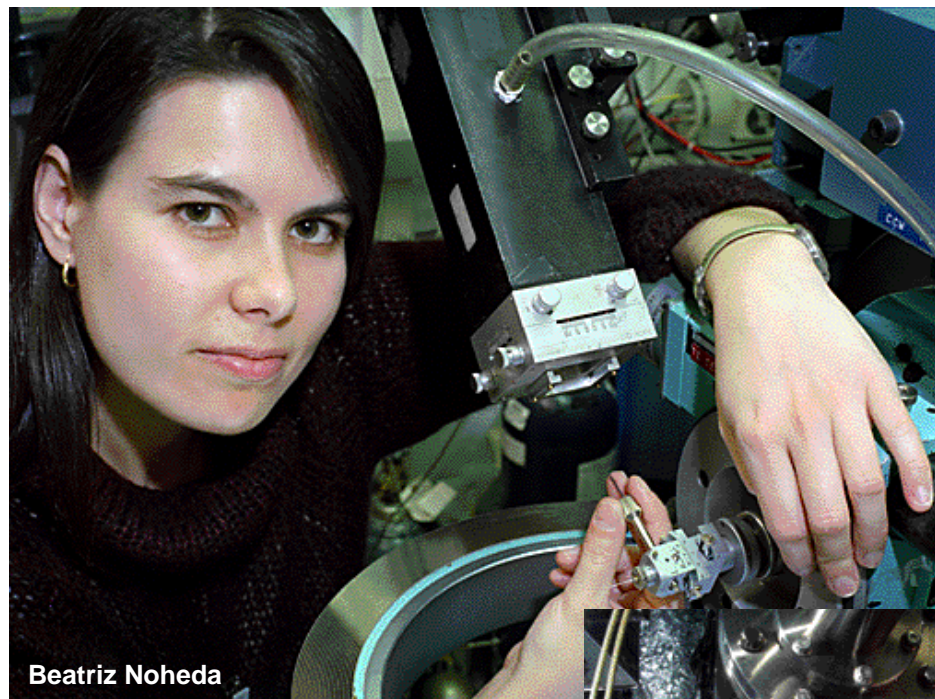


BNL Science Featured at March 2001 APS Meeting

More than 30 BNL scientists presented their research at the March 2001 American Physical Society (APS) meeting held this week, March 12-16, at the Washington State Convention Center in Seattle, Washington. These four stories

feature a sampling of the promising and varied research reported at the meeting. For more information on the APS meeting, go to: <http://www.aps.org/meet/MAR01/>.

— Karen McNulty Walsh and Diane Greenberg



Beatriz Noheda

Roger Stoulenburgh CNS-29-01

Revealing the secret of high-performance transducers

Beatriz Noheda, Physics Department, reported on new advances in the study of piezoelectric materials — materials that can be deformed by the application of an electric field, or that produce an electric current when physically deformed.

One of the most important piezoelectric materials is a ceramic known as PZT. It is used as a transducer for transforming the vibrations of sound waves, for example, into electrical current and vice versa in devices such as telephones, sonar systems, and ultrasound machines.

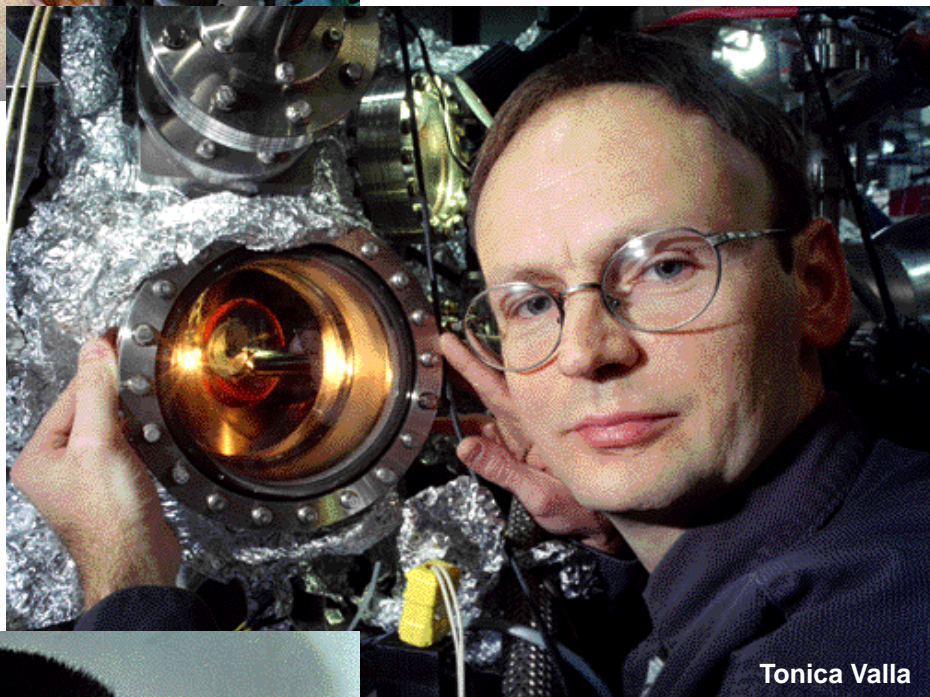
Noheda described the discovery of a previously unknown phase, or crystalline shape, for certain compositions of PZT, which explains

(continued on page 2)

Exploring electronic states in high-temperature superconductors

Tonica Valla, Physics Department, presented his group's latest efforts to understand the underlying mechanism for superconductivity in copper-based materials — cuprates — that act as high-temperature superconductors. Like traditional superconductors, these materials carry electrical current with no resistance while in their superconducting state. But Valla's studies at the NSLS reveal that they do not use the same mechanism.

(continued on page 2)



Tonica Valla

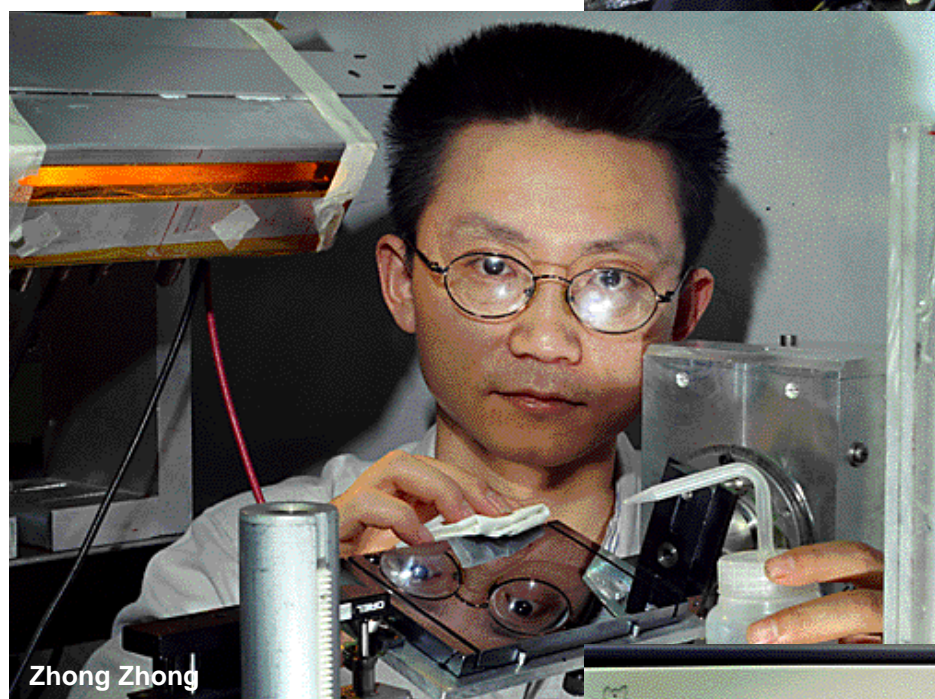
Roger Stoulenburgh CNS-28-01

Using new x-ray technique to improve breast imaging

Zhong Zhong, National Synchrotron Light Source (NSLS) Department, and North Carolina State University researchers Miklos Z. Kiss and Dale E. Sayers are investigating a new technique called diffraction-enhanced imaging (DEI) to detect and study calcifications of breast tissue.

As Kiss reported at the APS meeting, using DEI, the collaboration looked at a sample of breast tissue with at least ten calcifications and made computer models of the new imaging process to study its contrast mechanisms.

(continued on page 2)



Zhong Zhong

Roger Stoulenburgh CNS-30-01

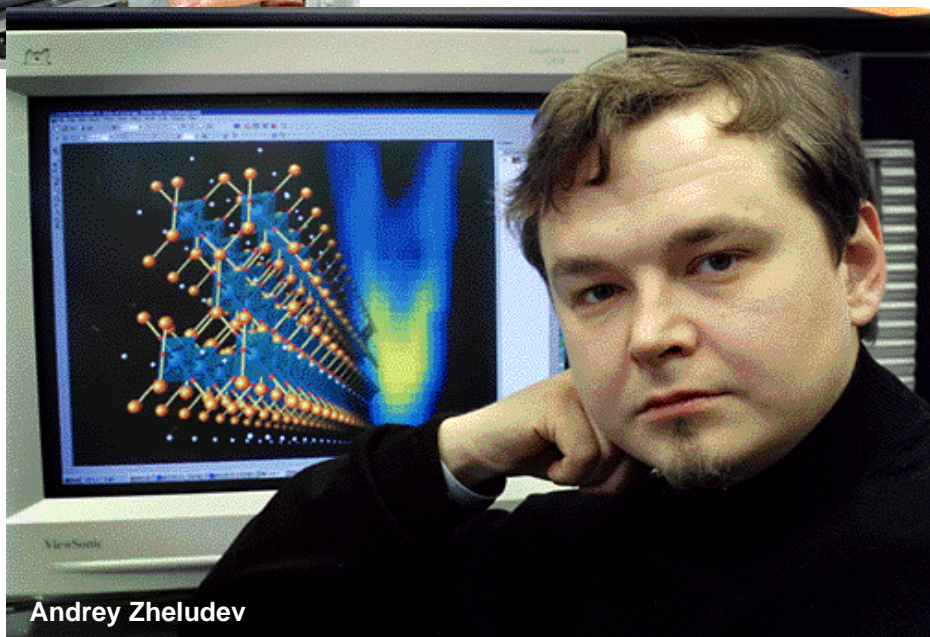
Probing the properties of mixed magnets

Andrey Zheludev, Physics Department, reviewed recent neutron scattering studies of "mixed" quantum/classical magnets.

Conventional magnets are characterized by long-range magnetic order — where the magnetic fields of all the individual atoms are oriented in the same or alternating directions. In contrast, certain one-dimensional magnets become disordered when quantum effects cause oscillations in the magnetic fields of individual atoms.

"The properties of such systems totally defy the classical picture of magnetism," Zheludev says.

(continued on page 2)



Andrey Zheludev

Roger Stoulenburgh CNS-31-01

BWIS Lecture Dresselhaus on Women in Science



MIT Photo by Donna Comeney

Sponsored by Brookhaven Women in Science, Mildred S. Dresselhaus will talk on "Perspectives on Women in Science," on Monday, March 19, at 4 p.m. in Berkner Hall. The former Director of DOE's Office of Science, Dresselhaus is a professor at the Massachusetts Institute of Technology (MIT).

In her discussion, Dresselhaus will include a recent study of the status of senior women faculty of the MIT School of Science, which she says shows that commitment from top management is needed to enhance the position of women in scientific careers.

Director of DOE's Office of Science August/2000-January/2001, Dresselhaus is a solid-state physicist. Holding appointments in the MIT Department of Electrical Engineering & Computer Science and Department of Physics, she began her association with MIT in 1960.

Dresselhaus is nationally known for her work in developing wider opportunities for women in science and engineering. Almost 30 years ago, Dresselhaus and a colleague organized the first women's forum at MIT as a seminar exploring the roles of women in science and engineering. The forum is now an annual event.

From 1997 to 1998, Dresselhaus was president of the American Association for the Advancement of Science (AAAS), the world's largest

(continued on page 2)

362nd Brookhaven Lecture
*Environmental Catalysis:
Unraveling the Mysteries
Behind Desulfurization*
presented by José Rodriguez
Chemistry Department



Wednesday, March 21
4 p.m., Berkner Hall
See story inside . . .

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 is located in the apartment area.
- 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. Recreation Bldg. Newcomers meet friends. Mimi Luccio, 821-1435
— Hospitality event

Wednesdays: On-Site Play Group
9:30 a.m.-11:30 a.m. Recreation Bldg. Parents meet while children play. Free, drop in any time. Monique de la Bey, 399-7656.
— Hospitality event.

Wednesdays: Dance Lessons
6-9 p.m. Brookhaven Ctr. North Ballroom, beg.-adv. ballroom, Marsha Belford, Ext. 5053.

Wednesdays: Yoga Practice Sessions
12:10-12:50 p.m., Recreation Bldg., free. For more information, contact Ila Campbell, Ext. 2206.

Tue. & Thu: Aerobic Dance
5:15 p.m., Recreation Bldg. \$4 per class or \$35 for any ten classes. Pat Flood, Ext. 7886; or Susan Monteleone, Ext. 7235.

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

— NEXT WEEK —

Monday, 3/19
***BWIS Lecture**
4 p.m., Berkner Hall Mildred Dresselhaus, MIT, "Perspectives on Women in Science". Free, open to the public.

Tuesday, 3/20
Alternative Energy Forum
7 p.m., Berkner Hall Presentations by: Nick Humber, Enron Wind; John Miglino, Institute for Sustainable Development at LIU; James Wegrzyn, BNL; C.R. Krishna, BNL; William C. Miller Jr., Clearview Group. Sponsored by the Community Advisory Council to BNL. Free, open to the public.

Wednesday, 3/21
BERA Ski Trip
Brodie Mt., MA, \$45 Includes bus transportation and lift ticket. Bus leaves Brookhaven Center at 5 a.m. Contact, Andrea Dehler, Ext. 3347; Tom Dilgen, Ext. 7455; or Bob Marascia, Ext. 7779.

***Noon Recital**
noon, Berkner Hall Guitarist Matthew Hinsley and flutist Jennifer Lynne Rhyne present "The Two Muses" Free and open to the public.

APS Meeting
Superconductors (cont'd.)

In both traditional and high-temperature superconductors, pairs of electrons carry the electric current, but the "glue" that holds the pairs together may be different. Valla's experiments give direct information about electronic states in these materials and can uncover the interaction that causes pairing of electrons.

The new materials become superconducting at warmer temperatures than do conventional superconductors, which must be kept super cold by surrounding them with expensive liquid helium. Cuprates, however, are superconducting at temperatures "warm" enough to be chilled by less-expensive liquid nitrogen. "If we understand how these high-temperature superconductors work, then we might be able to make them more efficient so that they can take the place of the more expensive kind in magnets for accelerators, electronic circuits, or even more exotic applications as superconducting railroads and motors," Valla says.
— Karen McNulty Walsh

Mixed Magnets (cont'd.)

An outstanding problem in condensed-matter physics is in understanding how classical and quantum magnets interact when combined in a single material. Zheludev described the discovery and study of the first known experimental example of such "mixed" magnets, which are found in complex rare-earth nickel oxides. The most important finding is that dynamic properties of these compounds have a unique dual nature, with features of both quantum and classical magnetism. This study deals with the most basic and fundamental aspects of material magnetism. While unlikely to result in practical applications in the short term, it contributes to the general understanding of how all magnets work.
— Karen McNulty Walsh

Breast Imaging (cont'd.)

This new method, compared to x-rays used in mammography, significantly improves pictures of breast tissue. Calcifications are associated with breast cancer, and their early detection is crucial for diagnosis and treatment. DEI was developed and tested at the NSLS by researchers from BNL, the Illinois Institute of Technology, North Carolina State University, and the University of North Carolina. DEI reduces the x-ray scattering that makes for blurry images and lack of contrast in mammograms. The new patented method may one day replace mammograms.
— Diane Greenberg

362nd Brookhaven Lecture
Unraveling the Mysteries Behind Desulfurization

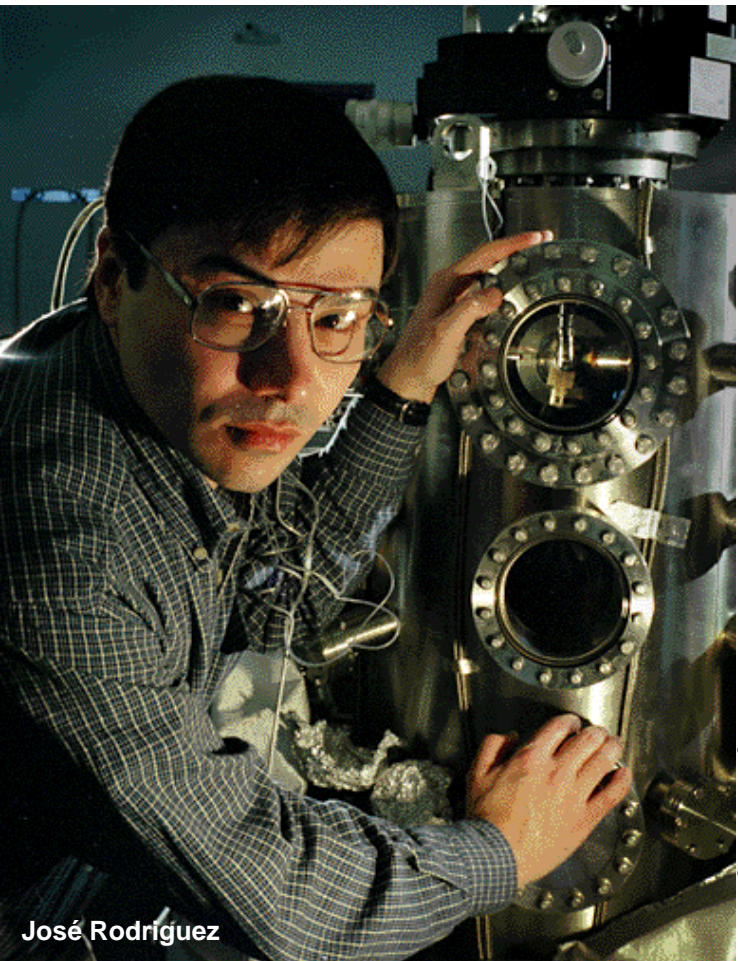
When fossil fuels are burned, sulfur impurities within the fuels become sulfur dioxide, a major air pollutant and a source for the formation of acid rain. Industry uses metal-oxide catalysts in catalytic converters and smokestack scrubbers to help keep sulfur pollutants out of the atmosphere. But new government regulations emphasize the importance of making

this process more efficient and less expensive. To help develop new catalysts based on inexpensive oxides, BNL chemists headed by José Rodríguez, Jan Hrbek, and John Larese have studied the behavior of sulfur dioxide on different surfaces. As a result of their basic research, they were able to collaborate with industry in successfully developing catalysts that destroy

sulfur dioxide more effectively, yet present no health or environmental hazard and are inexpensive. Rodríguez, a chemist in the Chemistry Department, will tell this story in the 362nd Brookhaven Lecture, "Environmental Catalysis: Unraveling the Mysteries Behind Desulfurization." He will give the talk on Wednesday, March 21, in Berkner Hall at 4 p.m., when he will be introduced by Hrbek, also of Chemistry. At Simon Bolivar University, Venezuela, Rodríguez earned a licenciante and first degree in

As a result of their basic research, they were able to collaborate with industry in developing catalysts that destroy sulfur dioxide more effectively.

chemical engineering in 1982, an M.S. in chemistry in 1983, and an M.S. in chemical engineering in 1985. He then moved to Indiana University, where he received his Ph.D. in chemistry in 1988. After two years at Texas A&M University, he joined BNL in 1991 as an assistant chemist. Named Chemist in 1996, he received tenure in 1998. To join the lecturer for dinner at a restaurant off site after the talk, call Jean Petterson, Ext. 4302, by noon on Wednesday, March 21.



José Rodríguez

Roger Stoulenburgh cns3201

APS Meeting
Transducers (cont'd.)

their very high piezoelectric response. "With this new 'monoclinic' phase, you no longer have to apply the electric field in the exact direction of the deformation. This material has a lot more freedom to deform," Noheda says. Scientists may now look for this monoclinic phase in other materials and use them as well as PZT to make the next generation of solid-state transducers, which could result in much more sensitive devices. This work was done at the National Synchrotron Light Source.
— Karen McNulty Walsh

Attn.: Parents
Of High-Schoolers

Applications for the Community Summer Science Program (CSSP) are now available from the Science Education Center, Bldg. 438. Advanced math and science students from local high schools who have completed their junior or senior year are eligible to participate in the six-week program. This year, the program will run from Monday, June 25, through Friday, August 3. The application deadline is April 6. For more information, contact Louise Hanson, Ext. 5849, hanson2@bnl.gov.

Service Awards

The following employees celebrated BNL service anniversaries during February 2001:

- 35 Years**
John J. Gould
Collider Accelerator
Anthony J. Krupien
Physics
25 Years
Edwin Casanas
Magnet
James J. Downing
Procurement & Property Mgmt
Susan Norton
Physics
Jerome D. Quigley
Procurement & Property Management
Joanne Tallarine
Energy Sciences & Technology
Judith C. Thompson
NSLS
20 Years
Margaret C. Bogosian
Intellectual Property & Industrial Partnerships
James E. Brower
Environmental Restoration
Leonard F. Mausner
Medical
Pooran Singh
NSLS
10 Years
Robert R. Gaschott
Radiological Control
Kenneth Krasner
Emergency Services
Linda J. Nunnermacker
Environmental Sciences
Jennifer B. O'Connor
Plant Engineering
Alan T. Raphael
Plant Engineering
David G. Robbins
Safety & Health Services

BWIS Lecture

Dresselhaus (cont'd.)

general science organization, and, from 1998 to 1999, she chaired the AAAS Board of Directors. She has also served as President of the American Physical Society and Treasurer of the National Academy of Sciences. Dresselhaus is a fellow of the American Academy of Arts & Sciences, the American Physical Society, and the Institute for Electrical and Electronic Engineers. Dresselhaus has received numerous honors and awards, including 17 honorary doctorates and the 1990 National Medal of Science. Born in Brooklyn, New York, Dresselhaus earned a B.A. from Hunter College in 1951. She was a Fulbright Fellow at Cambridge University and received an M.A. from Radcliffe College, Harvard University, in 1953. In 1958, she earned her Ph.D. from the University of Chicago. From 1958 to 1960, she was a National Science Foundation post-doctoral fellow at Cornell University.
— Diane Greenberg



Roger Stoudenbough CM12-19-00

Baruch Honor Students Visit BNL Learn About Lab Business, Research

Baruch College’s honor students and Baruch’s Department of Accountancy Chair Steven Lilien, Honor Program Director Etan Bourkoff, and Professor of Accountancy Sudipta Basu gather with

Last December, a group of regular and business honors students, a physics major, and three professors, all from Bernard Baruch College of the City University of New York (CUNY), were welcomed to BNL by Lab Director John Marburger.

The visit was the idea of Frank Federmann, BNL’s Director of Internal Audit, after attending a breakfast with members of the CUNY program in risk evaluation, in which,

“We were all impressed by the Baruch students. . . whoever hires them will be fortunate.”

along with the internal auditing program, Federmann is involved. “I was impressed with the caliber of the students and thought they would be inter-

ested in seeing what a national laboratory offers in the way of careers,” he said.

The students first visited the National Synchrotron Light Source and the Relativistic Heavy Ion Collider where Lab financial officers and scientists gave them an overview of the business or research aspects of these facilities. After these tours, which were arranged by Elaine Lowenstein, Community Involvement Office, the visitors returned to Berkner to lunch in small groups with approximately 20 BNL business and scientific staff.

“We were all impressed by the Baruch students,” commented Federmann. “They were so bright. Many have come to the U.S. recently and have had to learn a new language, just as many of us had to do in my day at Brooklyn College, when most of the students seemed to have come

from somewhere in Europe. But they already all have jobs waiting to receive them, and whoever hires them will be fortunate.”

Many More Women

Compared to the late 1960s that Federmann noticed that there is a much greater percentage of female students in the

“Whereas in the late 1960s, there might have been only one or two women, now, they far outnumber the men.”

group. “Whereas in the late 1960s, there might have been only one or two women, now, they far outnumber the men,” he said.

“This increase is typical of present-day business students,” he continued. “It re-

flects the increasing number of women in today’s job market, and especially in this field, where the glass ceiling is much more easily cracked by very bright women,” he said. “For example, I know of many successful female CEOs in small and large companies.”

The day’s events, which were coordinated by staff of the Diversity Office, headed by Lorraine Merdon, concluded with talks in Berkner: Federmann on business functions at BNL; Joseph Da Silva, DOE Brookhaven Area Office, on careers in DOE and the government; and Marsha Kipperman, Human Resources Division, on BNL job opportunities.

“We’re going to make this an annual event,” said Merdon. “At a time when the Lab wants to recruit excellent people, it is useful to have made these contacts.”

— Liz Seubert

In Memoriam

Edward Gibbons Reilly, who had joined the Physics Department on 6/6/49 and, after 31 years, retired as a senior technical associate on 12/31/80, died on 3/17/2000 at the age of 81.

Joseph Rhodes, who died on 3/24/2000 at the age of 79, had retired from the Fire Group as Fire Sergeant on 10/17/83. He had come to BNL as a firefighter B on 3/21/47.

Arrivals & Departures

Arrivals

- Marc Allaire
NSLS
- Kenneth J. Caccavalla
Plant Engineering
- Brandon D. Fox
Physics
- Victor Garza
Chemistry
- Frank Laue
Physics
- Michael M. McCann
Legal Office
- Matthias P. Messer
Physics
- Daniel P. Ottavio
Collider-Accelerator
- Janet Petroski
Chemistry
- Grigoriy Poskrebychev
Chemistry

Departures

- Michelle Ramotowski
NSLS



The Two Muses: Flute and Guitar

Matthew Hinsley and Jennifer Lynne Rhyne will present the free noon recital “The Two Muses: Flute and Guitar” on Wednesday, March 21, in Berkner Hall. All are welcome.



Performing together since 1995, the duo have a wide-ranging repertoire, including baroque, classical and romantic music as well as a vast array of contemporary styles including tango, folk-based, and modern compositions.

Most recently the duo performed in Texas, where they finished the recording of their soon-to-be-released debut CD, which includes works of Bach, Carulli, Piazzolla, Takemitsu, Beaser, and Godard.

Both active as soloists, Hinsley and Rhyne are completing doctoral degrees at the University of Texas at Austin, and the Stony Brook University, respectively. Rhyne, who performed with the Charlotte Symphony Orchestra as a winner of their Young Artist Competition, won the Texas Flute Society’s Master class Performers Competition. She was a finalist in the Frank Bowen Flute Competition in Albuquerque and won second prize in the Young Artist Competition of the Washington, D.C., Flute Association. Hinsley was a three-time national finalist in the American String Teachers’ Association National Solo String Competition, twice winning second prize. In 2000, he won first prize in the Music Teachers’ National Association Gibson Collegiate Artist Guitar Competition.

Calendar

(continued)

*Brookhaven Lecture

4 p.m., Berkner Hall.
José Rodriguez, “Environmental Catalysis: Unraveling the Mysteries Behind Desulfurization Reactions.”

Thursday, 3/22

Apheresis Blood Drive

Brookhaven Center. BNL volunteers from the previous apheresis drive are scheduled to donate platelets. For more information, contact Sue Foster, Ext. 2888 or foster2@bnl.gov.

Friday, 3/23

Women Engineers’ Lunch Networking Meeting

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

Saturday, 3/24

BERA IAA Festival of Colors

3:30 p.m., Berkner Hall. All are welcome to join BERA’s Indo-American Association in celebrating the Festival of Colors and the Indian New Year. Snacks will be served 3:30-4 p.m. A cultural program by local artists will begin at 4 p.m. Pizza will be served at 7 p.m. in the Recreation Center. Admission \$4. Contact Kumi Pandya, Ext. 7734; Srinil Iyer, Ext. 7655; or A.M. Topé, Ext. 5672.

—WEEK OF 3/26—

Tuesday, 3/27

EAP Lecture

noon-1 p.m., Berkner Hall
Psychologist Barbara Fontana will present “Where Did Our Love Go, Part II: Communication Skills for Couples.” For more information, contact Dianne Polowczyk, Ext. 4567.

Wed. & Thurs., 3/28-29

BERA Book Fair

10 a.m.-3 p.m., Berkner Hall
Discounted best-seller books will be on sale.

Thursday, 3/29

BERA Bridge Club

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

Daffodil Bouquets Arrive

Daffodil bouquets, purchased to benefit the American Cancer Society, can be picked up at the BERA Sales Office.

Friday, 3/30

BERA Spring Fling

6 p.m., Rock Hill Country Club, Manorville, \$15 per person includes, hot buffet, DJ, and cash bar. Contact: Andrea Dehler, Ext. 3347, John McCaffrey, Ext. 2075; Louie Nieves, Ext. 4897; or Laurie Pearl, Ext. 5520.

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. 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.

Meet the Candidates for the 2001 BERA Executive Board

The following four candidates are running for two four-year positions on the Executive Board of the Brookhaven Employees Recreations Association (BERA).

This contest will be decided through an election to be held March 26-30. All employees of BNL, BSA, DOE, and employees of permanent, on-site contractors are BERA members — and urged to vote.



Roger Stoutenburgh 00020301

Susan Cataldo

Susan Cataldo, a secretary in the Medical Department, has been involved in BERA activities since arriving at BNL over 13 years ago. She still plays on the mixed league softball team that she first joined, and, at one point, she played on three softball teams at once. Cataldo captains the ANSKY mixed league team, and she is also president of the Softball League, having been elected two years ago. She plays BERA volleyball and captained a team for some time. Cataldo also captained a mixed league bowling team and served as its recording secretary.

“I believe that joining BERA is a great way to meet your co-workers and boost morale at the Lab,” says Cataldo. “Everyone who takes part in BERA events really enjoys the activities, whether they are playing on a team, watching a match, or attending a party. If I become a Board member, I will work on encouraging every person at BNL, especially new employees, to take some part in what BERA has to offer. That way, the Lab gains from new ideas and the workplace is much more friendly.”



Roger Stoutenburgh 00030301

Charles Gardner

Charles Gardner, a technical specialist in the Collider Accelerator Department, has been active in BERA since 1987.

Gardner plays in the Softball and Football Leagues, dances in the Ballroom, Latin & Swing Dance Club, and served on the BERA Board as its president for two of his four previous years in office. He has organized after-work parties such as the BERA Spring Fling and Annual Holiday Dinner-Dance. Vice president of the BNL Cycletrons Motorcycle Club, he has also been president of the BNL Exercise and Body Building Club for ten years.

“My goal has always been to provide new facilities or improve existing ones that cater to the needs of all BERA clubs,” says Gardner, who helped select the new BERA gym equipment. “Part of my goal became a reality with the recent gym renovation and upgrade of the exercise and weight-lifting facility, but much more can be done. If elected, I will continue to provide the very best for all BERA clubs by working on ways to increase the morale of each and every Lab employee.”



Roger Stoutenburgh 00010301

JoAnn Reed

JoAnn Reed has been at BNL for approximately 23 years, the first 13 years in the Information Technology Division, now for ten years in what became the Procurement & Property Management Division. She has been an enthusiastic BERA member since her first day, she says, playing on numerous softball and volleyball teams and going on ski trips. Reed has also participated in many theater and holiday season bus trips to Manhattan, as well as trips to see the Yankees. Also, she has rarely missed attending — and having a great time — at BERA parties of all kinds.

“I think BERA activities are important at the Lab because, once you join, you make friends and enjoy yourself, and life becomes brighter,” says Reed. “Lab picnics were a great way to get all the BNL community together, so perhaps some family picnics could be arranged. If I am elected, I will ask the different BERA groups for their ideas on how to improve morale, then set to work to help them achieve this goal.”



Roger Stoutenburgh 00040301

Peter Pohlot

Peter Pohlot, an environmental compliance representative in the Environmental Services Division, has been involved with BERA for all of his two years at the Lab.

He immediately joined the BNL Running Club, and, for the past 18 months, he has been the club president. Last year, the club runners won the Long Island championship at the Chase Corporate Classic and took second place in the Corporate Division of Ocean-to-Sound relay. For the Running Club, Pohlot is working on the BNL Earth Day 4-mile race, to be held on April 22, which will be open to the public.

“If I am elected,” says Pohlot, “my mission will be to get more BNL employees actively involved in year-round aerobic workouts. Workouts with a group can be fun, and a lunchtime walk has the side benefits of getting fresh air and relieving stress. Also, interest was so great in the mountain bike ride that I co-organized last year among the 200-plus entrants that I would like to entertain the thought of a BERA mountain bike club.”

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. DD7451. **EXPERIMENTAL MACHINIST** - (Night Shift) Works on various materials from prints, sketches, or verbal instructions. Sets

up and operates machine tools, and also performs bench work on jobs where standards of operation may require unique application. Performs layout, preparation, measurement, setup, assembly, and installation. Makes own tools, performs maintenance incidental to operation of machines, and may specialize. Central Shops Division.

Indo-Am News

Festival of Color, 3/4

See calendar, page 3.

Indian Music Classes

The BERA Indo-American Association is sponsoring Indian vocal music and tabla drum lessons twice a month at the Brookhaven Center at 5:30 p.m. on Tuesday evenings, starting March 27. Classes will be taught by Samir Chatterjee and Sanghamitra Chatterjee, highly accomplished professionals in Indian tabla and vocal music respectively. For more information, contact A.M. Topé, Ext. 5672 or tope@bnl.gov.

Join BERA Events

For more information on these events, see the Calendar of Laboratory Events on pages 2 & 3, visit the BERA Sales Office, or call Andrea Dehler, Ext. 3347.

**Daffodil Sale**
3/29

**Book Fair**
3/28 & 29

**Spring Fling**
3/30

**Atlantic City Trip**
4/21

**Spirit Dinner Cruise**
7/3