



At the NSLS: BNL's Lisa Miller, Congressman Rodney Frelinghuysen, and BNL Director John Marburger.

N.J. Congressman Frelinghuysen Visits BNL

U.S. Congressman Rodney Frelinghuysen from the 11th District of New Jersey, representing Morris County and parts of Sussex, Essex, Somerset, and Passaic Counties, visited BNL on April 10 with Ken Bassett from his district office. Frelinghuysen is on the House Appropriations, Energy & Water Development Subcommittee, which has jurisdiction over the Department of Energy budget.

Welcomed by Laboratory Director John Marburger, the visitors talked with Marburger, Richard Osgood, Associate Director for Basic Energy Sciences, and Marge Lynch, Assistant Director for Community Involvement, Government, & Public Affairs, before seeing some key

research areas. The visitors first toured BNL's PET Imaging Facility, which is headed by Joanna Fowler, Chemistry Department, to hear about BNL's neuroimaging research using positron emission tomography (PET) (see also PET story below).

At his request, Frelinghuysen also heard from Creighton Wirick, Environmental Sciences Department Chair, about BNL's cooperative effort with the Environmental Protection Agency and the Army Corps of Engineers to work with industry to set up facilities to decontaminate dredged material from the port of New York and New Jersey and transform it into beneficial products. *(continued on page 2)*

Joseph Rubino CM-4-131-01

FACE Field Study Shows Biodiversity Benefit



Biodiversity is an important factor regulating how ecosystems will respond to increasing atmospheric carbon dioxide, say researchers from BNL and their collaborators from several universities. The team, led by Peter Reich of the University of Minnesota, just released results from a major field study that appears in the April 12, 2001 issue of *Nature*.

The scientists found that more diverse plant ecosystems were better able to absorb carbon dioxide (CO₂) and nitrogen (N), both of which are on the rise due to human activities and industrial processes.

"The key implication of this research is that, in response to elevated levels of CO₂ and N, ecosystems with high biodiversity will take up and sequester more carbon and nitrogen than do ecosystems with reduced biodiversity," says BNL plant physiologist David Ellsworth, one of the study authors.

The experiment, called BioCON (Biodiversity, CO₂ and N), is the first field study to test the hypothesis that plant species diversity influences ecosystem-scale responses to elevated CO₂ and N levels. It was performed in a scientifically controlled grassland environment at the Cedar Creek Natural History area of the University of Minnesota, using free-air CO₂ enrichment, or FACE, technology. This experimental technology was developed by BNL scientists to study the effects of enhanced CO₂ on plants in their natural environment, rather than in greenhouses or other enclosures.

The Minnesota FACE facility consists of six 20-meter-diameter experimental plots, each encircled by a ring of five-foot tall vertical pipes capable of releasing varying concentrations of CO₂. Computers monitor the wind speed, wind direction, and CO₂ level within each ring,

and adjust the release of CO₂ to achieve an atmospheric concentration at a level that is expected to occur fifty years from now.

In the BioCON study, the six rings were each subdivided into experimental plots measuring 2 x 2 meters. In 1997, these subplots were each planted with either 1, 4, 9, or 16 perennial grassland plant species, randomly chosen from among 16 species, including four nitrogen fixers.

The experimental plots within three of the rings received no additional CO₂,

"These findings suggest that protecting biodiversity worldwide will contribute to safeguarding the capacity of ecosystems to capture a larger fraction of additional carbon and nitrogen entering our environment due to industrial processes."

while three other rings were bathed in CO₂ that was about fifty percent above the present ambient concentrations. Beginning in 1998, half the plots received additional N,

comparable to the high rates of N deposition observed as a result of atmospheric emissions in industrialized regions.

At the end of both the 1998 and 1999 growing seasons, the scientists measured the total amount of plant matter (biomass) per square meter in each plot. Biomass is an indicator of carbon accumulated via photosynthesis, the process by which green plants use CO₂, water, and sunlight to grow. Nitrogen, an important plant nutrient, is absorbed from the soil to become part of the biomass.

The findings: Elevated levels of CO₂ and N resulted in increased biomass

when compared with plots exposed to ambient levels of CO₂ and N. This effect was greatest in plots with high biodiversity as compared to those with fewer species.

"These findings suggest that protecting biodiversity worldwide will contribute to safeguarding the capacity of ecosystems to capture a larger fraction of additional carbon and nitrogen entering our environment due to industrial processes," says BNL ecologist George Hendrey, *(continued on page 2)*



David Ellsworth

Norwegian Minister Tours BNL's PET Facility



At BNL's PET Imaging Facility are: (from left) Guri Ingebrigtsen, Norway's Minister of Social Affairs; Stephen Dewey, Chemistry Department; Nora Volkow, Associate Director for Life Sciences; Joanna Fowler, PET Imaging program head, and Atle Leikvoll, Consul General of the Norwegian Consulate in New York.

On April 6, Guri Ingebrigtsen, Minister of Social Affairs of the Royal Norwegian Ministry of Health & Social Affairs; Atle Leikvoll, Consul General of the Norwegian Consulate in New York; and six other Norwegian officials visited BNL's Positron Emission Tomography (PET) facility, where Lab scientists and their collaborators probe the brain chemistry of addiction, mental illness, and aging.

Ingebrigtsen wanted to learn more about BNL's addiction research programs to determine their relevancy to Norway's social welfare programs focused on drug addiction. Responsible for health, social insurance, and social services, the Norwegian Ministry of Health & Social

Affairs administers approximately one-third of the Norwegian federal budget.

Hosted by Nora Volkow, Associate Laboratory Director for Life Sciences; Joanna Fowler, Chemistry Department, who heads BNL's PET Imaging program; and Stephen Dewey, a senior scientist in the Chemistry Department; the visitors saw the PET imaging laboratory, recently expanded to include two state-of-the-art PET scanners, a microPET for pre-clinical research, and new analytical laboratories and preparation rooms for human studies.

Topics discussed included the PET team's latest findings on the effects of cocaine and other drugs of abuse on the human

brain; individual vulnerability to drug abuse; obesity studies; and advances in addiction treatment. As a follow-up to this visit, Volkow and Ingebrigtsen discussed future collaborations in which Norwegian researchers can become guest scientists at BNL to facilitate the initiation of imaging research programs in Norway.

Other areas of cooperation between BNL and Norway were also discussed. Paul Moskowitz of BNL's Nonproliferation & National Security Department talked with the visitors about concerns associated with dismantling Russian nuclear-powered submarines in northwest Russia; an area immediately adjacent to Norway.

Roger Stoulenburgh CM-4-4-01

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 M. Kay Dellimore, Ext. 2873.
- Additional information for Hospitality Committee events can be found at the Lollipop House and the laundry in the apartment area.
- The Recreation Building (Rec. Bldg.) 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 —

Tuesdays: Welcome Coffee

10-11:30 a.m. Rec. Bldg. Newcomers meet friends. Mimi Luccio, 821-1435.
— Hospitality event

Wednesdays: On-Site Play Group

9:30 a.m.-11:30 a.m. Rec. Bldg. Parents meet while children play. Free, drop in any time. Monique de la Beij, 399-7656.
— Hospitality event

Wednesdays: Yoga Practice Sessions

12:10-12:50 p.m., Rec. Bldg., free. Ila Campbell, Ext. 2206.

Wednesdays: Weight Watchers at Work

noon-1 p.m., Brookhaven Center South Room, Mary Wood, Ext. 5923.

Wednesdays: beg.-adv. Dance Lessons

6-9 p.m., Brookhaven Ctr. North Ballroom, Marsha Belford, Ext. 5053.

Tues. & Thurs.: Aerobic Dance

5:15 p.m., Rec. Bldg. \$4 per class or \$35 for any ten classes. Pat Flood, Ext. 7886; or Susan Monteleone, Ext. 7235.

Mon., Tues., & Thurs.: Kickboxing

noon-1 p.m., Mon. & Thurs. and 5:15-6:15 p.m., Tues. & Thurs. Mary Wood, Ext. 5923, or wood2@bnl.gov.

— THIS WEEK —

Friday, 4/20

Healthline Lecture/Workshop

noon-1 p.m., Berkner Hall Susan Williamson will present "Maintaining Flexibility Workshop." Mary Wood, Ext. 5923.

Saturday, 4/21

Bus Trip to Manhattan

\$10 - Adults
\$5 - Children ages 2-12
9 a.m.-6 p.m.
Monique de la Beij, 399-7656

Atlantic City Bus Trip

\$25 per person. Bus to Resorts Hotel/Casino. 8 a.m.-10:30 p.m. Tickets at the BERA Sales Office. Andrea Dehler, Ext. 3347, or M. Kay Dellimore, Ext. 2873.

Sunday, 4/22

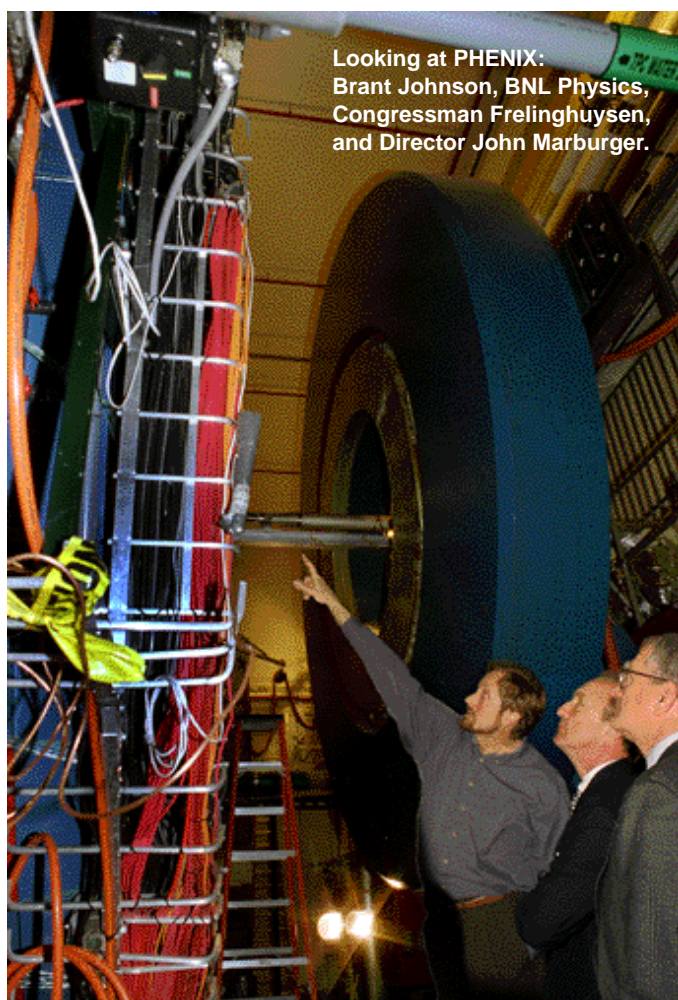
Earth Day Activities

10 a.m., 4-mile race
11 a.m., 1/2-mile Fun Run
Peter Pohlot, Ext. 5660.
8 a.m.-noon, Berkner Hall Lobby, Environmental Displays
Demonstrations by BNL researchers:
—Absorbed Natural Gas-Powered Vehicles, J. Wegrzyn
—Home-Heating Firing Bio-fuels, T. Butcher
For complete Earth Day information, see www.bnl.gov/eday.htm

Congressman Frelinghuysen Visits BNL

(cont'd.)

Then, from Sam Krinsky, Acting National Synchrotron Light Source (NSLS) Chair, the Congressman learned about the NSLS, one of the world's most widely used scientific facilities. One stop he made was at beam line X1A, which is one of five beam lines with active environmental science research programs. The Congressman was pleased to learn that seven-



Looking at PHENIX: Brant Johnson, BNL Physics, Congressman Frelinghuysen, and Director John Marburger.



Congressman Frelinghuysen at the NSLS.

Joseph Rubino CN4-133-01

teen New Jersey institutions send scientists to do research at the NSLS in biomedicine, electronic and structural chemistry, materials science and metallurgy, geosciences, and much more.

The party also toured the Relativistic Heavy Ion Collider (RHIC) with Derek Lowenstein, Collider-Accelerator (C-A) Department Chair. Achieving RHIC's goal — to recreate conditions that existed in the first few microseconds of the universe — will provide a deeper understanding of how the universe was formed and may reveal new particles and states of matter. Physics Department scientists Gene Van Buren and Brant Johnson, from RHIC's STAR and PHENIX detectors, respectively, explained how these giant experiments work.

— Liz Seubert

COMPUTER TRAINING

HTML Programing

An HTML Programing class has been added to May's schedule of computer training classes on Tuesday, May 15. To register for classes you must submit a training request form and an ILR or Web requisition for the appropriate amount to Pam Mansfield, Bldg. 515. When the form is received, your name will be put on a waiting list. All classes are scheduled on the number of requests received. For more information, registration forms, and class schedules, visit the ITD training page at <http://training.bnl.gov/>.

FACE Study (cont'd.)

who led development of the FACE system and is another co-author on the current study.

The scientists say the greater uptake of CO₂ and N in biodiverse plots may be due to positive interactions among the plant species. For example, with greater diversity, species bloom and absorb CO₂ and N over the entire growing season, rather than just part of it.

The other collaborators on this study were from the University of California, Berkeley, and the University of Nebraska. The work was funded primarily by the U.S. Department of Energy with additional support from the U.S. National Science Foundation.

— Karen McNulty Walsh

Three Students Awarded Scharff-Goldhaber Prize



Roger Stoutenburg CN4-141-01

Three students have each won the annual \$1,000 Scharff-Goldhaber Prize this year: Rebecca Christianson, Massachusetts Institute of Technology; Irina Mocioiu, Stony Brook University (SBU), and Jane Burward-Hoy, SBU.

The award was established to recognize substantial promise and accomplishment by a woman graduate student in physics who is enrolled at Stony Brook University or who is performing her thesis research at BNL. Administered by Brookhaven Women in Science (BWIS), the prize honors the late nuclear physicist Gertrude Scharff-Goldhaber (whose photo is seen back, left). In 1950, Scharff-Goldhaber became the first woman Ph.D. physicist appointed to the BNL staff, and, later, she became a founding member of BWIS.

Pictured are (from left) Pam Mansfield, BWIS Scholarship Committee Chair; Burward-Hoy; Mocioiu; Maurice Goldhaber, Scientist Emeritus at BNL and widower of Gertrude-Scharff-Goldhaber; Christianson; Alfred Goldhaber, Professor of Physics, SBU, and son of Gertrude and

Maurice Goldhaber; and Robert Shrock, Professor of Physics, SBU, and advisor for Mocioiu.

Preceding a reception for the three prize winners, two of the students gave brief seminars on their research. Christianson presented research she had completed at the High Flux Beam Reactor and the National Synchrotron Light Source. Her talk was titled "X-Ray Scattering Studies of the High Field Incommensurate State in Cu_{1-x}Mg_xGeO₃," Mocioiu discussed "Phenomenology of Neutrino Oscillations," and Burward-Hoy gave a poster session on "Using PHENIX to identify hadrons produced in 'Little Big Bangs' at RHIC."

Before the awards presentation, Victoria McLane, a founding member of BWIS, gave a brief talk on Gertrude Scharff-Goldhaber's life. Award Selection Committee members included Peter Bond, Senior Physicist, Physics Department; Derek Lowenstein, Chair of the Collider-Accelerator Department; and Peter Paul, Deputy Laboratory Director for Science and Technology.

— Diane Greenberg

'Take Our Daughters to Work' Day — Next Week

Today is the last chance to register your daughter for Take Our Daughters to Work Day, which is next Thursday, April 26. BNLers may bring their daughters age 9 to 15 to the Lab to see their parents' workplace and consider a career in science while participating in on-site activities.

To register, contact Susan Foster, Human Resources Division, Bldg. 185, Ext. 2888.

Coming Up Pogram Lectures

Mario Livio, Space Telescope Science Institute, will present "The Accelerating Universe," on Tuesday, May 8, and "Black Holes — Can These Shed Light on Anything," on Wednesday, May 9, both at 4 p.m.

Nutrition Workshops

The Occupational Medicine Clinic (OMC) and the Health Promotion Program offer two workshops, both on Thursday, May 3. Both will meet monthly thereafter for three months.

Cholesterol Workshop

Participants will have a lipid profile taken at the OMC prior to and at the end of the program. A registered dietitian will facilitate the workshops, with tips on eating out, travel, easy cooking, and how to monitor success.

Hypertension Workshop

At this workshop, discussions will be held on blood pressure screening, sodium control, shopping, healthy dining out, cooking, travel, and more. Symptoms that may not show until a serious health problem exists will be highlighted—demonstrating the importance of regular blood-pressure monitoring.

These workshops are limited to 15 people each. To register, contact Mary Wood, Ext. 5923, or wood2@bnl.gov, by April 27.

BERA Golf

The BERA Golf Association is now accepting applications for the 2001 season. All current BNL, contractor, and DOE employees, facility users, retirees, and their spouses are invited to join. For more information, contact Jeff Williams, Ext. 5587, jwilliams@bnl.gov.

One-on-One Retirement Planning

The Vanguard Group invites you to spend 30 minutes with a licensed Vanguard representative who will visit the Lab to talk about the financial issues that matter to you most.

On Thursday, May 3, meet one-on-one with a representative between 9 a.m. and 5 p.m. You can expect to learn about:

- Investing for long-term goals such as retirement
- Selecting funds for savings
- Making the most of available services and investment tools.

Schedule your 30-minute session by calling Vanguard, 1-800-662-0106, Ext. 6900. You will then be told of a location.

Arrivals & Departures

Arrivals

John A. Barta Plant Eng.
 Leslie M. Hill Dir. Office
 Garfield A. Jones Physics
 Alexei M. Tselik Physics
 Dong Wang C-A

Departures

Behnaz Behrouzian Biology
 Dermot P. Fitzgerald C-A

'Money Talks' Seminar, 4/27

Recent trends in financial markets may be causing concern about retirement savings. To help BNLers address these concerns, a representative from TIAA-CREF will present the seminar, "Retirement Savings During Volatile Markets," next Friday, April 27, at noon in Berkner Hall. The current state of the market and its overall long-term effects on retirement savings will be discussed. Check your mailbox for registration forms. For more information, call Joyce Wund, Ext. 7516.

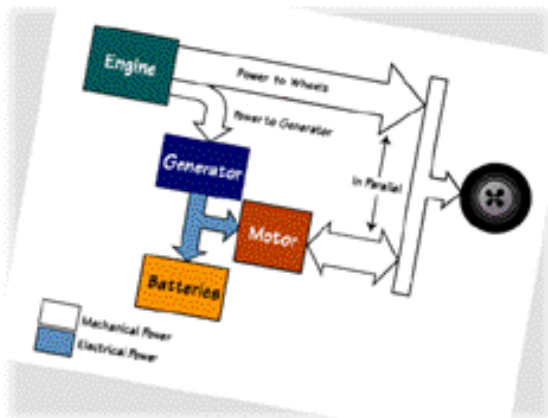


BNL's D.J. and Joe Greco caught in the unusual act of fueling up their new hybrid electric vehicle, the Toyota Prius. Catching them at the gas station is unusual because this car will drive for more than 600 miles on a single tank of gas. Impressed with the environmentally friendly car is James Young (back), Upton Service Station's gas attendant.

Joe Greco, a technician in the Source Development Laboratory of the National Synchrotron Light Source, and his wife D.J., a staff specialist in the Director's Office, set out to buy a new car this past January. They were pleasantly surprised when they came across the Toyota Prius — a hybrid electric vehicle (HEV), which is powered by both a gasoline engine and an electric generator.

The Toyota Prius and the Honda Insight are the world's first mass-produced HEVs with design features that make them the most environmentally friendly vehicles on the road.

The Grecos found that, unlike conventional vehicles, the gasoline-powered engine of an HEV only runs when there is a demand for power. During normal travel, the gasoline engine engages as needed to drive the car's wheels and/or recharge the battery. An electric generator supplies power to a separate electric motor, which also powers the vehicle. (See graphic below.)



"There is no need to plug in an HEV for recharging" says Joe, "because these cars recharge their batteries using their own gasoline engine. When the driver slows down or steps on the brake in an HEV, a regenerative braking system converts kinetic energy from the motion of the wheels — normally dissipated as heat in the brakes — into electric

current to help recharge the battery." About 20 percent of the total energy consumed by Greco's Prius comes from regenerative braking, which contributes to the car's excellent fuel economy.

'Green' in Several Ways

With fuel efficiency rivaling that of a motorcycle (50+ miles to the gallon) and emissions that are 90 percent cleaner than any gasoline-powered vehicle on the road, HEVs are truly environmentally friendly.

The Grecos were also attracted to buying an HEV for its lower noise pollution, due to the gasoline-powered engine only running when needed. When engine demand is low, such as when starting, traveling at a light load, or stopping, the HEV is driven only by its electric motor, using battery power. The car is virtually silent when idling at stop lights and cruising at slow speeds.

In an effort to reduce drag resistance, HEVs are designed to be aerodynamic. For example, the Prius is 14 percent more aerodynamic than the typical family sedan.

Technological Worries?

With such advanced technology incorporated into the car, one may wonder if a specialized mechanic is required to service the vehicle. An oil change is one thing, but where do you go when your 274-volt electrical system is in need of repair? "Not to worry," says Joe. "The hybrid electric system in our new car is covered by an eight year warranty."

According to Joe, "The Prius' other specifications, (weight, acceleration, etc.) are comparable to other vehicles in its class and price-range." The Grecos have given over 30 test drives to friends and co-workers and are happy to answer any questions.

As D.J. says, "Even though we were considering the Civic, my husband, Joe, is really into saving the world. So this was the only way to go."

With their new car — its increased fuel economy and low greenhouse-gas emissions — the Grecos are helping to keep the atmosphere clean.

— John Galvin

BERA Election Results



JoAnn Reed

JoAnn Reed and Charles Gardner were recently elected to the BERA Executive Board and will begin their four-year terms on May 1, 2001. They will replace the outgoing Board members Deborah Botts and



Charles Gardner

John McCaffrey and join the remaining six incumbent members, Tracy Blydenburgh, Tom Dilgen, Luis Nieves, Laurie Pearl, Rosalie Piccione, and Ed Sperry.

Dress For Success Clothing Drive

This year's Dress For Success clothing drive, which is coordinated with the Town of Brookhaven, will be held from Tuesday to Thursday, May 8-10. As in the past, this is a collection of business attire for women re-entering the workforce.

Clothing collected must be in excellent condition, dry cleaned, and on hangers. For more information, contact Nancy Concadoro, the BNL chairperson for this effort, Ext. 2877.

Calendar

(continued)

— NEXT WEEK —

Monday, 4/23

IBEW Meeting

6 p.m., Knights of Columbus Hall, Railroad Ave., Patchogue
 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, 4/24

Costco Wholesale Demo

10 a.m.-2:30 p.m., Berkner Hall
 Costco Wholesale (formerly Price Club) will offer Costco membership to BNLers. \$45 includes two cards. Applications for Costco American Express Platinum Card will also be available. The card has no annual fee and gives up to 2 percent back on all purchases.

***CAC Energy Forum**

7 p.m., Berkner Hall
 Clean Energy Solutions - Part 1 "Energy Efficiency & Renewables." Topics range from solar and wind feasibility studies to energy-efficient homes and 'green' high-rise buildings. Jeanne D'Ascoli, Ext. 2277.

Wednesday, 4/25

Voicestream Wireless Demo

10 a.m.-2:30 p.m., Berkner Hall
 Special rates on Voicestream/Omnipoint's GSM network will be offered to BNLers; Richard Goll, (516) 343-5900.

Thursday, 4/26

***Take Our Daughters to Work Day**

See notice on page 2.

Amateur Radio Club

noon, Room D, Berkner Hall
 Planning for the upcoming Field Day activities. All BNLers are welcome. Chris Neuberger, Ext. 6062.

BERA Bridge Club

7 p.m., Berkner Hall cafeteria
 Morris Strongson, Ext. 4192, mms@bnl.gov.

Friday, 4/27

***Money Talks Seminar**

noon, Berkner Hall
 "Retirement Savings During Volatile Markets." See notice on page 3.

Women Engineers' Lunch Networking Meeting

Noon, Berkner Hall, Room A.
 Arlene Zhang, Ext. 5369.

— WEEK OF 5/7 —

Tues. & Wed., 5/8&9

***Pegram Lectures**

Both at 4 p.m., Berkner Hall
 Mario Livio of the Space Telescope Science Institute will talk on "The Accelerating Universe" on 5/8, and on "Black Holes—Can They Shed Light on Anything," on 5/9.

Note: This calendar is updated continuously and will appear in the Bulletin whenever space permits. Submissions will be received by the preceding Friday at noon to appear in the following week's Bulletin. Please enter the 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.

Recital

BSA Noon Recital, Wednesday, April 25

In March 2000, Michael Schneider was the featured guest artist for the 8th Annual Paderewski Festival, held in Paso Robles, California, where he was hailed as "a pianist of exceptional insight." He presented a solo program of the works of Paderewski, Chopin, and his own Fantasy Piece No.1, which was the winning composition of the 1999 Texas Music Teachers Association Composition Contest. In October 2000, Schneider was awarded the Silver Medal in the 7th International San Antonio Piano Competition and was also awarded the Audience Choice Award.

The recital is free and open to all; come and go as you please.



Michael Schneider

Community Advisory Council Energy Forum, 4/24

The Community Advisory Council to BNL will present its 5th Energy Forum, "Clean Energy Solutions Part 1: Energy Efficiency & Renewables," on Tuesday, April 24, at 7 p.m. in Berkner Hall.

Topics will range from solar and wind feasibility studies, energy-efficient facilities, and energy conservation to the construction of 'green' high-rise buildings in Battery Park City. All BNL employees, visitors, guests, and the public are welcome. For more information, contact Jeanne D'Ascoli, Ext. 2277.

Help Wanted

Part-Time Post With BERA

A part-time position is available immediately as a back-up BERA Sales Clerk. Applicants must be available to work every Monday, every Sunday during July and August, and be able to work when the full-time BERA Sales Clerk is not available. Applications or resumé should be sent to M. Kay Dellimore, Bldg. 185.

Spirit Dinner Cruise

Join BERA on a dinner cruise around Manhattan on July 3, leaving BNL at 4 p.m. Buy tickets at \$75 (for bus, cruise, dinner, entertainment) from Andrea Dehler, Ext. 2247, or Rosalie Piccione, Ext. 3160.

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/JOBS/jobs.html.

OPEN RECRUITMENT - Opportunities for Laboratory employees and outside candidates. MK2224. ASSISTANT/ASSOCIATE SCIEN-

TIIST - (S-1-S2) - with background as a cryo-electron microscopist to solve macromolecular protein structures. This is a tenure-track position to establish a new, independent research program for biological structures using frozen-hydrated EM. Candidates must have a Ph.D. in biochemistry or biophysics and postdoctoral experience related to protein structure analysis using electron microscopy. Facilities available include a new 200 keV FEG TEM with tilt-cryostage, and access to the STEM facility and National Synchrotron Light Source. Successful candidates will be expected to work in collaboration with other biologists at BNL and institutions such as Stony Brook University, and to participate in a newly created Center for Complex/Membrane Protein Structures. Under the direction of C. Anderson, Biology Department.

MK2203. ASSISTANT CHEMIST (S-1) - Requires a Ph.D. in chemistry, physics, experience in surface science and micro/nano electronics and molecular electronics. Research will focus on developing new, ultrafast, nonlinear laser-based techniques and methods directed at the molecular-level study of the kinetics, dynamics, and structure of organic molecules interacting with model catalytic and nanostructured surfaces. Research will explore and exploit new ultrafast nonlinear optical techniques and methods to bridge this gap by developing tools which are relevant to a "bottom up" approach to surface chemistry that can be tested in the same laboratory from the "top down." The project will focus on characterizing the chemistry of small organic molecules on metal and metal oxide surfaces, as well as nanostructured sur-

faces relevant to catalysis, fuel cell technology, and molecular electronics. These systems are chosen carefully to build upon and collaboratively enhance efforts now ongoing at BNL, specifically the Catalysis & Interfacial Chemistry Effort (CICE) and the National Nanotechnology Initiative (NNI). Under the direction of R. Osgood, Chemistry Department.

DD9054. ADMINISTRATIVE SERVICES ASSISTANT (Reposting) (A-2) - Requires an AAS in business or finance, or comparable experience, to assist the Department's administrative support group. Prior experience with NIH grant submissions and/or DOE Office of Science proposal submission procedures is highly desirable. Demonstrated ability to interpret and apply proposal instructions in the preparation of grant documents, as well as proficiency in MS Office software is required. Familiarity with Laboratory functions including Web requisition, credit card procurement, and travel is also preferred. As a member of the Chair's Office, the successful candidate will provide assistance to scientific staff, will have knowledge in the preparation and submission of scientific manuscripts and federal (DOE and NIH) grant proposals, and will provide other administrative support as required. Medical Department.