

## Physicists Detect Clue to Material's Unusual Electrical Properties

BNL physicists are studying a mysterious material that may lead to significant advances in the miniaturization of electronics. In the July 27, 2001, issue of *Science* magazine, they offer the first clues explaining the material's newly discovered, unusual electrical properties.

This understanding may result in applications using the material to store electrical charge in high-performance capacitors, and offer insight into how charges behave on the nanoscale — on the order of billionths of a meter.

The material is unusual in that it has an extremely high dielectric constant, a property that determines its ability to become electrically polarized — i.e., separate positive and negative electrical charges. The higher the dielectric constant, the more charge that can be stored, and the smaller the electronic circuits can be made.

In addition, unlike most dielectric materials, this one retains its enormously high dielectric constant over a wide range of temperatures — from 100 to 600 Kelvins (K), or -173 to 327°C — making it ideal for a wide range of applications.

Yet the material's dielectric constant drops precipitously — 1,000-fold — below 100K, with no evidence of structural or phase changes in the atoms.

Therein lies the mystery.

"Such a large change in the electronic properties has impli-



Christopher Homes, Tom Vogt, and Stephen Shapiro, Physics Department, who have been studying an unusual dielectric material, are shown at an NSLS infrared beam line. Not present is Young-June Kim, Physics.

cations for the way that charge is distributed within the material," said Christopher Homes, Physics Department. "It's difficult to imagine how those electronic properties can undergo such a large change while the atomic structure remains unaffected."

Previously, scientists at BNL and elsewhere, including Tom

Vogt, Stephen Shapiro, and Young-June Kim of Physics, have looked for hints of changes using x-rays, neutron beams, and other methods — to no avail.

But Homes' technique, measuring optical conductivity, or the material's ability to reflect and absorb varying frequencies of light, revealed a number of

unusual changes in the way the atomic structure vibrates.

Homes detected the vibrations by illuminating samples of the substance with varying wavelengths of infrared light at BNL's National Synchrotron Light Source. He measured which wavelengths were reflected and

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## Save the Date: 9/11 Celebration Set For Lab Director

All employees, facility users, and guests are invited to a celebration sponsored by BSA for Laboratory Director John Marburger on Tuesday, September 11, 4-7 p.m. at Berkner Hall. Refreshments and entertainment will be provided.

A Senate confirmation hearing will be scheduled later this fall for Marburger, who was selected by President George W. Bush for nomination as Assistant to the President for Science & Technology Policy. Marburger will continue to serve as Lab Director until that confirmation process is completed.



## BNL Embarks On Two Major Research Programs

DOE has approved funding for two major nanoscience research initiatives at BNL. Each of the initiatives will receive one million dollars for a period of two years.

These studies of structures and interactions that occur on the nanoscale — on the order of billionths of a meter, or in the region between the atomic and the bulk scales — will permit precision control never before possible in many areas of chemistry, electronics, and materials science.

"These large-scale, interdisciplinary research programs will make use of BNL's unique research facilities and help to establish BNL as a leader in the burgeoning field of nanoscience," said Richard Osgood, Associate Laboratory Director for Basic Energy Sciences.

One set of studies will focus on understanding the nanoscale properties of catalysts, substances that initiate or speed up the rates of chemical reactions, with the goal of exploiting these properties to optimize chemical reactivity and selectivity.

"Improved catalysts can have far-reaching impact on the economy and environment since the combination of high activity and selectivity lowers energy costs and reduces the negative environmental impact of chemical processing and manufacturing," said Mike White of the Chemistry Department, who is leading these studies.

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## BNL Proposes Dedicated Isotope Research, Production Machine

Gail Marcus, Principal Deputy Director in DOE's Office of Nuclear Energy Science & Technology (NE), visited BNL on July 25 to meet DOE Brookhaven Area Office and BNL personnel, tour various facilities, and discuss Brookhaven's isotope research and production program. High on the agenda of topics discussed was BNL's proposed Cyclotron Isotope Research Center (CIRC).

CIRC, for which NE and BNL funded a conceptual design report last year, will fulfill an urgent national need for radioisotopes used to diagnose and treat disease.

Suresh Srivastava, who heads BNL's radionuclide and radiopharmaceutical research in the Medical Department, explained that radioisotopes constitute the lifeblood of nuclear medicine, which is one of the safest ways to diagnose and treat cancer and other life-threatening diseases.

"Radioisotopes are used in well over 12 million nuclear-medicine procedures annually in the United States alone," said Srivastava. BNL has a long history of developing and promoting the medical use of radioisotopes, the most famous being technetium-99m — used in about 85 percent of all nuclear medicine procedures worldwide.

The centerpiece of BNL's CIRC will be a 70-million electron volt, 2000-microampere, negative hydrogen-ion cyclo-

tron. It will serve as a reliable source for radioisotopes to be used for research, production, and training of future nuclear- and radio-chemists.

This year, three DOE bodies favorably reviewed and validated the CIRC concept. Also, through a bioengineering initiative funded this year and sponsored by Stony Brook University and BNL, New York State may provide significant matching funds for CIRC construction.

"Although funding is difficult at this time, the support of New

York State could be of crucial assistance to DOE in starting the CIRC project," said Srivastava. "With this machine, for a comparatively modest investment, BNL can revitalize nuclear medicine's exciting potential."

Other examples of radioisotopes designed and developed within Srivastava's group are: copper-67, shown to be very promising in treating B-cell non-Hodgkin's lymphoma; and tin-117m, which shows great promise for relief of primary and metastatic bone-cancer pain.

Many radioisotopes are often hard to obtain continuously in sufficient quantities because of the need for a dedicated, high-energy source for year-long production. Since the High Flux Beam Reactor was closed, BNL, a forefront producer of the nation's isotopes, can now use only the Brookhaven Linac Isotope Producer (BLIP).

BLIP production, led by Leonard Mausner, has remained an important source for many new and current radioisotopes.

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At a BNL luncheon on July 25, DOE and BNL staff discussing the Lab's nuclear medicine program and the hope for a dedicated isotope research and production facility are: (seated, from left) Linda Chang, Nora Volkow, both of BNL; Gail Marcus, DOE; Peter Paul, Suresh Srivastava, both of BNL; (standing, from left) Nand Narain, DOE Brookhaven; Norman Holden, Derek Lowenstein, Leonard Mausner, Marge Lynch, all of BNL; Michael Holland, DOE Brookhaven; and William Horak and David Schlyer, both of BNL. Marcus, the 2001-2002 President of the American Nuclear Society (ANS), was also the invited speaker the ANS Long Island Chapter meeting that evening.



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 —

**Mondays: Arts & Crafts**  
4-5 p.m. Rec. Bldg. \$5 per month covers materials. Marcia Leite, Ext. 1040.— Hospitality event

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

**Tuesdays: Yoga Practice Sessions**  
12-1 p.m., Brookhaven Ctr. North Room. Free. Ila Campbell, Ext. 2206.

**Wednesdays: BNL Ballroom, Latin & Swing Dance Club: beginner to advanced lessons**  
Register now for series 1 of the 10th anniversary 2001-02 season, which starts on Wednesday, September 12 (see listing for that day). North Ballroom, Brookhaven Center. Marsha Belford, belford@bnl.gov or Ext. 5053; Ron Ondrovic, ondrovic@bnl.gov or Ext. 4553; Sue Perino, perino@bnl.gov or Ext. 2483.

**Wednesdays: Cooking Exchange**  
5-6 p.m. Rec. Bldg. \$1 per evening covers the cost of ingredients. Marcia Leite, Ext. 1040.

**Wednesdays: Weight Watchers**  
noon-1 p.m., Brookhaven Center South Room, Mary Wood, Ext. 5923.

**Mon., & Thurs.: Cardio Kickboxing**  
\$5 per class. Mon. & Thurs. from noon-1 p.m. in the Gym. Thursday evenings from 5:15 to 6:15 p.m. in the Brookhaven Ctr. Registration is required. Contact, Mary Wood, Ext. 5923, or wood2@bnl.gov.

— THIS WEEKEND —

**Friday - Sunday, 8/17-19**  
**Balloon & Music Festival**

BERA offers discounted tickets for the Waldbaum's Balloon & Music Festival at Calabro Airport. On Friday hear Jethro Tull; on Saturday hear the Doobie Brothers and see fireworks by Grucci; and on Sunday, enjoy the WBLI Summer Concert Bash. Tickets available in the BERA Sales Office, weekdays, from 9 a.m. to 3 p.m. Andrea Dehler, Ext. 3347, or M. Kay Dellimore, Ext. 2873.

**Saturday, 8/18**  
**Foxwoods Casino Trip**  
Cancelled

— NEXT WEEK —  
**Wednesday, 8/22**

**Apheresis Blood Drive**  
Brookhaven Center. BNL volunteers from the previous apheresis drive are scheduled to donate platelets. Sue Foster, Ext. 2888, or foster2@bnl.gov.

EPSCoR: Advancing Energy Science & Technology Partnerships

This year, BNL presented a range of work, from the Relativistic Heavy Ion Collider program to positron emission tomography, at the annual DOE EPSCoR Workshop.

EPSCoR is short for Experimental Program to Stimulate Competitive Research. The program provides funds in states that traditionally have not had a large share of federal support. BNL hosted the workshop this summer with support from both DOE and the National Science Foundation (NSF) EPSCoR programs. The yearly workshops are held to promote communication and collaborations between investigators at colleges



Stephen Steadman, DOE, and Thomas Ludlam, BNL.

Detecting Clues (cont'd.)

which were absorbed. The absorbed wavelengths are those that match the atoms' natural vibration frequencies. As the temperature of the substance was cooled below the 100K mark, the absorbed frequencies — and therefore the vibrations — changed. "Since the vibrations in a solid depend a great deal on how the charges are distributed, the changes in vibrations suggest that the charges can be rearranged without causing a structural distortion," Homes said. "The fact that we see these changes offers the first real glimpse of why this material has such a large dielectric constant, and the mechanism by which it decreases so dramatically below 100K." The physicists speculate that at temperatures above 100K, pairings of positive and negative electric charges, called dipoles, can flip around quickly, independently of one another. This property and the high concentration, or density, of dipoles within the solid both contribute to the large dielectric constant, Homes said. If you put the material in an electric field, all the individual dipoles flip into alignment to separate the charges. But as the material cools, the dipoles "freeze out" in random positions, losing their ability to flip quickly into alignment. This "electronic phase transition" happens in the absence of a structural change. "Additional research will help us understand this effect and the range of ways this material might be used in microelectronics and other fields," Homes said. — Karen McNulty Walsh

Arrivals & Departures

Arrivals	
Minghui Yu	En. Sci. & Tech.
Departures	
Sharon L. Goode	Plant Eng.
Cathy J. Lombardo	ITD
Konstantin Olchanski	Physics
Jason R. Ortiz	C-A
Sharadha Sambasivan	Biology



John Taylor, BNL; Matesh Varma, DOE/EPSCoR Program Director; Peter Bond, BNL; and Myron Strongin, BNL and DOE/EPSCoR Coordinator.

and universities in the EPSCoR states and scientists in DOE laboratories. Special funding is available through partnership awards to bring these collaborations to fruition. Each year, the programs at one of the laboratories are emphasized. In addition, the other national laboratories gave summaries of their programs. Breakout sessions in various disciplines were also held so that researchers from DOE laboratories could meet with the state investigators. Sessions were also organized so that administrators in the laboratories, the EPSCoR



Peter Paul, BNL Deputy Director for Science & Technology, Robert Wood, DOE, and Gwyn Williams, Jefferson Laboratory.

states, DOE, and the NSF could discuss how to help researchers submit their proposals and how to cement better connections between the various institutions. Said Myron Strongin, BNL Physics Department, who coordinated the DOE/EPSCoR program, "The willingness and commitment of the conference committee, the breakout session chairman, and the speakers who gave uniformly excellent talks helped to make the workshop a success." He continued, "Thanks are due to many Laboratory services, such as Graphic Arts,



Front, from left: Christopher Homes, BNL; Ravindra Lal, Alabama A&M University, and Jiufeng Tu, BNL.

Conference Support Services, and Community Involvement's Tour Program." Viewgraphs and pictures from the conference are available at [www.bnl.gov/epscor](http://www.bnl.gov/epscor).



Terrence Buck, BNL, and Darnell Diggs, Alabama A&M University.

Worldwide Scam Reaches Lab Seek Financial Account Information

A worldwide scam originating in Nigeria has found its way to BNL. Russel Reaver, Manager of the Safeguards and Security Division (SSD), warns that many people at the Lab have already received letters, facsimiles, or e-mails designed to entice them into opening their bank accounts to supposed foreign government officials or former officials. This scam has been around since the mid-1990s, when Nigeria was the only originating country. Now, persons claiming to be from other sub-Saharan African nations have been sending the solicitations. The letters usually begin with a "request for an urgent business relationship," and goes on to solicit your help in disposing of excess funds obtained from sources in their country. State-run industries, such as mining, are normally the source claimed for these excess but "trapped" funds. These false sources wish to transfer many millions of U.S. dollars out of their country but need assistance. Naturally, they will cut you in for a percentage. All that need be done is to provide the originator with the name of your bank and your account number to enable details of the transfer to be worked out. The letter promises a follow-up meeting to finalize the deal. This may sound tempting, but everyone should be highly suspicious of any stranger asking for personal banking information. Says Reaver, "The odds are that funds will be transferred all right, but out of your account, not into it." Reaver adds, "If you receive this sort of correspondence, do not respond to it. Instead, send it to me or Lenny Butera at SSD in Bldg. 50. We will pass the information to the FBI for their on-going investigation."

Radioisotopes (cont'd.)

However, BLIP is only available for a few months a year, as the facility depends on receiving protons from a source that has limited financial support. The lack of a dedicated source for isotope production means that little isotope research and development can be performed, and few nuclear or radiochemists can be trained for future development of this field. Said Srivastava, "BNL management strongly supports CIRC, which would combine the Lab's extensive experience in the field of nuclear medicine with the long history of radioisotope research and development supported by DOE." — Liz Seubert

Service Awards

The following employees celebrated BNL service anniversaries during the month of June 2001:

50 YEARS	
Elinor F. Norton	Chemistry
40 YEARS	
Jadwiga Kycia	Biology
John J. Dabrowski	NSLS
Katherine S. Conkling	Rad. Ctrl.
35 YEARS	
John S. Read	Plant Eng.
Rudolf Zantopp	Rad. Ctrl.
30 YEARS	
John P. McNeil	Magnet
25 YEARS	
G. Alanson Greene	En. Sci. & Tech.
Mitchell D. Williams	Magnet
Michael F. Bonner	Nonp. & Nat. Sec.
William M. Morse	Physics
Cheryl R. Brown	Staff Services
Lore M. Barbier	Env. Sciences
Marion V. Heimerle	C-A
Patricia A. Cahill	SSD
Tirre F. Farmer	Plant Eng.
20 YEARS	
Leslie G. Fishbone	Nonp. & Nat. Sec.
Pauline M. Gagnon	PPM
Theresa J. Diaz	PPM
Andrew W. Moran	SSD
10 YEARS	
James T. Rose	NSLS
Barbara A. Coughlin-Byrne	Medical
Terrence T. Mroczkowski	C-A
Louisa A. Barone	HR
Emil J. Varrichio	C-A

## Nano Science

(cont'd.)

The second initiative will explore how electric charges move at the nanoscale. These studies could lead to advances in energy-conversion devices, such as those that convert sunlight into electricity, and new "molecular electronics" for tinier, faster computer circuits. Both programs will also develop and refine methods of nanofabrication to build improved materials atom by atom or molecule by molecule. "As we increase our understanding of charge transfer, this 'bottom up' approach should allow us to design and build materials with greater control and increased efficiency," said Chemistry's Carol Creutz, program coordinator for the second initiative.

**BNL's Unique Facilities, Interdisciplinary Staff**

BNL houses some of the world's most sophisticated research tools and an interdisciplinary team of research scientists, making it an ideal setting for these studies. Lab scientists are also working on a proposal to construct and instrument a new building to expand the Lab's capabilities in the area of nanoscience. This nanoscience center would provide a focussed effort for resident researchers and visiting scientists from around the world.

— Karen McNulty Walsh

8th Walk for Beauty, 9/24  
Fight Breast Cancer

On Sunday, September 30, the entire Lab community — employees, retirees, facility-users, guests, families — are invited to join the BNLe rs who will participate in the 8th Annual Walk for Beauty.

The proceeds from this charitable walk will benefit breast cancer research at the University Hospital and Medical Center at Stony Brook.

Here is some key information about this year's walk:

- As September 30 approaches, registration forms and additional information will be available.
- If you have the opportunity to register outside the Lab, indicate your company name as "BNL" in the appropriate place on the form.
- Contact Peggy Sutherland, Ext. 3131, or Donna Grabowski, Ext. 2720, with questions or requests to be added to the mailing list.

Science Museum

Wanted: Pre-1982 Canadian Nickels

The Lab Science Museum needs pre-1982 Canadian nickels. Unlike later models containing less pure nickel, these nickels are truly magnetic and are used in the magnet program to teach schoolchildren the principles of magnetism.

Extra Friday Hours 8/17 & 24

The Science Museum, Bldg. 935, is open today and next Friday, August 24, to Lab employees, facility-users, and their families, 11:30 a.m.-1:30 p.m. Each day there will be a liquid nitrogen demonstration at noon and a static electricity presentation at 12:45 p.m. Children under 14 must be accompanied by an adult.

Upton Nursery School Registration

Upton Nursery School (UNS) — a non-profit, cooperative pre school run by Lab parents for three- to-five-year-old children — is accepting registrations for September.

The school welcomes children from all countries: speaking English is not a requirement. Classes are taught by a certified New York State teacher with an MS in elementary education. Approximately once a month, each child's parent assists the teacher, which involves parents in their child's education and helps keep costs low.

Classes are in the on-site Recreation Building, on Mondays, Tuesdays, and Thursdays, 8:30-11:30 a.m. Children must be toilet-trained. Tuition is \$110 per month, plus a \$25 registration fee. For more information or to register your child, contact Shelley Herbert, 325-0572, or Shelly Shumway, 732-1367. Non-English-speakers will be answered by someone who can communicate with them.

Donations welcome

UNS fees are kept as low as possible, but expenses continually rise. Since young parents cannot afford higher fees, parent alumni or others interested in keeping the tradition of the UNS viable by donations may send checks made out to the Upton Nursery School, P.O. Box 324, Upton, NY 11973.

Classified Advertisements

Miscellaneous

BABY MONITOR - Fisher Price baby monitor, excel. cond. \$15; car seats, 2 Cosco Grand Explorer car booster seats, excel. cond., \$15; shoes, girls white jazz shoes size 5 and 5½, hardly used, \$15 each; toys, Little Tikes coupe and gas tank, \$15 for both. Lloyd, Ext. 5225.

BIRDS AND BUTTERFLIES - assorted sizes of balsa wood tropical birds, dried piranhas & butterflies, good for indoors & outdoors. Jessica, Ext. 5354.

COLEMAN - pop-up camper, sleeps 6, excel. cond., must see, \$1,500. Joe, 929-0668.

ELECTRIC STARTER - 12v, for 12 hp Techumseh eng., good cond., reasonable price. Dan, Ext. 4988.

LASER POINTERS - red, compact keychain, contains 4 pattern generating heads, batteries included, \$5 each. Thomas, Ext. 2225.

GOLD FLATWARE - service for 12, Reed and Barton Rebackraft, plus hostess gift set, lined flatware chest included, \$300. Kathy, Ext. 3431 or 654-8685.

LUGGAGE - luggage set, brushed tweed, oversized wheeled bag & carry on, ask. \$75 obo. Nancy, Ext. 2877.

POWERTOOLS - Delta band saw, \$100; Sears jointer, \$100; Sears 10 inch table saw, \$50; large Weber grill, \$10. Dave, Ext. 3522.

SNOWBLOWER - runs, ask. \$35 neg. Joe, Ext. 4660 or 929-0668.

SWING SET - 1 year old, needs children to play on, ask. \$75. Bobbi, Ext. 6047.

TOILET - porta potty by Sears, excel. cond., cost \$70, ask. \$25. Andrew, 744-6298.

On-Site Yard Sale, 8/23

All BNL employees, guests, and their families are invited to join in a giant yard sale on Thursday, August 23, at 5 p.m. on the lawn of the Recreation Bldg. 317.

To sell items or for information, contact guestservices@bnl.gov or the Quality Of Life Office, Ext. 8481.

Healthfest 2001  
Save These Dates!

The Lab's 8th annual Healthfest — a week of health, fitness, and safety — will be held this year, as follows. More information will be distributed as the event approaches.

date	events
Mon., Oct. 15	stretch, fitness walk
Tue., Oct. 16	stretch, fitness run
Wed., Oct. 17	Healthfest fair, golf workshop
Thurs., Oct. 18	Healthfest fair, tennis workshop
Fri., Oct. 19	mountain bike ride



Noon Recital, 8/22

The Daedalus Quartet

The Daedalus Quartet will present a noon recital on Wednesday, August 22, in Berkner Hall.

The Daedalus Quartet, an exciting new string quartet formed in the summer of 2000 by participants at the Marlboro Music Festival, is quickly making a name for itself in the chamber music world. Its members have studied at the Juilliard School, the Curtis Institute of Music, Harvard University, and the Cleveland Institute of Music. In addition to the Marlboro Festival and Musicians from Marlboro tours, the



quartet has participated at the Taos, Aspen, Banff, and Angel Fire Festivals. At BNL, Daedalus will be performing a program they are taking to the Banff International String Quartet Competition later in August.

In addition to their talent, Daedalus has BNL ties: Violinists Min-Young and Kyu-Young Ki and cellist Raman Ramakrishnan are graduates of Bellport High School, and Raman's father Venki was recently a BNL staff scientist.

Noon recitals are free and open to the public. Bring your lunch and come and go as you please.

Web Vehicle Auction

For the first time, retired BNL motor vehicles will be sold to the public via a Web-based auction. The auction of the vehicles, which are located at warehouse T-87, will be conducted by the Government Services Administration.

Pictures and other information about the 19 automobiles and trucks will be posted at www.gsaauctions.gov beginning on or about Monday, August 27.

The Web-based vehicle information will be available for 7 to 15 days thereafter, during which time anyone may bid on the vehicles.

Casino Cruise, 9/14

BERA offers a casino cruise on Friday, September 14. Tickets at \$30 per person include round-trip bus transportation to Freeport, a dinner buffet, \$10 in tokens, and the cruise. The bus will depart from Long Island Expressway exit 63 park & ride at 5:30 p.m. to meet the cruise ship, which leaves from Freeport at 7:30 p.m., returning to Freeport at 12:30 a.m.

Tickets and coupons for this and other events are available at the BERA Store in Berkner Hall, weekdays, 9 a.m.-3 p.m. For more information, call Andrea Dehler, Ext. 3347, or M. Kay Dellimore, Ext. 283.

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For Rent

BELLPORT VILLAGE - 1-bdrm. apt., l/r, d/r, kit., full bath., single pref., cable, incl. all, \$850/mo. James, 744-2095.

HOLBROOK - 2-bdrm. cottage on, full bsmt., garage, appliances, no pets, avail. 10/1, \$1000 + util. Morris, 585-4539.

MASTIC - 1-bdrm., full bath, large walk-in closet, kit., l/r, non-smoker, waterview, private, everything incl., \$700/mo. Gary, 281-2571.

MASTIC BEACH - 2-bdrm. apt., private ent., full bath, kit. & l/r combo, 2nd floor, no pets, \$875 + util & 2 months sec. 654-5623.

MEDFORD - 1 or 2-bdrm. condo, patio, indoor/outdoor pool, tennis & golf course, exercise room, completely furnished, washer & dryer, private entrance, walk to cafe & clubhouse, rent from 10/1 to 6/30, \$975/mo. Henry, 451-9533.

MILLER PLACE - new two-bedroom apartment in private home in quiet neighborhood, close to stores, Route 25, 25A, LIE, & Wm. Floyd Pkwy, private entrance, use of yard and built-in pool. l/r, eik., full bath, closets, available 9/1. Asking \$1,375 per month, includes all, 2 months' security, no smoking or pets. 821-3460.

SHIRLEY - 3-bdrm., l/r, kit., bath, new carpet, new paint, w/d, garage, nice yard, sec. & ref., avail. 9/1. 924-0139.

SHIRLEY - 1-bdrm. apt., l/r, d/r, kitchen, private entrance, yard, parking, quiet street, 6 miles to Lab. Freshly renovated. Single preferred. \$800/all. Joe, Ext. 7160 or 399-1013.

PATCHOGUE - spacious 3-bdrm., l/r, family room, dining, full bsmt., 2 baths, 2-car garage, fenced backyard with deck, 10 min. to Lab. Ext. 7655 or 928-5319.

HILTON HEAD, SC - condo, sleeps 6, fully furn., 2-bdrm., 2 baths, pool, beach, golf nearby, avail., Apr. to Oct. \$525/wk. Guy, Ext. 3147 or 689-5378.

JAMAICA, W.I. - silver sands, cottage-style villa, scenic, uncrowded, near Ocho Rios & Montego Bay, full domestic service, cooking, cleaning, laundry, sleeps 6, 3 min. walk to beach & tennis, courts. 928-6930.

KISSIMMEE, FL - Orange Lake, 2-bdrm., 2 bath, sleeps 6, golf, tennis, pool, 5 minutes to Disney, 2/16/02 - 2/23/02 residents week, \$650. John, Ext. 5100.

ST. CROIX , VI - Divi Carina Bay, week 19, 1-bdrm., sleeps 4, 34 yrs. remaining, brand new upper unit, private pool, casino, top rated, \$8,500. Bill, 732-9102.

For Sale

MALVERNE - 2-bdrm., 1 bath, eik., l/r, 55'x100', good retirement or starter home, \$240,000. Jim, Ext. 5537.

MASTIC - 3-bdrm. ranch, 1 bath, large country kit., no bsmt., 10 mins. to BNL, \$99,990. Phyllis, 878-0003 or G. Mar, 632-7582.

MIDDLE ISLAND - adorable lakefront year-round cottage, 2.5-bdrm., 1 bath, rebuilt by local architect/contractor in lovely environment, \$205,000. 286-2855 or 286-5870.

MILLER PLACE - north of 25A, 4-bdrm, Victorian, 18 months old, 2½ bath, 2 car garage, a/c, oak floors throughout, master bath suite, jacuzzi, \$320,000. 449-2496.

SHIRLEY - 4-bdrms., 2 bath, Cape, eik., l/r, bsmt., 1 car garage, 100'x100', 45 yrs. old, west of Wm. Floyd, \$150k. Gail or George, Ext. 5288 or 874-4131.

Calendar

(continued)

Wednesday, 8/22 (cont'd)

Alcatel Vacuum Demo

11 a.m. - 2 p.m., Berkner Hall  
A representative from Alcatel Vacuum Products will display a new helium leak detector and other new products. For more information, contact Tom Amels, 973-657-0769.

\*Noon Recital

The Daedalus String Quartet will perform at noon in Berkner Hall. Noon recitals are free and open to the public. Bring your lunch and come and go as you please. For more information, see www.music.bnl.gov.

—WEEK OF 8/27—

Monday, 8/27

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.

Wednesday, 8/29

Divorced & Separated Support Group

noon-1 p.m., Berkner Hall, Room D. Mary Campbell, Ext. 4776, maryc@bnl.gov.

Thursday, 8/30

BERA Bridge Club

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

—WEEK OF 9/10—

Wednesday, 9/12

Divorced & Separated Support Group

noon-1 p.m., Berkner Hall, Room D. Mary Campbell, Ext. 4776, maryc@bnl.gov.

BSA Distinguished Lecture on The Aging Process

At 4 p.m. in Berkner Hall, Caleb Finch, University of Southern California will present "Puzzles and Paradoxes of the Aging Process."

BNL Ballroom, Latin & Swing Dance Club: 2001-02 season starts with series 1

series 1 lessons (9/12-11/7) —  
• 6-7 p.m. beginner Introduction to Ballroom 103: West Coast swing, fox trot, peabody, quickstep (2 weeks per dance), \$30/person/8 weeks.  
• 7-8 p.m. advanced beginner American bolero & tango review syllabus levels I&II (4 weeks per dance), \$30/person/8 weeks.  
• 8-9 p.m. intermediate/advanced International quickstep and American waltz technique and principles (4 weeks per dance), \$40/person/8 weeks.  
North Ballroom, Brookhaven Center. Marsha Belford, belford@bnl.gov or Ext. 5053; Ron Ondrovic, ondrovic@bnl.gov or Ext. 4553; Sue Perino, perino@bnl.gov or Ext. 2483.

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.



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](http://www.bnl.gov/JOBS/jobs.html).

**LABORATORY RECRUITMENT** - Opportunities for Laboratory employees.

DD2394. SR. SECRETARY (CW-3) - Responsible for assisting staff within the Groundwater Projects Group. Works independently within established procedures and may be required to handle non-routine office matters. May have frequent contacts within and outside the Laboratory to exchange information essential to assigned office functions. Must possess extensive knowledge of one or more specific areas of Laboratory operations, policies and procedures and demonstrated skills in one or more specialized administrative functions. Requires sound knowledge of MS Excel, PowerPoint, MS Word, and other Microsoft Office applications. Requires a minimum of an AS degree and significant relevant experience or equivalent. Environmental Management Directorate.

DD2395. ADMINISTRATIVE SERVICES ASSISTANT (A-2) - Responsible for assisting staff within the Project Controls Group. Works independently within established procedures and may be required to handle non-routine office matters. May have frequent contacts within and outside the Laboratory to exchange information essential to assigned office functions. May direct the work of other support personnel. Must possess extensive knowledge of one or more specific areas of Laboratory operations, policies, and procedures, and demonstrated skills in one or more specialized administrative functions. Requires sound knowledge of Primavera Project Planner, MS Excel and MS Word. Will assist in planning, budgeting, scheduling and providing weekly and monthly schedule status updates using Primavera. Requires significant relevant experience and an AS degree or equivalent. Environmental Management Directorate.

**OPEN RECRUITMENT** - Opportunities for Laboratory employees and outside candidates.

NS8051. TECHNOLOGY ENGINEER (I-6) - Requires a bachelor's degree or equivalent, preferably in computer science or related discipline, and a minimum of 3+ years' experience in providing installation, diagnostic, and problem-resolution services for LAN and WAN network environments. Experience with major networking operating systems and transport protocols (Cisco IOS, Linux, Solaris, TCP/IP, NT) and extensive hands-on experience configuring and installing a wide variety of network hardware and software components is required. CCNA certification and demonstrated planning organizational, customer service, and excellent communication skills are a must. Must be available to perform network maintenance 24x7x365, as required, and be willing to serve as weekend on-call duty network engineer approximately one weekend a month. Information Technology Division.

NS2397. PROJECT ENGINEER II (P-7) - Requires a bachelor's degree in engineering or equivalent experience and capabilities, and 4-6 years' pertinent experience. Will be responsible for planning, budgeting, scheduling and executing surface remediation program work packages, and organizing and supervising staff engineers and engineering consultants. Responsible for field work, equipment design and development, test of materials, preparation of specifications, process study, research investigations, report preparation, procurement, contractor oversight, manufacture, erection, test, operation and implementation of remediation strategies. Environmental Management Directorate.

Motor Vehicles and Supplies

01 SUZUKI JLX CONVERTIBLE 2D - a/t, a/c, p/s, p/b, p/w, 5600 mi., tilt wheel, am/fm CD player, dual air bags, fold down rear seats, 4wd, removable hard tops, ask. \$18,500. Denise, Ext. 5873 or 878-1303.

99 CHEVROLET SUBURBAN LT - green/gray, 4x4, 7 pass., 35k mi., leather int., ask. \$23,995. Jim, 476-7556.

97 CHEVY MONTE CARLO - black, 4.3, keyless entry, bench seat, 27k mi., warranty included, ask. \$9,500. Frank, 516-785-1597.

## Summer Sunday Tours Continue Through August 26

### This Sunday, Tour BNL's Medical Department

**This Sunday, August 19, visitors to Brookhaven will tour the Lab's Medical Department where researchers will present and discuss BNL's clinical research and the use of state-of-the-art medical diagnostic tools. Visitors will learn about PET and MR imaging techniques. Tours of the Radiation Therapy Facility and BNL's whole-body counter will also be given.**

**In addition, visitors may take guided bus tours of the Lab site that will run continuously throughout the day; participate in the Whiz Bang Science Show, presented four times between 10 a.m. and 3 p.m. in Berkner Hall; and view the Camp Upton Historical Collection, which displays the history of the BNL site during its pre-Lab days as a U.S. Army camp in WW I and II.**

**Organized by BNL's Museum Programs of the Community Involvement Office, BNL's Summer Sunday tours begin at 10 a.m. and visitors must arrive before 3 p.m. The tours are free, open to the public, and no reservations are needed.**



95 TOYOTA CAMRY - 2-dr., 5-spd., gold package, CD player, 77k mi., new clutch, ask. \$7,500. Harry, 281-4217.

94 FORD CROWN VICTORIA - a/t, a/c, p/s, p/b, p/w, 100k mi., ask. \$4,000. Carol, Ext. 3906.

94 TOYOTA 4 RUNNER - auto, p/w, p/s, p/l, 70k mi., clean in/out, \$11,500. Ext. 7430 or 286-6492.

93 PROBE GT - p/b, p/s, p/w, p/l, 5 spd., a/c, am/fm cass., v.g. cond., ask. \$3,000. 281-0360 after 6 p.m.

93 TOYOTA TERCEL - green, 2-dr., 4-spd., manual, 79k mi., runs well, good body, \$1,500 obo. Alan, Ext. 4714.

92 JEEP WRANGLER - red, 5-spd., 4-cyl., 136k mi., new tires, runs well, \$3,800. Joe, 929-0668.

92 MERCURY COUGAR ELITE - white with blue carriage top, a/t, a/c, p/s, p/b, p/w, 86k mi., Rolf, Ext. 2305 or 286-2045.

91 FORD EXPLORER XLT - 4-dr., clean, garaged & well maintained, many new parts, runs well, \$4,300 neg. John, 331-4792.

89 CHRYSLER VAN - a/t, p/s, p/b, p/w, 169k mi., colored glass windows, well maintained, ask. \$1,400. Judith, 544-0392.

89 TOYOTA CAMRY - 5-spd., 4-dr., all power, cruise, well maintained, 180k hwy. mi., excel. running cond., ask. \$1,200 neg. Helen, Ext. 4973.

89 TOYOTA CAMRY - 5-spd., p/s, p/b, p/w, 180k mi., cruise, excel. running cond., 180k. mi., ask. \$1,200. Helen, Ext. 4973.

87 CHEVROLET CELEBRITY - white, 4-dr., a/c, p/s, p/b, 113k mi., runs very well, ask. \$895; 73 Volkswagon camper, white, excel. int., 106k mi., rebuilt motor needs torque converter & tires, \$495. Betty, 929-6144.

87 TOYOTA CELICA GT - hatchback, 180k mi., excel. cond., dealer maintained, \$3,000 firm. Frederick, 878-9102.

86 AUDI 4000S - 5-spd., 4-dr., all power, sunroof, many new parts incl., new front tires, ask. \$800. Chang, Ext. 4730.

84 PONTIAC FIREBIRD - black, a/t, a/c, p/s, p/b, 6-cyl., t-top, 86k orig. mi., CD player, excel. cond., \$2,300. Ellen, 654-3752.

83 OLDS DELTA 88 - runs well, many new parts, \$400. Bill, Ext. 5795.

ROLLBAR - white, double tube for sport side Chevy pick-up, good cond. 325-0447.

TIRES - 4 Dunlop Radials 235/85 R16 mounted on 6 bolts rims for vans or trucks, \$125. Fred, 369-9720.

Boats & Marine Supplies

26' CRUISER'S INC. HOLIDAY - 1986, hw, shower, elec. stove, head, refrig., new canvas, camper back, sleeps 6, 260 h.p. OMC I/O, \$14,000. 874-4131.

24' BAYLINER CIERA SUNBRIDGE - 1987, new int. cabin, stand-up head, galley, many extras, \$9,000. Rodney, 751-7023.

21' BOWRIDER - fiberglass with electric winch trailer, 115 h.p. outboard Johnson, lots of extras, \$3,000 neg. Fred, 369-9720.

18' GLASPRO - with trailer, Merc marine 90 hp eng., runs v. well, \$700. Al, Ext. 2175.

17' CANOE - Grumman squareback alum., fine cond., \$400. John, 765-1299.

17' F/G RUNABOUT - steering and cables, no motor, old trailer, \$150. Tirre, Ext. 3288.

16' CANOE - blue, 1995, Olde Town Discovery 158 with oars, excel. cond. 325-0447.

16' SAILBOAT - with trailer, ask. \$900. George, 878-1178.

14' FIBERGLASS SAILBOAT - with trailer, fully equipped, good condition, Buccaneer model, \$700. Gordon, 281-6386.

DINGHY - 9' x 4' fiberglass dink w/wood seats, only needs paint job, \$200. John, 765-1299.

JOHNSTON OUTBOARD - 1978, 15 h.p., electric start, long shaft, good cond., \$450. Al, Ext. 4718.

Furnishings & Appliances

AIR CONDITIONER - a/c Westinghouse 2000 Btu, \$200; twin bed, almost new, incl. box frame, \$50; white wooden changing table, \$40. 544-0392.

BED - twin size, box spring & mattress, like new, hardly used, ask. \$200. Maurice, 928-6930.

BED - full size, mattress & boxspring, chiro pillow plush, \$200. 475-3527.

BED - queen size, frame & mattress, \$150; table & 4 chairs, \$150; color TV, \$60, vacuum cleaner, \$20, CD-K7 recorders, answering cordless telephone, \$10. Carole, 632-8079.

BEDROOM PIECES - 7' triple dresser, 2 mirrors, 2 night stands, all wood, dark oak, no headboard, no chest of drawers, very good condition, \$250 obo. Greg, 878-6330.

BEDROOM SET - 2 twin beds, double dresser, chest, student desk, and pair of stifle lamps, \$500 obo; desk, large mahogany desk 76x36, \$100 obo. Yong , Ext. 4663 or 724-7891.

BEDROOM SET - day bed, twin bed, dresser, desk, all in matching oak, excel. cond. Alfred, 744-9866.

BEDROOM SET - queen size bed, one mirrored dresser, one men's dresser and two side tables, v.g. cond., ask. \$600. Pete, Ext. 5551 or 399-2813.

CHAIRS - 4 iron candy parlor style, refinished, white with pink seats, v.g. cond., \$60 for all; drafting table, commercial hydraulic top, size 38½x50½, easily adjustable height & tilt, \$145; couch & loveseat, burgundy, good cond., ask. \$135 for both; washer, Whirlpool, portable, full capacity, various cycles, used twice, cost \$400 ask. \$185. 744-6298.

ELECTRIC RANGE - 4.65 cu. ft., self cleaning electric range by Whirlpool, less than 2 years' old with use and care manual, \$200. Pat, Ext. 7886 or 758-3284.

FIREPLACE - Franklin, Atlanta stove, works, model 26, good cond., complete incl. acc. swing-out grill, best offer. Fred, 588-2268.

REFRIGERATOR- dorm size, 1.8 cubic feet, 20x19½x19½, excel. cond., \$55. Yang, Ext. 3663 or 474-3845.

SOFA BED - Jennifer Convertible, blue denim, twin size, with washable denim slip-cover, \$75. Peggy, Ext. 3131 or 472-7217.

TABLES - brass & beveled glass tables, coffee, end and sofa, good cond., \$100 obo. Nancy, Ext. 2877.

UPRIGHT FREEZER - large, food service type, works excel., \$75 obo. Bobbi, Ext. 6047.

Tools, House & Garden

GARAGE DOOR OPENER - Stanley with remote, \$50. Nick, Ext. 3205.

LAWNMOWERS - from \$40 to \$190. Joe, Ext. 4660 or 929-0668.

Sports, Hobbies & Pets

BICYCLE - Schwinn, 5 spd., bicycle built for 2, \$250. John, 765-1299.

BIKE - red Ducati replica, pocket 2000, low mileage, ask. \$850; bike, free agent speedway, 3 piece crank, yellow & red, \$250. Dan, Ext. 4605.

GUINEA PIG - with cage, accessories and more, paid \$80, \$25 takes all. Susan, Ext. 2168 or 744-4948.

HOME GYM - Weider Victory, multi-station, ask. \$400. Arlene, 344-3513.

TREADMILL - Sears, Lifestyler Expanse 750, 4 exercise profiles, zone monitor, 2.0 hp, 16" x 50" treadbelt, ask. \$225. 585-2084.

Audio, Video & Computers

COMPUTER - 486, monitor, printer, has 20 mb ram, 32 modem spd., good for starters, \$115 for all. 744-6298.

(continued on page 3)

BNL DANCE CLUB 2001-02 BALLROOM DANCE LESSON SCHEDULE

For more information or to register for series 1, contact Marsha Belford, [belford@bnl.gov](mailto:belford@bnl.gov) or Ext. 5053; Ron Ondrovic, [ondrovic@bnl.gov](mailto:ondrovic@bnl.gov) or Ext. 4553; or Sue Perino, [perino@bnl.gov](mailto:perino@bnl.gov) or Ext. 2483.

time Wednesday	series 1 9/12 to 11/7/01 <sup>†</sup> no class: 9/26	series 2 11/14/01 to 1/23/02 <sup>†</sup> no class: 11/21, 12/19&26	series 3 1/30 to 3/20/02 <sup>†</sup>	series 4 4/3 to 5/22/02 <sup>†</sup> no class: 3/27
6-7 p.m.	<b>INTRODUCTION</b> Ballroom 103: West Coast Swing fox trot peabody quickstep <i>\$30 per person</i>	<b>SYLLABUS</b> American peabody I & International quickstep I <i>\$30 per person</i>	<b>INTRODUCTION</b> Ballroom 104: hustle merengue mambo samba <i>\$30 per person</i>	<b>SYLLABUS</b> American peabody II & International quickstep II <i>\$30 per person</i>
7-8 p.m.	<b>SYLLABUS</b> American bolero & tango review I & II <i>\$30 per person</i>	<b>SYLLABUS</b> American bolero III & tango III <i>\$35 per person</i>	<b>SYLLABUS</b> American rumba IV & waltz IV <i>\$35 per person</i>	<b>SYLLABUS</b> American rumba & waltz review III & IV <i>\$35 per person</i>
8-9 p.m.	<b>MASTER</b> technique & principles: International quickstep <i>and</i> American waltz <i>\$40 per person</i>	<b>MASTER</b> technique & principles: International samba <i>and</i> American mambo & salsa <i>\$40 per person</i>	<b>MASTER</b> technique & principles: International fox trot <i>and</i> American tango <i>\$40 per person</i>	<b>MASTER</b> technique & principles: International rumba & cha cha <i>and</i> American bolero <i>\$40 per person</i>

<sup>†</sup>dates as of August 2001; subject to change as necessary.