5 p.m. Berkner Hall. Presentation of Environmental Stewardship Awards. See Earth Week program, page 4.

— WEEK OF 4/25 —

Monday, 4/25

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, 4/26

*BWIS Talk: Cancer-Related Studies

Noon, Berkner Hall. Lisa Diedrich, SBU, on "Complexity & Cancer: Towards an Interdisciplinary Methodology." All are welcome. See page 2.

Wednesday, 4/27

KeySpan Service Demo

10:30 a.m.-2 p.m., Berkner Hall. KeySpan offers BNLers discounts on energy and shop-at-home services.

Saturday, 4/30

Brooklyn Botanical Garden Bus Trip
BERA/APAA Heritage event. Sold out.

— WEEK OF 5/2 —

Saturday, 5/7

*APAA Heritage Event, Martial Arts

6:30-9 p.m. Berkner Hall. Tickets are at the BERA Store, Berkner Hall, \$10/adults, \$5/children. See page 2.

— WEEK OF 5/9 —

Wednesday, 5/11

*A Celebration of Richard Feynman

4 p.m. Berkner Hall. Bookreadings, drum playing. See page 2.

Friday 5/13

*Hampton & Kingpins in Concert

8 p.m. Berkner Hall. See notice, left.

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.

BERA Board Election Results



Roger Stoutenburgh D1160305

Frank Dusek (left), Collider-Accelerator Department and Joann Giambalvo, Staff Services Division and Safeguards & Security Division, have been elected to the Executive Board of the Brookhaven Employees Recreation Association (BERA). They will serve four-year terms, May 2005 through April 2009.

For more information on BERA, including a list of clubs, upcoming outings and trips, and more, go to www.bnl.gov/bera.



Roger Stoutenburgh D1170065

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 employees within the department/division and/or appropriate bargaining unit, with preference for those within the immediate work group; (2) present 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; call the JOBLINE, Ext. 7744 (344-7744), for a list of all job openings; use a TDD system to access job information by calling (631) 344-6018; or access current job openings on the World Wide Web at www.bnl.gov/HR/jobs/default.htm.

The following position has been exempted from the freeze by the Deputy Director:

OPEN RECRUITMENT - Opportunities for Laboratory employees and outside candidates. MK3563. POSTDOCTORAL RESEARCH ASSOCIATE - Requires a Ph.D. in experimental condensed matter physics or a related field. Experience in x-ray or neutron scattering and strongly correlated electron systems is highly desirable. Will participate in a research program on charge inhomogeneities in strongly correlated systems, including bulk, interface and nanoscaled systems. Under the direction of J. Hill, Physics Department.

Motor Vehicles & Supplies

- 05 SKYTEAM YOUTH DIRT BIKE - ST150Y, 150cc 4-Str., elec/kick start, disc br., \$1,400/neg; 03 dirt bike, Yamaha TTR125L, 4-str., \$1,875. Both grt. cond. Ext. 7081 or 929-5502.
- 03 MITSUBISHI LANCER - 4dr, 4-cyl, 5-spd, cd, p/w, p/l, a/c, silver, new front brakes, great gas mileage. 38K mi. \$8,900. 727-6959.
- 03 FORD MUSTANG - convertible, red w/ dk. grey leather int. V6, a/t, <20k miles. Loaded. \$18,500. Katie, 727-7227.
- 03 DODGE DURANGO SLT - Grey, 4X4. All power, a/c, am/fm/cd, 3rd row seat. Mint cond. 20K mi. \$19,500/neg. Jo-Ann, Ext. 8594 or 974-2142.
- 02 TOYOTA CELICA - Blue, sport 5-spd, a/c, s/roof, all pwr., am/fm/cd, cruise, 30+ mpg. 61K mi. \$11,900. Ext. 7410 or 723-0211.
- 01 SUZUKI JR50 - Runs and looks excellent, very low hours, excel. starter bike. \$800/neg. Joseph, Ext. 7316.
- 98 FORD TAURUS - a/t, 4dr, c/c, a/c, p/b, p/l, p/s, p/w, tilt wheel, am/fm. Excel cond. 78K mi. \$5,200/neg., Ext. 5263 or 744-2545.
- 94 MAZDA 626 - 6-cyl, 5-spd stick. 92K mi. \$1,500/neg. Mark, Ext. 3812.
- 93 MERCURY SABLE 1993 - White, V6, 4dr, a/c, p/b, p/s, p/l, p/w, cd/am/fm. Good cond. 140K mi. \$1,150/neg. 914-484-4429.
- 93 DODGE INTREPID - 6-cyl. 4dr. Runs v. well, looks great. Driver window regulator needs replacing. 135K mi. \$750/neg. Robert, Ext. 8440.
- 90 TOYOTA CAMRY - 4dr sedan, 5-spd manual, a/c, am/fm/cass, c/c, p/l, p/w, new battery, needs repairs. 119K mi. \$800/neg. Ilektra, Ext. 4509 or 384-3589.
- 87 FORD TAURUS - 4dr, a/t, V6, a/c, c/c, p/l, p/s, p/w, am/fm/cd, good running cond. 108K mi. \$750/neg. Li, Ext. 7604.
- 77 TRIUMPH BONNEVILLE - 750, 5-spd, like new, show or go. 5,000 mi. \$3,750. Kevin, 281-8031.
- TIRES - 4, Bridgestone Potenza, RE92, 205/55/16HR, Good tread, \$80. 928-6176.

Boats & Marine Supplies

21' PROLINE 211 - 1997, Merc. 225 I/O, low hours, cuddly cabin, Bimini top, great condition. \$15,500/neg. 889-5302.

23' PRO-LINE WALK-AROUND - 1981 w/200hp Evinrude, Cox tandem trailer, complete, \$7,500. Nick, Ext. 3205 or 653-8251. OUTBOARD MOTOR - 1973 Mercury 85hp, w/control box and cables. Not running. Make offer. Glenn, 379-0117.

Furnishings & Appliances

- BED - full size w/mattress, box springs & frame. 1 yr. old, extra clean, excel. cond. \$150. Jim, 335-9007.
- BED - king size w/mattress, boxspring & frame, 3 yrs. old, v. comfortable, make offer, you pick up. Nick, Ext. 7139 or 974-0818.
- CLOTHES DRYER - Frigidaire Sup Cap, w/ auto & time dryer cycles, 4-temp opt. Almost brand new, cost \$349, \$250/obo. 208-0408.
- COAT/HAT TREE - 1930's, oak mission style, metal hooks, approx. 5' tall, \$75. 803-0506.
- COUCH, RECLINER - Broyhill. Couch, blue, \$400. Recliner, mauve, \$100. Curio, dark wood, \$99. Excel. cond. Mickey, 642-7442.
- CURIO CABINET - Howard Miller, oak, 5 yrs. old, excel. cond., photo avail., \$300. 821-1271.
- DINETTE SET - white, lacquer, table w/4 chairs, china cabinet, \$600/all. 698-9016.
- DINING ROOM TABLE - solid honey oak w/2 leaves, 4 upholstered arm chairs, table protective pads. \$500. Thomas, 909-1498.
- E-Z LIFT CHAIR - reclining chair, elevates and tilts forward for easy in/out. E. Patchogue Pick up. \$75 obo. 286-5918.
- ENTERTAINMENT WALL UNIT - Dark wood, 3 modular pieces, cabinets, TV space, shelves, floor to ceiling, approx. 8'Lx7'H, \$600. Bob, Ext. 2629 or 751-7330.
- HUTCH - Light oak, three doors on bottom, three glass doors on top, glass shelves, top sect. lighted, \$150. Peter, Ext. 4028.
- PATIO FURNITURE - outdoor 60" fiberglass oct. table w/4 PVC chairs/cushions, sturdy, \$100; GE w/d, elec., \$50 for set. 286-8523.
- PIANO - Kawai upright, excel cond. \$2,000. Katie, 727-7227.
- WALL UNIT - ivory, lacquer, and glass, \$500. Joan, 591-1302 or 852-1546 Ext. 302.

Audio, Video & Computers

APPLE MAC G3 TOWER - 17" Apple display, 384MB RAM, 6GB HD, ethernet, SCSI w/Microtek Scanner scanner, OS 9.1. \$250 obo. Micheal, Ext. 4575 or 987-4511.

Sports, Hobbies & Pets

- BALL PYTHON - very tame, approx. 4' long w/55 gal. tank & stand. \$100. Liz, 727-7227.
- CAMERA BODY - Canon EOS Elan II body/strap/manuals. Like-new cond, \$150 obo. Micheal, Ext. 4575 or 987-4511.
- CHINCHILLA - Rare, muted beige color. Male, v. friendly, w/ cage. \$300. Katie, Ext. 3868.
- EXERCISE EQUIPMENT - Universal 4-station exercise machine w/extra weights, paid \$2,000, sell for best offer. 208-0408.
- FISH TANK & CABINET - 30 gal. w/black lacquer cabinet, less than one year old, paid \$400, sell for \$100. Don, Ext. 8248.
- POOL TABLE - 7' Pro Sport w/accessories, excel. cond. \$300. Jo Ann, Ext. 7009 or 471-7479.
- POOL TABLE - Winchester 8', maple construction with Cordovan finish, all accessories, mint, \$2000. Ext. 2815 or 874-9561.
- SOFTBALL GLOVE - Wilson A905 13", brand new. For a left-handed person. It fits on your right hand. \$55. Andy, Ext. 4357.

Tools, House & Garden

POLE SAW - telescoping w/10" electric chain saw that can be removed for conventional use. \$75. Ext. 3973.

Miscellaneous

- CAR SEAT - Graco infant carrier / car seat, good cond, \$10; Graco high chair, white plastic, removable tray. \$10. Peter, Ext. 4028.
- PLATTER - handcrafted, fancy, hot & cold, brand new, ask \$50. Barbara, Ext. 3431.
- VIDEO GAME - The Incredibles for Playstation 2, new \$25. Maria, Ext. 4961.
- WHOLE HOUSE FAN - hardly used, \$75. Richard, Ext. 7975 or 331-0245.

Yard & Garage Sales

MILLER PLACE - Moving Sale, April 16-17 and 23-24, 9 a.m. - 4 p.m. 11 Garden Ave., Miller Place. Mickey, 642-7442.

Free

TV - 21" color Toshiba in working cond. most of the time. You pick up. Micheal, Ext. 4575 or 473-3604.

Wanted

BOOKS - Will accept all used or new books. Don't throw them away, give them to me. Any type. Courtney, Ext. 3018 or (347) 453-5749.

EXCAVATING SVC W/BACKHOE - to level an area for slab construction, dig cesspool, and knock down trees. Mary Lynn, Ext. 7796 or 516-445-9386.

SOFT BALL PLAYERS - For Thursday night mixed league. Team name Guzzlers. Several teams looking. Step up to the plate. Ed, Ext. 3277.

Lost & Found

CASH - Found on Bell Ave. during week of 4/4/05. Call Ext. with denominations and exact date lost. John, Ext. 7770.

For Rent

BROOKHAVEN - 3 bdrm. house, 7 mins. to Lab. eik, l/r, d/r, 1.5 bath. Water incl. Cable ready. \$1,400/mo. Cheryl, Ext. 2852 or 654-2041.

EAST PATCHOGUE - like new, 3 bdrm., 2 bath, kit., d/r, l/r, f/p, cac, finsh. bsmt., gar., deck util., immed., \$2,200/mo. 475-2068.

MASTIC BEACH - brand new studio apt., heat, electric and cable incl., 2 mo. sec. req'd. \$800/mo. Bob, 281-6551.

MEDFORD - new 2-bdrm., 10x10, 10x12 bsmt. apt., lg. kit., lg. d/r, l/r, side yard, off street pkg. all util. incl., no smkg./pets, avail. 4/15. \$1,200/mo. Steve, 374-3967.

SHIRLEY - lg. 1 bdrm. bsmt. apt. very nice, near Wertheim NWR and Smith Point FINS, priv. ent., suit. for one, no pets, no smkg., includes all, sec. req'd. \$950/mo. Ext. 3846.

SHOREHAM - 1-bdrm. apt. semi-furn., l/r, d/r, bath. priv. ent., dr/wy pkg. No pets/smkg. Single. 1-mo sec + 1-mo rent. Util incl. 5 min to Lab. \$1,100/mo. Ext. 5263 or 744-2545.

WADING RIVER - 4 bdrm., 2 bath, ranch house. SWR school district, bsmt, 8 miles to the Lab, beach community. \$2,100/mo. John, Ext. 4028.

WADING RIVER - Bright and clean, one bdrm.-plus apt, near park and beach, priv. ent., no pets, no smkg., \$950 includes all. Avail. immed. \$950/mo. 988-7008.

YAPHANK - Studio apartment, fully furn., priv. ent., 4 mi to Lab, cable, high speed internet, all incl. \$800/mo. Irene, Ext. 5497.

KISSIMMEE, FL - 3 bdrm. Celebrity Resort condo, 8/5-8/12. Sleeps 8, jacuzzi, heated swimming pool, tennis, etc. \$950/wk. Nelly or Joseph, 981-9351.

MYRTLE BEACH, SC - 2-bdrm. (4 beds), 2.5-bath Townhouse on golf course in Little River, SC, community pool. \$491-\$813/week or \$700-\$1,200/mo. Chris, 472-4994.

OUTER BANKS, COROLLA, NC - Priv. home, 2 min. wk. to lake, 5 to ocean, 5 bdrm., 3 bath, pool, hot tub, www.family-vacation-homes.com, 7/30-8/6, \$2,695/wk. Ext. 2746.

For Sale

WADING RIVER - 1-bdrm, 5-rm. ranch, move-in cond, mint, near Wildwood PK, beach, l/r, den, d/r, w/w cpt, bsmt., vinyl sdng, Thermopane wnd. \$219,000. 516-449-8924.

Tip of the Month

The new mandatory New York State motor vehicle inspection (OBD II) that was implemented recently is performed by computer. If you have a 1996 or newer vehicle and would like to know more about this procedure, then stop by the on-site service station and pick up descriptive literature or go to the Office of Transportation and Air Quality website at www.epa.gov/otaq/obd.htm. 1995 or older vehicles will continue to be inspected on the dynamometer.

During Earth Week, 4/18-22 Reduce Mercury Inventory — for Free!

As part of BNL's goal of reducing the total amount of mercury on site, the Environmental & Waste Management Services Division (EWMSD) is making a Lab-wide offer: to dispose of nonessential mercury from various sources, for free. This offer extends the Pollution Prevention Program wherein several directorates, departments and divisions received financial assistance for mercury-reduction projects.

During Earth Week, April 18-22, personnel at BNL workstations with the following mercury-containing items: thermometers, pure elemental mercury, certain types of scientific equipment or devices that contain mercury, or other equipment not already identified in mercury-reduction projects, may contact their Environmental Compliance Representative or Waste Management Representative to have EWMSD collect and dispose of this material free of charge. It should be noted that not all mercury-containing equipment or devices are eligible for this offer.

Within each directorate, department, or division, Environmental Compliance Representatives to contact are:

- Facilities & Operations: Peter Pohlot, Ext. 5660
- Environmental Restoration; Instrumentation; Physics; and Procurement & Property Management: Keith Klaus, Ext. 6399
- CEGPA; Director's Office; Environment, Safety, Health & Quality; Finance; and Basic Energy Sciences: Debbie Bauer, Ext. 5660
- Energy, Environment & National Security: Steve Ferrone, Ext. 5664
- Collider-Accelerator and Superconducting Magnet: Mel VanEssendelft, Ext. 2905
- Life Sciences: Steve Ferrone, Ext. 5531
- Light Sources: Debbie Bauer, Ext. 5664

Waste Management Representatives to contact are: for the Facilities & Operations Directorate: Gary Olsen, Ext. 8580; for all other Lab staff: Joe Pavlak, Ext. 5445. Pavlak's service will waive the usual charge back service will during Earth Week for assistance with this project.



APRIL 18 – APRIL 22

Twice Is Nice Display, Wildlife Display, Student Art Display

- Berkner Hall lobby

Environmental displays will be on view throughout Earth Week, including art contest posters by children from local elementary schools.

APRIL 18 – APRIL 22

Environmental Pledge Tree

- 11:30 a.m.–1:30 p.m. Berkner Hall lobby

Place your pledge leaf of \$1, \$5, or \$10 on the tree, and your gift will be used to support the Foundation for Ecological Research in the Northeast (FERN) and research within the Pine Barrens of Long Island.

MONDAY, APRIL 18

Environmental Speaker, Karl Fridenberger of Organic Care

- Noon, Berkner Hall

Fridenberger will talk about protecting family, pets, property, and the environment. Learn about the benefits of natural organic and limited pesticide property care.

TUESDAY, APRIL 19

Office Supply Swap, BERA Music Club

- 11:30 a.m.–2 p.m., Berkner Hall lobby

Here is a chance to clean your work area and take unwanted supplies to Berkner Hall lobby by 11:30 a.m. and then enjoy the acoustic blues, folk, and swing of the BERA Music Club's Bruce MacDonald and Bob Paulucci while you swap and shop. Supplies not swapped will be donated to a local nonprofit agency.

WEDNESDAY, APRIL 20

Dirty Sock Contest, Hybrid Vehicle Display

- 11 a.m.–2 p.m., Berkner Hall North Parking Lot

At the Dirty Sock Contest, a clean sock will be placed on your car's exhaust for 30 seconds while the car runs. The dirtiest sock wins a free tune-up, courtesy of Upton Industries, Inc. BNL's on-site service station. Honda, Chevy, Toyota, and Ford will host a hybrid vehicle display.

THURSDAY, APRIL 21

Long Island Transportation Management/NuRide Presentation

- Noon-1p.m. and 1:30-2:30 p.m., Brookhaven Center, South Room

New program: participants cut commuting costs, reduce air emissions, and earn cash incentives. You must register on line at <http://info.nuride.com/bnl>. Lunch will be served. No time to attend? Get the facts at <https://www.nuride.com>.

FRIDAY, APRIL 22

Annual Earth Day Awards Ceremony

- 3:30-5 p.m., Berkner Hall

Lab Director Praveen Chaudhari and Assistant Lab Director for Environment, Safety, Health & Quality Jim Tarpinian will present environmental awards to BNLers and local elementary school student art contest winners.

SUNDAY, MAY 1

Heckscher Spring Festival

- 8:30 a.m.-5 p.m., Heckscher State Park

Displays in honor of Earth Day will be hosted by the NYS Office of Parks, Recreation & Historic Preservation. BNL's Environmental & Waste Management Services Division will be there with many interactive displays. Bring family and friends, enjoy free giveaways, music, food, and entertainment.