BROOKHAVEN BULLETIN
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BROOKHAVEN NATIONAL LABORATORY

Special Efforts, Accomplishments Earn Special Recognition

The business of BNL is science, and doing good science requires having good people — from the scientists who do the research, to the engineers, administrators, technicians, clerical staff and others without whose support the science could not go forward.

From among some 3,300 Lab employees, 74 were singled out recently for recognition through the Lab's Employee Awards Program. They include: four scientists (see below) whose outstanding research performance merited the Distinguished Research and Development (R&D) Award, symbolized by an engraved memento and accompanied by a pre-tax award of $5,000; five employees (see page 2) whose outstanding service in support areas garnered the Brookhaven Award, which came with an engraved memento and a pre-tax award of $2,000; and 65 BNLers (see page 3) who were honored with $500 after-tax Spotlight Awards for extending short-term extraordinary efforts in response to department or division needs.

"Brookhaven is extremely fortunate to have an abundance of excellent staff," said BNL Director Nicholas Samios. "In these times of tight budgets and as our financial and material resources shrink, without the energy and ingenuity of our 'human resources,' it would be very difficult to continue the forefront science for which the Laboratory is so well known. When people's efforts and accomplishments are very special, they deserve special recognition. That is why the Laboratory continues to extend its extreme gratitude — and these awards — to some of those whose efforts have contributed immeasurably to Brookhaven's continued success."

The Distinguished R&D Award, the highest honor in the Lab's Employee Awards Program, rewards notable contributions to BNL's research and development mission made over one or more years by a member of the scientific staff or an employee on the engineer/scientific associate/computer analyst schedule. The Brookhaven Award draws its winners from employees on the latter schedule, as well as staff within the administrative and two lowest management salary grades, employees within the technical monthly schedule, and those on the clerical and technical wage scale. The Spotlight Award may be given to administrative, technical and clerical employees, as well as those represented by the Oil, Chemical and Atomic Workers International Union.

For the Distinguished R&D and Brookhaven Awards, each department or division submitted nominations to the appropriate five-member selection committee. Composed of members of the Directorate, department chairs and division heads, those committees sent their selections to Samios for final approval. Spotlight Awards were based on the recommendation of supervisors and departmental/divisional approval.

Samios presented the Distinguished R&D and Brookhaven Awards at separate December ceremonies; the Spotlight Awards were presented to employees by their supervisors after each extraordinary accomplishment was completed, throughout fiscal year 1995.

Emery, Srivastava, Sutin & Volkow Win Distinguished R&D Awards

Victor Emery, Physics Department

In nominating Senior Physicist Victor Emery, Physics Department Chairman Peter Bond wrote, "Vic has made numerous internationally recognized contributions to a wide variety of topics in solid-state theoretical physics, making him a mainstay of the Brookhaven Solid State Theory Group."

Emery, who took his Ph.D. in theoretical physics at the University of Manchester, England, in 1957, has always worked at the forefront of important problems in nuclear or condensed-matter theory. While at the University of California, Berkeley, in 1960, Emery and Andrew Sessler made the dramatic prediction that liquid helium-3 would experience superfluidity, or flow without friction, at temperatures very close to absolute zero, This theory was later confirmed experimentally.

After joining BNL's Physics Department in 1964, Emery worked on fundamental theories for the behavior of helium-3/helium 4 mixtures, and later turned to the theory of organic conductors and superconductors, a topical issue during the 1970s and early 1980s. Here, he provided deep insights into general many-body aspects of boson and fermion systems. Through this work, Emery become one of the world's leading theorists in the study of phase transitions, where substances change among liquid, solid and gas,

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BNL's 1995 Distinguished Research and Development Award winners: (seated, left) Nora Volkow, (standing, from left) Norman Sutin and Victor Emery, (above) Suresh Srivastava.

Suresh Srivastava, Medical Department

In nominating Suresh Srivastava, Medical Department Chairman Darrel Joel said of the Senior Scientist, "Dr. Srivastava is an outstanding candidate. He has used his expertise in basic chemistry in conjunction with unique facilities at BNL for the production of forefront radiopharmaceuticals. . . . His distinguished research and development contributions in the fields of red blood cell (RBC) labeling, tin-117m for radiotherapy, and synthesis of improved chelating agents for tagging monoclonal antibodies will benefit hundreds of thousands of patients and will have a lasting impact on clinical nuclear medicine."

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Nora Volkow, Medical Department

When proposing Scientist Nora Volkow for the Distinguished R&D Award, Medical Department Chairman Darrel Joel wrote of "her outstanding contributions to the Laboratory mission in developing and applying neuroimaging techniques to the study of human brain function. Dr. Volkow's research is characterized by a central theme that an understanding of a disease at the molecular level will lead to improved treatment. Indeed her vision and the originality of her research has had a major impact on the way PET research is carried out in the United States and in the world."

PET, or positron emission tomography, allows researchers to track the signal of positron-emitting radionuclides as they travel through the body carried by biologically specific molecules. In BNL's Chemistry Department and elsewhere, PET facilities have been used for decades to study metabolism, drug uptake and other biochemical processes.

After receiving her M.D. in 1981 at

(continued on page 3)

Norman Sutin, Chemistry Department

Senior Chemist Norman Sutin "is an internationally recognized leader in the field of electron transfer and in the field of transition-metal photochemistry," observed Chemistry Department Chair Carol Creutz in nominating Sutin. "His work, which is unique in its interweaving of experimental and theoretical insights, has had profound and far-reaching influence in both fields and is, in large measure, responsible for the sophisticated understanding of electron transfer achieved in recent decades."

Sutin's research has focused on outer-sphere electron-transfer reactions — where the reaction consists of the transfer of an electron from one site to another. Such reactions are of critical importance in cell metabolism; electrochemical, geological and other environmental processes; and photosynthesis and solar photochemical conversion processes in general.

Since electrons move so much more rapidly than nuclei, and because energy must be conserved during the electron-transfer process, the molecules involved in the reaction must undergo reorganization before the electron transfer can take place.

Sutin worked on this reorganization and how its magnitude is affected by the molecular properties of the reactants. He has clarified the role of molecular bond distance and vibrational frequencies in systems ranging from aquo ion complexes to metalloproteins to the electronically excited

(continued on page 3)

DOE Offers Public Water Hookups To Residences South of Lab

The U.S. Department of Energy (DOE) will offer public water hookups to approximately 800 residences just south of BNL.

Carson Nealy, Manager of DOE's on-site Brookhaven Group, said, "In view of the fact that we have found chemical contamination in groundwater immediately south of the Laboratory, the Department of Energy has decided to offer public water hookups to our neighbors to the south. While we are not certain BNL caused the contamination, this is the responsible thing to do."

The DOE plan for public-water hookups will be presented at the public meeting that had already been scheduled for Tuesday, January 16, at 7:30 p.m. in Berkner Hall. During the meeting, DOE and BNL staff will present monitoring data from the area and discuss what the data mean in regard to public health.

This past fall, the Suffolk County Department of Health Services, in cooperation with BNL, began to sample domestic wells south of the Lab's property for contamination. The decision to offer public water hookups to the approximately 800 home owners in the area who have domestic wells follows last month's announcement that BNL would offer bottled water to a few homes where initial water testing had shown chemical contamination at or above the drinking water standard (see Brookhaven Bulletin, December 15, 1995).

To date, about 250 wells have been sampled and 180 of those samples analyzed. A total of four wells have been found to have chemical contamination at or above the standard.

Bullis, Dale, Hoey, Pappas & Slavinsky Merit Brookhaven Awards

William Slavinsky, Plant Engineering

During a time of pressures to do more with less, William Slavinsky has presented a model of how that can be done. As Superintendent of Craft Shops & Services in the Plant Engineering (PE) Division, Slavinsky has been recognized for tirelessly leading his personnel to provide the best service possible at the least cost.

Slavinsky's promotion in November 1994 instantaneously improved the outlook and future performance of PE's Operations & Maintenance Service Shops, which are the base for employees in the mechanical, electrical and building trades — people who are highly skilled, very knowledgeable and whose time is expensive.

Management had previously identified the need to challenge these talented craft personnel to perform to the best of their abilities — to cut costs and to improve their customer focus and productivity. Until Slavinsky took over, however, these goals had proved difficult to implement.

Leading by example, communicating openly and presenting his argument relentlessly, Slavinsky has improved productivity, quality and pride. His influence has reached beyond the groups under his supervision.

One program that embodies Slavinsky's concepts and methods is the Team Maintenance Program, which he implemented only a few months after being promoted. Under this approach, various craftspeople address a building's problems simultaneously, so buildings are maintained holistically, rather than piecemeal, Customer feedback on this approach has been very positive.

Slavinsky's 18 years at BNL began in June 1977 with temporary assignments as a plumber in PE. He joined the Plumbing Shop staff permanently in December 1978, and, by 1983, his skills and work ethic propelled him to the supervisor's job at the Water Treatment Plant. During his tenure there, the plant was modernized and the skills of the plant's engineers and operators were upgraded.

Named Assistant General Supervisor, Mechanical, in 1987, Slavinsky became General Supervisor of Construction Support in July 1988, earning an outstanding reputation for his people and himself.

BNL's 1995 Brookhaven Award winners: (from left) James Bullis, Edward Dale, Steven Hoey, Naomi Pappas and William Slavinsky. — Photos in this issue by Roger Stoutenburgh

Edward Dale, Alternating Gradient Synchrotron

Some 35 major cooling systems function throughout the Alternating Gradient Synchrotron (AGS) and Relativistic Heavy Ion Collider (RHIC). Senior Project Engineer Edward Dale, who heads the AGS Department's Mechanical Services Group responsible for the engineering design, installation, operation and maintenance of these complicated systems, has been recognized as a major contributor to the smooth operation and necessary improvements of the accelerator complex.

Dale joined the Lab in 1976 as a facilities engineer in the Plant Engineering Division, but, in 1978, he moved to the ISABELLE Project's Construction Section, responsible for design and construction of mechanical systems. Dale joined the AGS Department as engineer-in-charge of mechanical services in 1982, and was named Project Engineer. He was promoted to his present position in 1988.

Dale's early efforts at ISABELLE were valuable to his group's completing the water system that cools the new AGS-to-RHIC transfer line. Dale is well into the design of the radio-frequency (rf) cooling system for RHIC and is developing a preliminary design of the water systems required for the STAR and PHENIX detectors. In addition, Ed's group is responsible for cooling the magnet test facility and the RHIC compressor.

Dale was essential for the successful 1992 completion and continuing smooth operation of the AGS Booster. His resourcefulness and determination met the Booster water-cooling requirements within a bare-bones budget and a tight time schedule.

Examples of this resourcefulness include: neatly fitting the Booster main magnet water-pumping system in the basement of Bldg. 914 that once housed the old Cockcroft-Walton preaccelerator; using the cooling tower of the defunct 80-inch bubble chamber for its heat-exchanger cooling; designing and implementing a system that used chilled water from the AGS to cool the Booster rf cavities; and modifying systems in the AGS Linac to cool the Booster main ring power supplies and provide water for the Booster corrector and beam-line transport supplies.

Over the years, Ed has been steadily rebuilding the AGS cooling complex, overseeing system installations worth millions of dollars. Recently, he greatly simplified AGS operations by modernizing many key systems with remote monitoring and computer control.

Stories in this Awards issue were reported by Anita Cohen and Liz Seubert.

Naomi Pappas, Medical

Naomi Pappas, a medical associate I in the Medical Department, after working mainly on tissue culture for 22 years, joined BNL's Positron Emission Tomography (PET) group in 1990. Research in this program, which involves close collaboration between the Chemistry and Medical Departments, has attained world renown. PET is a technique that allows the brain to be imaged with radiotracers as it functions. Pappas's exceptional qualities and accomplishments have resulted in her making broad-ranging, unstinting and imaginative contributions to the day-to-day operation of the PET program.

As a PET operator, not only has Pappas learned to operate the facility and associated computers and to keep the instrument running and calibrated, but she has also gone beyond this requirement, broadening and enriching the primate experimental capability of the research.

To perform baboon radiotracer studies, Pappas needs to do arterial and venous catheterizations and tracheal intubation, and administer anesthesia, radiotracer and drugs, and she learned these procedures in record time. Also, she initiated the addition of sophisticated physiological monitoring and recording to the studies, modeled on the monitoring used in human surgical suites, so records are now available of the physiological status of the animal during a PET run. She initiated this effort entirely on her own, from purchasing the equipment to learning to use it, then continually modifying and improving the procedure to gather more information.

Recruiting subjects for PET studies is another area of Pappas's responsibility, requiring initial medical screening by telephone and entering the subjects who fit the criteria into the crowded PET schedule. Her ability to accomplish this pleasantly and to accommodate emergencies and occasional instrument failure is the source of compliments by both volunteers and patients. In fact, Pappas has become a key individual in calming the anxiety of subjects participating in a PET study for the first time. She is an excellent team member who learns new skills fearlessly and takes pride in advancing the PET research program.

James Bullis, Medical

Throughout his 20 years in the Medical Department, James Bullis, a medical associate I, has consistently made important contributions, first in biomedical research support and now in safety, training and quality assurance (QA) programs. His attention to detail and awareness of scientific equipment and facility support required for the research has been invaluable to the success of many projects.

On his arrival at BNL in 1975 as a technical specialist, Bullis assisted in the experimental hematology/leukemogenesis research program. Only nine years later, as lead technician, he supervised a four-person team, trained students, planned and executed research protocols involving a variety of unique techniques and managed a large experimental animal colony. He also helped plan and carry out complex experiments, then analyzed the data. As a result, he became a coauthor of 16 scientific papers published in peer-reviewed journals.

In 1991, Bullis assumed duties in implementing departmental QA and training programs. His organizational and supervisory skills and thorough knowledge of the needs of scientific investigators were essential in carrying out the new procedures in the most effective and least disruptive manner.

In 1994, he began coordinating Medical's environmental safety & health (ES&H), training, radiation control and conduct of operations activities, and serving as QA representative and supervisor for building and equipment and for property management and other facilities and services. He also chairs the ES&H and QA committees and is on the QA, Care and Safety Committee of the Clinical Research Center.

These responsibilities involve ensuring that all procedures are ready at all times for intense public scrutiny as well as external review and accreditation by regulatory agencies. Bullis introduced a number of innovative procedures to assure compliance with standards while improving the quality of research.

In another major initiative with Safety & Environmental Protection Division facilities support personnel, Bullis has implemented a new, "self-inspecting" approach for certain ES&H procedures, producing a program that may become a model for other departments.

Steven Hoey, Safety & Environmental Protection

Steven Hoey, a project engineer I in the Occupational Safety & Health Section of the Safety & Environmental Protection (SEP) Division, was recognized as an effective and decisive manager of SEP's Safety Engineering Group, having significantly improved the group's responsiveness to Lab programs. As manager, Hoey provides support to all BNL departments and divisions in conducting their safety programs.

Hoey was also cited for his skill in sizing up what is truly important to safety, his strong technical ability and his dedication to working effectively with people.

In addition to his supervisory role, Hoey has assumed direct responsibility for a number of major Lab safety programs. One significant example is in the Lab's safety analysis report program, in which he provides guidance for all facilities that require such reports, and coordinates all SEP assistance and review of all phases of the document preparation. His outstanding efforts in building close and supportive partnerships with the research community have proven invaluable to departments without great experience in this specialized field.

Other major safety issues coordinated by Hoey involved his ensuring that the U.S. Department of Energy's (DOE) non-reactor nuclear requirements and Accelerator Safety Order were correctly applied at the Lab. His close and dedicated work with staff of Lab facilities that could be affected by these requirements and orders were instrumental in making considerable savings to many programs.

Another typical example of Hoey's effectiveness was his role as a driving force within a Lab committee that evaluated handling, storage and operational practices with chlorine gas throughout the site. Chlorine stored in compressed gas cylinders became a very significant issue in the DOE community following a release and evacuation at a site in Idaho. The Lab committee identified and corrected several poor practices and significantly improved the BNL program. This resulted in an excellent review for BNL by a DOE team that was making a DOE-wide examination of these issues.

Hoey came to BNL as an SEP project engineer II in 1988. He was promoted to his present rank in 1992.

Sixty-Five Employees Spotlighted in Fiscal Year 1995

Sixty-five BNL employees were honored with Spotlight Awards during fiscal year 1995. The 41 able to be present for this photo are:

• (front row, from left) Robert Colichio, Safety & Environmental Protection (SEP) Division; Pat Fox, Department of Applied Science (DAS); Jean Frejka, Department of Advanced Technology (DAT); George Wunderlich, Plant Engineering (PE) Division; LaRosa Collins, DAT; Lawrence Lettieri, SEP; George Westwater, Physics Department; Marcia Bero, SEP.

• (second row, from left) Frederick Kobasiuk, Alternating Gradient Synchrotron (AGS) Department; Gail O'Hern, Human Resources (HR) Division; Peter Sutherland, Information Services Division; Richard Becker, Chemistry Department; Charles de la Parra, Relativistic Heavy Ion Collider (RHIC) Project; Rich Freudenberg, National Synchrotron Light Source (NSLS) Department; Carl Eld, AGS; Frank Dusek, AGS; Ray LoPresti, Reactor Division; John Rubino, NSLS.

• (third row, from left) Pat O'Connor, Computing & Communications Division (CCD); Chris Masullo, CCD; Celeste Tymann, Staff Services Division (SSD); Betty Elder, SSD; Dom Milidantri, RHIC; Judy Badal, DAT; Leesa Allen, Physics; Jeanne Volkmann, Contracts & Procurement Division; Breffni Medcalf, Physics; Richard Rothe, Physics; Ron Hauser, Central Shops Division; Lawrence Arnold, AGS.

• (fourth row, from left) Edwin Casanas, RHIC; John McNeil, RHIC; Leon Goudikian, RHIC; Richard Meier, RHIC; Edward Gregory, RHIC; Conrad Dabrowski, RHIC; Richard Conte, RHIC; Peter McHugh, Management Information Systems Division; Gary Nintzel, NSLS; Michael Farnitano, Reactor; Frank Stepnoski, SEP.

• Not present: Helen Baker, Budget Office; Oscar Blevins, PE; Patrick Browne, PE; Scott Buda, NSLS; Joseph de Cicco, AGS; Willem DeJong, RHIC; Robert Diem, AGS; Sheryl Gerstman, Safeguards & Security Division; Stephen Gill, AGS; Srinivasan Iyer, Budget; Richard Machnowski, Instrumentation Division; Peter Maier, HR; Glen Mehl, Reactor; Kathleen Nasta, DAT; Stephen Pontieri, AGS; Irene Rosati, Biology Department; Doris Rueger, Physics; Amalia Ruggiero, Medical Department; Antoinette Russo, Budget; Joseph Sanfilippo, AGS; Joan Terry, Medical; Donna Vestal, Reactor; Stephen Waski, PE; Susan White-DePace, NSLS.

Victor Emery (cont'd.)

and in superconductivity in low-dimensional fermion systems.

Emery's work with low-temperature superconductivity laid the foundation for his concentration over the last nine years on the theory of high-temperature superconductivity. Discovered in 1986, high-temperature superconductors have the potential to bring superconducting technology into everyday use.

As physicists worldwide struggled to understand this phenomenon, Emery presented one of the first believable theories, identifying the nature of the superconducting material's "holes," which are the carriers of the supercurrent. In detail, he correctly pointed out that the holes tend to sit mainly on oxygen, rather than on copper, contrary to initial popular belief. His model for the electronic structure of the copper-oxide planes is the starting point for many analyses of high-temperature superconductors and is commonly known as the "Emery model." Confirmation of this theory has come from many spectroscopic studies of high-temperature superconductors, and Emery is considered among the world's leading experts and spokesmen for this revolutionary field.

Currently, Emery and Steven Kivelson, University of California, Los Angeles, have proposed that high-temperature superconductivity occurs because the mobile holes would like to coalesce into a liquid state but are prevented from doing so because they are electrically charged.

At BNL, Emery received tenure in 1967 and was named Senior Physicist in 1972. In the Physics Department, he led the Cryogenics Group, 1973-77, and the Solid State Theory Group, 1975-84 and since 1994. He also served as Associate Chairman, 1981-85.

The author or coauthor of over 150 publications, Emery headed the scientific program at the High Flux Beam Reactor (HFBR), 1983-85, and chaired the HFBR Program Advisory Committee, 1984-85. Since 1987, he has been Chairman of the Lab's High Temperature Superconductivity Task Force.

Suresh Srivastava (cont'd.)

Srivastava, who received his Ph.D. in inorganic/analytical chemistry from the University of Allahabad, India, in 1961, joined the technetium chemistry group at BNL in 1975. In 1983, he became head of the Radionuclide and Radiopharmaceutical Research Program (RRRP). Now an international authority on technetium chemistry, he was awarded tenure in 1985.

In his early work on improving the first BNL-developed RBC-labeling procedure, Srivastava developed an efficient second generation kit that, when made and marketed by Cadema Medical Products, was widely used in cardiovascular nuclear medicine worldwide. But he was dissatisfied with aspects of the kit and developed a new procedure, conceptually quite different, which eliminated the drawbacks.

This improvement won him the 1986 IR-100 Award and the 1988 Special Award for excellence in Technology Transfer. Patented in 1988, the kit was tested in collaboration with Mallinckrodt Medical, Inc., marketed in 1991 and provides Medical with about $60,000 a year for exploratory research and graduate student support.

Srivastava was instrumental in introducing tin-117m-labeled compounds, a new class of potential radiopharmaceuticals for therapy. In basic research on tin as an essential ingredient of the technetium labeling kits developed earlier at BNL, he discovered that when the stannic form of tin is used in a compound, it is taken up almost exclusively by the bone, very similarly to other bone-seeking radiopharmaceuticals. This and other properties suggested the possibility of using this compound, which was patented in 1985, to relieve the excruciating pain of patients whose breast, prostate or lung cancer had spread to the bone.

Extensive animal studies confirmed tin-117m's promise, and, in 1992, clinical trials began. Of the 40 patients treated to date, 80 percent have experienced significant, sometimes nearly total relief from pain. Phase III trials will be done in partnership with Diatech, Inc.

Other innovative work led by Srivastava has been in the field of radiolabeled monoclonal antibodies for cancer detection and therapy. Current isotopes and chelating agents that attach appropriate radionuclides to the antibody molecule are unsatisfactory. However, the RRRP team has identified more effective radionuclides and developed new rigid chelating agents. In a preliminary imaging clinical study using BNL's agents, done in collaboration with the University of Nantes, France, tumor recurrence was imaged in the liver in colon cancer patients, which had never before been possible. Radiotherapy trials, of breast and of colon cancer, are planned in New York and Omaha this spring.

Norman Sutin (cont'd.)

states of metal complexes used in his solar photoconversion program, which aims to characterize systems capable of converting solar energy into chemical energy.

Sutin has also examined the role of the driving force for a reaction on the rates of outer-sphere electron-transfer reactions. In elegantly selected systems, he established the degree to which classical models, such as that of Nobel Prize-winner Rudolf Marcus, are obeyed, and he also explored and exploited systems in which only a quantum mechanical description is valid. Through this work, Sutin has arrived at clear guidelines for the design of efficient photoconversion systems.

In his most recent studies, Sutin has focused on the role distance plays in electron-transfer rates. He has shown how rates are attenuated through increasing electron donor-acceptor separation via the "nuclear factor" and via the "electronic factor." Sutin has utilized the spectroscopy of metal-to-metal charge-transfer transitions and unique analyses of rate data to probe both factors and disentangle their relative contributions.

Having earned his Ph.D. at Cambridge University in England in 1953, Sutin joined BNL's Chemistry Department in 1956. He was awarded tenure in 1963, and promoted to Senior Chemist in 1966. He served as Chemistry Department Chairman 1988-95.

Several national awards and his election to both the American Academy of Arts and Sciences and the National Academy of Sciences in 1990 are among the many ways that the scientific community has recognized Sutin's research, embodied in over 200 published papers.

Nora Volkow (cont'd.)

the National University of Mexico, Volkow did her residency at New York University's Department of Psychiatry. During this time, 1981-84, she collaborated with the BNL PET program and made pioneering observations in studies that documented subcortical abnormalities in the brains of patients with schizophrenia.

Volkow next joined the University of Texas Medical School at Houston to lead a program in PET research in psychiatry, where she published a major finding of the toxic effects of cocaine. To probe further into the neurochemical mechanisms underlying addiction required a sophisticated battery of radiotracers, which were available at the BNL PET program.

Thus, in 1987, Volkow joined BNL's Medical Department, and she was awarded tenure in 1992. Her first PET studies showed a surprisingly rapid uptake and clearance of cocaine from specific dopaminergic sites in the brain that perfectly paralleled the drug's behavioral effects. These were the first measurements in the living human brain to demonstrate that the kinetics of cocaine in the brain is a major factor in its effects. She also documented major changes in the brain dopamine system associated with major functional changes in the brain of the cocaine abuser.

As a result of the work of Volkow and others, chronic use of drugs of abuse such as cocaine is now clearly shown to produce neurochemical changes. Cocaine addiction can no longer be considered to be "psychological," but rather, a condition with clear biological changes.

Volkow used PET imaging to study alcoholism and substantiated, among other findings, the importance of genetics in sensitivity to alcohol's effects on the brain. Also, she documented that with abstinence, alcoholics can significantly improve their brain function.

Recently, Volkow launched a program to study changes in the human brain occurring with age. Already, she has shown that a change in the brain dopamine system, critically important in movement and motivation, is seen early, at 30-40 years of age.

Volkow's high standing in the scientific community is seen in her early membership in the American College of Neuropharmacology. Her numerous publications in major journals introduce new and original concepts.

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Payroll Correction Coming Next Week

When the Lab closed early due to snow for two days last month, time cards had already been submitted. So employees who had to work during those excused periods had to submit corrected time cards. However, with the current work week shortened due to the New Year's Day holiday, Payroll could not enter those corrections in time to be included in this week's paychecks for weekly employees, so the corrections will be effective in next week's paychecks.

Lecture Postponed

The next Brookhaven Lecture, previously scheduled for January 17, has been postponed until Wednesday, January 31. See future Brookhaven Bulletins for details.

Gospel Galore Next Month

The popular Gospel Extravaganza will return to Berkner Hall for the 14th time on Saturday, February 3, in celebration of Black History Month. Look for more information in next week's Brookhaven Bulletin.

Rifle & Pistol Club

The Rifle & Pistol Club meets on the second Wednesday of each month, so the next scheduled meeting is January 10, in Room 202, Bldg. 911B, at noon. For more information, call Otto Jacobi, club president, Ext. 3471.

Hospitality News

Christina White, a Tupperware representative, will be the guest speaker at the next Hospitality Committee get-together, on Tuesday, January 9, at 10 a.m., in the lounge of the Recreation Building in the apartment area.

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

C/W Dance

The next session of eight weeks of beginner, intermediate and couples dance classes sponsored by the BERA Country/Western Dance Club is planned to begin on Tuesday, January 23. Those who intend to participate must first register, so the club may determine which level classes to offer and estimate the per-person cost for each class. To register or for more information, call Marilyn Johnson, Ext. 2546, by Wednesday, January 10.

Arrivals & Departures

Arrivals

Timothy R. Connolly.....Central Shops
Elisabeth M. Deazley.....Central Shops
Steven Halderman.....Central Shops
Daniel L. Heglund.....Advanced Tech.
Giuseppe Mondi.....Central Shops
Maya Paczuski.....Physics
Rodney J. Weber.....App. Science
Mark T. Widmere.....Chemistry
Bruce E. Yanofsky.....Central Shops

Departures

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

John L. Barry.....Plant Eng.
Frances C. Brown.....Saf. & Env. Prot.
Dean Campbell.....RHIC
Stephen Crivello.....RHIC
Donald W. Dains.....Saf. & Env. Prot.
Evelyn Gallego.....Physics
Maj Britt G. Hansen.....Info. Services
Duff M. Henze.....Advanced Tech.
Joseph A. Hriljac.....App. Science
Markus Kuhn.....Chemistry
Olaf M. Magnussen.....Physics
Vera M. Mott.....RHIC
Ira Rosenberg.....Physics
Lisa J. Saracino.....Human Resources
June A. Schonberg.....AGS
Karen E. Smith.....Chemistry
John H. Sondericker III.....Physics
Linda R. Watson.....Occ. Medicine

Telephone Update

Phone-System Training

Training sessions 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 Wednesdays, January 10 and 17, and Thursday, January 25.

A training video is also available: Call the Research Library's Circulation Desk, Ext. 3483, to borrow it; or call BNL Video, Ext. 3680, to purchase a copy.

Phones to Change Week of Jan. 8

The following buildings, which are served by node site 2 in Bldg. 703, will be switched to the SRC telephone system beginning today, over the weekend and through the week of Monday, January 8. Those to have digital service are listed in bold; those receiving analog service are in plain text.

Date	Bldg.
Fri., Jan. 5	**906**, 907, 908, 909
Sat., Jan. 6	**510**
Sun., Jan. 7	**510** continued if required
Mon., Jan. 8	**555**
Tue., Jan. 9	**902**, 903, **904**, **905**, **943**, 944, 945
Wed., Jan. 10	920, 925, 932, 942, 928, 929, 913A-T
Thu., Jan. 11	**911**
Fri., Jan. 12	**930**, **930B**, 931A&B, **938**, **939**, **938B**

Linux Users Group

The BNL Linux Local Users' Group will sponsor a Linux Fair on Wednesday, January 10, from 11:30 a.m. to 1:30 p.m., in the lobby of Berkner Hall. Linux is a Unix-like operating system designed to run on a personal computer. All are invited to the fair where group members will be available to demonstrate applications such as the X Window system, scientific programs, PPP client-server connections and Netscape. Several computers will be set up for viewing and interacting with these applications.

For more information, call Matt Surico, Ext. 2426.

To Your Health

The following programs have been scheduled by the Health Promotion Program of the Occupational Medicine Clinic. For more information or to register, call Health Promotion Specialist Mary Wood, Ext. 5923.

Quit Smoking Now

If one of your New Year's resolutions was to quit smoking, then here's your chance: On Tuesday, January 9, from 4:30 to 6:30 p.m. in Berkner Hall, the Green Seminar will be offered to all employees and their dependents who smoke, but who wish to kick the habit and do so without gaining weight.

To be presented by Stuart Green, the president of GSI, a New York consulting firm specializing in corporate wellness programs, the one-session program will cost $10 per person for new attendees; those who have attended the seminar before may attend again free of charge.

Participants will each receive an audiotape and written material for use afterwards, to reinforce what was presented at the seminar.

Weight Watchers

Register for the next on-site Weight Watchers series on Wednesday, January 10, from noon to 1 p.m, at the Brookhaven Center. The fee is $89 per person for eight or ten sessions, depending upon the number of registrants.

Water Aerobics

Register now for the next stretching and water exercise series. The Tuesday and/or Thursday classes start January 9 & 11, from 5:20 to 6:10 p.m. in the BNL pool. For each class, registrants must either pay the $2 daily pool fee or present a season pool pass.

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 (282-7744), 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 experimental physics or electrical engineering, with demonstrated ability in the design and commissioning of leading edge electronic systems. Experience in charged particle dynamics, electromagnetic structures, and RF signal processing is desired. The successful candidate will join the RHIC Beam Instrumentation Section to work on the ion beam profile monitor and wide-band beam feedback systems. Research and development projects include Schottky signal measurement systems and SQUID-based instrumentation. Contact: Thomas Shea, RHIC Project.

Motor Vehicles & Supplies

94 CHEVY S10 PICKUP - 4-cyl., 5-spd., 27k mi., mint, many extras. 727-3863.

88 MAZDA 323 - p/s, ac, fm cass., high mi., no rust, runs well, $1,250. Brett, 727-5956.

88 CHEVY VAN C10 - V-6, p/s, p/b, a/t, very clean, great mileage, runs well, $3,500 obo. John, Ext. 4077.

85 NISSAN 4x4 PICKUP - many extras, excel. cond., must sell. Ext. 5329 or 422-7415.

84 HONDA ACCORD LX - a/t, 4-dr., ac, all power, cruise, am/fm cass., v.g. cond., $2,000. Bruce, Ext. 4290.

84 CHEVY VAN G10 - 110 w. base, 6-cyl., 120k mi., runs, $500 or best offer. Ext. 5046.

84 PONTIAC FIREBIRD TRANS AM - black w/gold trim, 5.0 liter engine, V-8, 5-spd., $1,900 neg. Rich, Ext. 5893 or 744-4816.

83 TOYOTA TERCEL - gold, 2-dr. h/b, 4-spd., new battery, excel. cond., $900 neg. Steve, Ext. 7862.

76 VOLVO 242DL - 4-spd., new battery & front struts, runs well, $900 neg. Steve, Ext. 3018 or 369-5181.

65 FORD - 6-cyl., a/t, new rear springs, shocks & muffler, good cond. 472-4559.

PARTS - '86 Camaro 2.8; '84 & '86 S10 Blazer. Rob, Ext. 7668.

Furnishings & Appliances

CAPTAIN'S BED - 6 large drawers, very sturdy, dark pine, $90; chest, dresser, mirror, antique blue, $110; microwave, large, $50. 473-6546.

CHINA CABINET - $40; couch, 3-piece set, $50; TV stand, $10. Lynn, Ext. 3813.

DRESSER - antique, oak, 3-drawers, ½ stripped, $75; water bed, single, $70; 5-shelf étagère, $25; end tables, $15 ea. or $25/2. Sue, Ext. 7235 or 399-7997.

FREEZER - G.E., 18 cu. ft., w/built-in lock, excel. cond., $300 neg. Ext. 5740 or 744-8386.

IRON - almost new, $20; food processor, never used, compact, $50; hand mixer, more. MajBritt, 821-8343.

LOVE SEAT - 58", $25; fireplace enclosure w/screen & glass doors, good cond., $20. Paul, Ext. 4156.

REFRIGERATOR - Gibson, 16.4 cu. ft., frost-free, $100. Steve, Ext. 7862.

Tools, House & Garden

KEROSENE HEATER - Jet heater, 55,000 Btu, used one season, $150; valve grinder, jig power tool, complete setup, $75. Dave, 878-1303.

KEROSENE HEATER - indoor, portable, excel. cond., $35. Tom, Ext. 4507 or 878-1060.

Sports, Hobbies & Pets

CAMERA - Nikon 8008 w/Nikon 35-105 Macro zoom lens, like new, $800. Steve, 286-1474 after 6 p.m.

DIVE GEAR - wetsuit, ⅜ Neo, regulator, vest (BC), rocket fins, best offer. Dave, 878-1303.

FISH TANK - 55-gal. w/stand, filter, misc. accessories, $200. 981-5993.

KARATE - fighting gear, never used, $50; stair stepper, $30; exercise bike, $25; rower, $10. Ext. 2539.

NORDIC TRACK PRO - adjustable height, full electronics, like new, paid $650, ask. $500. Dorry, Ext. 2078.

PET CARRIER - Vari-Kennel 200, new, $25; 30-gal. fish tank, like new, $40. Sue, Ext. 7235 or 399-7997 after 5 p.m.

PIANO - $200. Lynn, Ext. 3813.

SKI RACK - Barrecrafters for Honda Prelude, trunk mount, fits 4 sets of skis, used twice, ask. $50. Bob, Ext. 5588.

SNOWBOARD - K2 beginner, used twice, $50. Ext. 4030.

WEIGHT-LIFTING EQUIPMENT - bench w/incline or flat, 200 lbs. lg. plates, assorted sm. plates, 2 long bars, much more, $125. Tom, Ext. 4507 or 878-1060.

Audio, Video & Computers

COMPUTER - 386DX, 40 MHz, 4 MB RAM, dual floppy drives 5¼ & 3½ ,SVGA monitor, 540 MB hard drive, more, ask. $700. Frank, Ext. 2022 or 399-3446.

COMPUTER - Intel 486DX2/66, color monitor, 246M HDD, floppy drive, mouse, 4 MB RAM w/Panasonic NLQ printer, $850, w/o printer, $750. Paul, Ext. 7697.

FAX MACHINE - Fujitsu Dex Express 7800 plain paper copy, mint cond., $250 firm. Ext. 4938.

PRINTER - Panasonic KX-P1624, 24 pin, wide carriage, dot matrix, w/manual, excel. cond., $100. Keith, Ext. 3458 or 369-2504.

Miscellaneous

APPAREL - new, unisex denim; motorized manicure/ped. sets; 100% wool berets, imported. Gene, 878-8275.

COAT - woman's, leather, full length, zip lining, large, brand-new, orig. $465, now $165. Russ, 698-0424.

ENCYCLOPEDIA - Grolier, complete set w/yearbooks up to 1995, excel. cond., orig. $1,200, asking $400. Frank, Ext. 2022 or 399-3446.

LOCK SETS - used, entry, bathroom, deadbolts, aux., night latches, w/keys, your choice, $1 ea. Pete Ext. 4581/5105 or 399-2813.

Free

WINDOW - double hung, w/storm & screen attached, from an attic. Sue, Ext. 7235 or 399-7997 after 5 p.m.

Wanted

COMPUTER - 486, will consider 386, CPU only, have monitor, printer & keyboard, w/HD & 3½" + 5¼" drives, if possible. Kara, Ext. 5658 or 941-9359.

FRIENDS/COWORKERS OF DENNIS PULESTON - to celebrate his 90th birthday; open house, Sun., 1/14, 2-5, Brookhaven Free Library, Brookhaven. 286-0975.

KITTENS - two; 8-ohm stereo speakers. Bill, Ext. 2906.

PIANO - light oak wood, upright, in decent shape, reasonably priced. Dorry, Ext. 2078.

ROOMMATE - female, to share well-furnished 1 bdrm. apt., 5 min. to Lab, sep. entrance, fenced yard, cable, $325/mo. 924-0577.

TRAVELERS - to join guided tour of Sicily, spring '96. Janet, Ext. 4049.

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.*

AUTO CUSTOMIZE - vinyl tops, headliners, convert. tops, sunroof installation, elec. sunroof repair, rugs, some mech. work, brakes. Rob, 395-4521.

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

BUSINESS CARDS - raised lettering, many colors, BNL cards available, flyers, letterheads & envelopes. Mike, 878-3480.

CAKES - custom-designed cookies, pies & much more, for any & all occasions. Johanna, 924-7922.

CARPENTRY - quality work at reasonable cost, doors, trim, closets, siding, decks, etc., neat, reliable & professional. Gerry, 981-4518.

COMPUTER INSTALLATION/REPAIR - hardware, software, done in your home, reas. Steve, 345-6960.

GUTTER PROTECTION - keep your gutters free of debris & free-flowing forever, guaranteed, lic./ins., free est., Lab disc. Henry, 727-7227.

HOME IMPROVEMENTS - complete service, roofing, siding, windows, doors, decks, oak flooring, basements, lic./ins. Joe, 399-0828.

HOME IMPROVEMENTS - carpentry, drywall, spackling, painting, plumbing, ceramic tile, electrical, free est., Lab disc. Don, 929-6571 after 5:30 p.m.

HOME IMPROVEMENTS - quality work, honest prices, extensions, dormers, decks, kitchens, baths, roofing, siding, lic. & ins., refs., free est. Chris, 286-1348.

HOUSEKEEPER - will clean your home to your standards w/schedule convenient to yours, excel. refs. Jane, 874-4049.

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

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

PAINTED FINISHES - marbelizing, ragging, sponging, combing, graining, murals on floors, walls, ceilings & trim, free est. & samples. Phillip, 286-1348.

PAINTING/WALLPAPER HANGING SPECIALIST - 20 yrs. exp., free estimates. John, 277-3805.

PAINTING - int., ext., Sheetrock, tape, spackle, stain, polyurethane, wallpaper, power washing, refs., ins. James, 399-4912.

PHOTOGRAPHER - weddings, now booking for 1996 Rick, 874-4017 eves.

PIANO LESSONS - all levels, Shoreham-Wading River area, call about introductory lesson. Patti, 929-8277.

PIANO TUNING/REPAIR - reas. rates. 298-9560.

PLUMBING/HEATING - alteration & repair work by retired BNLer. Jim Morris, 472-1205.

RIBBONS - printed for party favors; large selection of wedding & all occasion favors. 981-5993.

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

Farewell Gathering

RETIREMENT PARTY - for John Weeks, Jan. 16, p.m., South Room, Brookhaven Center, $17.50/person includes buffet & gift, cash bar. C. Czajkowski, Ext. 4420, or C. Hanlon, Ext. 2995.

In Appreciation

The Brookhaven Award is a great honor, and I could not have achieved it alone. I thank all the people I have worked with through the years for their cooperation and support. Special thanks to the Plant Engineering management for giving me the opportunity to fulfill my goals. — William Slavinsky

Classified Ad deadline is noon Friday for publication Friday of the next week.

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