BROOKHAVEN BULLETIN
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BROOKHAVEN NATIONAL LABORATORY

Conference Draws Radiation Experts in Honor of Victor Bond

More than 130 practitioners of radiobiology, a scientific discipline whose impact reaches far into the public realm, met recently at Brookhaven to honor one of the field's most prominent spokesmen and contributors: retired BNL Senior Scientist Victor Bond.

The November 3-4 workshop drew attendees from the U.S., Britain, Canada, Germany and Japan to salute Bond in his 75th year.

As reflected in its title, "Physical Insult From and Biological Response to Low-Level Ionizing Radiation," the meeting concentrated on the subject that Bond has spent the last two decades of his 50-year career investigating: the effects of low-level radiation on biological systems.

And, while the views expressed by the speakers spanned a wide spectrum in this controversy-prone discipline, the work of Bond and his colleagues in developing new analyses of low-level radiation took center stage.

"It's time to determine if the status quo should be maintained or whether it's time to embrace change," said Bond's longtime Medical Department colleague and retired BNL Senior Scientist Eugene Cronkite, chairman of the conference organizing committee, as he opened the proceedings.

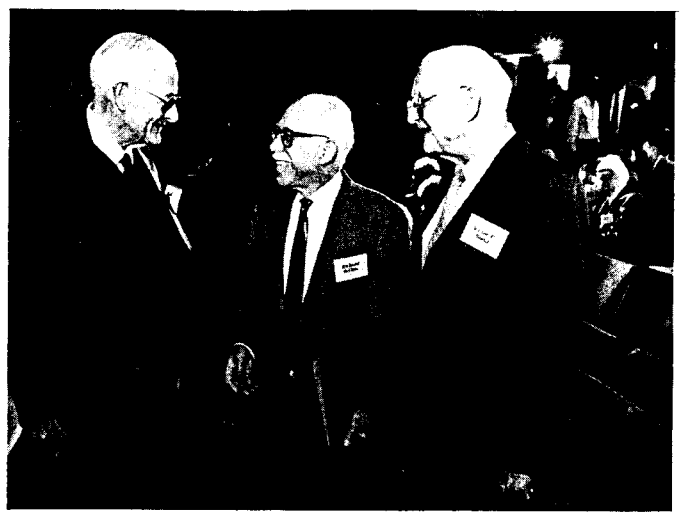
Assuming Risks

The dramatic effects of exposure to high levels of radiation have been well documented, not only in medical radiotherapy but also as a result of incidents such as the atomic bombings of Hiroshima and Nagasaki in World War II and the 1986 meltdown at the Chernobyl nuclear plant.

But lower levels, while suspected of causing cancer, are trickier. To determine the risks from extremely low-level exposures (those under five centigrays), scientists and regulators have long relied on assumption and extrapolation as well as scientific data.

The resulting model they use, a plot of radiation dose against response, is assumed to be linear. The lack of a threshold in the curve means, according to the model, that even the tiniest amount of radiation has the potential to cause excess cancer. And based on this linear, non-threshold approach,

(continued on page 2)



At the conference held November 3-4 to honor Victor Bond of the Medical Department, Bond (right) meets with longtime colleagues Eugene Cronkite (left), Medical, and Associate Director for Life Sciences Richard Setlow.

Career Portrait Of Victor Bond

The inspiration for the recent conference on low-level ionizing radiation, retired Senior Scientist Victor Bond has led a long and distinguished career, most of it at Brookhaven. "I came here in 1954 and intended to stay one year, at most two years, but I'm still here because I have always thought Brookhaven was just a marvelous place to work if one wants to do research," he says.

Much of his recent research has followed a path that he had started on in his earliest research on dose-response functions using medicinal agents. From this, he was essentially sure that the standard model for low-level radiation effects was imperfect. This model, he says, overestimates risks when it states that "any amount of radiation, however small, is harmful and can be lethal by causing a cancer. Anybody

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Dorry Tooker Is FLC Representative of the Year

Dorry Tooker, a staff specialist in BNL's Office of Technology Transfer (OTT), has won the 1994 Representative of the Year Award from the Federal Laboratory Consortium (FLC) for Technology Transfer, a volunteer organization of over 600 federal research laboratories, which work together to promote the rapid movement of federal technology research and development into the mainstream of the U.S. economy.

Presented to Tooker by Roger Lewis, the Director of the U.S. Department of Energy's (DOE) Office of Technology Utilization, at the FLC's annual conference held in Costa Mesa, California, from October 31 to November 3, the award honors the FLC member who has made the most significant contributions to the organization within the year.

Tooker, who is Deputy Coordinator for the FLC's Northeast Region, as well as the organization's Head of Marketing and Public Affairs, won the award for her enthusiastic approach to technology transfer. This included attending 17 outreach conferences across the U.S. during the year, as well as meeting with numerous local groups to promote BNL's technologies to the business community. With the aid of BNL's Photography & Graphic Arts Division and Public Affairs Office, she has also developed innovative ways to reach out to industry, such as numerous audiovisual presentations and photography displays.

Dorry Tooker

In a letter to Tooker, BNL Director Nicholas Samios noted, "I am delighted that the FLC has acknowledged your contributions in formulating and evolving the organization's technology-transfer initiatives. Your innovation and boundless energy have not only been of great value to the FLC, but have also been of vital importance to BNL's technology-transfer program. I applaud your enthusiastic commitment and continuing efforts to disseminate information about the Laboratory's scientific capabilities and our ability to contribute to the economic competitiveness of U.S. industry."

In addition, Tooker received congratulatory letters from Secretary of Energy Hazel O'Leary, U.S. Senators Alfonse D'Amato and Patrick Moynihan, and Congressman George Hochbrueckner.

O'Leary, who also sent a letter to Samios congratulating BNL, commented in it, "Receipt of the award recognizes Ms. Tooker's and your laboratory's commitment to standing behind the Department's goals of enhancing its contributions to the Nation's economic growth through technology transfer. The Brookhaven National Laboratory has provided Ms. Tooker with an atmosphere that allows for innovative ideas to flourish, and it is this sort of teamwork that will help DOE to meet the requirements necessary to fulfill its vision."

Tooker said, "I was surprised and thrilled to receive the award. There are a variety of opportunities available for businesses at Brookhaven, including our unique user facilities, CRADAs, licenses for patented technologies developed at Brookhaven, personnel exchanges and technical assistance. I will continue to work hard to achieve my goal of making industry aware of Brookhaven Lab's technologies and expertise."

To fulfill her goal, Tooker added, "I need Brookhaven researchers and chairmen to keep me informed of their latest research that relates to industry. From Biology to Physics, every department in the Laboratory does research or develops technologies that can be transferred to the marketplace."

Tooker first came to BNL in 1956 to work in the Personnel Division, leaving in 1959 to raise her family. In 1978, she returned to school, earning her B.A. and M.A. from Dowling College in 1980 and 1982, respectively.

After working in public affairs for a Manhattan firm, Tooker returned to BNL in 1985 as a part-time clerical assistant in the Personnel Division. She joined the Director's Office in 1986 as a senior staff services assistant, and became full-time in 1987. After several promotions, she began her current job as Outreach/Small Business Coordinator in OTT in 1991. Tooker also received the FLC's Northeast Regional Coordinator's Excellence Award in June 1994. — Diane Greenberg

New Phone System Will Mix Voice, Data Services

By fall of 1995, integrated voice and data services will available on the BNL site, under the terms of a $10-million, 10-year contract for telephone services that the Laboratory signed on September 22 with Siemens Rolm Communications, Inc.

Rolm is a leading manufacturer of large telephone systems, said Ralph Trondle, Manager of Telecom Services in the Computing & Communications Division (CCD), who added that the Rolm telephone system will boast a new, state-of-the-art, voice/data/video digital telephone switch, serving 5,500 lines. It will also feature digital instruments, management systems, sub-

(continued on page 2)

Photos on this page by Roger Stoutenburgh.

On hand to celebrate the signing of a new contract for telephone services between BNL and Siemens Rolm Communications, Inc. (SRC), are: (seated, from left) Joseph Pegano, SRC; John Small, BNL Division of Contracts & Procurement (DCP); Mary-Faith Healey, DCP Manager; Ralph Trondle, Manager of Telecom Services in BNL's Computing & Communications Division (CCD); (back, from left) George Graulich, SRC; Michael Bebon, BNL Assistant Director for Management & Physical Plant; Mark Wiesenberg, CCD Head; Martin Blume, BNL Deputy Director; John Brandli, SRC; Jack Jimmink, SRC; and John LaNave, SRC.

Bond Career Portrait (cont'd)

who hears and believes that should take for the hills. To me, the public is reacting exactly correctly to what they have been told; if I were told that and believed it, I would insist on banning all types of exposure to radiation."

The most recent development in Bond's career has been his co-development of the Hit Size Effectiveness Function, an alternative model for low-level radiation effects about which a review article in the *International Journal of Radiation Protection* and two other articles in *Health Physics*, will be published this year. But his path to this point includes many accomplishments:

- Received B.A., University of California, Berkeley, 1943.
- Received M.D., UC San Francisco, 1945.
- Received Ph.D., UC Berkeley, 1952.
- Served as medical officer, U.S. Navy, 1945-1954.
- Headed Experimental Pathology Branch of the U.S. Naval Radiological Defense Lab, San Francisco, 1948-1954.
- Came to BNL as a physician in the Medical Department, 1954.
- Named Deputy Director of BNL team delivering initial medical care to Marshall Islanders accidentally exposed to fallout from a U.S. nuclear test, 1954.
- Received BNL tenure, 1956.
- Became BNL Senior Scientist, 1958.
- Named Chairman of Medical Department, 1962.
- Received honorary Doctor of Science degree, Long Island University, 1965.
- Became BNL Associate Director for Life Sciences, 1967.
- Named President of the Radiation Research Society, 1974.
- Served on Pennsylvania and President's commissions on Three Mile Island nuclear accident, 1979.
- Honored for 20 years without taking a sick day, 1983.
- Received a Senior U.S. Scientist Award from the Alexander von Humboldt Foundation, to study for a year at the Kernforschungsanlage in Juelich, Germany, 1984.
- Returned to research as Senior Scientist, 1985.
- Organized conference on short-term health effects of reactor accidents after Chernobyl accident, 1986.
- Received the Distinguished Scientific Achievement Award from the Health Physics Society, 1986.
- Received a DOE Distinguished Associate Award, for "research accomplishments, insight, and dedicated service [which has] substantially advanced the scientific basis for radiation protection," 1990.
- Retired from BNL, July 31, 1994.
- Now working in Medical Department as a research collaborator. —K.V.

Bond Conference (cont'd)

strict radiation-protection standards have been developed for everything from the handling of radioactive isotopes in laboratories to the operation of nuclear power plants.

At the workshop, some speakers defended this "establishment" approach and its regulatory framework, while conceding that improvements in precision and radiation dose-equivalent standards may be necessary.

The present system is "somewhat arbitrary, not unreasonable, and as good as we can do, and as good as we need for radiation protection purposes," said Warren Sinclair, of the guideline-setting National Council on Radiation Protection.

But Bond and a growing number of others in the past decade have challenged this approach as inaccurate, and they have offered alternate ways to predict low-level effects in a less empirical fashion.

"From the linear non-threshold hypothesis, one would get the impression that low-level ionizing radiation is causing a large amount of cancer, but analysis shows that the mean amount of radiation energy imparted to a population to cause one cancer is quite large," Bond said in his presentation. "Low-level radiation is a poor carcinogen, and adherence to a linear non-threshold hypothesis as the core of radiation protection policy should cease."

One aspect of the current radiation-protection system to which the dissenters take particular exception is the use of dose-response curves, in which the dose is evaluated at the whole body or organ level where cancers are actually observed. At the workshop, several speakers expressed their belief that low-level radiation operates on, and should be evaluated at, the level of the cell or below. There, gene alterations play a prominent role.

"Cancer arises from a single cell, so we want to know what happens to that cell, to zero in and determine the local efficiency," said Ludwig Feinendegen, a senior scientist in BNL's Medical Department now detailed to the U.S. Department of Energy's Office of Health and Environmental Research (OHER).

To that end, several speakers described microdosimetry models, which measure or calculate radiation doses in cells rather than organs. Others detailed microdosimetry equipment such as proportional counters — radiation monitors that use a small gas-filled chamber to simulate the inside of a cell and to record radiation "hits" to the simulated, or phantom, cell.

Taking just such a cell-based approach was what Bond and then-BNL Senior Scientist Matesh Varma had in mind in 1982, when the Hit Size Effectiveness Function (HSEF) was introduced for evaluating the effects of low-level ionizing radiation.

The HSEF, said Varma, now program manager for OHER, permits calculation of the probability that a cell will respond given a radiation hit of a certain size.

"Ionizing radiation interacts with biological systems to produce a statistical distribution of hit sizes, and this is especially true when the dose is lower and all cells are not being hit with the same amount of energy," he explained.

Bond concluded the conference by delving even further into the HSEF work, describing research with the spiderwort plant species *Tradescantia*, and severly criticizing the established approach to low-level radiation effects. Of the linear non-threshold hypothesis, he said, "It has had an enormously negative financial, societal and political impact, and it has engendered in a large segment of the public a morbid fear of exposure to low-level ionizing radiation — all of which is not warranted by the data."

And, Varma added, "What we would hope is that, after our 40 years of working in radiation biology and biophysical modeling, this approach will be looked at seriously by the regulatory bodies, to start a dialogue on its use for determining radiation hazards. Victor Bond is one of the primary forces that has and continues to participate in bringing these questions to the forefront." —Kara Villamil

Physicist Harvey Wegner Dies

Harvey Wegner

Harvey E. Wegner, a guiding force behind both the Tandem Van de Graaff Accelerator and its later connection to the Alternating Gradient Synchrotron (AGS), died on November 27 of a massive heart attack. He was 69 years old.

"Harvey was one of the most energetic, enthusiastic and generous people I know," said Physics Department Chairman Peter Bond. "He was devoted to physics and to BNL and used his talents to bring a number of projects to fruition.

"There was another side to Harvey," Bond added. "He was a master at showing non-scientists the fascination of science. To hundreds of Lab visitors and high school students, he and his dramatic demonstrations were the highlight of their time at BNL."

After earning his Ph.D. in physics at the University of Washington in Seattle in 1953, Wegner joined BNL's Physics Department on November 10, 1953, as an associate physicist. For the next three years, he worked at the 18-inch and 60-inch cyclotrons, which produced radioisotopes for nuclear reaction studies. In 1956, he moved to Los Alamos, where he worked with the cyclotron group and helped prepare the proposal for the three-stage tandem facility there.

Rejoining the Brookhaven staff in August 1962, as a physicist, Wegner was named Project Manager for BNL's double Tandem Van de Graaff Project. He received tenure in July 1965 and was promoted to Senior Physicist in July 1968.

Then the world's highest energy Tandem Van de Graaff system, the two accelerators began operations in July 1970. With its two machines operating in a coupled "three-stage" mode, the facility was capable of accelerating almost any atomic species, eventually reaching energy levels over 300 million electron volts for the heavier elements. With the research program started, Wegner began managing the facility as co-group leader with David Alburger.

From 1975 to 1983, Wegner and others, including Chellis Chasman and Peter Thieberger, considered schemes in which the Tandem could serve as an injector for a more energetic machine; for example, Wegner and Mark Barton thought direct injection from the Tandem to the AGS might be possible. But only after Wegner, Thieberger and Michael McKeown developed a high-current, pulsed source of negative ions for the Tandem and demonstrated that the facility could accelerate such pulsed beams with about 100 times more intensity than previously thought possible did it become practical.

This development, combined with physicists' new interest in accelerating heavy ions to even greater energies in order to study new states of matter at very high nuclear densities, led to the ground breaking for the Heavy Ion Transfer Line between the AGS and the Tandem in October 1984.

The first beam of oxygen ions generated in the Tandem and accelerated in the AGS collided with experimental targets in October 1986, and one of the physicists welcoming this event was Wegner, then a participant in AGS Experiment 802. He later joined Experiments 859 and 866, and postponed retirement to see the first gold beam accelerated by the AGS following injection by the Tandem via the new Booster — completing the chain of accelerators that will be linked to and act as injectors for the Relativistic Heavy Ion Collider.

Wegner retired on September 30, 1992, but he was a consultant to the Laboratory at the time of his death, returning, said Bond, "to inspire young physicists and solve numerous startup problems with the experiment."

Wegner is survived by his wife Sally, of LaJolla, California; sons William, of LaJolla, and James, of Austin, Texas; daughter Linda Jacklyn, of San Diego, California; and four grandchildren.

Contributions in his memory may be made to the Memorial Sloan-Kettering Cancer Center, 1275 York Avenue, Box E, New York, NY 10021.

New Phone System (cont'd)

stantial upgrades to the Lab's cable infrastructure — and a new telephone at almost every jack.

In short, Trondle said, the new system will completely replace the GTE system now used on site, alleviating current capacity shortages, and providing improved voice quality and additional features. For example, he said, "Voice-mail users will be pleased to know that, when messages are received, a message-waiting light will be displayed on the telephone."

Unlike the current BNL telephone switch, which is located solely in Bldg. 449, the Rolm 9751 CBX Model 70 employs four strategically located nodes interconnected in a fiber-optic mesh configuration. Multiple nodes will allow the shorter lines required for digital telephone service, which will be the primary offering of the new system. Where digital service is not practical, however, analog service and instruments will continue to be used.

The contract also calls for internal wiring upgrades to about 83 buildings and upgrades to portions of the underground cabling infrastructure. And, Trondle said, "At least 20 of the scientific buildings scheduled for rewiring will receive fiber-optic cable to the desktop to permit future activation of high-speed networking services."

When equipped with a special module, the Rolm digital telephone sets can provide a simultaneous data capability of 19.2 kilobits per second, independent of the voice service. This module will replace existing hardware and be provided free for users of the PACX data switch currently employed by CCD and the Management Information Systems Division, unless those users choose to migrate to networks. There will be subscription charges for both voice and data services.

In addition to allowing the removal of the obsolete PACX system, the digital telephone will provide enough added capability to allow the elimination of considerable special-function equipment now in use around site.

Digital access facilities from long-distance carriers will interface directly with the Rolm switch — noticeably increasing the audio quality of telephone conversations, shortening the time it takes to set up dialed connections and eliminating equipment. BNL will also benefit from the system's diagnostic capabilities, which will permit the switch to initiate calls for help when it detects malfunctions and receive remote "health checks" from Rolm's diagnostic center.

Installation began last month and will take from 12-18 months, Trondle said. Once initial schedules are established with the vendor, CCD will provide additional information, training and schedules.

Coming Up

Fang Shu, a graduate student in physics at the State University of New York at Stony Brook and a guest junior research associate at BNL, will receive the Goldhaber Prize on Thursday, December 8, at 3:30 p.m., in the large seminar room of Physics, Bldg. 510. Immediately following the award ceremony, Shu will present a seminar on her work entitled "Structure of Solvent Molecules Bound to Per-Deuterated, Recombinant Sperm-Whale Myoglobin."

Administered by Brookhaven Women in Science (BWIS), this $500 prize was established in 1992 to honor Gertrude Scharff-Goldhaber, the noted nuclear physicist who, in 1950, was the first woman Ph.D. to be hired at BNL and who was a founding member of BWIS.

A reception will follow the presentations.

Wholehearted Support for the United Way

At the heart of this year's BNL fund drive for the United Way are the 59 campaign captains, 28 of whom are pictured above, together with — at each end of the banner — Fund Drive Chairman Jim Licari, Relativistic Heavy Ion Collider Project, and Coordinator Michelle Cummings, Management Information Systems Division.

Why donate?

"You are always coming across someone who suddenly *does* need help — and gets it from one of the 165 agencies funded by donations to the United Way," Licari said. "That's why we are hoping so much that BNL contributions will reach our goal of $105,000 to help needy Long Islanders. We're fortunate to have so many good campaign captains to encourage employees to donate as much as possible — as well as remind them that, by sending pledge cards in to Betty Pergan, Bldg. 179A, before December 16, they become eligible for the early-pledge prize drawings."

Already, the fund has reached $62,500, and some early pledgers have won dinners for two in local restaurants. But, thanks to the generosity of Associated Universities, Inc.; the Long Island Guards Union No. 37; Local 8-431 Oil, Chemical and Atomic Workers International Union; and Local 2230 International Brotherhood of Electrical Workers, more prizes are available. They include more dinners, gift certificates for shopping, and a grand prize of a weekend for two in New York City with theater tickets, dinner, and brunch at the Tavern on the Green restaurant.

Roger Stoutenburgh

Pick A TRAC Teacher

The DOE Teacher Research Associate (TRAC) program encourages outstanding science, mathematics and technology secondary-school teachers to participate in BNL's research for eight weeks during the summer at no cost to the sponsoring department. The 1995 TRAC program will run from Monday, June 26, through Friday, August 18.

Those interested in sponsoring TRACers may review applications from national candidates at the Science Education Center, Bldg. 438, through Thursday, December 8, and from Long Island teachers in January.

For more information, call Nina Leonhardt, Ext. 5963.

Come to the Science Museum to:

- ***Finish your holiday shopping at the Winter Holiday Sales at the Science Store.***
- ***Take a self-guided tour.***

Three Fridays — December 2, 9 & 16
10 a.m. to 3 p.m., Bldg. 701

Next BERA Concert — The Ravinia Trio

As part of the BERA 1994-95 concert series, the Ravinia Trio, a promising young piano trio with a growing international reputation, will appear in concert in Berkner Hall on Wednesday, December 7, at 8 p.m.

The Ravinia Trio is named after the Ravinia Festival in Chicago, where the chamber music ensemble from Germany made its U.S. debut in 1989. Since then, the group has toured widely in Europe and Japan. The trio presents challenging programs of new music and seldom-performed works, in addition to well-known pieces by famous composers.

Ravinia Trio

The program for the BNL concert reflects the diversity of the trio's interests. The three musicians — a pianist, violinist and cellist — will perform Beethoven's Piano Trio in E-flat major; Schöenberg's *Verklärte Nacht*, arranged for violin, cello and piano by Eduard Steuermann; and Schubert's Piano Trio in B-flat major, Op. 99, D. 898.

Tickets can be purchased at the door. They cost $14 for general admission, and $9 for students and seniors.

Calling All Carolers

The BNL Choral Group will present its annual Christmas Concert in the Cafeteria at the Christmas luncheon on Wednesday, December 21.

Rehearsals will be held at Berkner Hall, starting at noon sharp on: Monday, December 5; Thursday, December 8; Tuesday, December 13; Wednesday, December 14; and Tuesday, December 20.

Singers are needed for all parts — soprano, alto, tenor and bass. For more information, call John Weeks, Ext. 2617, or Janet Sillas, Ext. 2345.

LabVIEW Users

A LabVIEW Users Group meeting will be held on Thursday, December 8, from noon to 1:30 p.m. in Room C, Berkner Hall. Contact Doug Freeman of National Instruments, (800) 433-3488, or e-mail dougfr@tigua.natinst.com for more information.

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Country/Western Fans: Dance at BNL 12/16

If the holiday stampede has got you down, then plan on rustlin' on over to the Country/Western Dance, to be held on Friday, December 16, from 7 to 11 p.m. in the North Room of the Brookhaven Center.

Sponsored by the BERA Country/Western Dance Club, the dance begins at 7 p.m. with an hour-long country/western dance lesson for greenhorns and old hands alike. Then, at 8 p.m., be prepared for three hours of smokin' guns, tush push, watermelon crawl and other line and partner dances for lonely cowpokes and those with pa'tners alike. Buffalo wings and other hot and cold appetizers will be served during the evening, and you may belly up to the cash bar.

Before you check your spurs at the door, you must round up your tickets — in advance — at $10 per person, from either Carmen Falkenbach, Ext. 2663; Lois Marascia, Ext. 3315; or Ginny Morante, Ext. 3555.

Walking Club

The BNL Walking Club will participate in the Jingle Bell Run/Walk for the Arthritis Foundation on Saturday, December 3, at Belmont Lake State Park. For sponsor sheets, call Mary Wood, Ext. 5923, or go to the BERA Sales Office.

PSI Social

The annual December Social for the Upton Chapter of Professional Secretaries International (PSI) will be held on Wednesday, December 7, from 5:30 to 9 p.m. in the Recreation Building. It will feature demonstrations by the Pampered Chef on preparing holiday hors d'oeuvres.

As is customary, PSI will collect food, women's articles, toys, etc., for a local women's shelter, and donations will be appreciated.

The $5 cost of the social includes refreshments. For information, call Lynn McBrien, Ext. 2297.

Atlantic City Trip

There are still a few seats left for the next BERA-sponsored, one-day trip to Atlantic City to the Trump Castle Hotel and Casino, on Saturday, December 10. The cost will be $22, but the hotel-casino will give a $12.50 coin return and a $5 return voucher. The bus will leave BNL at 9 a.m., and return about 11:45 p.m.

Tickets are on sale at the BERA Sales Office. For more information, call Andrea Dehler, Ext. 3347.

Arrivals & Departures

Arrivals

James P. Ainoris ..... Plant Eng.
Jason D. Remien ..... Director's Off.

Departures

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

Rolf E. Olsen ..... NSLS

Healthline Lecture

Get Fit, Stay Fit

Laura Tipaldo

If your New Year's resolution is to get and stay physically fit, then attend "The Principles of Exercise FIT — Frequency, Intensity and Time," the next Health-line lecture. Sponsored by the Health Promotion Program of the Occupational Medicine Clinic, the talk will be presented by exercise physiologist Laura Tipaldo on Tuesday, December 6, from noon to 1 p.m. in Berkner Hall.

Tipaldo will explain how to exercise effectively, to help prevent cardiovascular disease and promote well-being. She will review the FIT principles. and explain how to start and stick with a safe and effective aerobic exercise program.

Tipaldo has worked as an exercise physiology consultant at the Brooklyn MetroTech Center of Chase Manhattan Bank and a health fitness specialist for Kraft General Foods in White Plains. She holds a bachelor's in exercise science from Hofstra University and is pursuing her master's in exercise physiology at Adelphi University.

To register for this lecture, return the Healthline flyer sent to all employees to Mary Wood, Bldg. 490. For more information, call Ext. 5923.

Be Social on Saturday

Due to popular demand, the TGIF Social that has been held monthly by the BNL Ballroom, Latin & Swing Dance Club has been moved to Saturday. Renamed the Saturday Social, the next informal dance will take place tomorrow, December 3, beginning at 8 p.m. in the North Ballroom of the Brookhaven Center.

All are invited to dance to the club's CDs and tapes, or bring your own music. The suggested donation of $1 will be used for the club's CD fund. For more information, call social chairman John Millener, Ext. 3853.

Basketball

Today at 4:30 p.m. is the deadline for Basketball League team captains to submit rosters to Ed Gregory, Bldg. 902, and for players not yet on teams to submit their names and life numbers to Gregory. The league is open to BNL and AUI employees, their spouses and contractors employed on site.

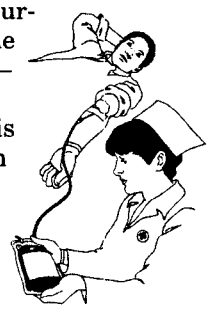
Team captains will meet on Thursday, December 8, at 12:15 p.m., in the gym.

Bowling

Red and Green League
R. Mulderig, Sr. 252/220/661 scratch series, E. Larson 248/212/203/663 scratch, R. Wiseman 243/219/635 scratch, R. Mulderig, Jr. 228/227/211/666 scratch, K. Asselta, 206/205/205/616 scratch, A. Liotta 241, N. Scala 239, R. Raynis 236, S. DiMauita 235, R. Larsen 225, K. Koebel 211, J. Griffin 203, E. Meier 202, J. Goode 201, A. Warkentien 201, H. Dawson 200, K. Riker 200.

Purple and White League
E. Sperry IV 237/232/643 scratch, M. Meier 223/190/183, C. MacDougal 217/175, B. Belligan 216/194, C. Wood 208, R. Picinich 207/192/181, S. Logan 196, T. Farmer 195, E. Sperry III 192/187, J. McCarthy 188/181, M. Reynolds, 182, J. Butler 180, C. Botts converted the 5/8/10 split.

Put Giving Blood on Your Gift List



While you can purchase many wonderful things during the holiday gift-buying season, there is still one thing that can be manufactured and given freely — blood.

If you want to add giving blood to your gift list, it is not too late to sign up for BNL's fall blood drive, which will take place on Thursday and Friday, December 8 and 9, from 10 a.m. to 3 p.m. in the Brookhaven Center. If you still have a pledge card, return it to BNL Blood Drive Chair Susan Foster, Bldg. 185, or call her at Ext. 2888, to make an appointment.

Mac Users to Meet

All Macintosh computer users are invited to a meeting on Thursday, December 8, at 9:30 a.m., in the seminar room of the Computing & Communications Division, Bldg. 515. Topics to be discussed will include a possible users group and the organizing of applications training. For more information, call Pam Mansfield, Ext. 7286.

Note to Employees:

Attendance at lectures, meetings and other special programs held during normal working hours is subject to supervisory concurrence.

Volleyball

Standings as of November 29

Open League		League I	
The Men and Me	19-5	Network News	14-4
Farside	18-9	Rude Dogs	12-6
GTEAM	15-9	Koopas	11-7
The Roofing Co.	10-14	Underdogs	5-13
Bud Men	1-26	Safe Sets	3-15
League 2		**League 3**	
Fossils	17-4	Take Five	15-0
Safe Sets II	14-7	Silver Bullets	14-1
Net Wits	12-9	High Volley'em	9-6
Mon. Night Live	12-9	Upton-Ups	8-7
Nuts & Bolts	9-12	DO-DAT	4-11
Spiked Punch	9-12	For Play	4-11
Jolly Vollies	8-13	Harlem Knights	3-12
Night Court	3-18	Bonnie's Bombers	3-12

Wanted: Toys

It's not too late to bring in a new Christmas toy or gift for a local needy child or young teen. Until Friday, December 16, bring donations to the BERA Sales Office in Berkner Hall, weekdays, 9 a.m. to 1:30 p.m.

For more information, call Andrea Dehler, Ext. 3347.

Hospitality News

Christmas crafts will be featured at the next Hospitality Committee get-together on Tuesday, December 6, at 9:30 a.m., in the lounge of the Recreation Building. If you have a handmade holiday item to show the group, bring it to the meeting, along with directions on how to make it.

Spouses of Lab employees and guests are welcome. Bring the children, but also bring a toy or two. Coffee, tea and cookies will be provided.

Film badges will be changed tomorrow. Please place your badge in its assigned rack space before leaving work today.

Software Demo

Tiger and Tripwire public-domain security products for UNIX workstations will be discussed by Robert Healy and Michael O'Connor, Computing & Communications Division, on Thursday, December 8, at 10 a.m. in the large seminar room, Physics Department, Bldg. 510. Topics will include advice on where to obtain the tools and how they can be used to increase computer security.

Archery Club

The Archery Club will hold its monthly meeting at noon on Thursday, December 8, in the large seminar room, Physics, Bldg. 510. New members are welcome. For more information, contact Bill Schoenig, Ext. 2377.

Cafeteria Menu

Monday, December 5	
Soup: Beef barley	.90/1.20
A la Carte: Steamed cod w/mustard	3.95
Fitness: Vegetable calzone	2.95
Deli: Pastrami	3.20
Grill: Reuben	3.30
Tuesday, December 6	
Soup: Chicken & rice	.90/1.20
A la Carte: Veal Parmesan	3.95
Fitness: Chicken cacciatore	3.85
Deli: Virginia ham	3.20
Grill: Lamb kabobs	3.30
Wednesday, December 7	
Soup: Vegetarian vegetable	.90/1.20
A la Carte: Chicken primavera	3.85
Fitness: Shepherd's pie	3.65
Deli: Roast beef	3.20
Grill: Monte Cristo	3.30
Thursday, December 8	
Soup: Black bean	.90/1.20
A la Carte: Braised short ribs	4.25
Fitness: Southwestern grilled chicken	3.70
Deli: Turkey	3.20
Grill: Philly cheesesteak	3.30
Friday, December 9	
Soup: New England clam chowder	.90/1.20
Display cooking: Pasta	
Fitness: Flounder julienne	3.75
Deli: Corned beef	3.20
Grill: Tuna melt	3.30

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 Personnel Division lists new placement notices. The purpose of these listings is, first, to give employees an opportunity to request consideration for themselves through Personnel, 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 (282-7744), for a complete listing of all openings.

LABORATORY RECRUITMENT - Opportunities for Laboratory employees.

DD 3609. SECRETARIAL POSITION - Requires an AAS in secretarial science or equivalent experience, excellent communication and interpersonal skills, and a broad knowledge of Laboratory policies and procedures. Will provide secretarial support to the Radiation Protection Group and the ALARA Center of DAT's Radiological Sciences Division. Duties will include organizing workshops, and interacting with national and international utilities and government agencies. IBM PC experience is essential, especially WordPerfect 6.0. Department of Advanced Technology.

DD 2478. SECRETARIAL POSITION - (term appointment) Requires an AAS in secretarial science, knowledge of Laboratory policies and procedures, good communications and organizational skills. Will provide varied clerical support, such as file maintenance, report and document preparation, assisting secretarial support staff. Knowledge of WordPerfect 5.1 and the IPAP system is essential. Budget Office.

OPEN RECRUITMENT - Opportunities for Laboratory employees and outside candidates.

DD 0544. TECHNICAL POSITION - (term appointment) Requires an AAS in a technical field or equivalent experience, and experience in mechanical and/or electromechanical assembly. Following written procedures and quality assurance standards also required, as is the ability to work under minimal supervision. Experience with electrical and mechanical measuring instruments is highly desired. Responsibilities include specific assignments in magnet assembly. RHIC Project.

DD 0545. TECHNICAL POSITION - (term appointment) Requires an AAS in electronic technology or equivalent, significant knowledge of rf and high-voltage circuits, and extensive experience in the layout and assembly of rf circuits. Will work from electronic schematics, verbal instruction and sketches. Knowledge of electronic test instruments and safety procedures associated with high-voltage and electrical systems desired. Responsibilities will include constructing, troubleshooting and maintaining rf amplifiers and high-voltage power supplies for the RHIC rf group. RHIC Project.

NS 2920. SCIENTIFIC ASSOCIATE POSITION - (term appointment) Requires a BS, MS preferred, in physics, chemistry, materials science or the equivalent, and 1-2 years' hands-on laboratory experience. Responsibilities will include providing assistance with setting up various beam-line configurations and interfacing between beam-line users and NSLS staff. National Synchrotron Light Source Department.

NS 2438. BUDGET/BUSINESS SYSTEMS ANALYST POSITION - Requires a BBA, MS desirable, strong knowledge in business systems development, extensive pertinent work experience and a strong accounting or finance background. Excellent analytical, written and oral communication skills are also required. Responsibilities will include automating Budget Office systems, working with MIS to automate the Laboratory's budget systems, utilizing MIS databases to extract data and create Laboratory financial reports. Will be expected to exercise a high degree of initiative and judgment in the performance of assignments and will be required to coordinate budgetary matters with both Laboratory and DOE staff. Budget Office.

LS 2606. PROGRAMMER POSITION - (part-time, term appointment) - Requires a bachelor's degree in computer science or equivalent and experience with UNIX, C language programming and shell scripts. Familiarity with SUN workstations, PCs and Macintosh equipment also required. A strong background in mathematics and physical science desired. Responsibilities include C language programming, C shell applications and assisting in system administration tasks. Department of Applied Science.

Sports, Hobbies & Pets

BACKPACK - & frame, alloy, w/heavy-duty waist belt, padded shoulder straps, asking $50. Ext. 7573.

GOLF CLUBS - women's right-handed, 3,5,7,9 irons, bag, $100. Paula, Ext. 4622 or 928-7769 after 5:30.

LACROSSE STICK - STX Dominator, 1 yr. old, hardly used, excel. cond., asking $60. Alex, 929-5945.

ORGAN - elec., Estey, 72 bal. bass cords, foot base cords, bench, books, needs tuning, excel. cond., $250. 475-8658.

PIANO - upright, recently tuned, $250. Casper, 345-5325.

ROWING MACHINE - Sears Lifestyler, $30. Ext. 3179.

SKIS - 2 pair, cross country, 200 cm, bindings, poles, 38cm boots, $35; no boots, $25. Steve, Ext. 7570.

Tools, House & Garden

POINSETTIA - florist-quality, low prices. 727-6818 after 4 p.m.

SINKS - bathroom, American Standard, w/fixtures, 2, 20"Wx19"D, reg. blue, good cond., $50/ea., or $85/both. 475-8658.

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

Miscellaneous

BROADWAY TICKETS - *Angles in America: Millinnium Approaches*, Sat., 12/3, 2 p.m., 2 mezz. seats, $65/ea. Ext. 7103.

CHRISTMAS TREE - artificial, 7', Scotch pine, w/stand, v.g. cond., $15. Jeff, Ext. 2907.

GIFTS - for Christmas, candles, paper goods, tins, linens, molds, purses, wallets. 286-0376.

MAPLE SYRUP - from my family's farm in Vermont. Peter, Ext. 7687 or 744-1112.

Free

BUREAU - w/mirror; water bed, king-size, heaters, pedestal, waveless. Mike, Ext. 2052.

KITTEN - gray-striped, female, lively, box-trained, friendly, will pay for shots, spaying. Cindy, Ext. 4679, beeper 0722 or 289-5433.

TABLE - dining room w/3 leaves, needs assembly. Ext. 3884.

Car Pools

WANTAGH/SEAFORD - need 1 driver for existing car pool. Paul, Ext. 2777.

Lost & Found

LOST - little girl's floppy blue denium hat w/bow, apt. area playground. Kathleen, Ext. 2882.

FOUND - gold bracelet in gym, Wed. 11/9. Ext. 3274.

Wanted

CAR - 1975 & up, MGB, good running cond. for daughter, reasonable. Rich, Ext. 5284.

CARS - 2 reasonably priced, running, for beginning drivers. Lou, 473-8562.

DOGHOUSE - small, for cats. Michiko, Ext. 7761.

FOOD LABELS - for project, Campbell's, Swanson, Pepperidge Farm. Maryann Maggio, Bldg. 459.

GARAGE-DOOR OPENER - automatic, good cond. 289-8105.

JUNK CARS/TRUCKS - free removal, money paid for running cars. Steve, 924-8741 after 7 p.m.

MARINE FISH - looking for healthy, inexpensive, tropical, saltwater fish. Jim, Ext. 4617.

PICKUP - Ford, mechanically sound, a/t, late model okay. Tom, Ext. 5265.

PRINTER - for Macintosh SE computer, also games & software. Mike, Ext. 2052.

PROJECTOR - 35mm Kodak Calvacade, working or parts; any brand 35mm projector; overhead projector. Vic, Ext. 7016.

TOYS - for needy kids for Christmas. Lorraine, Ext. 7814.

VOLUNTEER INSTRUCTORS - for science programs for children, after work & Sat. a.m., one-time or long-term, Science Museum, Shoreham. 821-8155.

Services

*Services are listed in the first **Bulletin** of every month as a courtesy to BNL employees. They are neither screened nor recommended by the **Bulletin**. Services forms are available in the **Bulletin** lobby, Bldg. 134.*

BRICKWORK - masonry, patios, walks, swimming pools, retaining walls, landscaping ties, Belgium block, 25 yrs. exp., Lab disc. Tony, 698-9274.

CARPET MECHANIC - installation, 30 years experience. Ken, 821-6005.

CERAMIC TILE INSTALLATION - kitchens, baths, foyers, etc., will do repairs. Patrick, 471-7853.

CHILD CARE - mature, responsible mother will care for your child in my Wading River home, ages 2-5 yrs., weekdays. Mary, 929-8613.

CHILD CARE - by licensed loving mother, impeccable refs. provided by BNL employees. Robin, 345-0298.

COMPUTERS - service and repair, all makes & models, instruction avail., done at your home, reasonable, computers for sale. Steve, 698-5260.

COMPUTER TRAINING - PC applications, from accounting to word processing, DOS & Windows, all levels. Gina, 929-3649.

DJ/MC - party & dance music from 40s-90s, all occasions, music & entertainment personalized for your affair, BNL refs. Lou, 698-8210.

DJ/MC - professional, rap, club, house, & 50s, all occasions, demo tape avail., refs. Alex, 286-0575.

ELECTRICIAN - lighting, outlets, additional circuits, service upgrades, repairs, lic./ins. Steve, 758-7002.

ELECTRICIAN - quality work, reasonable rates, licensed and insured, Port Jeff area. Tim, 331-4683.

FINANCIAL EVALUATION - of your insurance program or retirement planning for pension maximization, tax savings. Rich, 744-4816.

FISHING REEL REPAIR - Al, 734-7099 after 5:30 p.m.

HANDYMAN - odd jobs, painting, etc., reasonable rates, competent service. Frank, 399-4480.

HOME IMPROVEMENT - carpentry, drywall, spackling, painting, plumbing, ceramic tile, storage sheds, free est., Lab disc. Don, 744-2921 after 5:30 p.m.

JEWELER - special orders, repairs, honest, affordable, no job too large or small. Kelly, 821-5239.

LOCKSMITH - sales & service, 10% Lab discount, keys cut during lunch. Pete, 399-2813 after 5 p.m.

MASSAGE THERAPY - Medford, by appt. 475-4947.

MUSIC - DJ for your holiday parties, discount for Lab employees. John, 736-4842.

PAINTING - professional, licensed. 399-9293 eves.

PLUMBING & HEATING ALTERATIONS - repair work by retired BNL employee. Jim Morris, 472-1205.

SHEETROCKING & SPACKLING - free estimate. Kevin Tisch, 567-6621.

SKIN CARE & MAKEUP CONSULTANT - nail care, facials, men's line, body care, free first-time facial, cosmetic gift baskets. Barbara Jean, 929-3235.

TYPING - resumes, term papers, letters, etc., laser printer, fast service, pick up and drop off. Willie or Cathryn, 821-7327.

VIDEOGRAPHER - capture those precious moments on video, will tape weddings, parties, all occasions. Larry, 281-7240.

In Appreciation

Thanks to all who offered condolences on the loss of my mother. God's blessings on you all.

— Frances Hille

Ads left out of this issue due to lack of space need not be resubmitted to appear in the next issue.