

## BNL Model Foretells Traffic Tie-Ups — and May Help Prevent Them

Driving on some of Long Island's major roads at rush hour has become, for most motorists, a major pain. The Long Island Expressway? Often, it's anything but express. The Northern State and Sagtikos Parkways? At times, "parking lots" would be more like it. And construction work, accidents and bad weather only worsen the situation.

But even as drivers steamed and stewed in this summer's crawling traffic, a team of scientists from BNL and Polytechnic University was proving for the first time that it is possible to predict, and therefore help prevent, such highway snarls. They did it using a package of powerful computer software called ATOP, for Advanced Traffic Occupancy Prediction, developed in the Department of Advanced Technology (DAT).

A multifaceted piece of software, ATOP uses a number of different information sources and analytical techniques to predict traffic flow. It draws from an extensive database of historical traffic flow patterns, and from data about the current state of the highway, before feeding that information through sophisticated statistical routines. The result is a forecast of traffic volume entering and exiting an area of the highway.

Then, using conservation equations, ATOP simulates the movement of that traffic through the highway system. All the while, more information on actual traffic movement continues to come in — and if it doesn't match the prediction, the computer model corrects itself.

The project has passed several tech-



At the Hauppauge headquarters of the INFORM highway-monitoring system, which will soon begin using a BNL-developed traffic simulator, are: (from left) Ali Azarm, Department of Advanced Technology (DAT); Robert Rosendahl, INFORM director; David Stock, DAT; Elizabeth Selcow, DAT; and Robert Hall, DAT.

nical reviews and its results will be published shortly in a BNL report. Meanwhile, a team of seven DAT researchers and two professors and two doctoral students from Polytechnic is upgrading ATOP to take on data in real time — as it happens — and make its predictions equally swiftly.

The team works closely with members of the staff of the New York Department of Transportation's (DOT) INFORM system, an advanced traffic management system that collects and

evaluates roadway data. Since ATOP will eventually communicate directly with INFORM, this cooperation has already helped make the team's program a success.

### Informed Motorists

If drivers can know what conditions may lie ahead, the state and federal DOTs reason, they can do something about it — such as change to a less-congested route. So, last year, the federal DOT granted \$1.0 million to a

DAT team led by Robert Hall to develop ATOP into a workable package of software and hardware. The project comes under DOT's Intelligent Vehicle Highway Systems program, and another \$1.8 million has been requested for 1995.

"The bill that funds all of this looks at the use of intelligent transportation to do a number of things, on the assumption that there will be no new highway capacity added in the future," Hall said. "It looks at how we can increase efficiency by reducing congestion, as well as decrease environmental impact and increase public safety."

Already, INFORM has a system of computerized signs in place on the L.I.E. and the Northern State and Sagtikos Parkways. The signs now alert motorists whether traffic ahead is congested or normal — but they only tell drivers what is currently going on ahead, not what to expect by the time they get there.

When ATOP is installed on the INFORM system's computers in Hauppauge next year, Hall predicted, the electronic messages will become more meaningful for motorists. And traffic authorities will be able to determine the effects of their efforts, including minute-by-minute changes in the very electronic road signs that ATOP will feed into.

The BNL simulator takes its input from INFORM's system of magnetic flux, or loop, detectors embedded in the L.I.E., the Northern State Parkway, and their interconnecting north and south routes. (As a car passes over (continued on page 2)

## PE Group Takes an Energetic Approach to Reducing Energy Use

A lot of energy is being used at BNL in order to make sure that a lot *less* energy is used here.

And the energy expended in brain power by the Plant Engineering Division's Energy Management Group (EMG), headed by Mark Toscano, has already significantly decreased the Lab's use of fuel and electric power.

To conserve energy is a concern of most responsible citizens, but for national laboratories, this policy is also the law.

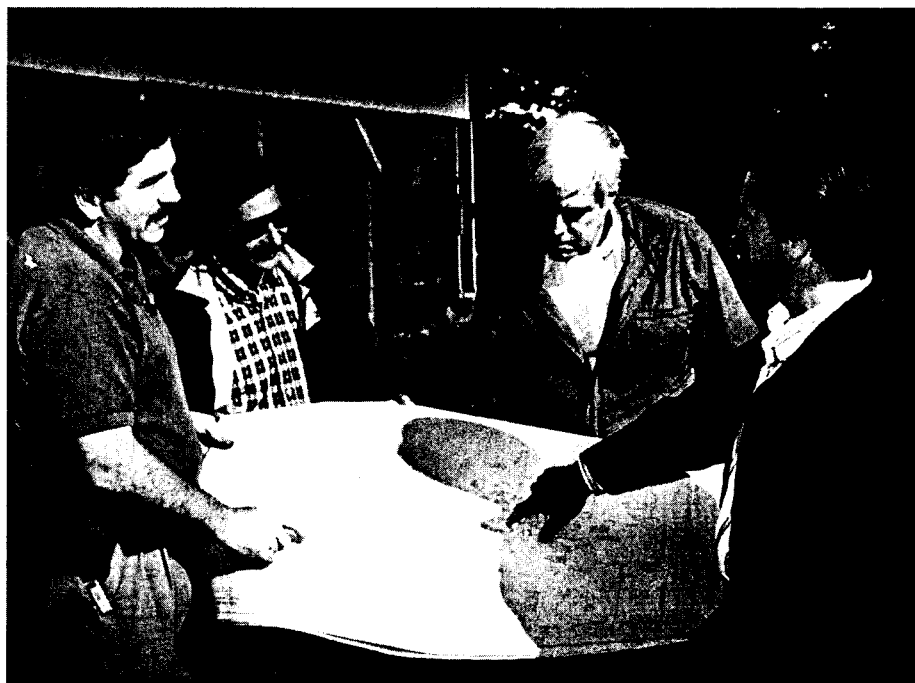
In 1992, the Energy Policy Act was

passed, requiring that each federal agency consume 20 percent less energy per square foot of building than the amount consumed in 1985. And, last March, President Clinton signed Executive Order 12902, expanding that goal to a 30 percent energy reduction by 2005. In addition, earlier laws had required a reduction of 10 percent by 1995.

"We're confident that BNL will meet the 1995 goal, as well as the later goals," said Toscano, whose group ensures that federal energy requirements are met and reports the Lab's energy use to the U.S. Department of Energy (DOE). "In addition to meeting the federally mandated goals for reducing energy use, BNL is interested in reducing actual cost. Since 1985, although the total square footage of Lab buildings has increased by 5 percent, site energy use has decreased by 7.2 percent and costs have decreased by 6.3 percent."

Working with Toscano are Energy Engineers Christopher Channing, Thomas VanderPutten and Barbara Pierce. Since 1979, the EMG has effectively initiated the reduction of fuel oil use at the Central Steam Plant, improvement of the on-site apartments' insulation, and installation of more efficient lighting in Bldg. 526, as well as a more efficient heating and cooling system in Berkner Hall.

EMG works by first identifying and evaluating potential energy-saving projects. Then, if the technical and life-cycle costing analyses show that a project will be cost-effective, they apply to DOE's In-House Energy Man-



At the location of what will be a 3.2 million-gallon tank for the soon-to-be-constructed Chilled Water Storage System, part of the Central Chilled Water Facility on Rochester Street, are: (from left) Plant Engineering Division's Thomas Butler, Christopher Channing, Thomas VanderPutten and Mark Toscano.

agement program for funding. "We've been one of the most successful national labs in obtaining these funds, with \$3.6 million last year, and \$1.5 million this year," noted Toscano.

Currently, EMG has obtained funding to modify lighting and install energy-efficient windows and more insulation in several buildings, improve heating and air-conditioning equipment, and expand the computerized Labwide Energy Management Con-

trol System. Also, the design is almost complete for a chilled water storage facility at the Central Chilled Water Facility that is expected to save BNL over \$650,000 a year.

During FY 1994, BNL used an estimated 5 million gallons of fuel oil and 209 gigawatt hours of electricity. Total energy costs were \$15 million, and, according to Toscano, would have been much higher except that the Lab buys (continued on page 2)

### Coming Up

BNL Historian Robert Crease will deliver the 299th Brookhaven Lecture on Tuesday, October 18. His talk on "History of the Laboratory, Part II: The Haworth Years" will begin at 4 p.m. in Berkner Hall.

Vera Rubin, an astronomer at the Carnegie Institution of Washington's Department of Terrestrial Magnetism and a trustee of Associated Universities, Inc., will deliver a Brookhaven Women in Science seminar on Thursday, October 20. Her talk on "Bright Galaxies, Dark Matter" will begin at 3 p.m. in the Chemistry Department's Hamilton Seminar Room, Bldg. 555.

## Twin Fire Trucks Now Protecting BNL and Bulgarian Nuclear Facilities

The food was different, the beer was strong, and almost no one spoke any English. But Fire Captain Russell Dunn of BNL's Fire/Rescue Group wasn't in Bulgaria to vacation. He was there to bring modern firefighting equipment to a huge, aging nuclear facility that desperately needed it.

For two weeks including Easter of this year, Dunn worked to deliver vehicles, instruments and a share of his firefighting expertise to the six-reactor nuclear power plant site at Kozloduy, Bulgaria. He may return in November to see the results of his efforts, which came as part of a U.S. Department of Energy program, managed by the International Nuclear Safety Project Office in BNL's Department of Advanced Technology, to assist Eastern European countries in improving safety at Soviet-designed reactors.

By the time Dunn left Kozloduy in April, the facility's mostly decrepit fleet of Soviet and Czech fire trucks had two brand-new U.S.-made additions: a small crash truck with a dry chemical and foam system, and an exact replica of the 16-ton Cyclone pumper originally customized for



BNL Fire Captain Russell Dunn, at left, poses with officers and drivers of the fire company at Bulgaria's Kozloduy nuclear facility in front of two brand-new fire trucks donated by the U.S. Department of Energy. The truck at left is an exact replica of one originally customized for BNL's Fire/Rescue Group.

BNL's Fire Truck Committee by its manufacturer, E-One of Ocala, Florida, for better safety in fighting hazardous materials fires. Dunn headed the committee, which also included firefighters

Kevin Cosgrove, Ken Licata and Frank Palmeri.

With the trucks, Kozloduy's 140 firefighters are now much more prepared to respond to emergencies spe-

### Make Fire Safety A Year-Long Habit

In conjunction with Fire Safety Week, October 9-16, the Bulletin salutes the BNLers who work to protect people and property from fire.

For the rest of us, observing Fire Safety Week, means changing smoke detector batteries, planning escape routes at home and doing all you can to stop fires before they start, says BNL Fire Chief James Roesler. "Although Fire Safety Week highlights this," Roesler said, "we should all practice fire safety all year long."

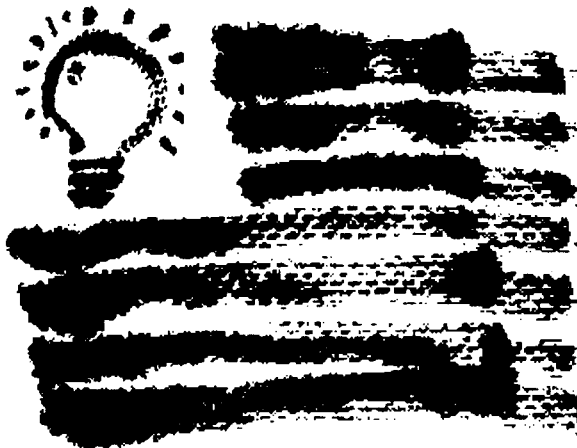
cific to nuclear facilities. But getting them to that point wasn't easy, Dunn reported.

First, it took 30 hours of traveling time to get to the port city of Burgas. Then, after locating the trucks, still on their freighter, Dunn found that the pumper's batteries had been drained by bored sailors running the sirens and lights at sea. Bulgaria's entire phone system also chose that exact time to give out for two days.

But eventually, Dunn managed to deliver the equipment to Kozloduy, and to start training its firefighters on how to use the deluxe BNL-style truck. "Firemen are the same here as over there," he said. "The officers and drivers all wanted to learn, and they could relate to what I taught them."

— Kara Villamil

ENERGY AWARENESS MONTH October 1994



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UNITED STATES DEPARTMENT OF ENERGY

### Reducing Energy

(cont'd)

most of its electricity from the New York Power Authority at a much lower rate than the Long Island Lighting Company charges.

"Since this is October, which DOE has named Energy Awareness Month, we're hoping that all BNL staff will make an extra effort to turn off any equipment that's not in use, and make sure that it's operated and maintained properly," said Toscano. "And, of course, we hope that these good habits will last the rest of the year."

To help BNLers to be aware of more of the facts and figures of the Lab's energy usage, EMG has compiled the 1993 In-House Energy Management Factbook, which is available to read in the lobby of the Public Affairs Office, Bldg. 134.

"We'd like everyone to be involved with saving energy," said Toscano. — Liz Seubert

### Golf Tournament & Dinner

The BERA Golf Association End-of-Season Tournament and Awards Dinner will be held Friday, October 14, at the Rock Hill Country Club, in Manorville. Tee times start at noon, and the format is a two-man scramble. Cost for BGA members is \$43 per person, \$63 for nonmembers. Golf or dinner can be attended separately. Deadline for sign-up is October 11. For tee times, information or sign-up, call Rick Jackimowicz, Ext. 3803.

### Traffic Tie-Ups

(cont'd)

it, the detector registers its presence and sends that information to the INFORM center in Hauppauge, where it is combined with data from the entire highway and analyzed.

Those data alone are interesting. But the ATOP team developed an algorithm that computes each vehicle's speed, and the density of the surrounding traffic, based on the detectors' readings. Then, using the DAT staffers' experience in nuclear engineering, physics and statistics, they developed their unique model. Weather, accident and construction information are added in.

"We've applied a lot of our analytical skills while developing the solution to a new problem, translating them to a new technology and to transportation," said Hall. "As a result, this simulation, which is the first of its kind, operates in real time — and the software must, and does, run faster than real time," in order to compute a useful prediction.

### Out of the Lab, Onto the Road

ATOP's implications stretch beyond electronic-sign messages that reach only the motorist already on the road.

The designers also believe that the information could be posted on a computer system available to both TV and radio traffic reporters and any Internet users. And, Hall said, cellular phone companies could even make recordings of up-to-the-minute traffic predictions for callers approaching main roads.

### Working With the Private Sector

Another area to be developed is the data-collection point: the detectors. The team is working with Northrop Grumman Corporation to develop a better traffic motion detector, using infrared cameras installed along the highway instead of the embedded loops currently used on Long Island and throughout the U.S. The new detectors may supply more information about traffic patterns, thus enhancing ATOP's predictions.

"It's a good example of the Lab working with the private sector — Northrop Grumman — as well as a university and government," said Hall. And in the end, the collaboration will make traveling Long Island's major roads a more pleasant, or at least less annoying, experience.

— Kara Villamil

### Second Chance For License Photos

If you missed last month's opportunity to have your next driver's license photo taken early and on site, mark your calendar for Tuesday, October 18. On that day — from 7:30 a.m. to 4:30 p.m. in Berkner Hall — representatives of the New York state Department of Motor Vehicles (DMV) will again bring portable digital cameras to BNL, as part of the DMV's "Early Bird" imaging effort.

Even if your present, old-style photo license is valid for several years to come, your new photo can be taken now. Then, when your license is about to expire, you can renew it by mail.

There is no fee for having the photo taken, although the normal license fee will apply when the license is renewed. The DMV representatives will also administer simple eye exams at the time of the photo and will need to see current photo licenses or non-driver ID cards.

### Note to Employees:

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

### SUN Seminars

The next technical seminar of the SUN series will be "Networks and Interoperability," on Wednesday, October 12, in the CCD Seminar Room, Bldg. 515, from 9:30 to 10:30 a.m., followed by a Q&A session. This seminar will cover: interoperability between PCs and SUN workstations, local area networks and connectivity, wide area networks and connectivity, and Solarnet and other products.

All are welcome. For more information, call Susan Eng, Ext. 7988, or send e-mail to sge@bnl.gov.

### Healthfest '94 Begins Monday

Healthfest '94 — BNL's second celebration of personal health, fitness and safety — will take place next week, including the following events:

- **2-mile Fitness Walk** — Monday, October 10, noon to 1 p.m., start at Science Education Center, Bldg. 438, preregistration required.
- **5-kilometer (3.1-mile) Fitness Run** — Thursday, October 13, noon to 1 p.m., start at Medical Department, Bldg. 490, preregistration required.
- **Health, Fitness & Safety Fair** — Tuesday & Wednesday, October 11 & 12, 11 a.m. to 2 p.m., Berkner Hall, preregistration required for foot screening.
- **"Ergonomics — Reducing Physical Stress at Home and at Work" Lecture** — Tuesday, October 11, noon to 1 p.m., Berkner Hall, preregistration required.
- **"Stress Management From a Behavioral Medicine Perspective" Lecture** — Wednesday, October 12, noon to 1 p.m., Berkner Hall, preregistration required.
- **"Smoking — How to Quit and Stay Quit" Lecture** — Thursday, October 13, noon to 1 p.m., Berkner Hall, preregistration required.

For registration forms, see last week's Bulletin or the recent Healthfest mailing to all employees. For more information, call Mary Wood, Ext. 5923.

# BNL's Intro to Computer Class Celebrates First 10 Years

Past, present and future participants in the Introduction to Computer Class that BNL offers to children and adults in surrounding communities came to BNL on September 21 to celebrate the program's 10th anniversary.

In the ten years to date, some 720 children and adults have participated in the six-week course, said program coordinator Frances Ligon, Office of Equal Opportunity. For students in the Riverhead School District, the first classes started in February 1984, at the First Baptist Church in Riverhead. Classes were initiated in 1990 at the Victory Church of God in East Patchogue, for students in the South Country School District.

Now plans are under way to add two new sites to the program: The Clinton Memorial A.M.E. Zion Church in Greenport will hold classes for students in the Greenport School District, and the Faith Baptist Church in Longwood will open its doors to Longwood Central School District students.

"These computer classes have been



At the 10-year celebration of BNL's Introduction to Computer Class, program coordinator Frances Ligon (second from right) greets BNLER Crystal Allen (right), a former participant who represents the program's past success, and two representatives of the program's future — Rev. Odessa Henry (left) of the Clinton Memorial A.M.E. Zion Church in Greenport and Peter Strafacci, Assistant Superintendent, Longwood Central School District.

be done in the future."

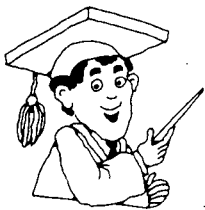
Crystal Allen will vouch for that. Computers have been a big part of her job in the administrative office of BNL's Supply & Materiel Division since she started working there, first as a temporary employee in 1988, then full-time in 1991.

But the first computer Allen ever worked with was the Commodore 64 computer she used in 1984, while a participant in the first Introduction to Computer Class in Riverhead. Today she credits the program with giving her the basic technology to be comfortable using computers. Allen went on to graduate from Riverhead H.S., then earn a B.S. in human services at the University of Bridgeport, before joining BNL.

For its pioneering and continuing involvement, the Riverhead program was presented with a plaque of appreciation. Rosa Palmore of BNL's Personnel Division accepted the award in the absence of Rev. Charles Coverdale of First Baptist Church of Riverhead.

"We are pleased to be involved with this program," Blume concluded, "and we thank those people at the Lab who have helped, especially Fran Ligon."

Among those people Ligon cited were Karl Swyler, Manager of the Office of Educational Programs, and more than ten BNL employees who have served as volunteer instructors over the years. She also thanked the U.S. Department of Energy and Associated Universities, Inc., for their continued support. — Anita Cohen



## AUI Scholarship Alert

Applications for 1995 AUI Trustee Scholarships can now be obtained from the Office of Scientific Personnel.

Children of regular employees of BNL are eligible to compete for up to 14 AUI scholarships, each for \$2,500 per year renewable for up to four years of study toward an academic degree.

In addition, up to three scholarships may be awarded to BNL and National Radio Astronomy Observatory (NRAO) employees' children who are Black, Hispanic or Native American. One such scholarship is open to qualified children of employees at BNL and another for children of NRAO employees. One may be awarded to an additional applicant from either institution.

Qualified applicants are: children of BNL employees who began regular, full-time or regular, eligible part-time employment no later than November 15 of this year and who are employed by BNL at the time the award is announced; or children of retired employees or employees who died while in regular service at the Laboratory. Stepchildren are eligible if the employee regularly claims the child as a dependent for income-tax purposes, or if the stepchild has resided in the employee's household for the two-year period immediately prior to application.

Applicants must be secondary school seniors who will be graduating during the current academic year and entering college by fall 1995.

For further information, contact the Office of Scientific Personnel, Bldg. 185A, Ext. 3336.

very important, not only to the community but also to the Laboratory," said BNL Deputy Director Martin Blume. "A key to success for all students in the future will involve being literate with computers — and the Lab needs employees who are computer literate. With some 2,500 computers here, much of our work is now being done by computer, and more will

## Next BERA Concert — Chamber Music Masterpieces

Chamber music masterpieces of the romantic repertoire from Brahms, Rachmaninoff and Schubert will be featured at the next BERA concert, on Wednesday, October 12, at 8 p.m. in Berkner Hall.

This special concert will be performed by outstanding music students from the State University of New York at Stony Brook. They are Lisa Deluca and Andres Schultz, violin; Jennifer Stirling, viola; Heidi Hoffman and Rupert Thompson, cello; and Leone Alitowski, piano.

A donation of \$6 is suggested for the performance.

## Inside Info

Sy Baron, who had served as BNL's Associate Director for Applied Programs since October 1984, stepped down from this position on September 30, to take a leave of absence to head a major project on risk assessment at the Medical University at South Carolina.

As BNL Director Nicholas Samios noted, "Sy has been responsible for some of our critical areas, the applied programs in both the Department of Advanced Technology [DAT] and the Department of Applied Science [DAS], and, in addition, our Office of Technology Transfer [OTT]."

As an interim measure, as of October 1, Baron's line responsibilities were

divided among three members of the Directorate: Deputy Director Martin Blume is overseeing DAT; John Axe, Associate Director for Basic Energy Sciences, is taking care of DAS; and Mark Sakitt, Assistant Director for Planning & Policy, is responsible for OTT.

Under Baron, Samios added, "All three of these areas have expanded and have developed new, vigorous programs. His technical expertise and his management skills have played an important role in accomplishing these objectives. We appreciate and thank him for these efforts."

Michael Carroll II, Safety & Environmental Protection Division (SEP), has been made Deputy Fire Chief in the Fire/Rescue Group, officially effective October 1.

Previously Training Captain, Carroll assumed the new title on July 1 to reflect his expanded responsibilities within the group. These extend beyond training to include day-to-day and long-range operations and planning, as well as assisting in implementing regulations and service as a relief captain and acting chief when necessary. As Deputy to Fire Chief James Roesler, Carroll also assists in the administration, coordination and supervision of the group.

Said Roesler, "The position of Deputy Fire Chief requires a strong leader who is dedicated to working

selflessly on the Fire/Rescue Management Team; Michael Carroll is such a person."

Carroll came to BNL 30 years ago August 31, after serving as a firefighter with the U.S. Air Force. He has served as Training Captain since 1980, and has assumed responsibility for developing the training curriculum, including new confined-space rescue and physical fitness programs.

Senior Scientist Stephen Schwartz of the Environmental Chemistry Division in the Department of Applied Science testified before the U.S. Senate's Committee on Energy and Natural Resources on May 24, regarding atmospheric aerosols and their contribution to what he refers to as the whitehouse effect. Schwartz was one of six university and government scientists who were invited to testify at a hearing on the science concerning global climate change.

As Schwartz informed the senators, atmospheric aerosols are suspension of fine particles in the air, or hazes, that scatter solar radiation from the planet, thus decreasing the solar heating of the earth. This cooling influence — the whitehouse effect — is thought by some to be comparable in magnitude to the better known greenhouse effect. Therefore, the cooling whitehouse effect is thought to mask somewhat the warming greenhouse

effect, which is thought to be due to the increasing concentrations of greenhouse gases that humankind has contributed to the atmosphere since the Industrial Revolution.

As Schwartz explained in his testimony, "Compared to greenhouse gases, whose atmospheric residence times are on the order of a hundred years, the aerosols are short-lived in the atmosphere, with a mean residence time of about a week. At present, the atmosphere contains an amount of carbon dioxide [CO<sub>2</sub>] in excess of the preindustrial amount that is equal to about 30 years' worth of present fossil-fuel-combustion CO<sub>2</sub>. To the extent that anthropogenic aerosols are offsetting a fraction of the greenhouse effect of this CO<sub>2</sub>, it is a week's worth of aerosols that is offsetting three decades' worth of CO<sub>2</sub>."

While some have suggested increasing haze to slow the pace of the greenhouse effect, Schwartz said, "Such a strategy would be relying on an ever-increasing, short-term fix to solve a long-term problem. Rather than solve the problem, such a strategy would only exacerbate it."

Instead, Schwartz advocated further study of anthropogenic aerosols, to "improve the interpretation of climate change over the industrial era and to formulate scientifically based policy to deal with climate change in the future."

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## Softball Champs



The Blue Jays flew to the top of League E1: (from left) Mike O'Connor, Alan Jones, Joe Tullo, Gerry Shepherd, George Oldham (captain), Charlie Johnson, Larry Musso (co-captain), Jim Forkin, Danny Martin, Frank Palmeri and Jerry Hobson. Not pictured: Bob Medina and Chris Saxen.



The Titans towered over everyone in League E2: (from left) Greg Condemi, Pete Stillman (captain), Joe Skelly, Bernie Stepnoski (co-captain), Bill Schoenig, Gary Danowski, John Niemczyk, Fred Schaeffer, Frank Stepnowski, Ed Meier, Pete Abrams, Vinny Chiampou and Biays Bowerman. Not pictured: Ken Asselta, Ed Beadle, Jim Boomer, Omar Gould, Tom Hayes, Jon Sandberg and Steve Savatteri.

— Photos by Roger Stoutenburgh



The Well Heads came in well ahead of the others in League M2: (back, from left) Victor Cassella, Tom Doyle, Jim Kos, Michael Cowell, Bill Pemberton; (front, from left) Millie Laster, Carlee Beecher, Wayne Alvarez, Donna Alvarez (co-captain) and Bob Howe (captain). Not pictured: Steve Barcelo, Stacy Cassella, Tom Hayes, Doan Hansen, Laura Howe, Jon Laster, Skip Medeiros and Darlene Reeves.



The Good Timers had a great time winning League M1 for the second consecutive year: (front, from left) Luke Greco with young Luke Greco, Kerry Bonti, Maryann Reynolds, Jennifer Schwartz (co-captain) holding "little" Michael O'Connor, Fran Salpietro, Carlos Victoria; (back, from left) Pete Bonti (captain), Mike O'Connor, Dina Tullo, Claudia Jones, Alan Jones and Larry Musso. Not pictured: Jerry Gaeta, Jody Greco, Terri Lacker, Pete La Salla, Barbara McCarrick, Brian McCarrick and Chris Saxen.

## Service Awards

The following employees celebrated BNL service anniversaries during September 1994:

<b>45 Years</b>	
Garman Harbottle	Chemistry
Seymour Rankowitz	Instrum.
<b>35 Years</b>	
Stanley P. Cherouski	Ph. & Gr. Arts
<b>30 Years</b>	
Lester G. Epel	Adv. Tech.
Geoffrey Hind	Biology
Kelvin K. Li	Physics
Edward D. Platner	Physics
<b>25 Years</b>	
Barbara Boerjes	Sup. & Mat'l.
John Czachor	AGS
Theophilus A. Gray	Plant Eng.
H. Ronald Manning	Staff Services
James T. Muckerman	Chemistry
<b>20 Years</b>	
Thomas W. Burrows	Adv. Tech.
Joseph M. Carraba	Cent. Shops
Tzi-Shan Chou	NLSL
Mundrathi Divadeenam	Adv. Tech.
Theodore Ginsberg	Adv. Tech.
Ernest J. Jochen	Cent. Shops
C.R. Krishna	App. Science
Kelvin G. Lynn	Physics
Alan H. Rosenberg	Biology
Richard R. Ryder	Cent. Shops
Dorothy Scheffer	Fiscal
Richard B. Setlow	Dir. Off.
Nancy L. Sobrito-Menekoff	Pers.
Rosemary Taylor	Cent. Shops
Otto White Jr.	Saf. & Env. Prot.
<b>10 Years</b>	
Maged S. Atiya	Physics
Kevin A. Brown	AGS
Charles N. Flagg	App. Science
Joseph A. Harder	Instrum.
Richard A. Jones	Plant Eng.
Marguerite M. Marsch	App. Science
Mary E. White	Personnel
Alexander Zaltsman	AGS

## Arrivals & Departures

### Arrivals

Thomas B.W. Kirk ..... Dir. Off.

### Departures

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

Joseph F. Aloia	NLSL
John N. Aliberti	Ph. & Gr. Arts
Raymond R. Axmacher	Ph. & Gr. Arts
Leonard S. Bacelli	Plant Eng.
Harold C. Berry	Comp. & Comm.
Leroy N. Blumberg	NLSL
Charles Bohnenblusch	AGS
Henry G. Bornbusch	Plant Eng.
Bing C. Chan	Adv. Tech.
Johannes Claus	RHIC
Peter Colombo	Adv. Tech.
Mirek Fatyga	Physics
Michel Gonin	Physics
Samy M. Hanna	NLSL
Frank G. Heimburger	AGS
Ernest P. Heppner	AGS
Ivan Horvath	Physics
Martin Howard	Physics
Jing-Zhen Jin	App. Science
Theodore R. Johnson	Medical
Joseph Kats	AGS
Fred H. Kuehl	AGS
Jianming Li	App. Science
Melvin Lindner	RHIC
Nancy B. Mayeski	Plant Eng.
Raven B. McKenzie-Wilson	RHIC
Paul A. Michael	App. Science
Mordechai Montag	Physics
Gerry H. Morgan	RHIC
Tom Oversluizen	NLSL
Constantino J. Posillico	App. Science
Peter D. Raynor	Ph. & Gr. Arts
Richard C. Richardson	Instrum.
Albert M. Roberts	Physics
Alfred D. Roebuck	Physics
Eugene W. Rogers	RHIC
Morton Rosen	Ph. & Gr. Arts
Charles V. Seaton	Sup. & Mat'l.
Richard Skelton	Medical
Edward Skrzec	Staff Serv.
Herbert Susskind	Medical
Michael Tartakovsky	AGS
Frederick J. Usack	AGS
Philip H. Warner	AGS
Mary Wigger	Ph. & Gr. Arts
John A. Wilcenski	RHIC
Akihiro Yamashita	Physics
Ling Ye	Physics

## PSI Meeting

The next meeting of the Upton Chapter of Professional Secretaries International (PSI) will be held at Borders Book Shop on Sunrise Highway in Bohemia, on Tuesday, October 11, at 2 p.m.

Author Jacques Weisell will speak on "How to Accentuate the Pro in Professional Secretary."

## Indo-American Meeting

The BERA Indo-American Association will have its annual general meeting today, Friday, October 7, in Room D, Berkner Hall, from noon to 1 p.m. All present members and interested persons are invited to attend. For more information, call Anand Saxena, Ext. 4844; Ramesh Gupta, Ext. 4805; or Anant Moorthy, Ext. 7562.

## Bowling

### Red & Green League

A. Warkentien 246/205/639 scratch series, K. Koebel 244/625 scratch, R. Mulderig Sr. 226/208/204/638 scratch, R. Larsen 222, J. Goode 220, R. Raynis 219, J. Griffin 215/207/201/623 scratch, R. Eggert 214/204, F. Griswold 213, E. Sperry IV 212/209/200/621 scratch, R. Wiseman 211, H. Dawson 210, B. Giulano, 203, K. Riker 202/202, E. Larson 202, H. Arnessen 201, T. Prach 200.

### Purple/White League

J. Biamonte 201, E. Zukowski 190/175, D. Botts 187/181, L. Farmer 182/176, K. Batchelor 182, J. McCarthy 180, M. Addressi 179, M. Picinich 175, C. MacDougal 172, M. Yanez 171.

## Cafeteria Menu

### Monday, October 10

Soup: Chicken noodle	.90/1.20
A la Carte: Chicken w/lemon & basil	3.75
Fitness: Steamed halibut	3.95
Deli: Pastrami w/mustard	3.20
Grill: Reuben	3.30

### Tuesday, October 11

Soup: Vegetable	.90/1.20
A la Carte: Stir-fry beef & vegetable	3.85
Fitness: Baked fish & lemon sauce	3.95
Deli: Virginia ham	3.20
Grill: Lamb kabobs	3.30

### Wednesday, October 12

Soup: Spinach & rice	.90/1.20
A la Carte: Italian fish roll	3.95
Fitness: Pasta w/baby shrimp & herb oil	3.85
Deli: Roast beef	3.20
Grill: Monte Cristo	3.30

### Thursday, October 13

Soup: Beef & vegetable	.90/1.20
A la Carte: Sweet & sour pork	3.95
Fitness: Pasta primavera	3.65
Deli: Turkey	3.20
Grill: Philly cheesesteak	3.30

### Friday, October 14

Soup: Fish consomme	.90/1.20
A la Carte: Curried vegetable stew	3.50
Fitness: Baked fish w/lemon & mustard	3.95
Deli: Corned beef	3.20
Grill: Tuna melt	3.30

**Center Club**—Watch Monday Night Football, enjoy 25¢ Buffalo wings during first half . . . Dinner specials nightly, 5-8 p.m.

## Calling All Craftsmasters!

Craftsmasters — get weaving, crocheting, quilting, metalworking, knitting, sewing, macramé, woodworking — or whatever you do that will result in an exhibit for the upcoming 7th BERA Craft Show. Sponsored by the BERA Art Society, the show will be held at Berkner Hall from Wednesday to Friday, November 16-18, daily from 11:30 a.m. to 1:30 p.m., with an evening reception from 5 to 7:30 p.m. on Wednesday, November 16.

BNL employees, their family members 15 years and older, retirees and guests of BNL may all contribute. More than one piece may be entered by an exhibitor, to be shown as space permits.

Exhibits for the show will be collected on Tuesday, November 15. So that a catalog can be made, please complete two forms for each work that you will enter and return them no later than Wednesday, November 2, to Robert Chrien, Bldg. 510A. More forms are available at the BERA Store at Berkner Hall, and copies are acceptable.

## Entry for 7th BERA Craft Show, November 16-18, 1994.

Name \_\_\_\_\_ Phone \_\_\_\_\_

Craft \_\_\_\_\_

Space needed \_\_\_\_\_

Vertical or Horizontal, table or floor \_\_\_\_\_

BNL contact & phone \_\_\_\_\_

Return to Robert Chrien, Bldg. 510A, by November 2.

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

**See Supplement for Classified Ads and Placement Notices.**



