BROOKHAVEN BULLETIN
Vol. 50 - No. 34 August 30, 1996
BROOKHAVEN NATIONAL LABORATORY

Encapsulation Is Critical to Environmental & Waste Technology

If you've ever tried to crack a Brazil nut, then you can appreciate the merits of encapsulation. Encasing a material in a hard shell is one way to protect it from outside intrusion and to keep it from leaking out.

While nutshells eventually degrade, allowing the nutmeats to go to seed or to be eaten, the encapsulation methods developed at the Environmental & Waste Technology Center in BNL's Department of Advanced Technology (DAT) are expected to last through the ages.

Thus, as the following stories show, these methods are being used for permanent containment of some of the most hazardous materials threatening the planet — mixed waste and radioactive ash.

In the latter case, BNL's use of encapsulation to combine two disparate entities into one solid substance is having a parallel effect on working relationships between scientists in the U.S. and the former Soviet Union.

Roger Stoutenburgh

Paul Kalb, Associate Division Head of the Environmental Waste & Technology Center (EWTC) in the Department of Advanced Technology (DAT) demonstrates the pilot-scale mixer for sulfur polymer encapsulation of Belarussian ash to: (from left) Anthony Romano, Assistant Chairman of DAT; Paul Moskowitz, Head of EWTC; Peter Green, Associate Director for Operations in the U.S. Department of Energy's Initiatives for Proliferation Prevention program; Ann Reisman, DAT Division Head, International Projects; BNL Deputy Director Martin Blume; and Belarussian scientist Alexandre Grebenkov, Institute of Power Engineering Problems.

BNL's Expertise Helps Belarus Cope With Chornobyl Ash

The country of Belarus is the center of an environmental and economic disaster area.

Nearly 10 years after an explosion at the Chornobyl nuclear power plant in what was then the Soviet Union, Belarussians face uncertainty about their health, their livelihood and their future.

But Belarus is not facing its troubles alone. With help from BNL scientists participating in a project sponsored by the U.S. Department of Energy's (DOE) Initiatives for Proliferation Prevention program, Belarussian scientists are continuing to deal with their country's pressing problems.

For example, nearly 20 percent of the total forest in the country, or about 40,000 square kilometers (9.9 million acres), has been contaminated by radioactive fallout from the Chornobyl explosion, which was just over Belarus's southern border in Ukraine. In rural areas of Belarus, trees serve as an essential form of heating and cooking fuel because oil, gas and electricity from other sources are in short supply.

As the trees are burned, the small amount of radioactive elements contained in the wood is concentrated in the ash. If the ash is stirred up, these elements can be inhaled. Though there is no immediate danger from the radiation, the long-term effects are unknown.

"Although they are aware of the problem, the government realizes there is no way to prevent people from using the wood," explained Paul Kalb, Associate Division Head at DAT's Environmental & Waste Technology Center. "One objective in their overall remediation strategy is to try to minimize the health effects by converting the ash into a nonhazardous form."

Seeking Safe Storage

Two years ago, after meeting at a scientific gathering, Kalb began working with Belarussian scientist Alexandre Grebenkov of the Institute of Power Engineering Problems, to help devise a way to store the ash safely.

After the meeting, Kalb invited Grebenkov to BNL, where the Belarussian scientist presented a seminar on the far-reaching environmental problems facing the area after

(continued on page 3)

Workshop For Potential Collaborators

BNL is one of ten national laboratories participating in Initiatives for Proliferation Prevention (IPP) — a U.S. Department of Energy (DOE)-funded program aimed at stabilizing personnel and resources that represent a weapons-of-mass-destruction proliferation risk.

The program encourages participation with institutes located in Belarus, Kazakhstan, Russia and Ukraine. Ann Reisman, Division Head, International Projects, in the Department of Advanced Technology (DAT), is the IPP coordinator for BNL.

On Monday, September 9, DAT will host a workshop for all BNL scientific department principal investigators interested in participating in the program. Starting at 9 a.m. in Berkner Hall, Room B, DAT staff will outline the program and give details about some ongoing projects (see story about Belarus on this page). BNL investigators will also learn how they can become involved and submit proposals for funding.

Those interested in attending the workshop should contact their department chairs.

Simple Process Solves Difficult Problem of Hazardous Waste

Consider your average milk jug.

Look closely at the cloudy white plastic, called polyethylene, with a new appreciation. A similar plastic is being used to contain hazardous waste using a technique developed at BNL.

Known as macroencapsulation, the process involves enclosing large pieces of radioactive or hazardous waste in a shell of polyethylene. The plastic covering allows the waste to be stored safely, significantly reducing leaching of contaminants.

The technique was developed by DAT's Environmental & Waste Technology Center (EWTC) under the direction of Paul Kalb and Paul Lageraaen, for the U.S. Department of Energy's (DOE) Environmental Management Program and private industry, as a treatment option for mixed waste. A combination of hazardous chemical and radioactive materials, mixed waste has been collected and stored awaiting such technological developments.

As the only private company in the U.S. authorized to dispose of mixed waste, Envirocare of Utah wanted to learn how they could use macroencapsulation to treat and store appreciable amounts of mixed wastes safely, Kalb said.

Envirocare became interested when researchers at EWTC demonstrated a similar technology, called *micro*encapsulation, at a full-scale technology demonstration at BNL in September 1994.

"Envirocare wants to develop new technologies to expand its treatment capabilities, so we began to discuss ways to work together," Kalb said.

The process is even more attractive to Envirocare because it is so simple, Lageraaen added.

Plastic Takes Shape

Macroencapsulation starts when thousands of polyethylene pellets are poured into a machine containing a long, helical screw that melts the pellets evenly as it turns.

The mixed waste is suspended inside a container so that it does not touch the sides. Milky, melted plastic pours out of the machine's end and into the container — encapsulating the waste. The plastic then cools and hardens into the shape of the container, which is whatever shape is easy to store.

(continued on page 2)

Summer Sundays Conclude at BNL Science Museum

Roger Stoutenburgh

Health physicist Kathleen McIntyre, one of many BNLers who volunteered their time at the Science Museum for this year's Summer Sunday tours, hands a "junior scientist" a Geiger counter during a demonstration of the radioactivity found in everyday items. ***(See story on page 2.)***

Summer Sundays at BNL's Science Museum: Thousands Came and Enjoyed Emphasis on Environment

About 4,600 visitors took the grand tour of BNL's Science Museum on seven Sundays this summer, getting a little environmental lesson along with their hands-on science fun.

Groundwater, radiation, environmental restoration, pine barrens ecology and pollution prevention were all addressed in many exhibits and demonstrations, several of them staffed by volunteers from the Lab's environmental and public affairs organizations.

"With all the attention the Lab has received over environmental issues in the last year, we thought it was time we addressed those concerns in our tours," said Janet Tempel, Supervisor of Museum Programs in the Public Affairs (PA) Office. "We were especially interested in reaching out to those communities closest to BNL. All residents of nearby Manorville, Ridge, Shirley and Yaphank received postcard invitations to our 'Neighbors' Days.' "

The tours' environmental components, including videos, nature walks, live demonstrations on naturally occurring radiation and an "Ask Me Environmental Questions" booth, were developed by a committee led by Tempel and including: Community Relations Coordinator Kathy Geiger; ecologist Jan Naidu, Safety & Environmental Protection (SEP) Division; Community Relations staff John Carter and Mary Dernbach, Office of Environmental Restoration (OER); Pollution Prevention Coordinator George Goode, SEP; and Kara Villamil, PA.

Help in producing the exhibits and demonstrations came from BNL Video in the Information Services Division; the Sign Shop in the Plant Engineering Division; environmental staff in OER and SEP; and participants in the Office of Educational Programs' Teacher Research Associate (TRAC) and Community College Honors programs.

Thanks to Volunteers

Radiation and groundwater demonstrations, and the Ask Me booth relied mainly on volunteers from SEP, OER and Public Affairs, who gave up all or part of their sunny Sundays to interact with visitors.

The following staff used Geiger counters and everyday objects, such as beach sand, smoke detectors and salt substitute, to show visitors how radioactivity occurs in the natural world and consumer products: Dean Atchison, Henry Kahnhauser, Alan Kuehner, Kathleen McIntyre, Bob Miltenberger, Buzz Rundlett and Ernie Tucker, all of SEP; and Rex Boone, Department of Advanced Technology.

A groundwater model built by Jan Naidu and TRAC teacher Andrew Leonard, with help from Frank Stepnoski, SEP, and from college student Angela Tiganitakis, taught many visitors about the way Long Island's groundwater moves and can be polluted.

Meanwhile, the Ask Me booth was staffed by: Frank Biele, Bill Fortunato, George Goode, Kathleen McIntyre, Bob Miltenberger, Mike O'Brien and Ed Richards, SEP; Achyut Topé, Tom Burke, Mary Dernbach, Bill Gunther and Bob Howe, OER; and Mona Rowe and Kara Villamil, PA.

Most frequently, visitors posed questions on groundwater contamination, Superfund cleanup and the Peconic River, but others wanted to know more about the Lab's research programs and seemed satisfied with BNL's environmental policies.

Finally, nature walks through BNL's pine barrens, led by TRAC teacher Larry Haman, were a great success.

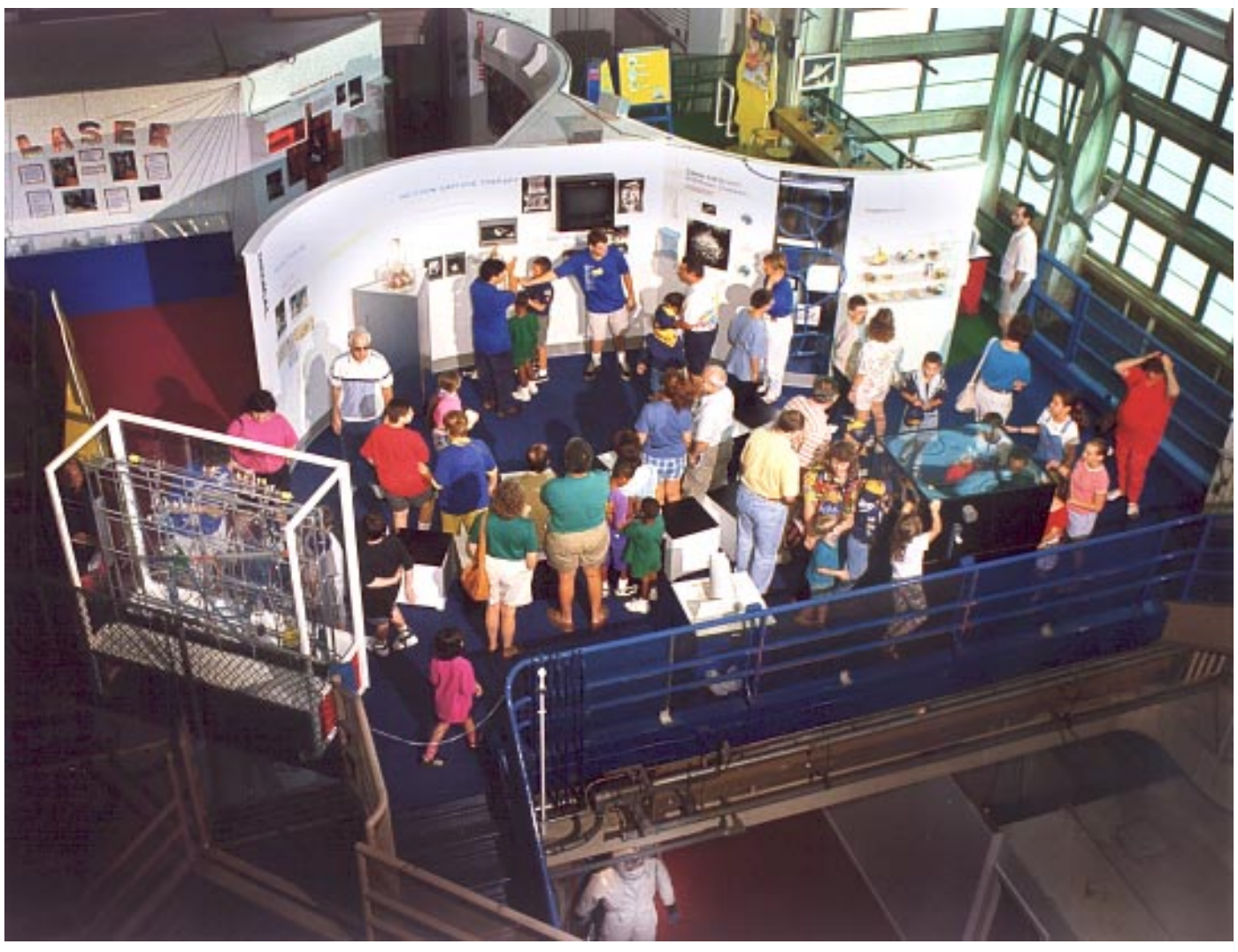
"Our thanks to all the volunteers, who gave up some beautiful days to be here to help us convey to the public the Lab's sense of responsibility about the environment," said Tempel.

With the coming of fall, the Science Museum's audience will change to school students. As many as four classes of school children will visit the museum each day to participate in science programs that are based on the New York State Science Syllabus and are geared to their academic level.

— Kara Villamil

Roger Stoutenburgh

Using a hand pump to move water and colored-dye "pollution" through a simulated cross-section of Long Island, a visiting family learns about groundwater movement and pollution from Jan Naidu, Safety & Environmental Protection (SEP) Division (third from right). The tabletop model was designed and built at BNL by Naidu with (behind table, from left) Frank Stepnoski, SEP, and two participants in the Office of Educational Programs' summer programs: teacher Andrew Leonard and college student Angela Tiganitakis.



Roger Stoutenburgh

Shown at the Science Museum are some of the thousands of visitors who enjoyed Sunday tours this summer.

Simple Process (cont'd.)

Polyethylene has a distinct advantage over other materials that have been tested to contain the waste, Kalb explained, since it does not cause any chemical interactions with the waste. He said materials such as concrete can interact with mixed waste, opening a wide range of possible problems.

Though the application to hazardous waste is new, the process of melting the plastic has been used by industry for years, Lageraaen said.

"This is really an off-the-shelf technology," he remarked. "It is used in many other places and simply required engineering a new application from an existing technology."

In fact, neither Brookhaven nor Envirocare had to develop their own equipment: They bought the machines directly from industry.

Early this year, Utah became the first state to offer a permit for this waste-storage technique. The U.S. Environmental Protection Agency also declared that macroencapsulation is the best demonstrated available technology for handling radioactive lead solids and serving as an alternative treatment standard for debris waste.

Envirocare nearly has its system working at full capacity, Lageraaen said. When it is, the company will begin processing 500,000 pounds of lead waste from several different facilities and contractors within the DOE system, including BNL. Envirocare will then bury the waste on site at its licensed disposal facility in Clive, Utah.

"Seeing the commercialization of a technology is very satisfying," Kalb said. "We were convinced of its potential, but it is certainly rewarding to see technologies we helped develop being used to solve DOE's overall waste-treatment problem." — Andrea Widener

AT&T Checks: Don't Cash Them!

Ralph Trondle, of Telecom Services in the Computing & Communications Division, reports that some BNL employees are receiving $80 checks from AT&T under their old 282 telephone numbers and, possibly, their new 344 numbers.

Trondle explained that cashing these checks authorizes a change from a customer's present primary interexchange carrier (PIC) — commonly known as the long distance carrier — to AT&T, and thereby obligates the customer to use AT&T. Apparently, AT&T has been unaware that they are sending these checks to a government facility where PICs can't be changed in this manner.

Employees receiving such checks are cautioned to destroy and not attempt to cash them, or they will be responsible for repaying AT&T. The Laboratory has notified AT&T of its error and requested that the company stop sending checks to BNL.

In Memoriam

John Binnington, who helped to establish the Research Library at BNL in 1947 and shepherded its growth as it became a major scientific and technical resource on Long Island, died on August 20 of lung cancer with complications from pneumonia. He was 81.

R. Christian Anderson, BNL's retired Senior Advisor to the Director, commented, "John Binnington was ideally suited to be a librarian. Well-read and erudite, he knew the needs of the people who used the library. As a consequence, I think the Lab has an extraordinarily good library."

John Binnington

With a B.L.S. from Columbia University, Binnington joined Brookhaven as a librarian on June 1, 1947, and he and his family were the first to reside in one of the apartments on site. By 1951, Binnington was named Head Librarian, and he was instrumental in building a collection of 85,000 books and 1,300 journal subscriptions at the Research Library. In 1971, Binnington became Head of the Lab's Technical Information Division, a post he held until his retirement in 1979.

Binnington was ingenious about obtaining hard-to-find publications for the Lab's library collection. In the 1940s, certain scientific journals published in Germany were difficult to obtain because they were not officially exported to the U.S. But the Head Librarian at the time, Hyman Goldsmith, had a relative in Germany, so, each month, Binnington would send a pound of coffee to the relative, who, in turn, would sent a copy of the coveted journal for the Lab's collection.

Madeline Windsor, Head of Technical Services at the Research Library, recalled, "To many of us who worked for JPB — as he was affectionately referred to by his staff — he was our boss, mentor and friend. He encouraged us to work up to our full potential and allowed us freedom to grow. He took great pride in the library and was devoted to Brookhaven Lab. He will be missed."

Binnington served as president of BERA for several terms and, later, as Chairman of the BERA Special Events Committee. He was instrumental in bringing popular artists to perform concerts at the Lab, including Pearl Bailey, Al Hirt and Dave Brubeck. He was also an active member of the BERA Theater Group.

As a member of the Special Libraries Association, he led a delegation to the Soviet Union in 1966 to study the library system there, and he hosted a delegation from the Soviet Union that toured libraries in the U.S. As a result, communications between U.S. and Russian libraries became more open.

A resident of Brookhaven hamlet, Binnington is survived by his wife Julia; son Thomas, of Bellport; two daughters, Bree Rice, also of Bellport, and Marjorie Braxton, of DeWitt, New York; two stepdaughters, Vijaya Maclean, of Lancaster, Massachusetts, and Loveday Kochersberger, of Bellport; a brother, Gerald, of Portland, Connecticut; 11 grandchildren; and one great grandchild.

— Diane Greenberg

Radio Club Has a Field Day

Every year since 1990, BNL's Amateur Radio Club has had a Field Day, as part of a national competition with thousands of other ham radio operators to test their skills in emergency communication — skills tested in actuality during such disasters as last August's wildfires.

Field Day is a bit of a misnomer, because the event takes place over two days: This year, on June 22 & 23 at the Lab's recreation fields, the club set up several transmitter sites, using portable antennas and towers.

The club's efforts were recognized with a proclamation from Brookhaven Town declaring the two days "Amateur Radio Operators Field Day," and from Suffolk County and New York State, which designated "Amateur Radio Week."

In their respective proclamations, Brookhaven Town Supervisor Felix Grucci acknowledged that the club has used its skills during floods, storms, aircraft crashes and in other local emergencies, and saluted "the vital role these residents play in each emergency;" Suffolk County Executive Robert Gaffney commended the group "for their hard work and dedication in keeping our residents informed;" and New York Governor George Pataki noted that amateur radio operators "are on alert for any emergency, local or worldwide."

Roger Stoutenburgh

Shown above in the Amateur Radio Club's room in the Recreation Building, with a proclamation from Suffolk County and some of the equipment used by the group's 50 members, are the club's officers, all federally licensed amateur radio operators: (front) Nick Franco, president, Federal Communications Commission call sign KF2PH; (back, from left) Joe Mazzarella, treasurer, KD2WR; Hugh McNeill, vice president, KA2DRR; and Chris Neuberger, secretary, KA2GAV.

Holiday Notes

In observance of Labor Day, the Lab will be closed on Monday, September 2. As a result, the following schedules will be in effect:

• **Credit Union** — The Teachers Federal Credit Union on site will be closed on September 2. The automatic teller machine in the foyer of Berkner Hall will be open throughout the holiday.

• **Food Service** — The Cafeteria will offer snack-bar service from 9 a.m. to 2 p.m. Saturday through Monday, August 31-September 2. The Brookhaven Center Club will be closed August 31 and September 1; it will reopen on September 2, 5-9 p.m. The vended-food service in Bldg. 912 will be in operation during the holiday weekend.

• **Gym & Pool** — The swimming pool will be closed for the holiday weekend, August 31-September 2. The gymnasium, which has been closed weekends throughout the summer, will reopen the following Saturday, September 7, 10 a.m. to 5 p.m.

• **Leisure Travel Office** — The Omega Leisure Travel Office will be closed next week, September 2-6. During that week, all leisure travel business will be handled by Omega's Rockville Centre office, 766-2350. The on-site Omega office will reopen Monday, September 9.

• **U.S. Post Office** — There will be no mail delivery and the service window at the Upton Branch of the U.S. Postal Service will be closed on September 2.

BROOKHAVEN BULLETIN

Published weekly
by the Public Affairs Office
for the employees of
BROOKHAVEN NATIONAL LABORATORY

ANITA COHEN, Editor
MARSHA BELFORD, Assistant Editor

Bldg. 134, P.O. Box 5000
Upton NY 11973-5000
Tel. (516) 344-2345; Fax (516) 344-3368

World Wide Web:
http://www.pubaf.bnl.gov/~pubaf/bulletin.html

The Brookhaven Bulletin is printed on paper containing at least 50 percent recycled materials, with 10 percent post-consumer waste. It can be recycled.

Chornobyl Ash (cont'd.)

the Chornobyl accident. Kalb and Grebenkov began to talk about ways they could work together to address some of these problems.

"Our expertise was in the treatment of radioactive and hazardous waste, and the Institute of Power Engineering Problems had specific knowledge of the area and the problem," Kalb explained.

At the time Kalb and Grebenkov were first meeting, the U.S. government became interested in funding research by nuclear-weapons scientists from the former Soviet Union, especially Belarus, Kazakhstan, Russia and Ukraine. Thus, the Initiatives for Proliferation Prevention (IPP) was created (see box on page 1).

Funding Non-Weapons Research

"The focus of the program was and remains to provide assistance to scientists who were formerly engaged in nuclear weapons research," Kalb said. "The U.S. wants to provide them with some non-weapons-related research areas. They have the technical expertise and some facilities, but they just don't have the funding."

With funding assistance from DOE's IPP, the staff of Belarus's Institute of Power Engineering Problems collected the radioactive ash from area homes and analyzed the physical properties and radioactivity of the samples.

They then shipped four barrels of the material to Brookhaven for encapsulation in sulfur polymer, as a test of the BNL-developed method to package radioactive waste. Sulfur polymer is produced from by-product sulfur.

During the test at BNL, the radioactive ash was mixed with melted sulfur polymer, coating the ash. The mixture then was poured into a container where it hardened for storage.

Following successful, small-scale testing at BNL, a larger-scale feasibility test was carried out in collaboration with the Scientific Ecology Group in Oak Ridge, Tennessee. This phase of the work was supported under a DOE Cooperative Research & Development Agreement, through BNL's Office of Technology Transfer.

A full-scale demonstration in Belarus is planned for the final phase of the project.

Belarus was the area hardest hit by the Chornobyl disaster. The accident displaced more than 100,000 people and has cost the economy nearly $235 billion. Jobs and money are still hard to come by.

Scientists Need Jobs, Too

The country's scientists also face employment problems. With the end of the Cold War, many well-educated, highly trained researchers who worked on developing nuclear weapons are now in need of jobs along with the rest of the country's population.

Ann Reisman, Division Head, International Projects, DAT, represents BNL on the IPP board. She said the program identifies and funds useful, non-weapons-related research being done in former Soviet block countries. The hope is the research will eventually be transferred to U.S. companies, which would develop and commercialize products based on the research.

"The main idea is to draw scientists into these agreements and, eventually, make them self-sustaining," she said. BNL currently has nine projects funded under IPP with collaborations in Belarus, Russia and Ukraine.

Eager to Work With U.S.

In a June trip to Belarus, Kalb found the scientists very eager to work with the United States and excited about the possibility of creating jobs.

"Their economic situation is so dire at this point that they are very much in need of external support," Kalb said. "This is a two-way benefit. There are some really valuable resources we can utilize as well."

In addition to the ash stabilization work, BNL has received approval from IPP to form two other collaborations with Belarussian scientists. One will deal with evaluating risks associated with various environmental remediation strategies, and the other would involve growing crops to remove contaminants from the soil.

BNL's projects in Belarus are also being coordinated with similar IPP projects at Sandia National Laboratories (SNL) and the National Renewable Energy Laboratory (NREL). The SNL project explores the possibility of generating valuable electrical power from burning contaminated trees or plants in Belarus, and the NREL project involves the beneficial use of contaminated crop lands.

Reisman said that often the government can support more scientists for its money in the former Soviet Union because the cost of living is so much lower: In the U.S., it might cost up to $300,000 to fund a scientist; in Belarus, funding for the same caliber scientists might run only $7,000. "It is a low-cost and effective way to conduct quality science and accomplish national security objectives at the same time," Reisman said.

— Andrea Widener

Life Don't Mean a Thing If You Ain't Got That Swing

. . . So new members are welcome to join the BNL Ballroom, Latin & Swing Dance Club's beginner lindy and six-count swing lessons.

Starting September 11, from 6:30 to 7:30 p.m. for eight Wednesdays in the North Ballroom of the Brookhaven Center, beginners' lindy and swing lessons will be taught by former U.S. Ballroom Champion Giny Rae and her partner, former Empire State Ballroom Champion Peter Sciurca.

Also for beginners, bolero and salsa I will be taught from 7:30 to 8:30 p.m. A review of cha-cha and fox trot from levels I through IV will be held for members who have taken those classes.

All BNL employees, retirees, on-site contractors and their families and friends are invited to sign up. Partners are not necessary, as the club signs up equal numbers of men and women. If a minimum of 40 people register, then the per-person cost is $25 for each eight-week class.

To register or for more information, call: Marsha Belford, club president, Ext. 5053; Ron Ondrovic, 1st vice president, Ext. 4553; or Rudy Alforque, 2nd vice president, Ext. 4733.

Archery Club

The Archery Club will hold its next meeting on Thursday, September 5, at noon in the large seminar room, Physics, Bldg. 510. New members are always welcome. For more information, call Bill Schoenig, Ext. 2377.

BBQ Postponed

The all-you-can-eat barbecue, postponed from yesterday because so many employees have been on vacation this week, will be rescheduled for a date to be announced in September. The Lab's food-service contractor, Flik International, Ext. 3541, regrets any disappointment that this may have caused.

Softball

Standings as of August 23

League E1		**League E3**	
Blue Jays	9-3	Mesocyclones	11-2
Phoubars	9-3	Pick-Up Sticks	6.5-6.5
System	7-4	Medical	4.5-8.5
Ice Men	7-5	Bombers	4-10
Magnets	7-5	**League M1**	
Titans	2-11	Stingrays	10-4
Cleen Sweep	1-11	Gour-Mets	9-5
League E2		Good Timers	9-5
Hammerheads	10-3	Snake Bites	8-6
LightsOut	9-4	OER Wellheads	4-9
Hy Tech	9-4	Parke Avenue	1-12
Contaminators	8-5	**League M2**	
CCD	7-6	Skeleton Crew	6-2
Phase Out	6-7	Varmints	5-3
Scram	6-7	No Names	3-5
Feds	5-8	Stray Cats	4-4
Phytinphytos	5-8	What's on 2nd	4-4
Sure Fire	0-13	Monday Nite Live	1-7

Computing Corner

The Computing & Communications Division (CCD) offers the following in the second-floor seminar room of CCD, in Bldg. 515:

NetDynamics

A two-hour, hands-on seminar on NetDynamics, a JAVA Web/database application development tool, will be offered twice on Wednesday, September 11: first at 10 a.m., then at 1:30 p.m. During these free sessions, participants will build a complete JAVA Web/database application. For more information, contact Ed McFadden, Ext. 4188 or e-mail emc@bnl.gov.

UNIX Training

Seats are still available for the following UNIX-based classes, Monday through Friday, September 16-20:

UNIX introduction	9 a.m.-noon
Perl programming	1-5 p.m.
C programming	1-5 p.m.

The fee for each class is $350 per person. For more information or to register, contact Pam Mansfield, Ext. 7286 or e-mail pam1@bnl.gov.

Arrivals & Departures

Arrivals

Peter A. Genzer.....Environ. Restoration
Jiansheng Jiang.....Biology
Jean-Junior Joseph.....Physics
Brigitte R. Sylvain.....Biology

Departures

This list includes all employees who have terminated from the Lab, including retirees:

Kevin J. Linkletter.....Safeguards & Sec.
Christine M. Quiery.....RHIC
Ray E. Weber.....Safety & Envir. Prot.

Met Opera Tickets

Family-circle tickets for certain performances during the 1996-97 Metropolitan Opera season will go on sale on Wednesday, September 11, at the BERA Sales Office in Berkner Hall.

The list of tickets and dates was printed in last week's Bulletin and is also available now at the Sales Office, weekdays, 9 a.m. to 1:30 p.m.

Tickets cost $26.50 each, but they must be purchased in pairs. All sales will be final; no refunds or exchanges.

Classified Advertisements

Placement Notices

The Laboratory's placement policy is to select the best-qualified candidate for an available position. Consideration is given to candidates 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, handicap or veteran status.

Each week, the Human Resources Division lists new placement notices. The purpose of these listings is, first, to give employees an opportunity to request consideration for themselves through Human Resources, and second, for general recruiting under 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, or call the JOBLINE, Ext. 7744 (344-7744), for a complete listing of all openings.

Current job openings can also be accessed via the BNL Home Page on the World Wide Web. Outside users should open "http://www.bnl.gov/bnl.html", then select "Scientific Personnel Office " for scientific staff openings or "Employment Opportunities" or "BNL Human Resources Division" for all other vacancies.

SCIENTIFIC RECRUITMENT - Doctorate usually required. Candidates may apply directly to the department representative named.

POSTDOCTORAL RESEARCH ASSOCIATE - Trained in chemistry, with experience in organometallic chemistry. Experience with NMR and vacuum-line techniques for handling air-sensitive compounds is also required. Familiarity with kinetic and mechanistic studies, gas chromatography, catalytic reactions and high-pressure reactions is preferred. Contact: Morris Bullock, Chemistry Department

POSTDOCTORAL RESEARCH ASSOCIATE - Trained in chemistry or physics, to study the structure-reactivity relationship on model catalysts such as metal on oxide surfaces. A strong background in surface spectroscopies and surface kinetics is required. Experience with UHV instrumentation and computer programming is desirable. Knowledge of high-pressure instrumentation for catalyst characterization, solid-state chemistry, scanning-probe microscopes, x-ray diffraction and absorption using synchrotron radiation is preferred. Contact: Jan Hrbek, Chemistry Department.

LABORATORY RECRUITMENT - Opportunities for Laboratory employees.

DD0587. ADMINISTRATIVE POSITION - (part-time, term appointment) Requires an AAS or equivalent experience, demonstrated excellent communication and organization skills, and an extensive knowledge of Laboratory policies and procedures. IPAP/JCARS experience required. Experience in an administrative-support capacity highly desirable. Will assist RHIC Project Administrative staff in a variety of procurement-related activities. RHIC Project.

OPEN RECRUITMENT - Opportunities for Laboratory employees and outside candidates.

DD4529. TECHNICAL POSITION - Requires a BS in electronic technology or computer technology, and computer experience sufficient to support the computer group in the maintenance and administration of the NSLS computer systems, networks and control systems. Will help analyze and resolve problems, troubleshoot hardware, install software, and set up computers and related hardware. Familiarity with the following is highly desirable: Novell, PC software, Unix, cabline, cable TV, support of X-terminals, terminal servers, print servers and mail. Familiarity with networks, network hardware, Ethernet and RS232 cabline, fiber optics, network protocols and network diagnostics is beneficial. National Synchrotron Light Source Department.