BROOKHAVEN BULLETIN
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BROOKHAVEN NATIONAL LABORATORY

Nine Honored With Laboratory's Highest Awards

Excellent performance was the common thread linking the nine BNL staff members who received the Laboratory's two highest honors in December.

Outstanding research performance earned four of them the Distinguished Research and Development (R&D) Award, symbolized by an engraved memento and accompanied by a pre-tax award of $5,000. Read below about the accomplishments of Carl Dover, Physics Department; Joanna Fowler, Chemistry Department; Samuel Krinsky, National Synchrotron Light Source Department; and Y.Y. Lee, Alternating Gradient Synchrotron (AGS) Department.

Outstanding service in support areas won five of them the Brookhaven Award, which came with an engraved memento and a pre-tax award of $2,000. See page two to read about the achievements of Walter Becker, Department of Advanced Technology; Joseph Levesque, Safety & Environmental Protection Division; Peter Kroon, Physics Department; Edward Murphy, Plant Engineering Division; and Alexander Pendzick, AGS Department.

BNL Director Nicholas Samios presented the awards at separate December ceremonies. "The honorees this year are a distinguished group drawn from many areas of the Lab, and I congratulate them and wish them all well," he said, adding, "I am extremely pleased with this program in that it honors outstanding performance in a tangible way and thereby expresses the Laboratory's appreciation of these individuals for their efforts."

The Distinguished R&D Award, the highest of the honors 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 support/supervisory classifications, and those on the clerical wage scale.

Each department or division submitted nominations to the five-member selection committee for the appropriate award. Composed of members of the Directorate, department chairs and division heads, those committees send their selections to the Laboratory Director for final approval.

Distinguished Research and Development Award Winners

Brookhaven's 1994 Distinguished Research and Development Award winners: (from left) Joanna Fowler, Y.Y. Lee, Samuel Krinsky and Carl Dover.

— Photos by Roger Stoutenburgh

Carl Dover, Physics

In nominating Senior Physicist Carl Dover, Physics Department, Department Chairman Peter Bond commented, "For over two decades, Carl has made major contributions to nuclear theory, particularly in the field of what is known as medium-energy physics, and also in heavy-ion physics. It is clear that the physics community has recognized his scientific expertise; he is a Fellow of the American Physical Society, has served on the Nuclear Science Advisory Committee and many review committees and currently is the Chairman of the Division of Nuclear Physics, as well as being an adjunct professor at Yale University."

Before joining BNL's Physics Department as an assistant physicist in 1971, Dover had already spent three years in the Physics Theory Institute at the University of Heidelberg and a year in the Institute of Nuclear Theory at the University of Paris.

While Dover's theoretical research has spanned diverse areas of nuclear physics, he has focused primarily on physics involving three types of particles: antiprotons, the antimatter form of the proton, which shares all its characteristics, but has the opposite charge; medium-energy mesons, particles such as pions and kaons, which are each made up of a fundamental entity called a quark and its antiparticle opposite, an antiquark; and heavy ions, atoms stripped of their electrons.

Dover's main body of work is in hypernuclear physics, or the study of strange quarks — quarks having the quality known as "strangeness" — in nuclei. The signal importance of his contributions to this field can be inferred from a report of a recent Nuclear Physics Review Panel, in which Dover

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Joanna Fowler, Chemistry

In his nomination of Joanna Fowler, former Chemistry Department Chairman Norman Sutin said of the Senior Chemist, "Dr. Fowler is a preeminent chemist in the field of radiopharmaceutical chemistry and its application to the neurosciences using PET [positron emission tomography]. She is an exceptional scientist and an outstanding role model."

Fowler's arrival at BNL's Chemistry Department in 1969 was as a postdoctoral research associate working with Stanley Seltzer on organic synthesis — in the same area of chemistry as her 1967 Ph.D. from the University of Colorado and 1968 postdoctoral appointment at England's University of East Anglia.

Then, in 1971, she took a full-time associate chemist position that had opened up in the Radiotracer Research Group headed by Alfred Wolf. There, Fowler got her first taste of an area of synthetic chemistry that has held her interest ever since: the preparation of tracers, labeled with quickly-decaying radioactive isotopes, that can be used in making images of the internal chemical dynamics of living beings using the PET technique.

PET scanning tracks the signal of positron-emitting radionuclides as they travel through the body carried by biologically specific molecules. Medical researchers at BNL and elsewhere have used increasingly sophisticated PET facilities for decades to study metabolism, drug uptake and other biochemical processes.

Twenty-three years later, and still working closely with Wolf as well as others in the Chemistry and Medical

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Y.Y. Lee, Alternating Gradient Synchrotron

When proposing Y.Y. Lee for the Distinguished R&D Award, Alternating Gradient Synchrotron (AGS) Department Chairman Derek Lowenstein said that Lee is "an internationally recognized accelerator physicist, who has made many outstanding and creative contributions to the design, development and improvement of the accelerator complex. Specifically, as initiator and driving intellectual force, he has been the single most important physicist in promoting the Booster, realizing from the very beginning all the advantages that such a synchrotron would bring to the AGS and to the developing concept of the Relativistic Heavy Ion Collider, and thus, to BNL's research and development mission."

Lee came to BNL in 1971, joining the then Accelerator Department (AD) as an associate physicist. Previously, after receiving his Ph.D. in physics in 1964 from the University of Michigan, he had been a high-energy physics experimentalist, first, at Michigan, next, at the University of Wisconsin and then, at the State University of New York at Stony Brook.

During his first years at the Lab, Lee contributed to the neutrino physics program and the particle beam line design effort, becoming section leader of the Experimental Planning and Support Division Physics Group in 1973. In 1974, he was named a physicist and asked to lead the AD External Beam Switchyard Group, and, in addition, to join the Massachussetts Institute of Technology-BNL experiment that led to a Nobel Prize for Samuel C.C. Ting as codiscoverer of the J-psi particle. Lee then took charge of AGS

(continued on page 3)

Samuel Krinsky, National Synchrotron Light Source

Samuel Krinsky, Deputy Chairman of the National Synchrotron Light Source (NSLS) Department, was nominated for an R&D Award "based on his pivotal role in making the NSLS the leading synchrotron source in the world and on his continued research aimed at increasing the brightness of the x-ray ring, developing new insertion devices and constructing a free electron laser," noted Denis McWhan, BNL's Associate Director for Basic Energy Sciences.

Krinsky's long association with BNL started when he was a student collaborator in 1969 working on his Ph.D. in theoretical high-energy physics, which he received from Yale University in June 1971. He was then a BNL guest collaborator doing research in theoretical condensed-matter physics at the Institute of Theoretical Physics at the State University of New York at Stony Brook, 1971-73.

Krinsky joined BNL's Physics Department in September 1973, moved to the Accelerator Department in 1977 and came to the NSLS in 1982. He was named NSLS Deputy Chairman in August 1986 and served as Acting NSLS Chairman from August 1989 through April 1990.

Krinsky played pivotal roles designing the NSLS x-ray ring and developing the NSLS. In addition, he was the leading theoretician in the technical design of the vacuum ultraviolet and booster rings, and he contributed to the design of the insertion devices, the undulators and wigglers, in the x-ray ring.

(continued on page 3)

Joseph Levesque, Safety & Environmental Protection

Though he is quick to remind others that his task involves a team effort, Joseph Levesque is a key player in fire protection at BNL. As a project engineer within the Emergency Services Section of the Safety & Environmental Protection Division, Levesque has performed every task and activity associated with fire-protection engineering, from fire-hazard review to the recent investigation of the fire at the Tristan experiment located at the High Flux Beam Reactor.

Levesque was a member of the Laboratory committee reviewing the fire, and the U.S. Department of Energy recognized his expertise by using him as a technical consultant in its followup investigation.

One of Levesque's most notable accomplishments is the procurement and initial management of the computerized Site Fire Alarm System. In addition, he has been involved in a ten-year process of upgrading the fire-protection systems and the level of life safety at the Lab.

Besides improving the overall fire-protection program, Levesque has helped improve fire protection for many research programs, and many scientific departments have specifically requested his assistance because of his demonstrated ability to resolve safety issues by balancing safety with the needs of scientific programs.

Levesque came to BNL in March 1982, as a staff engineer in SEP. He was named Project Engineer II in August 1983 before transferring with the Fire/Rescue Group to the Safeguards & Security Division in October 1983. In October 1985, he returned to SEP with the Fire/Rescue Group and was named to his current title of Project Engineer I in October 1988.

— Marsha Belford

Edward Murphy, Plant Engineering

Edward Murphy, Deputy Manager of the Plant Engineering (PE) Division, was cited for his effective project management over the past 15 years.

Murphy came to BNL in July 1979, as a facilities engineer II in PE, working within the Energy-Conservation Group to produce remarkable energy-cost savings. In 1980, he was named Project Engineer II and became BNL's energy manager. As such, he supervised the proposal of more than 30 energy-conservation projects and obtained U.S. Department of Energy (DOE) funding for over 75 percent of them, a record among DOE labs.

Concurrently, he became Project Manager for the construction of the Lab's Central Chilled Water Facility. By bringing the project in on time, Murphy enabled the Lab to collect a $400,000-rebate from LILCO.

In 1984, Murphy was made a project engineer I, and, in 1989, he became Manager of the Project Coordination Group, overseeing projects worth nearly $40 million, including the design and construction of the boiler replacement for the moderization of the Central Steam Facility, the Radiation Therapy Facility in the Medical Department, and the conventional facilities for the Relativistic Heavy Ion Collider.

Since becoming PE's Deputy Manager in October 1991, Murphy has stressed technical competence in construction engineering, resulting in significant improvements in the performance and quality of construction in support of many programs.

For ten months beginning in December 1993, Murphy served as Acting Manager for the Office of Environmental Restoration, significantly improving DOE's satisfaction with BNL's environmental restoration program by meeting all previously-agreed-to milestones and implementing extensive program management improvements — Marsha Belford

Brookhaven Award Winners

Roger Stoutenburgh

BNL's 1994 Brookhaven Award winners: (clockwise from top left) Walter Becker, Alexander Pendzick, Joseph Levesque, Edward Murphy and Peter Kroon.

Walter Becker, Advanced Technology

Since coming to BNL in 1956 as a technician C in the then Nuclear Engineering Department, Walter Becker has worked in nearly all of the buildings used by his department, now called the Department of Advanced Technology, or DAT.

Today, as a Senior Technical Associate and DAT's Facility Manager, Becker finds himself responsible for maintaining and upgrading 200,000 square feet of space in many of those same buildings. And, as DAT's Environment, Safety & Health (ES&H) Coordinator and deputy chair of the department's ES&H Committee, he is responsible for guarding the safety and health of those who work within them.

Among his accomplishments in these roles, Becker has assisted many of the department's groups in acquiring and renovating laboratory and office space. He has also used his extensive knowledge of safety regulations to help in reviews of and upgrades to the High Temperature Combustion Facility and the Gamma Irradiation Facility, and in preparing DAT for the U.S. Department of Energy's 1990 Tiger Team visit. In 1993, he was given a BNL Spotlight Award.

Before becoming a valuable part of DAT's administration, Becker was one of its most valued technicians. Known for his flexibility and enthusiasm, Becker worked on projects involving liquid-metal fuel and sodium-cooled reactors, assisted in the construction and then the use of BNL's Radiation Effects Facility, and was involved in the testing and use of concrete polymers for waste immobilization and other applications. In 1978, he was BNL's deck captain on a ship that recovered a drum of low-level radioactive waste from 13,000 feet under the Atlantic Ocean during an Environmental Protection Agency survey of a general waste disposal site. Becker also holds or shares several patents associated with his work. — Kara Villamil

Alexander Pendzick, Alternating Gradient Synchrotron

Senior Project Engineer Alexander Pendzick's key contributions to constructing and keeping the Alternating Gradient Synchrotron's (AGS) beam lines and experiments running and safe were all cited in his nomination.

Pendzick heads the 65-member Experimental Area Group, a position he has held for 11 years — one for every experiment now on the AGS floor. In that time, AGS experiments have increased in number and exponentially in complexity, and Pendzick's group of engineers, designers, technicians and tradesmen has kept pace with the demand for their support while maintaining an excellent safety record.

Pendzick arrived at BNL in 1972 as a development engineer III, working in the group he now heads. The group's duties on each experiment, beam line and extraction port begin with construction and assembly and continue through operations and upgrades. Among the projects completed in just the past four years are the conversion of the A3 beam line from a neutral beam line for rare-kaon decay to a heavy-ion beam transport line and the construction of two new secondary beam lines in support of two second-generation rare-kaon decay experiments, 787 and 865

Pendzick also worked on the construction of a new spectrometer and detector facility for 864, a strangelet search experiment; the current effort to rebuild the U line to serve the muon g-2 experiment 821 and to become a transport line between the AGS and the Relativistic Heavy Ion Collider (RHIC); and the construction of the new V line to provide pions and muons for E821.

Pendzick's group also oversaw component installation for both the AGS Booster and the Linac-to-Booster transport beam line, projects that were completed in 1991 and made the AGS the world's high-intensity source of high-energy protons, as well as a suitable injector for RHIC. — Kara Villamil

Peter Kroon, Physics

Senior Engineer Peter Kroon was cited for his outstanding engineering talent and support service to the BNL research mission. In particular, he was recognized for his work as the lead mechanical engineer on the multimillion dollar, 350-ton calorimeter that BNL built for the D-Zero experiment at the Tevatron at Fermi National Accelerator Laboratory (Fermilab).

Data are now being taken with the calorimeter, which has been the keystone of the experiment's search for the top quark. Several publications have already appeared from it and forefront physics results from this calorimeter are expected to continue over the next decade. As BNL's D-Zero Project Engineer, Kroon not only contributed significantly to the engineering design, which was done at BNL, but also cooperated with the experiment's many collaborating institutions with a high degree of coordination and communication.

Kroon also planned and coordinated the installation of the modules into the calorimeter's cooling system at Fermilab, including the design of the necessary fixtures and support system. From his work over the years on the D-Zero project, Kroon was commended as being consistently able to think systematically through unforeseen situations and being one of the first to come up with solutions that address the key issues. He was also cited as a valuable resource for assistance in financial planning, providing cost estimates and helping meet budget and U.S. Department of Energy review deadlines.

Kroon came to BNL in 1984, joining the Physics Department as a project engineer. He is currently the Chief Mechanical Engineer for the large PHENIX detector experiment to be mounted at BNL's Relativistic Heavy Ion Collider. — Liz Seubert

Carl Dover (cont'd)

is cited as "the intellectual leader in the theory community for hypernuclear and other strangeness-related physics."

Dover's major accomplishments in strangeness physics are the development of a theory of how strange nuclei are produced by nuclear reactions induced by pions, as well as seminal work on the structure of nuclei with one or two strange quarks in the form of hyperons — this latter with Avraham Gal of Jerusalem and John Millener, Physics. He also maintains a close working relationship with the BNL medium energy group, headed by Robert Chrien, Physics. This group at the Lab's Alternating Gradient Synchrotron (AGS) participated in the definitive studies of strange nuclei and search for the H-dibaryon.

In 1975, Dover became a physicist with tenure, attaining his present title of Senior Physicist in 1985. During the 1980s, his interests turned to higher energy collisions with heavy ions, under investigation now at the AGS and soon at BNL's Relativistic Heavy Ion Collider. He has also studied a new class of nuclei with very large strangeness, called "strange hadronic matter," now being searched for in experiments at BNL and at CERN.

Among Dover's other notable accomplishments have been his early pioneering work on the theory of pion interactions with nuclei, which provided a solid theoretical framework for later analysis of the pion nucleus data. Also, his elucidation of the mechanisms of proton-antiproton annihilation represents a fundamental contribution to the problem of matter-antimatter interactions.

Finally, Dover's investigations of baryon number nonconserving processes in the nucleus, such as proton decay and neutron-antineutron oscillations, were crucial in providing a link between the rate of these processes in nuclei and their rate in free space. Such decays, if eventually observed, would open new avenues of physics. — Liz Seubert

Brain Imaging

Men and women 20 years and older are needed for participation in brain-imaging studies. A fee will be paid. Supervisory approval is required. Contact Naomi Pappas, Ext. 2694.

BNL Lecture: 2001 — An Inner Space Odyssey

Hardly a person exists whose imagination has not soared into the vastness and excitement of outer space — propelled out through starry distances, perhaps on a moonbeam or in a 2001 spaceship.

But there exists a space-time area equally mysterious and exotic — inner space. And though they may be exploring the inside of one single atom, scientists exploring inner space measure in numbers that are as vast as those of outer space. This huge multitude of tiny measurements becomes a latticework of checkpoints on which high-energy physicists trace the positions and behavior of submicroscopic particles, deepening our understanding of fundamental matter.

Where do the inner-space explorers stand now? What's a GeV, and why are billions of electron volts needed? What kinds of experiments have been done, what equipment used — and what lies ahead?

To answer such questions and pilot a guided tour of these still little-charted realms, Senior Physicist William Marciano will give the 302nd Brookhaven Lecture on Wednesday, January 18. His talk on "2001 — An Inner Space Odyssey: High Energy Physics in the Next Millennium," will begin at 4 p.m. in Berkner Hall, when he will be introduced by former Laboratory Director Maurice Goldhaber, AUI Distinguished Scientist emeritus.

In his talk, Marciano will give a brief perspective of high-energy physics, why it is studied and how it has advanced. He will talk about what is called the Standard Model — a set of generally accepted principles physicists have discovered or proposed to describe matter and the forces that form it. He will also define other essential units and terms relating time, space and energy.

Marciano will explain why high energy is synonomous with short distance, and show what energies have to be obtained to probe certain distances.

Roger Stoutenburgh

William Marciano

He will map out the forces and types of physics that tend to dominate the matter around us, continuing down the path of a scale measured in parts of a centimeter into subatomic physics, then further down, to inside the proton. And finally, he will reach the most miniscule part, the Planck scale, where events occur at well under billionths of a centimeter apart, space-time is geometrical, superstrings may replace points and the richest area of new physics beckons.

William Marciano received his Ph.D. in physics from New York University in 1974. After six years at The Rockefeller University, he moved to Northwestern University, where he was an associate professor until he joined BNL's Physics Department at a physicist in 1981. Since 1987, he has been head of Physics' High Energy Theory Group. Additionally, he has held various visiting appointments at Brookhaven and at other national labs.

After the lecture, all are invited to join Marciano for discussions and refreshments. Those interested in joining him for dinner at a restaurant off site should contact William Morse, Ext. 3859.

BNL Food Drive

Pickup all next week.

"My dear friends at BNL,

You, each and every one of you, are truly a blessing to the needy in this area. We have never had to turn anyone away hungry because of your generosity and the undying zeal of Carole Kerr ."

These words were taken from a letter from Sister Elizabeth of St. Anthony's Bread — Parish Outreach, where food donations for the needy of Brookhaven Town are collected and distributed. Please, BNLers, continue to help — everything you give is used by your neighbors in want. If you have no time to shop, you can also send a personal check to BNL Food Drive Coordinator Carole Kerr, Bldg. 460.

Country/Western Dance

The BERA Country/Western Dance Club wants to offer beginner and intermediate classes in the near future. The days and times have not yet been established, as a minimum number of participants is required. So, if you are interested in either class, then contact Ginny Morante, Ext. 3555, or Lois Marascia, Ext. 3315.

Volleyball

Open League		League 1	
The Men and Me	32-10	Rude Dogs	25-11
GTEAM	26-13	Koopas	24-12
Farside	22-17	Network News	21-15
The Roofing Co.	18-21	Underdogs	11-25
Bud Men	1-38	Safe Sets	9-27
League 2		**League 3**	
Fossils	26-7	Silver Bullets	25-5
Safe Sets II	21-12	Take Five	23-7
Mon. Night Live	21-12	High Volley'em	20-9
Net Wits	21-12	Upton-Ups	17-13
Nuts & Bolts	15-18	DO-DAT	14-16
Jolly Vollies	13-20	For Play	12-18
Spiked Punch	12-21	Bonnie's Bombers	4-25
Night Court	3-30	Harlem Knights	4-26

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Joanna Fowler (cont'd)

Departments, Fowler has become a noted researcher in the field. As principal investigator in Chemistry's PET Research Group, Fowler has helped BNL's PET facility gain worldwide renown, by devising innovative ways to attach isotopes to molecules of interest to medical imaging researchers.

Recently, Fowler has also been active in bringing Brookhaven's Center for Imaging and Neurosciences to reality. When completed, the Center will include the present PET facilities, a magnetic resonance imaging (MRI) center currently under construction, and facilities for single photon emission computed tomography (SPECT).

One of the first radiolabeling projects Fowler was involved with was the development of a tracer, ^{18}F-fluorodeoxyglucose, that is now in use in every PET center in the world.

Since then she has concentrated on radiolabeling many molecules, including enzyme inhibitors used to treat Parkinson's disease; cocaine, for psychostimulant studies headed by her Medical Department colleague Nora Volkow; and various neurotransmitters and pharmaceuticals. She and Volkow are currently studying neurotransmitter dynamics in the human brain during normal aging.

In addition to 210 publications and co-inventor status on many patents for radiolabeling procedures, Fowler's work has garnered many honors — most notably a rare double-capturing of the Jacob Javits Investigator Award in the neurosciences. In 1986, she and Wolf were co-principal investigators for the team that won the first Javits prize, and, in 1993, Fowler and the PET group received a seven-year Javits Award, automatically extending a National Institutes of Health grant to develop radiotracers. In 1988, Fowler and Wolf shared the Gustavus John Esselen Award for Chemistry in the Public Interest, given by the Northeastern Section of the American Chemical Society. — Kara Villamil

Samuel Krinsky (cont'd)

Having turned his attention to improving the stability of both rings' orbiting electrons, Krinsky shared a 1989 R&D 100 Award for the real-time global orbit-feedback system, which is now being incorporated into many third-generation synchrotron sources.

With stable and reliable beams in both rings, Krinsky became interested in, among other topics, determining the factors limiting how small the gap between the magnets of an undulator can be before the orbit and lifetime of the electron beam is affected.

Most existing storage rings operate with insertion-device gaps of 10 to 20 millimeters (mm), but Krinksy's work with Peter Stefan, NSLS. indicates that a gap approaching 2 mm can be achieved, making it possible to produce very bright undulator radiation in the hard x-ray region on the NSLS x-ray ring, which operates at 2.5 billion electron volts (GeV). To produce hard x-rays from undulators with larger gaps, the third-generation sources were designed to operate at six and eight GeV. So, a result of Krinsky's research is that it will be possible to produce x-rays with an energy of 100,000 electron volts from undulators at third-generation sources.

In addition, Krinsky was cited for his research on the free-electron laser, specificially his theoretical work done in collaboration with Li Hua Yu, NSLS, on a single-pass, free-electron laser as a candidate for the next-generation light source.

"Sam Krinsky has always had a vision of what the NSLS can be and he has helped build this facility into the leading synchrotron source in the world," concludes McWhan. "He continues to push for further improvements and for the development of fourth-generation sources. His intellectual force and leadership are critical to the continued development of the NSLS." — Marsha Belford

Y.Y. Lee (cont'd)

operations, as well as coordinating the external beams group, and he was involved in the layout, optics design and construction of several beam lines, including the present branch line to the Brookhaven Linac Isotope Producer.

From 1977 to 1982, Lee headed the AGS Division of AD, directing the operation and improvement of the AGS machine complex. He initiated and worked on a major effort toward the acceleration of polarized protons at the AGS, a project successfully completed in 1984, the year AD became the new AGS Department.

It was in the early 1980s that Lee turned his attention to the idea of a booster synchrotron at the AGS. As he envisaged it, the Booster had three objectives: First, it would be a booster for high-intensity proton operations at the AGS, which was limited in its final beam intensity by the ion injection energy.

Second, the Booster would be an intermediate accelerator of a very broad range of low-energy heavy ions, capable of accelerating them at energies high enough for full or almost full stripping before injection into the AGS.

Finally, the Booster would serve as an accumulator-accelerator of polarized protons, which entailed yet another set of design constraints.

To design such a complex machine, with three disparate modes of operation, required a deep understanding of accelerators and many innovative solutions. Lee contributed to all phases of design from the choice of circumference, to the injection and extraction modes, to the specifications of magnet current, voltage and field quality.

The soundness of Lee's design had immediate results. In 1992, gold ions were successfully delivered from the AGS for experimenters. By 1993, Booster intensity and AGS intensity broke all previous records. Then, in 1994, the Booster again surpassed its design value in intensity, securing the AGS's position as the world's highest intensity synchrotron. —Liz Seubert

UNIX Training in Solaris, Perl, C Shell, C++

The next scheduled UNIX-based classes to be presented by the Computing & Communications Division are:

Course Title	Date	Time	Fee
Solaris System Admin.	Feb.13-17	9 a.m.-4:30 p.m.	$500
Perl Programming	Mar. 6-10	9 a.m.-noon	$250
C Shell Programming	Mar. 6-10	1 p.m.-4:30 p.m.	$250
C++ Programming	Mar. 6-10	9 a.m.-4:30 p.m.	$500

To register, send an ILR for the appropriate amount, listing the classes, to Pam Mansfield, Bldg. 515, by at least three weeks before the starting date of the requested class. This will be the last time these courses will be offered this fiscal year. For more information, call Ed McFadden, Ext. 4181 or e-mail emc@bnl.gov.

Arrivals & Departures

Arrivals

Laurie Benedict ..... App. Science
David Lynn ..... RHIC

Departures

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

Karl L. Abrams ..... Comp. & Comm.
Daniel F. Leahy ..... App. Science
Samuel G. Logan ..... Cent. Shops
Sharon H. Yen ..... Comp. & Comm.

Let's Dance

The BNL Ballroom, Latin & Swing Dance Club is offering the following, to which all BNLers, their family and friends are invited:

• **Saturday Social** — At 8 p.m. tomorrow, come to the North Ballroom of the Brookhaven Center to be social and cha-cha, hustle, lindy and peabody the night away — or do any other ballroom, Latin or swing dance to the CD music provided by club member Ralph Izzo. The suggested contribution is $1 per person, which will be put in the club's music fund. For more information, contact John Millener, Ext. 3853.

• **Dance Lessons** — Over eight Wednesdays beginning January 25, two series of beginners' classes will be offered: The first class will learn quickstep and Viennese waltz from 5:15 to 6:30 p.m.; the second class, from 6:30 to 7:30 p.m., will offer instruction in samba and six-count swing. The cost for each series is $20 per person. To register, call Marsha Belford, Ext. 5053.

Bowling

Red & Green League

R. Eggert 265/235/695 scratch series, R. Larsen 244/234/209/687 scratch, R. Mulderig Sr. 224/222/203/649 scratch, F. Griswold 213/210/205/628 scratch, H. Arnesen 234/220/611 scratch, E. Larsen 257, A. Liotta 246, K. Koebel 244, S. DiMaiuta 237, K. Asselta 234, R. Mulderig Jr. 231, J. Goode 226, J. Cuccia Jr.223, R. Raynis 213, J. Griffin 210, B. Giuliano 209, A. Warkentien 202.

Purple & White League

B. Belligan 222/180, J. McCarthy 212, S. DiMaiuta 211, E. Sperry IV 200, M. DiMaiuta 199/185, T. Farmer 196, K. Riker 190, R. Raynis 184, J. Sheehan 184, C. Botts 181, J. Biamonte 180, D. Klein 180, E. Sperry III 180, M. Reynolds 176, D. Botts 175, Diana Fisher 172, M. G. Meier 172, L. Farmer 170.

Addled Addresses

• 50 Brokhaven Avenue
• Brookhaven Ant Lab

Note to Employees:

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

Cafeteria Menu

Monday, January 16
Martin Luther King Jr. Day
Snack bar service - 9 a.m. to 2 p.m.

Tuesday, January 17	
Soup: Cream of mushroom	.90/1.20
A la Carte: Eggplant parmesan	3.65
Fitness: Curried chicken	3.95
Deli: Virginia ham	3.20
Grill: Spanish omelet	3.30
Wednesday, January 18	
Soup: Split pea	.90/1.20
A la Carte: Tortellini carbonara	3.65
Fitness: New England cod	3.95
Deli: Roast beef	3.20
Grill: Monte Cristo	3.30
Thursday, January 19	
Soup: Chicken vegetable	.90/1.20
A la Carte: Chicken lo mein	3.75
Fitness: Stir-fry beef	3.95
Deli: Turkey	3.20
Grill: Cuban sandwich	3.30
Friday, January 20	
Soup: Manhattan clam chowder	.90/1.20
Display Cooking: Omelet	2.95
A la Carte: Flounder w/julienne veg.	4.25
Deli: Corned beef	3.20
Grill: Fried clams	3.30

Phys. Rev. Opening

The American Physical Society (APS) is seeking an editorial assistant to prepare manuscripts for publication in Physical Review Letters. Will train someone with interest in journal publication willing to make the commitment necessary to develop editorial-production skills. B.S. or M.S. in physics or a related science needed; editorial experience, especially in scientific publishing, desirable. Candidate should have broad interest in physics, strong command of the English language, excellent communication skills and familiarity with the working scientist's expectations for a scientific publication. Send cover letter and resume, including salary requirements, to: Joseph Ignacio, Personnel Manager, APS, 1 Research Road, Box 1000, Ridge, NY 11961.

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

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.

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

ENGINEER - (50% of full-time) With experience in economizer design and devices for control of particulate emissions from combustion sources. Knowledge of particulate collection mechanisms is preferred. This is a CRADA-funded project to develop condensing economizer technology to commercial viability. Contact: Thomas Butcher, Department of Applied Science.

POSTDOCTORAL RESEARCH ASSOCIATE - Trained in nuclear or particle experimental physics, to join an ongoing experimental program using the gold beam at the AGS and to help develop the BRAHMS experiment proposed for RHIC. Experience in relativistic heavy-ion physics at or above 1 GeV/nucleon is preferred. Contact: Challis Chasman, Physics Department.

LABORATORY RECRUITMENT - Opportunities for Laboratory employees.

DD 3609. SECRETARIAL POSITION - (term appointment) Requires an AAS in secretarial science, knowledge of Laboratory policies and procedures, good communication and organizational skills. Will provide varied clerical support, such as file maintenance, report and document preparation, and assisting secretarial support staff. Knowledge of WordPerfect 5.1 essential. Some experience with data management desirable. (reposting) Department of Advanced Technology.

OPEN RECRUITMENT - Opportunities for Laboratory employees and outside candidates.

MK 2980. MANAGER, OFFICE OF EQUAL OPPORTUNITY - Requires a minimum of a bachelor's degree; a record of success in the EEO/diversity arena; familiarity with regulatory requirements, laws and guidelines (including OFCCP reviews); management experience; and excellent oral and written communication skills. Will have overall responsibility for the Laboratory's EEO program, including monitoring personnel policies, practices and procedures, and developing special employment programs and recruitment sources in order to achieve greater diversity within the Laboratory work force. Will work with senior Laboratory management in developing and implementing these programs and plans, and advise the Director on EEO matters at the Laboratory. In addition, will have oversight for the continuing development and distribution of the Affirmative Action Plan, serve on various Laboratory EEO and diversity committees, and direct the activities of professional and support staff. Director's Office.

LS 3712. BIOLOGY ASSOCIATE POSITION - Requires a BS in biology or equivalent with experience in microbiological work. Working knowledge of small- and large-scale maintenance of microorganisms, particularly extremophiles, is required. Responsibilities include research dealing with an extensive collection of mesophilic and thermophilic microorganisms. Department of Applied Science.

LS 3714. BIOLOGY ASSOCIATE POSITION - Requires a BS in physics with experience in the operation of ICP-MS instrumentation, as well as other types of mass spectroscopy and gas chromatography. Familiarity with the appropriate computer software is necessary. Responsibilities include running the mass spectrometers and gas chromatographs for all the energy-related programs carried out by the applied biochemistry group. Department of Applied Science.

NS 2058. PHYSICS ASSOCIATE POSITION - Requires a BS in a scientific discipline or engineering, or the equivalent experience, and a comprehensive background in the electronic control of precision mechanical components. Prior supervisory experience and knowledge of cryogenics is very desirable. Will be responsible for the day-to-day operation of all experimental equipment and support laboratories at the HFBR, which includes installations and modifications. Will also be responsible for supervision of technical staff, work-flow control, purchasing and budgets. (reposting) Physics Department.

DD 6166. TECHNICAL POSITION - (term appointment) Requires an AA in mechanical technology or equivalent experience. Must have knowledge of hand and power tools, as well as experience with equipment fabrication and assembly. Experience with precision measuring devices is also required. Alternating Gradient Synchrotron Department

DD 6165. TECHNICAL POSITION - Requires an AAS in electronic technology or equivalent experience. Familiarity with fundamental circuit concepts and experience with various test equipment are also required. Experience with high-voltage equipment, vacuum systems or PLCs is desirable. Alternating Gradient Synchrotron Department.

Motor Vehicles & Supplies

91 MERCURY CAPRI - convertible, red, loaded, 55k mi., m/t, 60/5 yr. warr., excel., $7,600. Ed, Ext. 5360 or 477-8117.

91 GEO METRO - blue, 2-dr., 5-spd., 61kmi., 50+ mpg, runs well, $3,495. Joe, Ext. 2898.

90 MERCURY SABLE - s/w, loaded, 59k mi., third seat, light blue, oil changed every 3k mi., $8,200 neg. Rich, 765-2847.

89 NISSAN 240 XE - coupe, a/t, ac, v.g. cond., $6,000. Cleve, Ext. 7234.

88 FORD TAURUS - s/w, V-6, ac, am/fm stereo, p/s, p/b, cruise, 98k mi., new shocks/struts, rebuilt trans. 1 year, good tires, v.g. cond., $3,500. Ext. 3963.

88 HYUNDAI - a/t, ac, 101k mi., very clean in & out, engine needs work, $1,000. 864-1798.

88 NISSAN SENTRA - m/t, ac, high mi., runs well, perfect body & int., $2,300; '84 Volvo wagon, diesel, m/t, ac, best offer over $2,000. Terry, 298-1932.

88 TRACER - a/t, ac, cruise, cass., one owner, $2,295. Ext. 4424 or 878-0863.

86 BUICK REGAL LTD - 2-dr. sedan, a/t, p/pkg., am/fm stereo, new tires, brakes, exhaust, gar., high mi., $2,850. Leo, Ext. 2952 or 289-1855.

86 BUICK SKYHAWK - $1,600. Cassella, 585-2084.

85 COUGAR - 3.8, motor runs well, great station car, dependable, $500 neg. Ed, Ext. 5462 or 929-4902.

85 FORD ESCORT - mint cond. Harvey, 281-7568.

84 FORD WAGON - full-size, very low mi., V-8, a/t, ac, cruise, w/leather int.; '84 Mazda pickup, 5-spd., 91k mi., runs well, $800. Bob, Ext. 7921 or 749-1948.

84 VOLVO 240 GL WAGON - white, 4-spd., o.d., ac, p/s, p/b, very clean, all receipts, $2,650 neg. Harry, Ext. 7984 or 325-2030.

82 CADDY DE VILLE - 40k mi. on new engine, runs well. $1,300. Bert, Ext. 5156 or 581-4436.

79 CAMARO - easy to start, runs well, $700. David, Ext. 5207.

76 CHEVY CAMARO 350 - V-8, $850 neg.; tires, 225/70R15, 4 Dunlop-tread, $60/4; 225/70R14, Goodyear Eagle ST radials, $35/2. Ron, Ext. 4553 or 744-1194.

PARTING OUT '78 FORD F150 4x4 - front nose, 351M motor, new rear, hood, door, transfer case, steering box. Wayne, Ext. 2964.

TIRES - 1, P215/70R14, Firestone, excel., $25; 2, P225/75R14, Goodyear, brand-new, orig. $175, now $40 ea. 698-9274.

BUMPERS - new, front & rear, '95 Chevy van, $100 ea. firm; trailer hitches: Class III, Class I, $20 ea.; radio w/speakers, $40. Don, Ext. 7237 or 744-2921 after 5:30 p.m.

Tools, House & Garden

OIL BURNER - Beckett model AF, high-retention, compl., $80; 2 circulators, $30/ea., all excel. cond. 689-9234.

FIREWOOD - hardwood, split, seasoned, $60/half cord. Tom, Ext. 4507 or 878-1060.

LAWN TRACTOR - Ariens, w/snow plow, grass catcher, 32" cut, 8-h.p., excel. cond., $675. Don, 581-7656.

MOWER DECK - for Gravely L model. 363-7032.

PATIO SET - wrought iron, 4 swivel chairs, table, Formica top, indoor, $200. Marty, Ext. 2214.

Miscellaneous

BABY'S ITEMS - car seats, $10-$15/ea.; solid maple crib & mattress, $80. 473-6432.

COLLECTIBLES - authentic copy of the 1919 contract to sell Babe Ruth to the Yankees, make offer. O. Booker, Ext. 3082 or 727-5912.

ENCYCLOPEDIA - Grolier Academic American, 1990 edition, 1991-1994 yearbooks, like new, orig. $1,400, asking $425. Frank, Ext. 2022 or 399-3446.

RING - diamond engagement, 0.93 w/2 tapered diamond baguettes, appraised at $5,000, asking $2,700. Mike, Ext. 4293.

SKIS - Olin, 180cm, w/Salomon 444 bindings, runaway straps, $20 neg. Don, Ext. 7237 or 744-2921 after 5:30 p.m.

TICKETS - Met Opera, *Cavalleria Rusticana* and *Pagliacci*, Feb. 4, row M center orchestra. Ext. 3922.

WASHER & DRYER - GE, large cap., $500/both. Jane, 698-3870.

Free

CAMCORDER TAPES - VHSC, Maxell, blank, never used. Mona, Ext. 5056.

CEMENT - white mortar, 75-lb. bag. Ext. 3884.

SPEAKERS - Advent 5002, need new woofers; also Daisy-wheel printer. Cindy, Ext. 3461 or 874-3652.

Lost & Found

FOUND - men's gloves in parking lot between Post Office and Contracts & Procurement. Mickey, Ext. 7908.

LOST - Deer antlers, last seen at DAT holiday party at Berkner, please return, no questions asked. Flo O'Brien, Ext. 4962.

Real Estate

Real Estate advertised for sale or rent is available without regard for the race, color, religion, sex, age, national origin, disability or veteran status of the applicant.

For Rent

BELLPORT - 4-bdrm., 2 baths, l/r, d/r, den, eik, fully furn., pool, deck, fenced yard, no pets, lawn service incl., $1,300/mo. + util. 286-1024.

CALVERTON - 2-bdrm. condo, 5 appl., patio, upper deck, ac. Ext. 7595.

CENTER MORICHES S. - 1-bdrm. apt., 2 priv. ent., full bath, lg. bright rms, off-street park, use of yard & w/d, fully furn., cable, walk to all, nonsmoker, avail. now, $650/all. 878-6760.

CENTER MORICHES - 2nd floor, 2-room apt., priv. ent., full bath and kit., near stores and transp., 10 mi. from Lab, nonsmoker pref., no pets, $500/mo. incl. util., 1 mo. sec. Lois, Ext. 3315 or 929-4753.

CORAM - own room in priv. home, $300/single or $500/master bdrm. w/priv. bath, incl. all. Ext. 7897 or 331-0807.

MILLER PLACE - 2-bdrm. apt., new carpet, stove, kit., off-street parking, nonsmoker, no pets, close to Lab, residential neighborhood, fenced wooded lot, $850/mo. incl all. Doan, Ext. 7535 or 345-0462.

PORT JEFFERSON VILLAGE - furn. rm., share bath, sep. ent., nonsmoker, $100/wk. 473-6432.

SELDEN - studio, l/r, kit. w/new flooring, full bath, priv. ent., w/w, $500/mo. incl. all, 1 mo. sec. 474-2792.

SELDEN - 3-bdrm. ranch, l/r, d/r w/deck, kit., full bath, fenced yard, $1,000/mo. + util. John, 732-7568.

SHIRLEY - 3-bdrm. house, waterfront, fenced yard, fp, walk to beach, 15 min. to Lab, $750/mo. Matthew, 399-2989 or Heilig, Ext. 5105.

SOUND BEACH - 3-bdrm. house, renovated, eik, l/r, full bath, fenced yard, $975/mo. Lisa, 821-3306.

STONY BROOK - small 3-rm. house, 2 mi. north RR sta./Univ., l/r, bdrm., eik, office area, full bath, w/d hookup, cable, no children, $750/mo. + util., dep. & sec. George, Ext. 3061 or 751-0265.

WADING RIVER - cozy 3-rm. apt. w/eik & bath, single nonsmoker, no pets, avail. 2/1 or possibly sooner, $500/mo. incl. all. Janet, Ext. 2345.

WADING RIVER - 1-bdrm. apt., ac, w/w, priv. ent., balcony & parking, single, nonsmoker, no pets, $600/mo. incl. all. Ruth Ann, Ext. 7774.

WADING RIVER - large studio apt., full kit., quiet neighborhood, driveway parking, 15 min. to Lab, $500/mo. incl. util. 929-4465 eves.

YAPHANK - restored 4-bdrm. Victorian house, 1½ baths, large country kit., large property, 4½ miles from Lab, avail now. 944-4872.

YAPHANK - 1-bdrm. apt. to share., townhouse, 5 min. to Lab, pool, tennis. Arlean, Ext. 2387.

KEY WEST, FL - April 22-29, condo sleeps 2, on water, kit., pool, priv. beach, gym, marina, hot tub, w/d, tiki bar, walk to town. Sheryl, Ext. 7716.

CATSKILLS - 3-bdrm. chalet w/sleeping loft, fully furn., near Hunter and Windham Mts., great for skiing. Kay, Ext. 4501 or Bea, Ext. 3642.

LAKE PLACID, NY - 3-bdrm. condo in town, 2 baths, walk to village, skating oval, arena, restaurants, ski Whiteface, magnificant views of Lake Placid and Whiteface. Tom, Ext. 4631 or 744-0781.

HILTON HEAD, SC - 2-bdrm. condo sleeps 6, 2 baths, beach, golf nearby, tennis on site, $300/Jan.-March. Guy, Ext. 3147 or 689-5378.

MT. HOLLY, VT - 2-bdrm. A-frame, l/r, kit., bath, 10 min. to Okeano Mt., 25 min. to Killington Mt., avail. through March holidays. Tom, Ext. 5899.

VERMONT - ski house near Mt. Snow, sleeps 7, $125/night, 3 night minimum. Lloyd, 627-7589.

ST. THOMAS - April 29-May 6, 2 connecting villas, sleeps 6, ideal for family or 2 couples, pool, restaurants, shops on site, free transporation to town beach. John, 924-4262.

For Sale

EAST MORICHES - 2-bdrm. condo on Moriches Bay w/ocean view, bsmt., gar., boat slip, 3 tennis courts, pool. Platner, Ext. 3922 or 878-2604.

GREENPORT - cozy 2-bdrm. in historic village, walk to beach, village, deck, $89,000. Ed, Ext. 5360 or 477-8117.

HAMPTON BAYS - Shinnecock Hills, water view, 3-bdrm. contemporary, 2-story, 2 baths, fp, ask. $227,900. 728-5019.

LAKE PANAMOKA - new, 3-bdrm., 2 full baths, full bsmt., OHWH, vaulted ceiling, must sell, 10 min. to Lab, ask. $94,000. Tom, 878-5854.

MASTIC - 120'x100' cleared lot, all permits & variances, ask. $30,000. Patti, Ext. 3145.

PATCHOGUE - 1-bdrm. co-op, l/r, w/w, mint cond. George, 475-5336.

RIDGE - 3-bdrm. townhouse, 1½ baths, lg. l/r, 5 min. to Lab, $69,900. 924-4734.

RIVERHEAD - on upper Peconic River, 2 bdrm., eik, cac, central humidifer, bsmt., timed igs, bulkheading, deck, picture window, priv. dock, 15 min. to Lab, $99,000. 878-0270 eves.

ROCKY POINT - 3-bdrm. custom ranch, eik w/custom cab., w/w, 4 appl., OHWH, city water, corner plot, landscaped, $85,000. Donald, 473-6570 after 7 p.m.

SELDEN - 2-bdrm. co-op, lg. cust. bath w/Jacuzzi, lg. cust. eik, l/r, d/r, w/w, cac, terr., pool, tennis, clubhouse, 2 yrs. old, $72,000. 696-5322.

STONY BROOK - 3-bdrm. Devon ranch, 2 baths, eik, l/r, d/r, fam. rm. w/fp, new carpeting, major appl./heating system, windows, fenced yard, M-section, 3VSD, $168,000. Zhou, Ext. 5855 or 689-7462.

TERRYVILLE - 4-bdrm. tri-level ranch, 1½ baths, l/r, d/r, eik, fam. rm. w/bay windows & sliders, landscaped ⅓ acre w/20'x40' brick patio, shed, possible M/D, ask. $110,990. 928-7265.

WADING RIVER - 3-bdrm. Colonial, 2½ baths, 2-car gar., custom kit., Jennair, gazebo, shed, igs, igp, deck, steam bath, satellite dish, SWRSD, 1.1 acre, $209,900. 929-8323.

YAPHANK - 3-bdrm. townhouse, fin. bsmt., 2½ baths, pool, tennis, 5 min. to Lab. Arlean, Ext. 2387.

PORT CHARLOTTE, FL - ¼ acre bldg. lot, developed neighborhood, ready to build, $9,000. 929-8323.

Wanted

CHILD CARE - need mature person to baby-sit 3 hrs. 2 nights a week and possibly 3 hrs. 2 days, must have car. 399-5677.

DOS 6.0 BOOK - reasonable, for beginning computer nerd, retired; junk van, Ford E150 for parts, will pay finder's fee. Bill, 281-6498.

HANDICAPPED LIFT CHAIR - electrically assisted, sitting & rising. Joe, Ext. 2898.

HOUSEMATE - to share waterfront house, rent $433 + util. Skip, Ext. 3806 or 878-4130.

HOUSEMATE - to share lg. 3-bdrm. house, 2 baths, 5 min. from Lab, full kit., d/r, l/r, beach rights, TJ, 744-3308.

MACINTOSH SOFTWARE - for running C language programs, also an external hard disk at least 40 MB. Bill, Ext. 3698.

SEGA GAME GEAR - want to swap "Major Pro Baseball" for something more suitable for my daughters. Pam Esposito, Ext. 5752.

SKIERS - to ski Hunter 1/25, send $42 for bus & lift to Augie Hoffmann, Bldg. 510C.

STEREO RECEIVER - prefer small, without speakers. Ext. 4591.

TICKETS - to U. Conn. vs. Seton Hall at Meadowlands, Jan. 21, Big East basketball tournament at MSG. John, Ext. 4482.

In Appreciation

Thanks to everyone for a great send-off: The gifts are terrific and your generosity is heartwarming.

— Ellie Mitchell

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