

Coming Up

Ian Tattersall, Chairman and Curator of the Anthropology Department at the American Museum of Natural History, will present an AUI Distinguished Lecture on Wednesday, January 24, at 4:30 p.m., in Berkner Hall. In his lecture entitled "Human Evolution: How We Know What We Think We Know," Tattersall will discuss how recent advances in fossil-dating techniques have affected the way anthropologists trace human evolution. The lecture is free, and the public is invited.

The Afro-American Culture Club will sponsor the 14th Gospel Extravaganza on Saturday, February 3, at 7 p.m., in Berkner Hall. Five choirs will be featured, including the nationally recognized, 35-member James Hall and Worship and Praise, and the BNL Gospel Choir.

Tickets cost \$12 for adults and \$5 for children under 12 and may be purchased from the BERA Sales Office in Berkner Hall, open weekdays from 9 a.m. to 1:30 p.m. There will be no reserved seats and no tickets sold at the door. For further information, call April Donegain at Ext. 2459.



Curtain of Snow Comes Down on Old Theater

Nineteen inches of snow blanketed BNL during the Blizzard of 1996, this past Sunday and Monday, January 7-8. According to BNL meteorologist Victor Cassella, this storm tied with one that occurred during the Lab's first year, on December 26-27, 1947, as the second worst snowfall since BNL's meteorologists began keeping records. The record-breaker took place over February 6-7, 1978, when 23 inches of snow fell at Upton.

Nonetheless, the Blizzard of 1996 took its toll at BNL, forcing the Lab's closure this past Monday and Tuesday and precipitating the dramatic collapse of Bldg. 424, across from Berkner Hall, on the corner of Brookhaven Avenue and Columbia Street (see photo above).

The last of the four indoor theater buildings erected in 1943, when the site was the U.S. Army's Camp Upton during World War II, Bldg. 424 was most recently being used for storage by the Alternating Gradient Synchrotron Department. Some components of the stored equipment were slightly radioactive, said William Casey, Head of the

Safety & Environmental Protection Division. Since this activity is nondispersible and produces very low radiation levels, it poses no danger to employees or the environment, Casey said.

Bruce Medaris, Manager of the Plant Engineering (PE) Division, said that no one saw the last great show put on at the theater. The initial collapse of the 9,900-square-foot building was detected by members of the BNL Police Group at 7:45 p.m. on Sunday evening. They notified PE, which took all necessary corrective actions, such as shutting off the utilities. The building's last standing side wall collapsed on Wednesday, at about 10 a.m., shortly after BNL photographer Roger Stoutenburgh took this photo.

At press time, PE personnel had not yet been able to enter the building and provide a true estimate of the extent of the damage. But, because the stored equipment was very carefully packed, Medaris said, "We hope it won't be too severe." At this time, the cause of the collapse remains unknown.

— Anita Cohen

Telephone Update

Phone-System Training

The next training session on how to use the new Siemens Rolm Communications (SRC), Inc., telephone system will be held from noon to 1 p.m. in Berkner Hall on Wednesday, January 17. After that, there will be only one more class, on Thursday, January 25.

For those who can't make a class, a training video is available: Borrow it from the Research Library, Bldg. 477, by calling the Circulation Desk, Ext. 3483; or purchase a copy by calling BNL Video, Ext. 3680.

Phones to Change Week of 1/15

The following buildings, served by node site 2, Bldg. 703, or node site 1, Bldg. 449, will be switched to the SRC phone system beginning today, over the weekend and the week of January 15, the sixth week of the changeover. Buildings originally scheduled to be changed over on Monday or Tuesday, January 8 & 9, have been rescheduled for either next week or the following week. Those to have digital service are listed in bold; those continuing with analog service are in plain text.

Date	Bldg.
Fri., Jan. 12	902, 903, 904, 905, 943, 944, 945
Sat., Jan. 13	515
Sun., Jan. 14	515 continued if required
Mon., Jan. 15	911
Tue., Jan. 16	930, 930B, 931A&B, 938, 939, 938B
Wed., Jan. 17	631, 918, 922, 811, 926, 924, 923

6000 Series Extensions

With the new 344-exchange, the 6000 series is now available for BNL extensions. If your building has not yet been changed to the new system and until it is changed over, to dial a 6000-series extension, you must dial 344-6### to reach that extension.

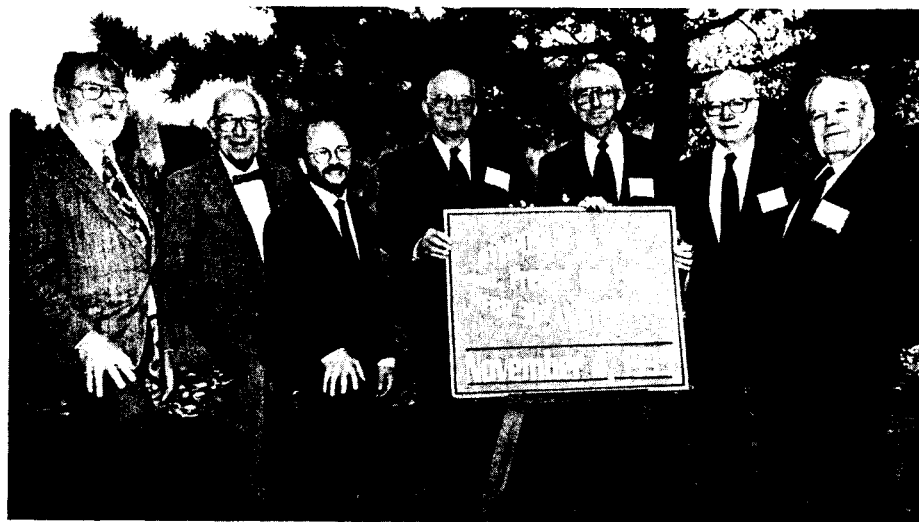
HFBR 30th Salutes the Machine and Its Makers

Thirty years of neutron-science history came to life on November 4 of last year, when those who made BNL's High Flux Beam Reactor (HFBR) what it is today gathered for an anniversary symposium sponsored by Associated Universities, Inc. (AUI).

After a welcome from Laboratory Director Nicholas Samios, BNL Deputy Director Martin Blume reviewed the close connection between experiment and theory in research at the HFBR. Donald Stevens, retired Head of the U.S. Department of Energy's Office of Basic Energy Sciences, followed Blume, recalling the early stages of establish-



On hand for the post-symposium festivities was the winner of the 1994 Nobel Prize in Physics, Bertram Brockhouse (right), whose prizewinning discoveries were based in fundamental work at the HFBR. He is shown with his wife Doris Brockhouse and BNL Deputy Director Martin Blume.



The panel at the 30th anniversary symposium for the High Flux Beam Reactor (HFBR) included: (from left) HFBR designers Kenneth Downes and Julius Hastings, panel moderator and Lab historian Robert Crease, vessel alloy advisor John Weeks, HFBR designer Joseph Hendrie, first Reactor Division Head Robert Powell and HFBR designer Herbert Kouts.

— Photos in this issue by Roger Stoutenburgh

ing national user programs at the reactor. Then, a panel of the HFBR's designers, technical advisors and administrators took the Berkner Hall stage to share their recollections (see photo above).

Following the panel, Robert Birgeneau, AUI Trustee and Dean of Science at the Massachusetts Institute of Technology, traced the evolution of condensed-matter research over the HFBR's life span.

Surface-adsorption studies using neutrons was the subject of the next talk, given by John McTague, who chaired BNL's National Synchrotron Light Source Department from 1982

to 1983, before becoming Deputy and then Acting Presidential Science Advisor and, in 1986, Scientific Officer at Ford Motor Company. McTague and recently retired BNL Physicist Laurence Passell performed pioneering work in surface adsorption.

Looking to the future, John Axe, Head of the BNL Center for Neutron Sciences, closed out the afternoon by describing plans to upgrade the HFBR, including replacing the reactor vessel and adding a cold-neutron guide hall. Such changes, he said, would enable the reactor to serve as a world-class neutron facility for the next 30 years.

— Kara Villamil

Joint Approach to Negative Ions

Every three years since 1977, BNL has hosted a symposium on the production and neutralization of negative ions and beams. A similar European workshop had been held every two to three years at different locations in western Europe, starting at Ecole Polytechnique, France, in 1984. The main objectives of both meetings have been to review progress in negative-ion source development and in the understanding of fundamental processes of these ion sources and the production of neutral beams, and to discuss the status of experimental programs in this area. This year for the first time, Brookhaven hosted a joint meeting of both the Seventh International Symposium on the Production and Neutralization of Negative Ions and Beams and the Sixth European Workshop on the Production and Application of Light Negative Ions. Held October 23-27 in Berkner Hall, it drew some 50 participants from ten countries.

Cochairs of the joint meeting were (see photo at right) BNL's Ady Hershcovitch (back right) and Marthe Bacal (front, third from left), Ecole Polytechnique, who are shown with the local organizing committee, all associated with the Advanced Source Development Group in BNL's Alternating Gradient Synchrotron Department: (back, from left) James Alessi, Ron Clipperton, (front, from left) Deepak Raparia, Ahovi Kponou, Krsto Prelec, Walter Hensel and Marion Heimerle; not shown is Ed Beebe. Hershcovitch said this successful meeting is expected to be the first in a series of joint conferences that will alternate between BNL and sites in Europe every two years.

— Anita Cohen



Chillin' With The New Water Tank

If you wanted to take this picture yourself this time next year, you'd have to use a waterproof camera — and swim in 3.2 million gallons of chilly water! Luckily, BNL photographer Roger Stoutenburgh saved you from the frigid dip and captured this



view from inside the Lab's new Chilled Water Storage Tank before it was filled to the top of its 71-foot-high walls. The cavernous steel tank, whose massive walls were erected last year near the Lab's Chilled Water Facility, will be used to hold water destined for the air-conditioning and process-cooling systems in several Lab buildings. It will receive water that the facility chills at night and hold the water until it is sent the next day to the nine buildings that use it. Thus, the Lab will save as much as \$650,000 a year by not running water chillers while higher, daytime rates are in effect.

— Kara Villamil

Inside Info

Mary Wood, BNL's Health Promotion Specialist in the Occupational Medicine Clinic, has been named one of the volunteers of the year 1995 of the Long Island Division (LID) of the American Cancer Society (ACS). She was presented with a Certificate of Appreciation "for notable service in the crusade to conquer cancer."

As part of the ACS's self-evaluation in preparation for the turn of the century, Wood serves on the LID's tobacco committee, for which she has been instrumental in designing smoking-cessation programs, anti-smoking legislation, educational materials for pregnant smokers, and patient-education programs for physicians. In addition, she has served as a fundraiser and publicist for ACS programs, and has been an ACS speaker on work-site health.

Mary Wood obtained her B.S. in community health and health education, her master's in health education from the State University of New York at Stony Brook, and her M.B.A. at Adelphi University. As a health edu-

cation specialist, she is certified by the National Commission for Health Education Credentialing.

Speakers Bureau

The following speakers have given talks on behalf of the Laboratory:

John Bloom, Reactor: Wyandanch High School Career Day, "Careers at BNL," May 10.

Dorry Tooker, DO: Dowling College Technology for Tomorrow Open House, "Technology Transfer," May 18.

Stephanie LaMontagne, RHIC: Westhampton Rotary Club, "BNL in General," July 11.

Michael Bebon, DO: Affiliated Brookhaven Civic Organizations, "Peconic Bay Concerns," November 20.

Creighton Wirick, DAS: Westhampton Beach Elementary School Environmental Group, "Peconic Bay Concerns," November 21.

John Andrews, DAS; **Frederick Horn**, SEP; **Terri Lacker**, Reactor, 31st Annual Shelter Island Science Fair, Science Fair Judges, December 1.

Jan Naidu, SEP: The Diocesan Environmental Committee, "BNL Environmental Issues," December 21.

New Views in Higher Education For Math, Science, Technology



How can more students be encouraged to concentrate on math and science? That was a question addressed on October 30, when 100 educators from over 35 schools, colleges and universities gathered at BNL for a two-day meeting to discuss "Reform in Higher Education: A New Vision for Mathematics, Science and Technology." Charles Mackey Jr. (at podium), of the New York State Education Department, delivered the keynote address at the meeting, which was organized and hosted by BNL's Office of Educational Programs. Highlighted topics included the integration of mathematics, science and technology in elementary education; the scientist's perspective; and the implications of possible reforms on teacher preparation.

— Liz Seubert

'HERA-tics' Gather for Workshop



When the Relativistic Heavy Ion Collider (RHIC) comes on line in a few years, it will collide beams of relativistic heavy ions to provide glimpses of nuclear matter at its most basic level. At the same time, another accelerator half a world away — the HERA collider in Hamburg, Germany — may be doing physics that will complement RHIC's program. Operated by DESY, the German accelerator lab, HERA already collides electrons and protons in a unique program. Now, it may gain a heavy-ion injector that will allow it to collide electrons and atomic nuclei. On November 17 and 18, more than 60 high-energy and nuclear physicists gathered at Brookhaven to discuss what could be learned from heavy-ion experiments at HERA and the relation of that knowledge to RHIC physics. Among the participants at the Nuclei at HERA and Heavy-Ion Physics workshop, part of the ongoing Future Physics at HERA workshop series for American scientists, were: (front row, from left) Raju Venugopalan, Institute for Nuclear Theory, Seattle; workshop co-chairs Sean Gavin, BNL, and Mark Strikman, Pennsylvania State University; Steven Ritz, Columbia University; Edward Shuryak, State University of New York at Stony Brook; (back row, from left) Miklos Gyulassy, Columbia University; and Thomas Kirk, BNL Associate Director for High Energy & Nuclear Physics.

— Kara Villamil

BNL Spent Over \$50 Million On Long Island in FY95

The Lab increased its spending for supplies and services on Long Island to more than \$50 million in fiscal year 1995 (FY95) — about \$8 million more than the last fiscal year. About 26 percent of the BNL's purchases during the period from October 1, 1994, to September 30, 1995, were from Long Island businesses.

Of the 11,351 purchases made on Long Island last year, 8,015 totaling more than \$42 million were made in Suffolk County, and 3,336 amounting to over \$7 million were made in Nassau County.

Anthony Salvo, Deputy Manager of the Division of Contracts and Procurement, which handles the Lab's purchasing, said, "BNL is an active member of the Long Island business community. By procuring various goods and services through Long Island-based firms, Brookhaven exhibits its participation in ensuring the health of the Long Island economy."

New construction and maintenance of older buildings accounted for many of the Lab's purchases during FY95. Brookhaven has contracted with J. Kokolakis Contracting, Inc., of Rocky Point — the number-one vendor this fiscal year — to build a new 18-acre Waste Management Facility on site. The \$13.4-million facility will replace an existing waste-handling area that has been in use since the Lab was founded in 1947.

The number-two vendor was Conroy Contracting Company, Inc., of Miller Place, which worked on several construction and maintenance projects at a total cost of \$4.3 million. With contracts totaling \$2.5 million, M.H. Kane Construction of Bohemia worked on some prominent BNL projects, including the 3,500 square-foot magnetic resonance imaging facility, which will house a huge magnet with at least twice the strength of any used for general medical diagnosis. The MRI unit will become part of BNL's Center for Imaging and Neurosciences, which will use various imaging techniques to study the human brain.

Other projects M.H. Kane is working on include a 7,200-square-foot addition to Bldg. 463, to house the staff of the Protein Data Bank, a computer archive used by the worldwide scientific community to obtain data on the structure of proteins and other biological macromolecules.

The company is also building a small addition and making modifications to the Brookhaven Linac Isotope Producer (BLIP), which produces several radioactive forms of chemical elements used in medicine, research and industry. When completed in 1996, the upgraded BLIP facility, which will be renamed the Brookhaven Isotope Research Center, will be able to meet up to 100 percent of the U.S. demand for selected accelerator-produced isotopes.

Out of BNL's 1995 operating budget of \$296.7 million, 50.5 percent was spent on salaries and wages, and 18.5 percent went to fringe benefits. Most of these funds were also spent on Long Island. —Diane Greenberg

50 YEARS AGO THIS WEEK . . .

A half century ago, a chain of events of great significance to everyone associated with Brookhaven National Laboratory got under way. These events will be recounted in a series that will run as appropriate throughout 1996 and 1997, the 50th anniversary years of Associated Universities, Inc. (AUI), and BNL, respectively.

AUI President Robert Hughes looked back on the almost 50-year union between AUI and BNL. "AUI was founded in 1946 for the specific purpose of creating a new, major nuclear laboratory on the east coast under Atomic Energy Commission [AEC] sponsorship," he recalled. "Happily, the founders had broad vision and insisted on providing BNL with the opportunity to grow and excel in many areas of science. A decade later, AUI met another national need by founding the National Radio Astronomy Observatory (NRAO) for the National Science Foundation.

"Much has changed over the half-century," Hughes continued. "The AEC has been replaced by the DOE, and the Laboratory has become a major international resource. But the essentials are unchanged: The AUI Board and Laboratory management are committed to excellence in providing world-class facilities and producing first-class research. It is and has been a privilege to work with and for the dedicated staffs at AUI/BNL/NRAO."

The AUI/BNL saga actually began in the fall of 1945, according to Norman Ramsey, who recounted the "Early History of Associated Universities and Brookhaven National Laboratory" in Brookhaven Lecture number 55, on March 30, 1966. "Insofar as I know," Ramsey said, "the idea that grew into [AUI] and [BNL] arose in discussions

between I.I. Rabi and myself at Columbia University during the period from October to December of 1945. . . . [we] both felt that Physics at Columbia University had made enormous contributions to the war effort but that the University was coming out in this period with little scientific benefit in return.

"[We] discussed at length how we could best make a nuclear reactor available to Columbia. . . . [We] came to the conclusion that the best alternative was to call together a number of institutions in the New York area to see if all of us could not cooperate in the establishment of a reactor and perhaps a high energy facility. We discussed this with other members of the Physics Department at Columbia and with Dean George B. Pegram." Since there was general agreement, Dean Pegram then called a meeting. . . .

Thus, AUI/BNL history was made on the following dates:

• **January 14, 1946** — Dean Pegram writes letters to research institutions, calling meeting to discuss nuclear science laboratory.

• **January 16, 1946** — Conference at Columbia of representatives of 19 research organizations in the Philadelphia to New Haven metropolitan area. At this meeting a letter is drafted to Major General Leslie R. Groves, Commanding General of the Manhattan District, the predecessor to the AEC. The letter states the need for a regional research laboratory near New York City and offers the assistance of these institutions in taking the steps necessary to achieve it. Dated January 17, the letter is sent on January 19.

**George Pegram's memory is honored at BNL through the prestigious Pegram Lecture series; the Lab site's Groves Street remembers Leslie Groves.*

Info on Lab IDs

In response to a U.S. Department of Energy (DOE) directive, BNL's Safeguards & Security Division (S&SD) will begin issuing new, standardized identification badges/cards Labwide, in the spring.

Because current BNL identification cards for many employees, guests and contractors expired on December 31, 1995, those have been extended through June 30, 1996, and will be reissued before that date according to a schedule to be announced.

However, for anyone who holds a Q or L authorization badge and must travel to other DOE sites, the S&SD Badge Office will reissue the badge with an expiration date of June 30, 1996. To obtain a new badge, complete a BNL F 2868 Identification Card/Security Badge Application, available through your group's administration, and bring it to the Badge Office in Bldg. 30.

For more information, call Hank Raimondo, Ext. 7258.

Adult Swim Lessons

Swim lessons for adults will be given from 5:15 to 6:15 p.m. at the BNL pool on Wednesdays for eight weeks, beginning January 31. Open to BNL employees, retirees and on-site contractors, and their family members 18 years or older, the lessons cost \$40 per person; in addition, participants must pay the daily \$2 pool-entrance fee or present a season pass.

Sign-up is taking place at the pool, Bldg. 478, now through the first night of classes. For more information, call Head Lifeguard Susan Dwyer, Ext. 3496.

Reports Available

The following reports are available to Lab staff and affiliates of DOE, AUI and NRC. Others may purchase them from the National Technical Information Service, U.S. Department of Commerce, 5285 Port Royal Road, Springfield, VA 22161. Staff members should call the designated contact.

BNL-52455

Contact: E. Rothman, Ext. 7114
1994 Activity Report, National Synchrotron Light Source. E.Z. Rothman, N.A. Wright

BNL 52468

Contact: G. Webster, Ext. 3227
Release of Radon Contaminants from Yucca Mountain: The Role of Buoyancy Driven Flow. T.M. Sullivan, C. Pescatore

BNL-52469

Contact: G. Webster, Ext. 3227
Overview of Research and Development in Subsurface Fate and Transport Modeling. T.M. Sullivan, M. Chehata

BNL-52475

Contact: A. Waltz, Ext. 5834
Proceedings of the 1995 Oil Heat Technology Conference and Workshop, Held at Brookhaven National Laboratory. R.J. McDonald

In Memoriam

The following retirees passed away recently:

Mildred H. Dobert, who retired on August 31, 1971, as a draftsman III in the Mechanical Engineering Division, died on December 4. She was 89 years old. She had joined the Lab on March 31, 1952, as a tracer IV in the Photography & Duplicating Division.

Richard Weiss, who retired from the Plant Engineering Division on January 15, 1978, died on December 4, at the age of 66. He had started at BNL on January 31, 1966, as a janitor in the Plant Maintenance Division. He was a building & grounds utility worker at the time of his retirement.

Marion L. Czaja, a technical supervisor I in the Accelerator Department when he retired on September 24, 1982, died on December 6. He was 73 years old. He had been at BNL since May 4, 1953, when he signed on with the Accelerator Development Department, as a technician in the Proton Synchrotron Division.



Insurance Benefits: New Office Hours

The hours for the Insurance Benefits Office in Bldg. 185, are now limited to 8:30 a.m. to 1 p.m., Monday through Thursday. During those hours employees may request assistance with aspects of their insurance benefits, such as enrollments and coverage changes.

In case of an emergency, contact Denise DiMeglio, Ext. 2881.

PC Training

Training classes in such PC application software as WordPerfect for Windows, EXCEL, ACCESS, PowerPoint and Windows are being scheduled for February.

For a complete list of classes or to receive registration information, contact your training coordinator or call Pam Mansfield, Ext. 7286, or e-mail pam1@bnl.gov.

In Stormy Weather

Listen to:

Station	Area	AM	FM
WALK	Patchogue	1370	97.5
WBAB	Babylon	1440	102.3
WBLI	Patchogue		106.1
WCTO/ WGSM	Smithtown	740	94.3
WHFM	Southampton		95.3
WHLI/ WKJY	Hempstead	1100	98.3
WLIM	Patchogue	1580	
WLIX	Islip	540	
WLNG	Sag Harbor	1600	92.1
WRCN	Riverhead	1570	103.9
WRIV	Riverhead	1390	

Or call: 344-INFO*

*Dial the letter O, not zero!

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