BROOKHAVEN BULLETIN
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BROOKHAVEN NATIONAL LABORATORY

A Smoggy Day Is a Good One for Team of Atmospheric Chemists

Just how bad is the New York City area's smog problem? To find out, scientists from BNL's Department of Applied Science (DAS), three other U.S. Department of Energy (DOE) labs and two local universities took to the air throughout July.

In a plane loaded with scientific instruments and sporting protruding air-sampling intakes, the team analyzed the area's air for a dozen different chemicals — among them ozone and many of its "helpers" in smog formation.

The 15 flights at 1,500 feet above the Big Apple, Long Island, Connecticut, New Jersey and Westchester allowed the team of atmospheric chemists to measure the levels of ozone precursors, such as nitrogen oxides and hydrocarbons, and chemicals produced after ozone is formed, such as hydrogen peroxide and formaldehyde.

Once they finish analyzing their data, the collaborators' work may have implications for the region's compliance with the federal Clean Air Act. New York, New Jersey, Connecticut and Long Island are currently in violation of the legislation's ozone limit.

Roger Stoutenburgh

They can't all fit on the plane at once, but this team of scientists, technicians and flight crew all participated in a series of July flights that examined smog over the New York metro area. Posing in front of Pacific Northwest National Laboratory's (PNNL) G-1 plane at Suffolk County Airport in Westhampton are: (kneeling, from left) Victor Morris, PNNL; John Hubbe, PNNL; Yin-Nan Lee, Department of Applied Science (DAS); Carl Berkowitz, PNNL; Paul Klotz, DAS; (middle row, from left) Paul Doskey, Argonne National Laboratory; Linda Nunnermacker, DAS; Judy Lloyd, State University of New York (SUNY) at Old Westbury; Fassil Mesfin, SUNY at Old Westbury; Peter Daum, DAS; Larry Kleinman, DAS; (back row, from left) Jai Lee, DAS; pilots Bob Hannigan and Mike Warren, PNNL; and Stephen Springston, DAS. Not pictured are: Huan Feng, SUNY at Stony Brook; and Richard Larsen, Environmental Measurements Laboratory.

Good Up There, Bad Down Here

In the atmosphere's upper regions, ozone protects the Earth from the sun's ultraviolet radiation. But in the lower atmosphere, called the troposphere, the problem is too much ozone.

Down here, ozone is an unwelcome pollutant. Produced when emissions from cars, trucks, power plants and industry react in the presence of sunlight, ozone is a troublesome component of smog that irritates the lungs, eyes and noses of metropolitan-area residents and aggravates asthma.

Ozone also blows easily over state boundaries, making New Jersey's ozone New York's problem, and New York's ozone Connecticut's problem.

The data from the researchers' three-hour flyovers will update what is known about ozone in the New York metro area. Aside from preliminary work in 1995, the last such flights were in the early 1980s.

Scientific instruments have improved tremendously since the 1980s flights, said DAS atmospheric chemist Peter Daum. "We're starting with a clean piece of paper as far as what's known about the air over the New York region," he said.

Collaboration in the Air

The team was drawn from BNL, Pacific Northwest National Labora-

(continued on page 2)

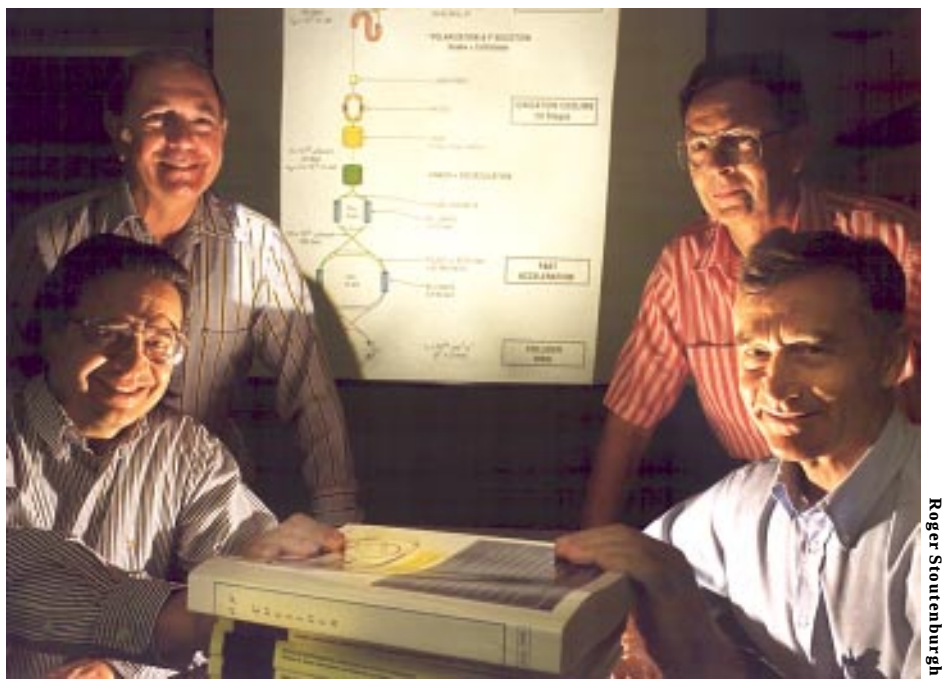
A Visitor's View: Aleksandr Skrinsky, Director, Budker Institute of Nuclear Physics, Novosibirsk

Ideas that accelerate into the future can be expected from Aleksandr Skrinsky.

The Director of the Budker Institute of Nuclear Physics (BINP) in Novosibirsk, Russia, Skrinsky has been visiting BNL's Center for Accelerator Physics (CAP) for two weeks, ending today.

In an August 13 seminar, he outlined a recent BINP development for an accelerator that could, in practice, set extraordinary energy gain records using the electric fields set up in the wake of charged particle micro-bunch trains speeding through plasma.

A week earlier, Skrinsky had given a seminar describing his design — still innovative, though conceived many years ago — for cooling the muons in a muon collider, a proposed particle-physics machine that could rival the Superconducting Super Collider's once anticipated energy range, but at a tenth of its size.



Roger Stoutenburgh

Visitor Aleksandr Skrinsky (front right), Director of the Budker Institute of Nuclear Physics in Novosibirsk, Russia, talks about the proposed muon collider with (clockwise from bottom left) BNL Director Nicholas Samios, Deputy Director Martin Blume and Robert Palmer, Head of BNL's Center for Accelerator Physics.

The concept of the muon collider, which had been discussed by John Tinlot in the 1950s, was worked out and proposed at a 1971 international seminar in Switzerland, "not by me personally," Skrinsky preferred to say, but "by a Novosibirsk Institute active internal interaction."

Nine years later, at the Rochester Conference in Madison, Skrinsky again described a muon collider, and, in 1981, he developed the detailed design for ionization cooling of the muons. But at that time, he thought, almost nobody believed that it was a reachable goal.

Interest in the idea resurged in the 1990s. Workshops, papers and a collaboration led to a high-luminosity design developed by Bob Palmer, who heads CAP, and David Neuffer, then at the Continuous Electron Beam Accelerator Facility.

As part of the current collaboration to develop the formal proposal for the collider, Skrinsky said he hopes that the Institute will contribute its conceptual and technological experience, especially in the research and development of the targetry and ionization cooling systems.

Director For 20 Years

Skrinsky has been BINP's Director since 1977, but his association with the Institute — now 3,000 members strong — dates back to its opening in 1958. He explained that the Institute's primary focus in high-energy physics is and has always been on colliders. In fact, he remembered that 1966 was the year that he had made

(continued on page 2)

AUI Lecture

NASA Engineer On the Hubble Space Telescope

H. John Wood

Launched into earth orbit by a space shuttle on April 24, 1990, the Hubble Space Telescope (HST) has obtained better images of the universe than any previous telescope. But soon after its launching, scientists discovered that an incorrectly shaped mirror caused the telescope to produce blurred images.

H. John Wood, Lead Optical Engineer and Science Outreach Manager for the HST Project at the National Aeronautics and Space Administration's (NASA) Goddard Space Flight Center, will discuss the flaw in the Hubble's optics at the next AUI Distinguished Lecture. Entitled "The Hubble Space Telescope: Optics and New Science," the talk will be held on Wednesday, August 21, at 4:30 p.m. in Berkner Hall.

Assigned to the Hubble Project in 1990 after the flaw in optics was discovered, Wood led the effort to find the prescription to fix the flawed optics and build the corrective optics systems. In explaining how the telescope works, and how it was built and re-

(continued on page 2)

AUI Lecture (cont'd.)

paired, Wood will illustrate its new capabilities with examples of objects studied in our solar system; in the Milky Way galaxy, and its satellites and neighbors; and in the most distant and youngest galaxies ever seen.

According to Wood, the new observations obtained by the HST have caused scientists to question the most fundamental concepts in cosmology, such as the age of the universe and the evolution of galaxies. Astronomers are reexamining the validity of the basic laws of physics over long time scales and large distances.

Wood will show a short videotape that describes the principles of the Hubble's optical correction, and he will recount the first servicing mission, with illustrations. He will also discuss plans for both the HST's second servicing mission and the Next Generation Space Telescope.

A graduate of Swarthmore College, Wood earned an M.A. in 1962, and a Ph.D. in 1965, both in astronomy, from Indiana University. His career began with six years on the astronomy faculty at the University of Virginia. He then served as a staff astronomer at the European Southern Observatory in Chile, 1970-75, before becoming Assistant to the Director at Cerro Tololo Interamerican Observatory for two years.

Wood joined NASA's Goddard Space Flight Center in 1985, and he is the winner of the 1992 NASA exceptional service medal and the 1994 NASA exceptional achievement medal. He has also authored 50 research papers in astronomy and space optics.

Associated Universities, Inc. (AUI), initiated the AUI Distinguished Lecture series at BNL in 1965. The series features experts in various subjects who lecture on topics of general interest. —Diane Greenberg

Need a Lift?

Though the 3.5-MV Research Van de Graaff was disassembled this past spring, the accelerator is not going to waste. Since 1949, the machine had been accelerating low-mass atoms, including the radioactive isotope of hydrogen, tritium. Because the accelerator was internally contaminated, it could not be disposed of as scrap. Last month, BNL riggers lifted the 73,000-pound accelerator, which exceeded the weight limit for their usual trucks, on to special trucks for shipment to the Scientific Ecology Group (SEG) in Oak Ridge, Tennessee. There, SEG will remove the tritium from inside the accelerator, then melt the machine. The recycled metal will be used for either radioactive-waste containers or radiation shielding. — Andrea Widener

Roger Stoutenburgh

Coming Up: BNL Lecture

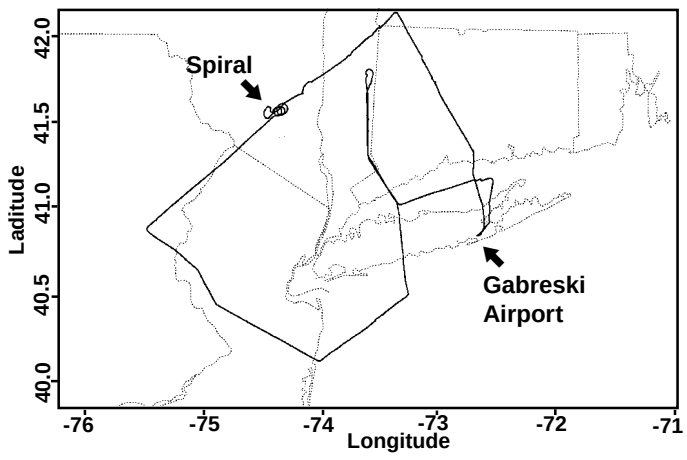
John Shanklin, Biology Department, will give the first Brookhaven Lecture of the 1996-97 season on Wednesday, August 28, at 4 p.m. in Berkner Hall. He will be speaking on his latest research in a lecture called "Engineering Enzymes to Make Better Oils."

Smoggy Day (cont'd.)

tory (PNNL), Argonne National Laboratory, DOE's Environmental Measurements Laboratory, and the State University of New York campuses at Stony Brook and Old Westbury.

Their work was sponsored by the U.S. Department of Energy (DOE), in coordination with the North American Research Strategy for Tropospheric Ozone (NARSTO), a collaboration of government agencies, universities, industries and utilities from the U.S., Canada and Mexico.

The Gulfstream-1 aircraft that carried the scientists and their equipment is operated for DOE by PNNL's experienced contingent of pilots, meteorologists and instrumentation specialists.



The flight path (solid line) of the atmospheric chemistry flight of July 28, which took off and landed at Gabreski Airport, Westhampton. While collecting air samples in the New York metropolitan area, the plane did a slow ascending spiral (small circles), to get samples at different altitudes northwest of New York City.

Throughout the month, the team made its base at a hangar at Gabreski Airport in Westhampton.

Now that the flights have landed, the air-pollution data will be analyzed and deposited into a NARSTO computer database. It will be available to anyone, including the environmental authorities charged with cleaning up the New York metro area's air.

Smog Efforts On Target?

The area's environmental authorities have made some efforts to cut down on the production of air pollutants, including mandating large employers, such as BNL, to start carpooling programs that could reduce exhaust fumes from rush-hour traffic. BNL has also cut its nitrogen-oxide output by using better fuel in its large boilers.

National emission-control measures for ozone have also been implemented, most visibly in the design of automobile engines. Such steps are seen as necessary because of ground-level ozone's long life in the troposphere and its resulting tendency to disperse in the wind beyond political jurisdictions.

Once analyzed, the flight data will reveal the contribution that different pollutants make toward forming ozone, an important indicator of whether control efforts thus far have gone after the right culprits.

"These measurements, along with computer calculations, will tell us whether ozone is best controlled by reducing emissions of nitrogen oxides or hydrocarbons, a crucial question for policy makers," explained atmospheric chemist Lawrence Kleinman, DAS.

— Kara Villamil

A Visitor's View (cont'd.)

the first of some 40 visits to the United States, with a stop at BNL, because it happened to be during the first observation of electron-positron annihilation collisions at Novosibirsk electron-positron collider.

In 1967, the first electron-positron annihilation study at Novosibirsk produced rho-meson parameters. "This was new physics, the start of real high-energy physics with colliders," Skrinsky said.

Research Links BINP & BNL

The Institute also specializes in developing different beam-cooling methods, especially electron cooling.

For decades, BINP has been active in the field of synchrotron radiation generation and using, as at BNL, synchrotron-radiation for the study of solid-state physics, chemistry and biology. "We have colliders as synchrotron radiation sources and make dedicated sources for others," said Skrinsky. "We also make insertion devices — one is in operation here at BNL at the Light Source."

Another important link between BNL and the Institute is the pioneering work on free electron lasers (FELs). At Brookhaven's Accelerator Test Facility, BNL researchers have made important contributions to FEL-related science and technology.

The Institute, among other key innovations, has invented an optical klystron system that achieves the shortest wavelength ever obtained with FELs. "Our record still holds, after eight years," observed Skrinsky, "though the Japanese are now very close!"

Another Institute invention has been an x-ray medical-imaging system that requires about 30 to 100 times less radiation dosage to patient than in conventional systems. "This is especially good for unborn babies and for monitoring clinical treatment for which many x-ray images are needed," Skrinsky pointed out.

BINP also designs, constructs and supplies compact, high-power electron accelerators that can be operated by comparatively unskilled staff for industrial technologies . "We have about 130 such machines in operation around the world," the Institute's Director said.

The Path to Novosibirsk

Skrinsky's path to Novosibirsk began in 1957 when he was a student at Moscow University. "I joined Gersh Budker's laboratory in the Institute of Atomic Energy," he recalled. "That was the main lab, where the first Russian reactor was built, in 1946. In 1958, the Institute of Nuclear Physics at Novosibirsk was announced, and building started in what was just forest. I moved there, with Budker as Director, in January 1962."

Soon, Skrinsky became one of the leaders at the Institute, then was made Deputy Director in 1970. Upon Budker's death in 1977, Skrinsky became Director.

"So it is very difficult to separate my interests from the Institute," he said. "I do not want to separate myself from it." Because of this, although he was elected Chairman of the Nuclear Physics Division of the Russian Academy of Sciences eight years ago and was given an office in Moscow, where he officially works almost full-time, Skrinsky considers this chairmanship his "second hat."

To wear his first hat as much as he can, he travels the 3,000 kilometers east each week to Novosibirsk, returning to Moscow for about two days out of seven — and keeping in training by a run every morning, as he has for 45 years.

Skrinsky, whose committee work includes membership on the CERN Scientific Policy Committee and being the Chairman of the International Committee for Future Accelerators, has been honored with the Lenin Prize in 1967, the U.S.S.R State Prize in 1989, and some state orders. His lifelong interest in science has always been centered on high-energy physics and the applications that originate from its development — what he calls its "by-products."

"While the basic, ultimate goal is understanding the microcosmos," he said, "at the same time, because you need to enter into something completely new for humankind, you need to develop new technologies, new devices, new phenomena — like synchrotron radiation. Nobody had experience with it, yet it was to be so useful.

"You need to observe and directly connect the basic science and its usefulness," he continued. "Before, during the arms race, everyone would agree that basic science is very, very important. Now, we have to inspire the public and politicians to ensure their investment in research. And this strong, good feedback is possible and seems necessary for the future."

— Liz Seubert

Equipment Demo

On Monday, August 19, from 11 a.m. to 1:30 p.m. in Berkner Hall, IBM will demonstrate its new line of network printers and Thinkpad laptops. IBM representatives will be there to answer questions. For more information, call IBM's Ken Hammer, 349-3462.

Pilot DAT Program Emphasizes Mentor-Mentee Teams

A new program in the Department of Advanced Technology (DAT) will encourage employees to reach their career goals with the help of a mentor.

The program, which is in its testing phase, has matched four mentor-mentee teams based on mutual career interest.

"In the beginning, we contacted people we thought would be good mentors," explained Kara DeCastro, DAT's Mentoring Committee Chair. The mentors were matched with mentees based on applications to the committee and compatable interests.

Once the pairs are matched, they decide on specific goals they wished to reach. Mentors and mentees are required to spend four hours together each month.

The initial mentor-mentee pairs are: Ruth Kempf, Deputy Department Chair, Nuclear Energy, and Bruce Dionne, project engineer; Tony Romano, Assistant Department Chair, and Kathy LaVelle, Senior Project Planning Specialist; Bridgett Ramos, Budget Specialist, and Karen Wagner, Administrative Secretary; and Bob Kinsey, Physicist, and Barbara Crothamel, Systems Specialist.

If successful, this program could serve as a model for the rest of the Laboratory. For more information, call Kara DeCastro, Ext. 3643.

—Andrea Widener

Roger Stoutenburgh

These mentor-mentee groups were formed to help employees reach their career goals. Pictured: (front, from left) Karen Wagner, mentee; Marilyn Pandorf, Human Resources Division contact; Ruth Kempf, mentor; Kathy LaVelle, mentee; (back, from left) Mary McGrath, ombudswoman; Vicki McLane, Mentoring Committee member; Kara DeCastro, Mentoring Committee Chair; Joseph Carbonaro, Mentoring Committee members; Bridgett Ramos, mentor; Bruce Dionne, mentee; Barbara Crothamel, mentee; Ed Kaplan, mentee supervisor. Not pictured: Tony Ramano, mentor, and Bob Kinsey, mentor.

Brookhaven Town Fire Marshal Thanks BNLers for Mutual Aid

The Fire/Rescue Group in BNL's Safety & Environmental Protection Division received a Letter of Appreciation from Brookhaven Town's Chief Fire Marshal Joseph Sauerwein, recognizing the group's response to the Town's hazardous-materials (haz-mat) incidents while the Town's Division of Fire Prevention was involved in the TWA Flight 800 recovery operation from July 17 to August 1.

BNL's Fire/Rescue Group became the Town's haz-mat responder for those two weeks as the result of a Haz Mat Mutual Aid Agreement signed by Associated Universities, Inc., Vice President Leland Willis, and, on July 15, by Brookhaven Town Supervisor Felix Grucci Jr.

As Sauerwein noted in his letter, "The ink was not even dry when, less than 36 hours later, the Division of Fire Provention was called to respond to the tragic crash of TWA Flight 800. For the next two weeks, we were totally committed to the recovery operation and left with virtually no capability to respond to haz-mat incidents throughout the Town."

So, the day after the tragedy, Sauerwein called BNL Fire Chief James Roesler, requesting that the Fire/Rescue Group respond in the Town's stead to haz-mat calls for the duration of his division's participation in the recovery.

Sauerwein commented, "Little did either of us expect that the Mutual Aid Agreement would come into play so soon, or so frequently," as, over the following two weeks, Fire/Rescue responded to two calls and, on three occasions, the group was placed on alert, but not called out.

Sauerwein added, "While the fire departments and residents you assisted were somewhat amazed to see personnel and equipment from BNL some 20 miles off the Lab site, they were equally pleased that the needed expertise and help was quick to arrive. . . . While the time we spent in East Moriches was stressful, I took great comfort and solace in the fact that if another haz-mat run were to come in, then your group was ready and willing to come to our aid."

He concluded: "On behalf of Supervisor Felix J. Grucci Jr., the Fire Marshals of the Division of Fire Prevention, and, truly, all of the 420,000 constituents of the Town of Brookhaven, please accept our sincere appreciation for your invaluable help, and relay our collective gratitude to all the members of the BNL Fire/Rescue Group." —Marsha Belford

Banking on BNL

If you don't recognize this as a building on site at BNL, that's because it's not on site—it's in Siena, Italy. And *Banca Nazionale del Lavoro* is not Brookhaven National Laboratory in Italian—it's an Italian bank that Louisa Morrison of the Safety & Environmental Protection Division spied, and just had to photograph, while vacationing last year in Tuscany.

Indian Concert Tomorrow Night

Tickets are still available for a concert on Saturday, August 17, featuring instrumental music of northern India played by two well-known Indian musicians — Satish Vyas, a santour player, and Sadanand Naimpalli, who will accompany him on drums called tabla.

Sponsored by BERA's Indo-American Association, the concert will be held in Berkner Hall at 7 p.m.

Tickets cost $8 per person, $12 per couple, and $15 total for families with children under 18.

Purchase tickets from the BERA Sales Office until 1:30 p.m. today; or from Animesh Jain, Ext. 7329; Piyush Joshi, Ext. 3847; Anand Saxena, Ext. 4844; or A.M. Topé, Ext. 5672; or at the door tomorrow evening.

Note to Employees:

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

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ANITA COHEN, Editor
MARSHA BELFORD, Assistant Editor

Bldg. 134, P.O. Box 5000
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In Memoriam

The following retirees passed away recently:

Robert E. Stafford, who retired from the Lab on December 18, 1981, with over 20 years of service, died on May 24. He was 74 years old. He had started at BNL in the Cosmotron Department on July 25, 1960, and automatically became a member of the Alternating Gradient Synchrotron (AGS) Department when that accelerator replaced the Cosmotron. He was a technical associate I at the AGS when he retired.

Barbara A. Smith, who worked at BNL for more than 32 years, died on July 5, at the age of 58. She had joined the Physics Department on December 9, 1963, as a scanner trainee. During her BNL career, she later worked in the AGS Department, the Accelerator Development Department and, lastly, the Relativistic Heavy Ion Collider (RHIC) Project. When she left the Lab on long-term disability on August 4, 1995, she was a programmer with RHIC.

Rosemary Kanuga, whose career as a registered nurse in the Medical Department spanned 32 years, died on July 27. She was 75 years old. She had first come to Brookhaven on September 1, 1948, but left in 1957 for nine years, and then again in 1969 for three years. She retired from Medical on July 31, 1980.

50 YEARS AGO THIS WEEK

This series, which recounts the earliest days of Associated Universities, Inc. (AUI), and BNL, will run as appropriate throughout 1996 and 1997, the 50th anniversary years of AUI and BNL, respectively.

• **August 1946** – From time to time, between now and the end of the year, the law firm of Milbank, Tweed, Hope, Hadley and McCloy is consulted with respect to the proposed contract between AUI and the Manhattan District regarding the operation of the new laboratory.

• **August 20, 1946** — AUI issues a press release on the appointment of Dr. Philip M. Morse, of the Physics Department of the Massachusetts Institute of Technology, to be the first Director of the new laboratory. During World War II, Morse had been Director of the Operations Research Group of the U.S. Navy.

(To be continued on September 6.)

BWIS to Present Chasman Scholarship

On Thursday, August 29, at 4 p.m., Brookhaven Women in Science (BWIS) will present the 1996 Renate W. Chasman Scholarship to Mary Carlucci-Dayton of East Patchogue, a physics major at the State University of New York at Stony Brook. All are invited to the reception in Room B, Berkner Hall; refreshments will be served.

The Chasman scholarship is a one-time award of $2,000 presented to a Long Island woman who has returned to school, following an interruption, to pursue her education in the sciences, engineering or mathematics.

Computing Corner

The Computing & Communications Division (CCD) offers the following:

UNIX Training

Seats are still available for the following UNIX-based classes, scheduled to meet in the the second-floor seminar room, CCD, Bldg. 515, Monday through Friday, September 16-20:

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

The fee for each class is $350 per person. To register, send an ILR for the amount to Pam Mansfield, Bldg. 515, by Friday, August 30. For more information, contact Ed McFadden, Ext. 4188 or e-mail emc@bnl.gov.

ORACLE Training

A five-day course entitled "Introduction to ORACLE" is scheduled for October 21-25. The per-person fee for this class is $1,625. For more information or to register by Friday, August 30, contact Pam Mansfield, Ext. 7286 or e-mail pam1@bnl.gov, or Susan Eng Wong, Ext. 7988 or e-mail sge@bnl.gov.

Arrivals & Departures

Arrivals

Sumitra Ranganathan.....SEP
Scott K. Seberg.....RHIC
Cheo S. Teng.....NSLS

Departures

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

Lisa Blevins.....Plant Eng.
Lillian Brady.....Biology
David J. Burr.....Adv. Technology

Bowling

Call for Bowlers

Although summer is not yet over, it's time to "think bowling" again! All BNL employees and members of their immediate families can join. You do not have to be a great bowler, just a willing one, so sign up for an evening of fun.

Applications for the Tuesday night men's league in Port Jefferson and the Thursday night mixed league in Rocky Point are available at the BERA Sales Office, Berkner Hall, weekdays, 9 a.m. to 1:30 p.m.

Registration for existing teams is due by Wednesday, August 21; new teams must register by Friday, August 23. A captains' meeting will be held on Wednesday, August 28, at noon in Room A, Berkner Hall. For more information, call Debbie Botts, Ext. 3888, or Maryann Musso, Ext. 2352.

Bowling Officers

The new Bowling League officers for 1996-97 are: Andy Warkentien, president, Ext. 5837, Bldg. 835; Sonny DiMaiuta, vice president, Ext. 5265, Bldg. 902A; Rich Eggert, treasurer, Ext. 4834, Bldg. 355; Maryann Musso, recording secretary, Ext. 2352, Bldg. 197C; Debbie Botts, Purple/White league secretary, Ext. 3888, Bldg. 355; and Ron Mulderig, Red/Green league secretary, Ext. 3084, Bldg. 326.

Softball

Standings as of August 12

League E1		**League E3**	
System	7-2	Mesocyclones	9-2
Blue Jays	8-3	Pick-Up Sticks	5.5-5.5
Phoubars	7-3	Bombers	4-8
Ice Men	6-4	Medical	3.5-7.5
Magnets	6-5	**League M1**	
Titans	2-9	Snake Bites	8-4
Cleen Sweep	0-10	Stingrays	8-4
League E2		Gour-Mets	8-4
Hammerheads	9-3	Good Timers	6-5
LightsOut	8-4	OER Wellheads	4-8
Hy Tech	8-4	Parke Avenue	1-10
CCD	7-5	**League M2**	
Contaminators	7-5	Skeleton Crew	6-2
Phase Out	6-6	Varmints	5-3
Scram	6-6	No Names	3-5
Feds	5-7	Stray Cats	4-4
Phytinphytos	4-8	What's on 2nd	4-4
Sure Fire	0-12	Monday Nite Live	1-7

Note: *The address for the World Wide Web page of the BNL Softball League is http://pubweb.bnl.gov/~l2ball/*

Speakers Bureau

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

• **Michael O'Brien**, SEP; **Kara Villamil**, DO: Bellport Rotary Club, "Radiation, Breast Cancer & BNL," June 4.

• **Jack Preses**, Chem.: Telephone Pioneers of America, "BNL in General," June 4.

• **Mona Rowe**, DO: Center Moriches Chamber of Commerce, "BNL in General & the Lab's Environmental Issues," June 11.

• **William Gunther**, OER; **Jan Naidu**, SEP: Three Village Democratic Club, "BNL in General & the Lab's Environmental Issues," June 13.

• **Kara Villamil**, DO: Dayton Avenue School in Manorville, "BNL in General & the Lab's Environmental Issues," June 14.

• **Paul Giannotti**, Reactor; **Nina Leonhardt**, OEP; **Karl Swyler**, OEP: Ridge Elementary School, "Rocket Launching," June 17.

• **John Dunn**, Bio.: Minority High School Apprentice Program, "Biology at BNL," June 27.

• **Kara Villamil**, DO: Riverhead Free Library, "BNL in General & the Lab's Environmental Issues," July 10.

• **Michael O'Brien**, SEP; **Jan Naidu**, SEP: Riverhead Chamber of Commerce, "BNL in General & Environmental Issues," July 11.

• **Robert Crease**, DO: Long Island State Veterans Home, "BNL's History," July 22.

Classified Advertisements

Placement Notices

The Laboratory's placement policy is to select the best-qualified candidate for an available position. Consideration is given to candidates in the following order: (1) present employees within the department/division and/or appropriate bargaining unit, with preference for those within the immediate work group; (2) present employees within the Laboratory; and (3) outside applicants. In keeping with the Affirmative Action plan, selections are made without regard to age, race, color, religion, national origin, sex, handicap or veteran status.

Each week, the Human Resources Division lists new placement notices. The purpose of these listings is, first, to give employees an opportunity to request consideration for themselves through Human Resources, and second, for general recruiting under open recruitment. Because of the priority policy stated above, each listing does not necessarily represent an opportunity for all people.

Except when operational needs require otherwise, positions will be open for one week after publication.

For more information, contact the Employment Manager, Ext. 2882, or call the JOBLINE, Ext. 7744 (344-7744), for a complete listing of all openings.

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

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

SCIENTIST - With several years' experience in high-energy or relativistic heavy-ion physics, and a thorough knowledge of on-line system-software techniques for modern physics detectors, to assume the position of Project Leader for On-line Software for the STAR Project. Responsibilities will include the design, development, and implementation of the on-line computing system for STAR, and leading a large collaborative software effort focused on that activity. Contact: Timothy Hallman, Physics Department.

SCIENTIST - With several years' experience in high-energy or relativistic heavy-ion physics. Extensive knowledge of the GEANT infrastructure for the STAR experiment at RHIC is essential. Ability to develop and maintain essential relational databases, as well as interfaces to simulation, event reconstruction, and on-line/off-line production software is also required. Experience in developing STAR software is preferred. Contact: Timothy Hallman, Physics Department.

SCIENTIST - With several years' experience in high-energy or relativistic heavy-ion physics. A working knowledge of UNIX operating systems as implemented on workstations such as the SGI (IRIX), IBM RS/6000 (AIX) and SUN Sparc (Solaris) is essential. Proficiency with scripting languages and C programming language is preferred. Responsibilities will include the development of infrastructure software for the STAR off-line data-processing system and management of STAR production software development. Additional responsibilities will include infrastructure support for the STAR analysis framework and corresponding interface to CERN library software. Contact: Timothy Hallman, Physics Department.

SCIENTIST - Trained in experimental physics (preferred) or computer science, with experience in implementing complex data-acquisition systems involving multiple processors and high data rates. Requires familiarity with C, C^{++} or other object-oriented language, the UNIX operating system and maintenance tools. Will develop software for data acquisition for STAR, one of the large experiments at RHIC. Will participate in the design, documentation, implementation and testing of software architecture, as well as provide support for ongoing hardware development projects. Contact: Micheal LeVine, Physics Department.

OPEN RECRUITMENT - Opportunities for Laboratory employees and outside candidates.

DD4858. OFFICE SERVICES POSITION - Requires previous travel office experience, including several years' SABRE computer experience. Will assist Laboratory staff in all aspects of travel such as airline, railroad, bus and ferry reservations; limousine or car rentals; and accommodations. Administrative Support Division.