



George Rabinowitz (left) and Arnold Peskin look at the equipment that forms BNL's central hookup with NYSERNet.

## Onset of NYSERNet on Site

Any Victorian child, steeped in fairy tales, took for granted that behind the locked door in a turreted castle would lurk a powerful force mysteriously linked to worlds far beyond the normal horizon.

So any Victorian child on a visit to Bldg. 515 would feel at home. For deep in the Applied Mathematics Department (AMD), despite its real-life atmosphere and lack of turrets, a clear locked door guards a sleek array of equipment. By means of a slender cable, this equipment connects its users with incredible speed to an intricate network of information spread over state and continent.

In other words, NYSERNet is on line at Brookhaven.

An acronym for the New York State Education Research Network, NYSERNet is a statewide computer network linking BNL, 14 universities and several industrial laboratories.

Part of the initial impetus for the project was to give each of these centers direct access to the multimillion dollar supercomputer complex funded by the National Science Foundation (NSF) at Cornell University's Center for Theory and Simulation in Science and Engineering. In turn, the Cornell supercomputer is linked with four other NSF-funded supercomputers across the country, in California, Illinois, New Jersey and Pennsylvania.

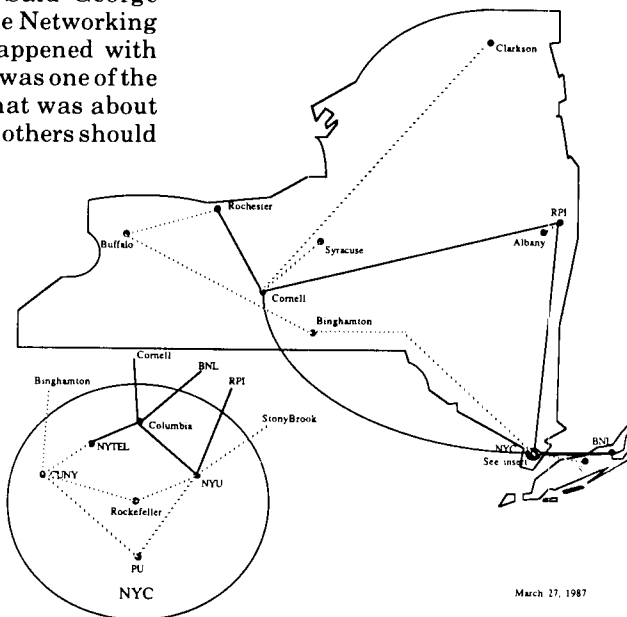
The immediate result of NYSERNet is to permit users access to electronic communication at 56,000 bits per second (bps), though eventually, this will reach 1.5 million bps, a speed at which the entire contents of the *Encyclopaedia Britannica* could be transmitted in five minutes.

As a result, a researcher has the prospect of unprecedented computing power — an office terminal that is tied in to mainframe computers capable of from 30 to 40 million calculations per second can now draw on the supercomputer achieving over 200 million calculations per second.

With NYSERNet, information travels over main trunk lines, which are connected by complex switches at each center, or local network. A local network — such as the one at BNL — can consist of a wide spectrum of systems. At BNL, for example, possible hookups to NYSERNet range from AMD's IBM 3090 computer to terminals at individual work stations.

The NYSERNet system was designed, installed and is being managed by New York Telephone and Rochester Telephone. Said George Rabinowitz, leader of the Networking Group of AMD, "It's happened with astonishing speed. BNL was one of the first to come on line. That was about eight weeks ago. But the others should

**Anatomy of NYSERNet. Solid lines link local networks that were already hooked up by March 27. Work is expected to be completed on all the others within about a month.**



## First Gamma Rays Seen At LEGS Beam Line

The first beam of gamma rays was seen at the Laser Electron Gamma Source (LEGS) at beam line X5 of the x-ray ring of the National Synchrotron Light Source (NSLS), on Thursday, May 21, at 10:35 a.m.

This is the first milestone in establishing LEGS as a medium energy, nuclear physics facility providing intense monochromatic and polarized gamma rays with energies up to 500 million electron volts (MeV). There is no other source of these gamma rays in the world.

The beam at present has a continuous spectrum of gamma rays up to 300 MeV, while the x-ray ring is running at low current for studies during a scheduled shutdown. The LEGS beam is produced by Compton backscattering of ultraviolet laser light from the electrons circulating in x-ray ring.

According to Physicist Andrew Sandorfi, the rate of gamma ray production by backscattering is consistent with what was predicted. To define the beam's energy, Sandorfi and his colleagues tagged electrons, which give up their energy in making gamma rays. Then by selecting the desired energy, the LEGS beam can be made monochromatic, or of one wavelength.

In addition to Sandorfi, David Dowell, Franco Giordano, Ottmar Kistner, Giovanni Matone and Craig Thorn are physicists on the LEGS project. They are assisted by Frederick Franz, Pierrick Hanlet, Aron Korostyshevsky and Anthony Kuczewski.

When LEGS begins operating in 1988, the first experiment planned at the X5 beam line is the measurement of the photodisintegration of deuterium, the lightest composite nucleus, using a polarized beam.

all be active within about a month. It's rare for such a complex proposal to be carried out so quickly."

Funding for NYSERNet, including hookup at BNL, came from the National Science Foundation, New York State, New York Telephone and Rochester Telephone. The project has immediate, direct advantages to each sponsor. There are jobs and technical advancement for the phone companies; easier and swifter communication for the state and business community; greatly widened research and consultation possibilities for scientists.

One advanced technological feat that NYSERNet expects will become

an everyday event is teleconferencing, whereby business meetings could be attended from different places, each group of participants seeing the "absent" members of the group on a screen. The same process would enable medical diagnoses to be made at distant hospital centers.

For the present, BNL users with the appropriate software are able to log on to a remote computer right from their offices. They gain access to immense data collections and calculation potential, a considerable convenience for many research projects. It is also a simple matter to send whole files to another center for consultation. Another capability of the network is electronic mail, which can be addressed to as many users as the sender requires.

And all this is available through the new array of equipment in AMD, property of New York Telephone, which is locked behind the clear door for security purposes.

"In fact," said Arnold Peskin, head of AMD's Networking, Engineering and Telecommunications Division, and BNL's representative on the NYSERNet Board, "many of the things we can do with it could be done by other methods — but so much more slowly. The speed of NYSERNet sets it apart as a valuable research facility. Soon we'll wonder how we did without it."

— Liz Seubert

Note: For further information about NYSERNet usage at the Lab, please contact Arnold Peskin, Ext. 4161.

## Reviewing Technical Support For IAEA Safeguards

You start it off at the keyboard — but after that, it's just by a touch on the screen that you choose exactly which video information will be displayed next on this new, extremely user-friendly learning tool. Enthusiastically received by the Department of Energy (DOE), the equipment is being demonstrated here by Jerry Cadwell (second, from left) of the Technical Support Organization in BNL's Department of Nuclear Energy, who had it developed at DOE's request.

The demonstration was held during the U.S./IAEA (International Atomic Energy Agency) Semi-Annual Review of Technical Support for IAEA Safeguards, held at Berkner Hall, May 18-21. Assessing the equipment's potential are Vienna-based members of the IAEA who attended the review. Pictured are (from left) Leslie Thorne, Cadwell, Juliette Watstein, Dmitry Tolchenkov, David Rundquist, Hiroyoshi Kurihara, Raymond Parsick and John McManus. Staff from the four agencies — State Department, DOE, Nuclear Regulatory Commission, and Arms Control and Disarmament Agency — forming the Technical Support Coordinating Committee in Washington, D.C., along with BNL's International Safeguards Project Office, represented the United States government at the review.



## Camp Upton Leftover

Building 906, the structure on the northeast corner of Cornell Avenue and Pennsylvania Street that houses the PETT VI, is getting a new addition. But work on that addition came to a temporary halt on Tuesday afternoon when one construction worker unearthed what turned out to be a training grenade used to instruct Camp Upton soldiers during World War II.

Though the training grenade was totally inoperative and perfectly safe, it looked and felt like the genuine article. So as soon as it was found, construction was stopped and the BNL Police Group was notified. In turn, BNL's police contacted the Suffolk County Police bomb squad. Cornell Avenue was cordoned off during the 30 minutes the bomb squad needed to confirm that the grenade was a training tool.

Finding such artifacts of the Lab's days as Camp Upton is not an uncommon occurrence and, so far, all such finds have turned out to be safe ones. Still, Gerald Kinne, Assistant Director for Reactor, Safety and Security, warns not to take anything for granted. Any potentially hazardous find should be reported to the Police Group immediately.

## Farmers' Market Opens Next Week

The Wednesday Farmers' Market at BNL will begin its sixth season on June 3. Farmers will truck their fruits, vegetables and floral products to the same spot as in previous years — north of the tennis courts in the parking lot along Brookhaven Avenue. The market, which is not open to the general public, will be held on site every Wednesday through November 25, from 11:30 a.m. to 1:30 p.m.



## Register for Dowling's On-Site Fall Courses

Four courses are being offered on site by Dowling College for the Fall 1987 semester. Registration for these courses will be held on June 15, 17, 23 and 25, at Berkner Hall, from 11:30 a.m. until 2 p.m. The four courses are:  
 ENG 041 — American Literature 1  
 BUS 111 — Managerial Economics  
 BUS 108 — Labor Relations  
 PSY 015 — Developmental Psychology

A counselor will be available on the registration dates to process registration forms and answer questions about Dowling's program offerings.

## Shopping Spree

Brookhaven Women in Science (WIS) is sponsoring a trip to several factory outlets in Reading, Pennsylvania. The spring shopping spree will take place on Saturday, June 20, and the cost of \$16.00 per person includes round trip transportation from BNL to Reading. The bus will leave from BNL at 5:30 a.m. and return here at 9 p.m. The deadline for reservations is June 1. For more information or to sign up, contact Mary Ann Castrogivanni, Ext. 3898, Bldg. 535A.

## Arrivals & Departures

### Arrivals

Vincent Stanziani ..... Accel. Dev.  
 Neville W. Williams ..... AGS

### Departures

This list includes all employees who have terminated from the Laboratory, including retirees:  
 Thomas A. Belz ..... Central Shops  
 Phyllis L. Strahm ..... P&GA

## For Iron-Rich Blood

At last December's BNL blood drive, many would-be blood donors were surprised that iron deficiency prevented their blood from being acceptable. So, if you'd like to give blood at BNL's summer blood drive, June 23-25, now is the time to start upgrading your iron intake.

Even if you don't plan to give blood, it is worth making sure your blood does not lack iron because of your diet. Records show that many American women are likely to have some degree of iron deficiency. Dieters are also vulnerable, as weight-loss diets are often low in iron. Well-balanced diets of about 1,800 calories should meet most needs, but some foods are richer in iron than others.

To absorb more of the iron in your foods, take a source of vitamin C along with them. The following foods contain varying amounts of extra iron: lean beef, dark turkey, pork chops, veal cutlet, calves' liver; lima beans, baked beans, black-eyed peas, split peas, asparagus, lettuce, lentils, spinach, swiss chard, canned vegetables; raisins, dried figs, fresh prunes; clams, canned oysters, steamed scallops, canned sardines (with bones); cashews, sunflower seeds and walnuts.

## BNL's Fabulous Forty

*The BNL we know today is the sum of thousands of events that have taken place here since 1947. This sampling shows the variety of events — from the monumental to the minor — that have occurred during the month of May, throughout the Lab's 40 year history.*

**May 1947** — Personnel assignments (about 25) in the Accelerator Project were divided among four machines then being considered: a 60-inch cyclotron, a 240-inch synchro-cyclotron, a Van de Graaff electrostatic generator and a proton-synchrotron.

**May 1, 1948** — Preparations were completed for high altitude flights later in May, for a Physics Department study of primary cosmic rays by means of balloon-borne cloud chambers.

**May 4, 1950** — the Hospital of the Medical Research Center was featured in a live, on-location, half-hour television show on NBC.

**May 5, 1951** — Approximately 1,000 people saw the recently completed magnet of the new Cosmotron, a highlight of BNL's Visitors' Day.

**May 20, 1952** — During Cosmotron commissioning, beam energy was increased to 1.3 billion electron volts (BeV), the first time that 1 BeV was exceeded in the laboratory.

**May 1, 1953** — BNL's scientific staff, including full-time visitors, totaled 299.

**May 7, 1956** — Seen in the Bulletin Board's classified ads: 2-year-old, 3 bedroom ranch, Bellport, \$16,400.

**May 14, 1957** — Bridge, poker, canasta, pinochle, chess and checkers were among the games to be played at the Laboratory Residents Association Spring Card Party.

**May 26 & 27, 1958** — BNL hosted 70 participants at a Conference on Bubble Chamber Scanning & Data Handling Devices.

## Partners in Progress

Department of Energy (DOE) contractors will reconfirm their commitment to the concept of equal employment opportunity (EEO) at a conference on June 10-12, to be hosted by BNL's Affirmative Action Office. "Partners in Progress" is the theme of the 1987 DOE/EEO Contractors Conference, which some 80 participants are expected to attend.

The conference, which will be held at the Sheraton Smithtown Hotel, will begin at 9 a.m. on Wednesday, June 10, with an introduction by Earl Blanton, BNL's Assistant to the Director for Affirmative Action, and a welcome from BNL Director Nicholas Samios. The morning will include talks and discussions about "Current Trends — An Update" and "American Indians in Science and Technology." These will be followed by a luncheon at which Rosalie Gaull Silber-

man, Vice Chairman of the EEO Commission, will be the keynote speaker. Afternoon workshops on "Wrongful Discharge" and "AIDS in the Workplace," will be followed by a buffet supper.

On Thursday, following morning panels on "Community Outreach Programs" and "Drugs in the Workplace," conference attendees will come to BNL for a Lab tour. In the evening they will enjoy a dinner cruise on the Great South Bay. "Legal Issues" will be discussed at the concluding session on Friday morning.

Registration fees for BNL employees are: luncheons, \$15 each; buffet dinner, \$10; dinner cruise, \$50. To register for all or part of the conference activities, or for more information, contact Frances Ligon, Ext. 3709.

## Losers & Quitters

At BNL, there are 35 losers and 22 quitters. The losers are those who have reached their goal weight through the on-site Weight Watchers program; the quitters are those who have stopped smoking as a result of the American Lung Association's Smoking Cessation Workshops held on site.

Several of these successful people have suggested that support groups should be formed so that they can continue to encourage each other. To find out if there is enough interest in such groups, Health Promotion Specialist Elaine Friedman has organized a meeting for Tuesday, June 2, at noon in Berkner Hall. All losers and quitters — including those employees and family members who have lost weight or quit smoking outside of the on-site programs — are welcome to attend. If you cannot attend this organizational meeting, but would like to participate in a support group, send your name, Lab address and extension to Friedman, Bldg. 490, by June 2.

## PSI News

The Upton Chapter of Professional Secretaries International (PSI) will celebrate its fifth anniversary with an Installation Dinner on Monday, June 15. The guest speaker will be Certified Professional Secretary Carolyn S. Hayes, Past International President of PSI. She will address the question, "What Makes You Think You Are a Professional?"

The 7 p.m. Installation Dinner at the Island Squire Restaurant in Middle Island will be preceded by a cash bar at 6 p.m. Tickets are \$17 each, and the ticket deadline is June 8. For more information, contact Deidre Seymore, Ext. 5037, or Patricia Towey, Ext. 3445.

## Payroll Note

Employees are reminded that, by filing new forms W-4 or W-4A before their next pay periods, they can avoid the possibility of paying penalties for underwithholding on their wage incomes.

$9 \times 10^{12}$  protons per pulse (p/p). (For comparison, the AGS began operation in 1960 at  $3 \times 10^{11}$  p/p; today, intensity has reached as high as  $1.89 \times 10^{13}$  p/p.)

**May 16, 1974** — The Physics Department's New Group celebrated the new operational status of the Flying Image Digitizer (FID), a device for reading films taken in bubble chambers.

**May 16-22, 1976** — About 35,000 people attended an Energy Fair and weekend open house held at BNL.

**May 17, 1977** — The Power Transmission Project reached its first milestone when its refrigeration system was cooled to 7 kelvins.

**May 18, 1979** — The Bulletin reported that the Alternate Liquid Fuel system, developed by BNL's Joe Rose, had saved the Lab \$1,430,000 in fuel costs since it went into operation in May 1977. (Now, savings are in excess of \$7 million.)

**May 11, 1981** — The first organizational meeting of the Afro-American Culture Club was held. The BERA club was formed to promote Afro-American cultural awareness, encourage intercultural exchange and help achieve a positive multi-ethnic work environment.

**May 29, 1981** — The establishment of the Employee Assistance Program was announced in the Bulletin.

**May 1, 1982** — Nicholas Samios became BNL Director.

**May 6, 1982** — The first beam of visible light emanated from port U14 of the vacuum ultraviolet ring of the National Synchrotron Light Source.

**May 20, 1983** — The Bulletin announced that Marilyn Gibbons was the first person to receive an award under the Employee Suggestion System.

**May 21, 1985** — The Danish House was dedicated at BNL.

**May 19, 1986** — An important milestone was reached for the Tandem/AGS Heavy Ion Project when an oxygen beam from the Tandem Van de Graaff Accelerator was captured in the AGS ring.

**May 17, 1960** — Beam was first introduced into the ring of the new Alternating Gradient Synchrotron (AGS); by May 26, the beam had been circulated through 100 turns.

**May 13, 1963** — BERA Bridge Club members Les Lawrence and Sanford Wagner won a trip to Paris for taking first place in the National Industrial Recreation Association Bridge Tournament.

**May 10, 1965** — AUI announced the winners of the AUI Trustee Scholarships, a newly established program. Ten children of BNL employees became eligible to receive \$900 a year, for up to four years.

**May 17, 1966** — The Chemistry Department hosted an open house. The staff was about 90% moved into its new building, 555.

**May 25, 1967** — The Bulletin Board reported that the Brookhaven Laboratory Auto, Sport and Touring Club, otherwise known as BLAST, was ready to start another season of rallies and time trials.

**May 7, 1968** — Dramatic and encouraging results of the L-Dopa treatment of Parkinson's disease were announced by a BNL Medical Department team under George Cotzias, at a meeting of the American Association of Physicians.

**May 22, 1969** — The Bulletin Board reported that disassembly of the Cosmotron was almost completed.

**May 27, 1970** — The Bulletin announced that BERA had approved a request to sponsor the newly organized Mixed Softball Program.

**May 25, 1973** — The AGS proton beam intensity reached a record level in excess of



League III's championship team was the Sourcerers. Shown here are: (front, from left) Gwyn Williams, Kathy Griffin, Carrie Grimshaw, Nancy Lazarz, (back, from left) Karen Archer, Erik Johnson, Mike Sagurton (captain), Alistair MacDowell and Reiko Hashizume. Not pictured: Sharon Zuhoski.



Top honors in League II went to the Cannonballs. On the team are: (bottom, from left) Kim Holschuh, Richard Garrett (captain), Nancy Lazarz, (center, from left) Eric Kneedler, Karen Archer, Steve Hulbert, (top, from left) Jean Jordan and John Dubendorff. Not pictured: Debbie Spikes.



## Volleyball Champs

—photos by Peter Horton

Phoenix, which came in first in the Open League, includes: (front, from left) Jim Roberts, John Usher, (back, from left) Sandi Litcher and Don Litcher. Not pictured: Bob Casey, Rich Davis, John Millener and Dennis Weygand (captain).



Upfagrabs was the winning team in League I. The team includes: (front, from left) Ron Webster, Barry Karlin (captain), Antoinette Russo, Jay Adams, (back, from left) Rong Li, Walt Reams, Jean Spears and Bill Kropp. Not pictured: Elke Braüer, Sandy Lane.

## Tennis

### Court Reservations

Two tennis court reservation systems will go into effect on Monday, June 8, (with sign-up on Friday, June 5). The rules for court use are posted at courtside and in the BERA Sales Office, Berkner Hall.

Under the **advance reservation system (A)**, three of the courts may be reserved for weekday play the day before play (thus Friday for Monday play). If two players are not on court within ten minutes of the reserved time, the court reservation is forfeited.

The **on-court scheduling system (B)** offers the three remaining courts on a first-come, first-served basis to players who sign the blackboard at courtside at the time of play.

Reservation sheets for system A are held at the BERA Sales Office from noon to 1 p.m. on the day preceding play. Reservation sheets for the day's play will be posted at courtside in the morning, where players may reserve any courts that remain open. Only group 1 from the priority players list below may use system A. Only groups 1 and 2 may use system B:

1. Laboratory employees (including

Visiting and Guest appointees and BNL retirees).

2. Laboratory employees playing with family members or personal guests.

3. Immediate family members of Laboratory employees.

4. Personal guests of Laboratory employees.

### Annual Tournament

The tournament will get under way on Saturday, July 18, and players can sign up at the BERA Sales Office beginning June 22. Further details will be given in a later issue of the Bulletin. All players are reminded that tournament play takes precedence the weekends of July 18 and July 25.

### Tennis Ladder

There will be no ladder play this year as a result of limited participation last year.

### Tennis Committee

Tennis Committee members are Nick Combatti, Eena-Mai Franz, Frank Kito, Marilyn McKeown, Ken Perkins, Niels Schumburg, Steve Shapiro, Paul Valli and Gail Williams (Chair).

## AACC Dinner Dance

The Afro-American Culture Club will hold its annual Installation/Dwight C. Brown Memorial Scholarship Award Dinner Dance on Saturday, June 6. The affair will be held in the Brookhaven Center from 7:30 p.m. to 2 a.m. The ticket price of \$25 includes a cocktail hour from 7:30 to 8:30, dinner, and music by The Mechanics. For ticket information, call Rosa Palmore, Ext. 2064, Bruce Penn, Ext. 7213, or Fran Ligon, Ext. 3709.

## Microcomputer Club

A demonstration of the Polaroid Palette, an inexpensive color slide/print device for the IBM PC, will be given Thursday, June 4. The meeting will be in the Biology Department library, Bldg. 463, from noon to 1 p.m. and will be presented by Computer Graphic Technologies.

## Golf

The third tournament of the BGA season will be held on Wednesday, June 10, at the Swan Lake Golf Club in Manorville. Tee times will begin at 11 a.m. and may be obtained by contacting John Connelly, Ext. 4639, Bldg. 452.

Entry fees are \$1 for BGA members, \$2 for non-members. Deadline for signing up for the tournament is noon on Monday, June 8. Greens fees are \$11.

Sixth-eight people played in the tournament at Timber Point. Low gross winners in flights A to E were Doug Sweely (81), Artie Dick (87), Bob Meier and Bill Sampson (96), Chang Park and Bob Sabatini (100), and See-Meng Wong (103). Winners for low net by flight were Dick Hildenbrand (72), Joe Bauernfeind (68), Jim Desmond (75), Joe Carbonaro (69), and Dennis Malloy (69). Tony Baltz and Dick Hildenbrand had the closest-to-pin shots. Doug Sweely and Mike Losquadro won the longest drive contests.

## Bowling

The Bowling Awards Party will be held Friday, June 12, at 5:15 at the Brookhaven Center. Tickets can be obtained from Maria Apelskog, Ext. 3138.

## Hospitality News

The next Hospitality Committee get-together will be on Tuesday, June 2, at 9:30 a.m. We will meet at the Brookhaven Center. However, we will leave the Center at 10 a.m. sharp and carpool to Berkner Hall. There, we will be joined by a member of the Public Affairs Office who will take us on a tour of the BNL Exhibit Center.

Please come and enjoy the morning with us. Spouses of Laboratory employees and guests are welcome. Bring the children; babysitting will be provided free of charge. Coffee, tea and danish will be served.

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

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