

## BNL Collaboration Finds Trees Grow Faster In Simulated 21st-Century Atmosphere

Trees in experimental forest plots bathed in atmospheric carbon dioxide (CO<sub>2</sub>) at levels expected by the year 2050 experienced a 25 percent growth increase during the first two years of a continuing project, according to results from an ecological research facility built and co-run by BNL.

The report is published by scientists from the University of Illinois, Duke University, Brookhaven, and other collaborators in the May 14 issue of *Science*. It is based on research at the Forest-Atmosphere Carbon Transfer & Storage (FACTS-1) facility operated by Brookhaven in a Duke forest in North Carolina. FACTS-1 is one of several such facilities built by BNL for use by ecologists and other scientists to evaluate the effects of global change on plants and ecosystems.

"This study puts forests on the carbon-dioxide map," said lead author and Illinois plant biologist Evan DeLucia. While the potential for forests to absorb carbon-dioxide emissions had been only speculative, "We now have some real data that allows for global extrapolation," he concludes.

In 50 years, if forests worldwide were to grow 25 percent faster than they do now, then plant life could serve as a "sink" for about half the expected CO<sub>2</sub> emissions from fossil-fuel combustion, the results of this study suggest.

But DeLucia and William Schlesinger, a Duke botany professor and the article's other main author, caution that sustaining such a high uptake is unlikely. Open-air studies at Italian hot springs and another Duke plot suggest that CO<sub>2</sub>-induced growth spurts will decline within a few years. "The crux of the matter is that vegetation can respond to higher



Within three plots in a forest in North Carolina, white rings of metal piping are seen as they pump extra carbon dioxide (CO<sub>2</sub>) into the atmosphere surrounding the loblolly pines on Duke University-owned land where the recent discovery about the impact on tree growth of a CO<sub>2</sub>-enriched atmosphere was made. Thirty lead scientists and their teams from BNL, Duke and other institutions are involved in this project, the goal of which is to study trees' response to a simulation of the atmospheric CO<sub>2</sub> concentration that are expected during the next century. FACTS-1 is just one of several user facilities built by BNL and its FACE collaborators for similar ecology research in Arizona, Wisconsin, Minnesota, Nevada, Tennessee, and Switzerland and now Panama. Over 200 scientists a year use these facilities to study the effects of elevated concentrations of CO<sub>2</sub> on crops, prairie, desert, meadow, and hardwood and tropical forest.

CO<sub>2</sub> and act as a carbon sink," Schlesinger said. "The 25-percent growth increase is probably an upper limit for what the world's vegetation can do. Nevertheless, it is interestingly high."

"These results confirm the value of simulating tomorrow's atmosphere in natural ecosystems and raise important questions for future research,"

said Brookhaven's George Hendrey, who is the FACTS-1 co-principal investigator with Schlesinger, and who, with a team within the Division of Environmental Biology & Instrumentation in the Department of Applied Science, originated the technology for the Free Air Carbon Enrichment (FACE) program upon which FACTS-1 is based.

Hendrey's FACE team includes: Keith Lewin, who leads the FACE engineering group; Bill Behrens, Andrew Palmiotti, and Galen Hon, who assist Lewin; John Nagy, who develops FACE operations software and participates in the experiment; and David Ellsworth, who is stationed at Duke for the research.

The Duke-owned forest, where the DOE-funded study is being conducted within three 100-foot-diameter parcels of land, is dominated by 13-year-old loblolly pines, which are a fast growing tree species and happen to be at their peak growing age.

Each of the three forest parcels is ringed by 16 Brookhaven-developed

High up in the tree tops of a North Carolina loblolly-pine research forest is BNL Scientist George Hendrey, who co-leads the FACTS-1 project and co-developed the technology that makes this ecology research possible.



### Coming Up

The State University of New York at Stony Brook (USB) and Brookhaven Women in Science are sponsoring four seminars on site on Friday, June 11, during USB's Laboratory History & Sociology Conference, June 10-12.

From 1:30 to 5:30 p.m. that Friday, the Lab's historian, Bob Crease, who is also a USB associate professor of philosophy, will moderate the four talks, in the following order: "Lord of the Rings: SLAC, CEA, the AEC, and the Fight to Build the First U.S. Electron-Positron Collider," by Elizabeth Paris of the University of Pittsburgh; "The Technological and Industrial Dependence of CERN," by John Krige of CRHST, France; "The Frontier Outpost of the SSC: The Central Design Group (1983-88)," by Lillian Hoddeson and Adrienne Kolb of the Fermi National Accelerator Laboratory; and "Community Relations and the National Laboratories," by William Lanouette and Gary Boss of the U.S. General Accounting Office.

The presentations will be made in the Hamilton Seminar Room of the Chemistry Department, Bldg. 555. All are welcome.

Scientist Yimei Zhu of the Department of Applied Science will deliver the 347th Brookhaven Lecture, which is entitled "Seeing Is Believing: Advanced Electron Microscopy in Materials Science," on Wednesday, June 16, at 4 p.m. in Berkner Hall. All are welcome.



Meet the 1999 Brookhaven Council

Since 1962, the Brookhaven Council has been advising the Laboratory Director on promotions to tenure and other matters concerning the scientific staff. It is also the group to which scientific staff and others within the Laboratory community may bring their concerns to the Director's attention. The Council's 15 members are tenured scientists elected for three-year terms by the tenured scientific staff of their respective departments or divisions. The 36th Brookhaven Council is composed of: (seated, clockwise from left) Charles Meinhold, Department of Advanced Technology (DAT); Robert McGraw, Department of Applied Science (DAS); Doon Gibbs, Physics Department; Hiroshi Takahashi, DAT; Peter Takacs, Instrumentation Division; Jack Fajer, DAS; (standing, from left) Thomas Roser, Alternating Gradient Synchrotron Department; Stephen Dewey, Chemistry Department; Suresh Srivastava, Medical Department; Brookhaven Council Chair John Sutherland, Biology Department; Gwyn Williams, National Synchrotron Light Source Department; Stephen Peggs, Relativistic Heavy Ion Collider; and Michael Creutz, Physics. Not pictured are: John Larese, Chemistry; and John Shanklin, Biology. For more information on the Brookhaven Council, go to [www.council.bnl.gov](http://www.council.bnl.gov) on the World Wide Web, or click the appropriate link on the BNL home page.

towers. These towers' computer-controlled pipes and valves maintain constant atmospheric concentrations of CO<sub>2</sub> at 560 parts per million — (continued on page 2)

## FACTS-1

(cont'd)

which is the concentration projected for the year 2050, as compared to today's concentration of 360 parts per million — around the clock and regardless of wind speed and direction.

The experiment is fully replicated, meaning that trees in the three locations are exposed to increased CO<sub>2</sub>. Three other identical tower-ringed forest plots that receive no extra CO<sub>2</sub> are serving as controls.

In 1997, the first full year of the replicated study, the overall growth rate of the dominant pine trees and underlying hardwoods, shrubs, and vines increased 16 percent in the CO<sub>2</sub>-enriched plots when compared to control plots, the authors reported in *Science*. In 1998, the increase swelled to 25 percent, an addition that to some degree reflected the inclusion of fine root growth not measured in 1997.

The scientists are skeptical that high growth rates can be sustained, in part because of the Swiss and Italian studies. Those studies, comparing high CO<sub>2</sub>-concentration areas to control sites, found carbon dioxide's stimulatory effects decreased as trees age. An older tower ring site built to test the FACE concept has also logged reduced response to elevated CO<sub>2</sub> beginning after the fourth of its six years of operation. — Kara Villamil

## Holiday Notes

In observance of Memorial Day, the Lab will be closed on Monday, May 31, and the on-site offices of the Teachers Federal Credit Union, Omega Leisure Travel, and the United States Postal Service will be closed. No Bulletin will be published on Friday, June 4.

The Brookhaven Center will be open for breakfast and lunch throughout the holiday weekend, May 29-31, 7:30 a.m.-2 p.m. Dinner service at the Brookhaven Center will not be offered on Saturday and Sunday, May 29 & 30, but will resume on Monday, May 31, 5-9 p.m.

The pool and gym will be closed throughout the holiday weekend, May 29-31. The usual hours at the pool will resume on Tuesday, June 1. The gym will also reopen on Tuesday and the usual weekday hours will resume. Until Saturday, September 11, the gym will be closed on weekends, according to its summer schedule.

## Retirement Options

In a one-hour seminar sponsored by the Human Resources (HR) Division, a TIAA-CREF representative will discuss BNL employees' retirement options under the BSA retirement plan. To be presented at noon on Thursday, June 10, the talk will cover cash withdrawals, minimum distributions, annuities, survivor benefits, and more. To register, return the bottom portion of the Money Talks flyer recently sent to all employees to Denise DiMeglio, HR Benefits Manager, Bldg. 185, by Tuesday, June 1. For more information, call Ext. 7516.

## Computer Training

The Information Technology Division has scheduled the following classes for June:

date	topic	level
6/8	Excel	intro.
6/16	Windows 95/98	basic
6/22	Word	interm.
6/29	Outlook	

To register for these classes or interest in future classes, submit a training request form to Pam Mansfield, Bldg. 515. Forms and course outlines are available at [www.ccd.bnl.gov/bnl/training/](http://www.ccd.bnl.gov/bnl/training/).

## BNL Telephone Operator Peggy von Achen Helps Save Off-Site Caller's Life



Peggy von Achen

The morning of Wednesday, April 14, was proceeding like any other day in the working life of BNL's senior Telephone Operator Peggy von Achen of the Information Technology Division.

Within the telephone office in the east wing of Bldg. 515, von Achen and fellow Telephone Operator Glenn Abramowitz were at their respective consoles, answering the usual array of calls. As the calls were being automatically switched to the available console, the two operators were spending the morning transferring those who have called BNL's general number — 344-8000 — to the proper parties, providing extension numbers of those not listed in the Lab's telephone directory, placing foreign long dis-

ance calls, and the like.

But then, at 10:20 a.m., von Achen answered a request for operator assistance that she will remember for the rest of her life.

The beep and the display on her console indicated that it was an off-site phone call, which von Achen answered with pride in her voice, "Brookhaven National Laboratory."

"The caller was a female who said, 'I'm 87 years old and I'm all alone and I can't breathe,'" recalls von Achen.

She continues, "I said, 'What?' and, as she was repeating herself, I picked up the phone next to me and dialed 9-911," the off-site number for Suffolk County emergency services.

With the console's headset cover-

ing her left ear and by holding the phone handset to her right ear, von Achen served as the failing woman's only connection to help.

After placing the call to emergency services, "I identified myself, the Lab, the situation, and what I knew about her condition so far, and they could hear me talking on the other line," says von Achen.

It was not easy to get the necessary information to locate the victim, as the woman was drifting on and off the line. So von Achen had to work hard to keep her attention.

Learning that her name was Paula and that she lived in a certain apartment complex in Commack, emergency services told von Achen to keep her on the line until they arrived at the victim's home.

"So I said, 'Let's talk,' and she said, 'What do you want to talk about?' and I said, 'Let's talk about your family,'" remembers von Achen, who then used all her powers of persuasion to induce the woman to keep talking.

During the not-so-coherent conversation, von Achen was told about the woman's husband, son, daughter-in-law, and daughter. But, when the woman was unresponsive for too long, "I'd yell, 'Paula, Paula, answer me,' into the phone, anything to get her attention," reports von Achen.

At 10:28 a.m., only eight minutes after the start of what seemed like the longest phone call of von Achen's life, another voice got on the line. It was that of a Suffolk County police officer, who informed von Achen that the emergency medical technicians were on the scene, so she could "disengage."

Throughout the phone call, von Achen was cool, calm and collected, as if she had worked her whole life staffing a crisis hotline. But, upon hanging up, "I was shaking — I had to leave my console and go outside to calm my nerves. I was a nervous wreck, wondering, since time is of the essence in an emergency like that, if I got help there in time."

Von Achen will wonder about Paula's fate her whole life.

"A couple of days later, I called back because I was concerned about Paula. I spoke with her husband, who blessed me for what I had done for her, but said that she was not doing too well. Before I hung up, I asked him if he could tell her that the telephone operator at Brookhaven National Laboratory hopes she gets better."

Two weeks ago, von Achen called again, only to learn that the number has been disconnected. "I just hope that Paula has recovered and, with her husband, has gone to live with their son or daughter," says von Achen.

Though this was the most dramatic rescue in von Achen's 12 years as a BNL telephone operator, it was not the first time that she has worked to connect people in crisis via the telephone.

"I have tracked down an assistant director at the airport when his wife was in a car accident. I have called around site, finding parents in their labs or out in the field when their children or baby-sitters are frantically trying to find them. I have located schoolchildren on tour on site when their parents have called the Lab needing to talk to them," she says.

Von Achen concludes, "And it's not just me: every BNL telephone operator I have worked with over the years has done the same thing because we know the Lab and its employees, and we care about them because we are family — not just a telephone number." — Marsha Belford

## Fire-Rescue Salutes von Achen's Heroism



At the May 13th ceremony honoring Telephone Operator Peggy von Achen (center) for her heroism, are: (from left) Mike O'Connor, manager of ITD's Networking, Engineering & Telecommunications Section; ITD Director Donald Fleming; Fire Chief James Roesler, Fire/Rescue Group of the Emergency Services Division; and Emergency Services Division Manager Frank Marotta.

"In grateful appreciation of your effort, assistance and quick thinking to aid a fellow Long Islander in need," the Fire-Rescue Group of the Emergency Services Division presented an inscribed plaque to Telephone Operator Peggy von Achen of the Information Technology Division (ITD) (see story above).

At the presentation, on Thursday, May 13, Fire Chief James Roesler commended von Achen on behalf of the Lab for her professionalism and for going beyond the call of duty as a good Samaritan. "At the firehouse, we answer our fair share of emergency phone calls, so we know what she went through," said Roesler.

Mike O'Connor, who manages ITD's Networking, Engineering & Telecommunications Section which includes the telephone operators, agreed: "Peggy is a capable operator who knows what she's doing. This was not the first time that she has been faced with an emergency situation and acted professionally. During her first day on the job, she was presented with a similar situation and performed as if she were the veteran she has ultimately become."

**BSA Cultural Program**

**Cello-Piano Duo in Concert, June 2; Voice Recital on June 9**

The next BSA Lunchtime Recitals will be presented on Wednesday, June 2, and June 9, 12-12:45 p.m., in Berkner Hall. Offered by the BSA Cultural Program, these recitals are free, informal and open to all. Audience members may bring a box lunch into the hall to enjoy with the music, and they may come and go as the please.

On June 2, compositions by Beethoven and Rachmaninoff will be performed by cellist Tomoko Fujita and pianist Amanda von Goetz. Their program includes Beethoven's seven variations on the theme "Bei Männern, welche Liebe fühlen" from Mozart's *Die Zauberflöte*, WoO 46, and Rachmaninoff's Sonata for Cello and Piano in g minor, Op. 19.

An ardent performer of chamber music, Tomoko Fujita has performed in Alice Tully Hall, Weill Recital Hall and Merkin Recital Hall in New York City. A composer, Fujita has had her orchestral work *Serial Passacaglia* performed by the Julliard Pre-College Orchestra, and her *Intrada for Brass Quintet* performed by the American Brass Quintet and the Brass Quintet of the Toledo Symphony Orchestra.

Daughter of BNL chemist Etsuko Fujita of the Chemistry Department, Tomoko Fujita is a 1998 BSA scholar and a Shepherd Society Scholarship student at the Shepherd School of Music of Rice University.

Amanda von Goetz made her debut with the New Jersey Symphony in 1996, as winner of the orchestra's young artists auditions. Her 1997-98 season included her Carnegie Hall debut, where she performed with Skitch Henderson and the New York Pops. Other performances have taken her to, among other



halls, Carnegie's Weill Recital Hall and the Julliard Theatre at Lincoln Center.

A resident of the state of New Jersey, Amanda von Goetz was honored with that state's 1996 Governor's Award in Performing Arts.

On June 9, soprano Myrna Bismarck-Becker will be accompanied by pianist Edith Lowe Auner for a recital of vocal works by Ponce, Dvorak, von Bingen, Beethoven, Spontini, Wolf, and Thomas.

**Pianist Amanda von Goetz and cellist Tomoko Fujita**

Bismarck-Becker has selected songs by Manuel Maria Ponce from *Siete Canciones* and *Seis Poemas Arcaicos*, "Song to the Moon" by Antonin Dvorak, songs from Hildegard von Bingen's *Ursula Antiphons*, and four settings of Mignon's song from Goethe's *Wilhelm Meister*, one each by Beethoven, Gaspare Spontini, Hugo Wolf, and Ambroise Thomas.

Myrna Bismarck-Becker has performed title operatic roles on the premier stages of three international capitals — Mexico City, Ottawa and Warsaw — and both leading and title roles in over 20 other operas around the world. A resident of Blue Point and an instructor at Kane College in New Jersey, Bismarck-Becker was the Town of Brookhaven's 1999 Woman of the Year in the arts.

Pianist Edith Lowe Auner is an active soloist and chamber music



**Soprano Myrna Bismarck-Becker**

player. Winner of the University of Chicago Concerto Competition, she has performed with the DuPage Symphony Orchestra and the Lake Forest Symphony. Since 1997, Auner has been director of the pre-college music program at the State University of New York at Stony Brook.



**BNL Spring Blood Drive**

**BNL's Legal Counsel Greg Fess Gives Blood; How About You?**

BSA has three corporate officers — BSA President and Lab Director John Marburger, BSA and BNL General Counsel Greg Fess, and Brian Sack, who is BSA Chief Financial Officer and the Lab's Assistant Laboratory Director for

During the course of his usual workday as General Counsel, Greg Fess handles a variety of legal issues regarding the Lab.

His jurisdiction includes BSA's prime contract with DOE to manage and operate the Lab, the Lab's compliance with the Price-Anderson Act regarding nuclear-safety activities, and BNL's operation under applicable environment, safety and health regulations. And, of course, there is always litigation, such as the case filed last week in California alleging that the Lab's Relativistic Heavy Ion Collider will create Pac Man-like particles that will consume the Earth.

But, last fall, Fess took time out of his busy workday and will again this spring to donate blood during one of the Lab's seasonal, on-site blood drives.

"I've been giving blood on and off for 25 years because I believe it is my civic

Finance & Administration — and all three give blood. This is the second in a series of three stories discussing their reasons for being blood donors. The first story featured Marburger (see Brookhaven Bulletin, December 4, 1998).

duty to do so as a member of the community," explains Fess, who has O-positive blood, the universal-donor blood type. "Giving blood is an easy way to help my neighbors, and, in many cases, my coworkers."

The next on-site opportunity for Lab employees, retirees, facility-users, and guests to give blood is during BNL's spring blood drive, which will be held Thursday and Friday, June 17 & 18, from 9:30 a.m. to 3 p.m. in the Brookhaven Center.

BNL makes work time available to employees so they can give blood. Given that fact, "I hope more employees will take the time to give blood, which can be used in so many forms for Long Islanders with medical need," says Fess. "In doing so, not only will we be giving the gift of life, but we will be helping to ensure the Lab community's status as a significant contributor to Long Island's blood supply."

For the upcoming blood drive, the goal is 410 units of blood; during last fall's drive, 274 units were collected — which means, given some volunteers are deferred, at least 136 more BNLees must roll up their sleeves to give. Those eligible to donate are people in good health between the ages of 17 and 76 who have not donated blood in the past 56 days.

To make an appointment, contact Blood Drive Chair Susan Foster, Human Resources Division, at foster2@bnl.gov or Ext. 2888. Include your name, extension, and preferred date and time.



**General Counsel Greg Fess, pictured at last fall's BNL Blood Drive.**

**BROOKHAVEN BULLETIN**

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## To Your Health

For more information or to register for the following programs, contact BNL's Health Promotion Specialist Mary Wood, Bldg. 490, Ext. 5927, or wood2@bnl.gov.

### Cardio Kickboxing Starts June 3

Cardio kickboxing classes will again be offered on site, Mondays and Thursdays from noon to 1 p.m. in the North Ballroom of the Brookhaven Center, beginning on Thursday, June 3.

The cost of each class is \$5 per participant, payable at the class. Registration is a must.

### March Into May Ends June 10

Friday, June 4, ends the ten-week, site-wide exercise program March Into May, which began on March 22. Participants are asked to report their point totals to their captains, who must turn in their tally sheets by June 10. In addition to being rewarded with a March-Into-May T-shirt, those who report their total points will have their names entered in the third and final drawing of the program.

### March Into May Week-5 Raffle Winners

At the end of the fifth week of March Into May, the names of seven of the program's 367 participants were drawn in the program's second incentive raffle.

Two won exercise mats: Ed Kaplan of the Department of Advanced Technology; and Lisa Willi of the Budget Office. Five won water coolers: Charles Dimino, Reactor Division; Sharon Goode, Plant Engineering (PE) Division; John Kulesa, PE; Stephanie LaMontagne, Relativistic Heavy Ion Collider Project; and Neville Williams, Alternating Gradient Synchrotron Department.

### Spring Walk on June 15

In celebration of the completion of March Into May, all participants and any other willing walkers are invited to undertake a two-mile Spring Walk on Tuesday, June 15, starting at the Science Education Center, Bldg. 438. Registration is not required.

### CPR Course on June 14

A course on cardiopulmonary resuscitation of adults will be given on site on Monday, June 14, from 6 to 9 p.m. The course is open to BNL employees, retirees, facility-users, and other guests, and it costs \$22.50 per participant. Registration is required.

## Bowling Party

All BNL bowlers, their families and friends are invited to the annual BERA Bowling League awards party, which, this year, will be held at Ladakins on Friday, June 11, 6-10 p.m.

For tickets purchased by June 4, the cost is \$12 per bowler and \$17 per guest, which covers dinner, DJ music, and an open bar. Tickets purchased after June 4 cost \$40 per person, with no exceptions. To purchase tickets, bring or mail checks (not cash) payable to BERA Bowling to Tracy Blydenburgh, Ext. 4422, Bldg. 750.

## Equipment Demos

On Thursday, June 3, from 10 a.m. to 2 p.m. in Berkner Hall, Andor Technology will demonstrate its scientific-grade CCD and ICCD technology and have an assortment of products on display. For more information, contact Andor Technology, (860) 648-1085 or chrisc@andor-tech.com.

Electronic Marketing Associates will demonstrate the product line of ODU-USA, a German manufacturer of machined metal connectors, in Berkner Hall on Tuesday, June 8, from 11 a.m. to 2 p.m. For more information, contact Electronic Marketing Associates, (973) 605-1994 or electronicmarketing@worldnet.att.net.

## 1999 BNL Basketball Champions

# Wizards Work Their Magic



Pictured are the 1999 BNL Basketball League's regular season and championship winners, the Wizards, who include: (standing, from left) power forward Terry Buck, guard Fred Maier, (seated, from left) forward Al Boerner, captain and power forward Charles Edwards, and shooting guard Reggie Sanchez. Absent from the photo are: point guard Santos Ortiz, small forward Jim Rank, and center Rob Singleton.

The Wizards won the BNL Basketball League's 1999 regular season with only one loss, 65 to 54, to the Bombers late in the season. Though the Wizards had faced the Bombers twice earlier in the season and emerged victorious, when the Wizards again played the Bombers on April 15, not only did winning that final playoff game mean earning the 1999 Basketball championship, but it also meant vindication.

During that last and deciding game, the Wizards worked their magic late in the third quarter with three straight steals — two by Terry Buck and one by Santos Ortiz — which gave the Wizards the lead by six points. One more basket by Al Boerner allowed the Wizards to win by eight points, 70 to 62. "For turning up the defense to lift the team past the Bombers," says Wizards captain Charles Edwards, Terry Buck and Santos Ortiz were named the game's most valuable players.

## Classified Advertisements

### Placement Notices

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

**MK8224. POSTDOCTORAL RESEARCH ASSOCIATE** - Requires a Ph.D. in radiochemistry or inorganic chemistry, with experience in radiolabeling methodology. Experience in synthetic coordination chemistry and protein-peptide labeling with radiometals is highly desirable, as are experience with radioisotope production/processing and familiarity with radiometal chelates and bioconjugation techniques. Knowledge of small animal experimentation is advantageous. The research program includes the preparation and evaluation of radiometal (tin-117m) chelates for bone-cancer therapy, and the development of bioengineered vehicles for delivering therapeutic isotopes/toxic genes for the combined radioisotopic/gene therapy of cancer. Under the direction of S. Srivastava, Medical Department.

**MK8011. POSTDOCTORAL RESEARCH ASSOCIATE** - To work on quantum control methods using shaped mid-infrared pulses. Experience in ultrashort pulse lasers and amplification, ultrashort metrology, and ultrahigh vacuum techniques is required. Under the direction of L. DiMauro, Chemistry Department.

**NS3241. GROUNDWATER SAMPLING/ANALYSIS COORDINATOR** - (term appointment) Requires a BS in chemistry, hydrogeology, or environmental engineering; several years of experience in field coordination and management of CERCLA/RCRA GW monitoring programs; and excellent communication skills. Knowledge and skills in GW sampling protocols, QA/QC, analytical methods, validation/usability, and data interpretation/mapping are necessary. Familiarity with graphical representation software packages is desirable. Will coordinate several activities of the site-wide groundwater-monitoring project. Environmental Restoration Division.

**NS8701. ACCOUNTING POSITION** - Requires a bachelor's degree in accounting, finance or business administration; five years of professional accounting experience; proficiency with spreadsheet program (Excel); and knowledge of generally accepted accounting principles. Experience in accounts receivable and collections is highly desirable, as are proficiency with PCs, extensive experience with computerized business systems and processes, and proven analytical skills. Duties will include analyzing complex accounting transactions; assisting in special studies; preparing financial reports; maintaining and controlling routine accounting records; and performing routine clerical office functions. Financial Services Division.

**DD7370. TECHNICAL POSITION** - Requires an AAS degree in electrical/nuclear technology and/or equivalent experience with calibrating, troubleshooting and

repairing electrical and pneumatic process instrumentation. Will perform installation, maintenance and repair tasks on research-reactor facilities and auxiliary equipment. Previous work experience as an instrument technician in a nuclear facility is highly desirable. Also requires the ability to obtain and maintain a DOE security clearance. Reactor Division.

Roger Stoutenburgh