

## BNL Lecture: Some Exclusive Stories

From jousting knights to meteorites, when two things collide at high speed, some violent physical changes usually result. If, after the collision, the knights simply turned around and shook hands, or if the meteorites remained intact, it would be a very rare event.

Such rare events do occur in some particle collisions at the Alternating Gradient Synchrotron (AGS). Known as "exclusive reactions," these events will be the subject of the 235th Brookhaven Lecture, to be given by AGS Physicist Alan Carroll. His talk on "Follow That Quark!" and Other Exclusive Stories" will begin at 4:30 p.m., on Wednesday, June 17, in Berkner Hall.

Alan Carroll is involved with AGS Experiments 755, 785 and 834, all collaborations between BNL, the University of Minnesota and the Univer-

sity of Southeastern Massachusetts. E785 is a polarized proton study; E755 and E834 are studying exclusive reactions as a means of testing quantum chromodynamics, or QCD.

QCD describes the nature of quarks, which are considered to be the basic constituents of matter. This theory also explains how quarks are held together via the strong interaction in particles known collectively as hadrons. Hadrons that consist of three quarks are called baryons (protons are one example); hadrons made up of a quark and an antiquark are called mesons.

In his lecture, Carroll will introduce these terms before describing what happens when two hadrons collide. Usually what happens is that the violence of the collision causes the gluons that confine the quarks in the hadron to temporarily lose their grip. As the quarks scramble toward renewed unity with other quarks, their desired state, they undergo rearrangement, which results in additional new particles. In a few, very rare collisions, the same number of particles exist before and after the collisions, and an exclusive reaction has occurred.

Carroll will describe the experimental equipment that makes it possible to measure short distance, hard collisions at large angles. The collisions that Carroll will talk about are created when a known beam of pi or K mesons or of protons is collided with a stationary proton target.

Not only do the researchers know the ingoing particles, but they also know the "flavors" of the quarks inside the particles. In QCD, the flavor determines what kind of hadrons will be formed when the quarks combine



Alan Carroll stands outside of the building at the AGS that houses the equipment used for Experiments 755, 785 and 834.

— protons, neutrons or hyperons. Carroll will explain how the experimenters use flavor as a label to identify outgoing particles. By comparing ingoing and outgoing particles, the collaborators can determine which mechanisms are responsible for exclusive reactions.

Experiments on a few exclusive reactions were done in the early years of the AGS, but the development of QCD has led to a new interest in such hard collisions. Carroll will go through the historical developments that led to the present sequence of experiments. Finally, he will summarize what E755 and E834 have learned so far from the study of exclusive reactions and what light their findings shed on our understanding of QCD theory.

Alan Carroll received his Ph.D. in physics from Harvard University in 1963. At Harvard, he was a National

Science Foundation Predoctoral Fellow from 1958 to 1962. Today, he is a member of the American Physical Society.

From 1963 to 1965, Carroll was a Senior Scientific Officer at the Rutherford High Energy Laboratory in England. He came to Brookhaven in 1965 as a Physicist in the Physics Department, moving to the Accelerator Department (now the AGS Department) in 1965.

In addition to his experiments on exclusive reactions, Carroll has had a major responsibility for assisting universities with their research at the AGS. Last February, he chaired the Neutrino Workshop held at BNL.

All those interested in getting together after the lecture are invited to go with the lecturer to a restaurant off site. Anyone who would like to be part of this group should call Gerry Bunce, Ext. 4771.

### BNL Lectures Now Available

A number of recent Brookhaven Lectures are now being readied for publication. Two lectures that have recently been published and are now available from the authors are:

- "Probabilistic Risk Assessment," by Robert Bari, Department of Nuclear Energy. Request BNL-51976 by calling Ext. 2629.
- "Using the Light Fantastic," by Gwyn Williams, National Synchrotron Light Source Department. Request BNL-51988 by calling Ext. 7529.

## David Moncton Wins Lawrence Award

Condensed matter physicist David Moncton, who heads the Exxon Corporation's synchrotron radiation program at BNL's National Synchrotron Light Source (NSLS) and who has been associated with BNL for over a decade, has been selected as one of six recipients of the Department of Energy's (DOE) Ernest Orlando Lawrence Memorial Awards for 1987.

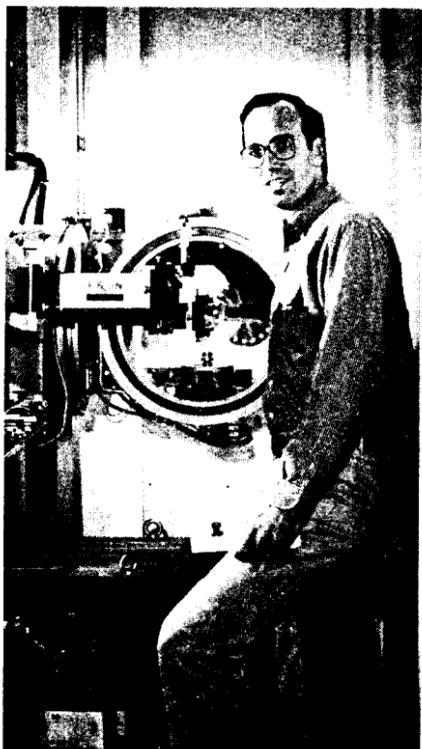
The award that Moncton will receive from Energy Secretary John Herrington at a July 30 ceremony in Washington, D.C., includes a gold medal, \$10,000 and a citation "for the development of high resolution synchrotron x-ray scattering techniques and their applications to diverse materials systems."

Lawrence Awards are given to U.S. citizens who are relatively early in their careers and who have made recent, meritorious contributions to the development, use or control of atomic energy, in any related area of science. Established in 1959, the award honors the memory of Ernest Orlando Lawrence, the inventor of the cyclotron and the founder of the laboratories at Berkeley and Livermore, California, which bear his name.

In addition to Moncton, who is currently associated with Argonne National Laboratory (ANL), the 1987 recipients are James Gordon, Los Alamos National Laboratory; Miklos Gyulassy, Lawrence Berkeley Laboratory (LBL); Sung-Hou Kim, LBL and the University of California, Berkeley; James Kinsey, Massachusetts

Institute of Technology; and J. Robert Merriman, Oak Ridge National Laboratory.

When used at high-intensity, synchrotron radiation sources such as the NSLS, Moncton's high resolution



David Moncton demonstrates one of the vertically oriented diffractometers now being used for an Exxon Corporation experiment at the National Synchrotron Light Source.

techniques enable researchers to distinguish phenomena otherwise difficult to observe. Examples of applications in his own research include studies of phase transitions in two-dimensional systems, magnetic x-ray scattering and, most recently, the attempt, together with Jerome Hastings of the NSLS, to resolve subtle x-ray energy changes, which provide information on collective excitations in solids.

In 1973, when he began neutron diffraction experiments at BNL's High Flux Beam Reactor (HFBR) for his thesis, Moncton started using instruments called diffractometers. For neutron beams, diffractometers have always been aligned in a horizontal plane. To take advantage of the flat, narrowly collimated, synchrotron radiation beam, however, Moncton and his colleague Peter Eisenberger realized that the diffractometer should be in a vertical plane. Today, a visitor to a synchrotron radiation source encounters such a diffractometer every few steps.

Moncton says that his HFBR neutron training influenced his work with synchrotron radiation. "I learned about the importance of high resolution from [BNL Senior Physicists] Gen Shirane and John Axe," Moncton said. "A lot of the ideas and motivation for what we did with synchrotron radiation came from the exciting time I had here doing neutron experiments."

He began experimenting with syn-

(Continued on page 2)

## Patent Awarded

Thomas Botts, former BNL employee, and James Powell, Department of Nuclear Energy, were awarded U.S. Patent No. 4,643,809 for inventing a process that gasifies coal electrochemically at room temperatures, yielding essentially pure forms of hydrogen and carbon dioxide.

Previously, coal has only been gasified at temperatures of 1,000°C or more, and the gases produced have been contaminated with nitrogen, hydrogen sulfide or a carbon sulfide. These limitations prevented large-scale commercial development.

In the new process, hard or soft coal particulates and a suitable slurry liquid are combined in a flowing stream. Several electrodes and an electrolyte are introduced and kept in an electrically conducting relationship with the stream of slurry.

This establishes a magnetic field that polarizes the electrodes, causing an electrochemical reaction that reduces the coal in the slurry. The reduction produces hydrogen and carbon dioxide gases, which are collected at opposite ends of the electrodes.

At the same time, the electrodes themselves are free to rotate. This, combined with the flowing action of the slurry, ensures that blocking or poisoning gases are scrubbed away so that the hydrogen and carbon dioxide produced are uncontaminated.

With the costs of maintaining very high temperatures and separating or filtering out contaminants eliminated, this new electrochemical process allows economically feasible large-scale gasification of coal.

## Speakers Bureau

Eleanor Grist, Myron Ledbetter (Bio.), 22nd Annual Science Fair at Shelter Island High School, Science Fair Judges, January 9.

Garman Harbottle (Chem.), Gelinas Junior High School 7th Grade Science Fair, Science Fair Judge, January 28.

Mona Rowe (DO), Rotary Club of Riverhead, "BNL General," February 11.

John Rothmann (Med.), Town of Islip Senior Citizens, "Osteoporosis: Health and Nutrition," February 27.

Marsha Belford (DO); Jannifer Hill (Occ. Med. Clinic); Joyce Tichler (DAS), National Women's History Week at Patchogue Medford High School, "Careers for Women in Science," March 3.

Theodore Robinson (Phys.), State University of New York (SUNY) at Stony Brook Step Program at Suffolk County Community College, "Careers in Engineering," March 7.

Erik Johnson (NSLS), Center Moriches Elementary School, "BNL General," March 24.

Donald Gardner (Phys.), Career Awareness Exploring Program at Suffolk Lutheran High School, "Careers in Engineering," March 27.

Martha Heine (Med.), Experience Day at Wantagh Elementary School, "Careers in Science," April 8.

Robert Baldwin (Reactor); Douglas Hill (DAS); Payman Mortazavi (NSLS), SUNY at Stony Brook Career Day, "Careers in Engineering at BNL," April 9.

Meyer Steinberg (DAS), Suffolk County Science Explorations at Suffolk County Community College, "Applied Science: How to Solve the World's Problems by Turning Gold into Lead," May 18.

Sara Dawson (Phys.), Suffolk County Science Explorations at Suffolk County Community College, "Quarks and Leptons: The Wonderful World of High Energy Physics," May 18.

Stephen Barr (Phys.), Nassau County Science Explorations at Hofstra University, "Elementary Particles," May 19.

## An Exercise In Balloon Spotting

Watching your weight can win you a prize — if you are like William Fritz, Accelerator Development Department, who watches other things at the same time.

Just over a month ago, Fritz, a member of the Weight Watchers group on site, was on his two-mile, lunchtime walk around the ring by the Collider Center, when he noticed a pale beige label fluttering on the ground. He picked it up and found that it was attached to a burst balloon that had been launched by Tashan Pelzer, a second grader at an elementary school in Edison, New Jersey. A message printed on the label asked that it be returned with details of the place and time of finding.

Fritz turned the balloon over to Public Relations to send back to Tashan with a map, aerial photo and information on the Lab, as well as some small souvenirs from the Science Store.

And where does the weight-watching prize come in? Well, if Tashan's balloon turns out to be the one that is returned from the greatest distance, it will be Fritz's two-mile constitutional that causes him to win the prize from the James Monroe School Parent-Teacher Association!

## Correction

The first spectrum of a monochromatic beam was recorded at the Laser Electron Gamma Source (LEGS) at the National Synchrotron Light Source on Wednesday, May 27, not June 28 as reported in last week's Bulletin.

## Tick Talk

The warm weather has arrived on Long Island and so have the ticks — beware of them in the woods, high grass and brush. Ticks are a problem in Suffolk County during the spring, summer and fall. Though most tick bites are harmless, some can result in Lyme Disease or Rocky Mountain Spotted Fever.

The tick has eight legs, a flat abdomen attached to a small head and a hard, shell-like skin. During three



Magnified 60 times, an adult tick of the species *Ixodes dammini*, which is responsible for the transmission of Lyme Disease.

stages in a tick's life, it feeds on the blood of warm-blooded animals, including people, by attaching itself to the animal's skin with its mouth. As it feeds, the tick becomes engorged with blood and can become the size of a small grape before dropping off.

Before a tick bites, however, it will crawl about on a person for up to three hours. To remove it, use blunt tweezers. If the tick has bitten, use the blunt tweezers to grasp the tick at the point of attachment and pull straight out. Do not grasp the tick's abdomen

or leave its mouth parts in the skin. Do not squash the tick; burn it by holding it in the tweezers over a match flame. Then dispose of it in the garbage or toilet.

Wash the skin where the tick was attached and wipe the skin with alcohol or hydrogen peroxide. Then wash your hands and the tweezers thoroughly.

As hundreds of thousands of people in Suffolk County are bitten by ticks, but only about 100 cases of Lyme Disease and some 20 cases of Rocky Mountain Spotted Fever occur each year, testing ticks found on people is not practical. "A small percentage of ticks are carriers of these diseases, and even if a tick that has bitten you is infected, that doesn't mean that you are infected," explains Physician Martin Mayer, Deputy Director of Public Health, Suffolk County Department of Health Services.

However, if rash, fever, chills, headache, stiff neck, muscular pain, general malaise or enlarged lymph nodes arise after a tick bite, see a physician. Prompt and appropriate antibiotic treatment usually prevents the progression of the tick-transmitted diseases.

To try to avoid ticks, when going into wooded and brushy areas, wear a light-colored, long-sleeved shirt tucked into full-length pants, high socks and boots. As an additional preventive, some insect repellents are labeled as effective against ticks. When checking your body for ticks, pay especial attention to the scalp and external ear.

More information regarding the tick-borne diseases common on Long Island is available at the Occupational Medicine Clinic. In addition, Health Promotion Specialist Elaine Friedman is planning a seminar on Lyme Disease on July 7.

## Tour Guides Gather for Luncheon



Mort Rosen

BNL's volunteer tour guides escort college and professional groups on tours of the Lab during the work week. On May 21, these men and women were the guests of honor at the annual luncheon held to thank them for their assistance. Pictured are: (front, from left) Graham Smith, Victor Gonzalez, Lucy Sanchez, Arlene Clay, Juanita Heyliger, Elaine Lowenstein (Tour Program), Tom Dickinson, Janet Tempel (Tour Program), Peter Kohut, Sue Montealone, George Taylor, Janice Lamb, (back, from left) Garfield Hawthorne, Betty Pergan, Don David, Vinnie LoDestro, Andy Feldman, David Comstock, Rick Jackimowicz, Frances Scheffel, Thelma Dawson, Ron Clipperton, Janet Sillas, Evelyn Ritter, Audrey Bangel, Elaine Zukowski and Jean Stafford. Missing from the picture are: Mark Culp, Jackie Larrie, Vincent Lettieri, Elizabeth Mogavero, Payman Mortazavi, Rich Sautkulis and Lucien Wielopolski. If you are interested in becoming a volunteer tour guide, contact the Tour Program, Ext. 4049.

## BNL's Fabulous Forty

The predecessors of today's volunteer tour guides were four women who worked in the Personnel Department in the late 1960's: (from left) Mary Weisen (now retiree Mary Austin), Charlotte von Knoblauch (now retiree Charlotte Schuette), Catherine Tierney (now with the Department of Applied Science) and Beatrice Kohler (now former employee Beatrice Brownell).

They are shown here with Assistant Personnel Manager Peter Paige (now retired), on a trip to Connecticut General Life Insurance Company (CG) in Hartford, which administers the Lab's insurance plans. The trip served a dual purpose: The group was able to see how insurance claims are handled on the other side of the Long Island Sound, and, on a guided tour of CG, the women got a few firsthand tips on guiding from CG guide Jerry Soule (left).



## Inside Info

At its commencement exercises on May 22, Southampton College honored Jeffrey Coderre, an Associate Scientist in BNL's Medical Department, as its Distinguished Alumnus of the year. Coderre, whose field is experimental radiotherapy and who is studying the efficacy of neutron capture therapy for melanoma, was graduated from Southampton in 1975 with two Bachelor of Science degrees. After matriculating in 1971, Coderre completed two majors: one in chemistry, another in marine science. He was presented with a silver wine cooler as the Distinguished Alumnus Award.

After college, he spent one year at the University of Iceland on a Fulbright Scholarship. From 1976 to 1981, he was a graduate student in chemistry at Yale University, which granted him a Ph.D. After a three-year post doc at the University of California at San Francisco, Coderre came to BNL in July 1984.

## Moncton

(cont'd)

chrotron radiation in the late 70's, at the Stanford Synchrotron Radiation Laboratory (SSRL), as a member of the technical staff of Bell Laboratories. After coming to BNL in 1982 to head the X-Ray Scattering Group in the Physics Department, he continued his research at SSRL and prepared for experiments now on line at the NSLS.

In 1985, Moncton joined the staff of the Exxon Corporation, though he remains a Guest Physicist at BNL. This year, he is also acting as an Associate Director of ANL, in charge of developing the 7 GeV Advanced Photon Source expected to be built there in a few years.

Moncton says his Lawrence Award-winning work was made possible by the network of national DOE laboratories. "They allow research that couldn't be done in any one place," he explained. "Each instrument has its own role to play. Together they are complementary, a series of stepping stones that allow you to get to a goal."

## Fabulous Forty Footnote

On May 22, the Fabulous Forty recounted the efforts of many BNL'ers during the rescue of seven-year-old Benny Hooper, who fell in a well 30 years ago. One retiree who was not mentioned, however, was Edwin Szczepanik, the first crane operator on the scene. On May 16, 1957, he worked for a heavy equipment firm. He arrived at the Manorville site with his crane at 8 p.m., about one half hour after the boy fell in the well, and stayed till relief came, near dawn the next day. Five years later, in 1962, he came to BNL, retiring in 1981 as a Heavy Equipment Maintenance Supervisor in Plant Engineering.

## Giving Blood — A Gift for All Reasons

You can give a much easier gift than this — give blood!



Shopping for gifts is an exhausting business, and it may take quite a time before your bank balance is restored. Blood donors, however, experience no tiring aftereffects, and they replenish their one pint within 24 hours. There are no exchanges, either! You get the satisfaction of knowing that the pint given means life or better health to up to five different people.

The BNL Blood Drive makes giving the gift even easier — just sign up for a time between 10 a.m. and 3 p.m. during June 21, 22 or 23, when you'll go down to the gym to join the many other concerned donors. Remember that an iron-rich diet from now on will help ensure that your blood has sufficient red cells. A trained nursing staff will take care of you — and you will be taking care of Long Islanders' desperate need for more blood.

More information can be obtained from your departmental Blood Drive Captain, or Susan Foster, Blood Drive Chair, Ext. 5126.

## Losers & Quitters

An employees' support group has been formed among the losers and quitters at the Lab — those who have lost weight or have quit smoking, either through BNL-sponsored Health Promotion activities or on their own. The group will meet on the first and third Tuesday of every month, from noon to 1 p.m., beginning Tuesday, June 16. The first meeting will take place in the Berkner Hall lobby; the meetings on July 7 and 21, and on August 4 and 18 will occur in Room A, Berkner Hall. For further information, call Dorry Tooker, Ext. 2103.

## Register for Dowling's Fall Courses on Site

Registration for on-site Dowling College courses will be held on June 15, 17, 23 and 25, at Berkner Hall, from 11:30 a.m. until 2 p.m. The following courses are being offered for the Fall 1987 semester:

- ENG 041 - American Literature I
- BUS 111 - Managerial Economics
- BUS 108 - Labor Relations
- PSY 015 - Developmental Psychology

A counselor will be on hand on those dates to process registrations and answer questions about Dowling's program offerings.

## WIS Cocktail Party

The eighth annual cocktail party of Brookhaven Women in Science (WIS) will be held on the patio of the Brookhaven Center on Thursday, June 18, from 5 to 8 p.m. Hot and cold hors d'oeuvres will be served, and there will be a cash bar.

The party is open to non-members, as well as to WIS members. Reservations are requested and may be made by sending a check for \$5 per person, payable to Brookhaven WIS, to Ellen Gannon-Weider, Bldg. 535A, by Tuesday, June 16. Please include a note with your name and those of any guests you are bringing.

## BROOKHAVEN BULLETIN

Published weekly by the Public Affairs Office for the employees of BROOKHAVEN NATIONAL LABORATORY

ANITA COHEN, Editor  
MARSHA BELFORD, Assistant Editor  
LIZ SEUBERT, Reporter

35 Brookhaven Ave., Upton, N.Y. 11973  
(516)282-2345

## Cafeteria Menu

Week of June 15

|  |  |
|--|--|
| <b>Monday, June 15</b>                               |  |
| Chicken noodle soup                                  | (cup) .75<br>(bowl) .95                    |
| Veal Madeline w/1 veg.                               | 2.85                                       |
| London broil w/1 veg.                                | 2.95                                       |
| Hot vegetable plate (lite-weight)                    | 2.20                                       |
| Hot deli: Roast beef                                 | (bread) 2.45<br>(roll) 2.55<br>(hero) 2.65 |
| <b>Tuesday, June 16</b>                              |  |
| U.S. Senate bean soup                                | (cup) .75<br>(bowl) .95                    |
| Scalloped ham & potatoes w/1 veg.                    | 2.75                                       |
| Broiled fish w/lemon butter & 1 veg.                 | 2.95                                       |
| Hot deli: Grilled Reuben                             | 2.45                                       |
| <b>Wednesday, June 17</b>                            |  |
| Turkey rice soup                                     | (cup) .75<br>(bowl) .95                    |
| Baked pork chop w/1 veg.                             | 2.95                                       |
| Cheddar & broccoli quiche w/1 veg. (lite-weight)     | 2.85                                       |
| Hot deli: Turkey garden club                         | 2.65                                       |
| <b>Thursday, June 18</b>                             |  |
| Split pea soup                                       | (cup) .75<br>(bowl) .95                    |
| Vegetarian lasagna w/diet garlic bread (lite-weight) | 2.85                                       |
| Beef stew w/biscuit                                  | 2.85                                       |
| Antipasto assortment (on the ice table)              | 2.25                                       |
| Hot deli: Baked ham                                  | (bread) 2.45<br>(roll) 2.55<br>(hero) 2.65 |
| <b>Friday, June 19</b>                               |  |
| Manhattan clam chowder                               | (cup) .75<br>(bowl) .95                    |
| Broiled fish w/1 veg.                                | 2.95                                       |
| Fried clams w/1 veg.                                 | 2.95                                       |
| Macaroni & cheese w/1 veg.                           | 2.75                                       |
| Hot deli: Hot pastrami                               | (bread) 2.45<br>(roll) 2.55<br>(hero) 2.65 |

## BERA News

### Children's Summer Recreation Program Features Swimming and Tennis

#### Swimming Classes

**Planned Program:** Each child will be scheduled for one lesson each week for a total of eight lessons. American Red Cross certificates will be awarded to children who qualify.

**Time:** Monday through Friday, 2 to 3:30 p.m.

**Fee:** \$17 for each child upon registration; plus \$1.50 daily admission fee or present season ticket.

**Participants:** Children of all Laboratory employees. For the safety of the children, a minimum height of 48" is required.

**Registration:** Applications may be picked up at the Recreation Office between the hours of 8:30 a.m. and 5 p.m.; the BERA Store in Berkner Hall between 9 a.m. and 2 p.m.; and the

swimming pool during scheduled hours. Mail or deliver applications with registration fees (checks payable to BERA) to the Recreation Office, Bldg. 185, no later than Friday, June 26.

#### Tennis Program

**Planned Activity:** Basic tennis instruction.

**Time:** Monday through Thursday, 3 to 4 p.m.

**Participants:** Children of all Laboratory employees.

**Fee:** Although no fee or registration is required, children will provide their own rackets and balls, and will be asked to pay a \$2 entrance fee if they wish to play in the end-of-season tournament.

### Cricket Club

The International Cricket Club's season will get under way with practices scheduled for two consecutive Fridays, June 12 and 19, at 5:15 p.m. on the Recreation Field. The first match will be at home against the Staten Island Cricket Club on Saturday, June 20, at 1:30 p.m. For further details, call Dave Cox, Ext. 3818, or John Millener, Ext. 3853.

### Softball

Week of June 1

|                            |                      |
|----------------------------|----------------------|
| <b>League I</b>            |                      |
| Six Pax                    | 15 - Magnuts 13      |
| BNL Bandits                | 10 - Sudden Impact 6 |
| <b>League II</b>           |                      |
| Dirty Sox                  | 4 - AMD 3            |
| Cutting Edge               | 10 - Medical 9       |
| <b>League III</b>          |                      |
| Mole-Esters                | 13 - Septembers 12   |
| Survivors won - Kidz-R-U's | lost                 |
| <b>League IV</b>           |                      |
| Spacekadets                | 17 - No Feedback 9   |
| Simply Awesome             | 17 - Turkeys 3       |

### Arrivals & Departures

#### Arrivals

Ann Marie Bergman ..... Biology  
Edward N. Lazo ..... S&EP  
Albert Liotta ..... Plant Eng.  
Alan A. Morgillo ..... Accel. Dev.  
Luis A. Oquendo ..... Central Shops  
Celso Ponce ..... Plant Eng.  
Guo-Xin Qian ..... Physics  
Alessandro G. Ruggiero ... Accel. Dev.

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

#### Departures

Sven-Johan V. Heselius ... Chemistry

### Rifle & Pistol Club

The BNL Rifle and Pistol Club does trapshooting every Tuesday evening at 5 p.m. Anyone interested in shotgun shooting is welcome. No experience is necessary; NRA instructors are usually present. Call Bill Dalton, Ext. 4428, or Otto Jacobi, Ext. 3471.

### Nursery School

The Upton Nursery School is now accepting applications from Lab employees who wish to enroll their three- and four-year-old children for the 1987-88 school year. For more information, call Marietta Veligdan, 874-3447.

### Tennis

The annual tournament consisting of five events (mixed, men's and women's singles, men's and women's doubles) will begin the weekend of July 18. On this weekend and that of July 25, the tournament will take priority over all other play. Players may sign up at the BERA Sales Office from June 15 through July 7. The draw will be posted by July 9 at the Sales Office and courtside. Competitors are encouraged to play first-round matches as soon as the draw is posted.

The tournament is open to Lab employees and spouses, and the entry fee is \$2 per person, per event, payable at sign-up. Those interested in playing doubles but who are without partners, should sign up anyway. The Tennis Committee will try to find partners.

### From Army Camp to College Campus



Robert Terwilliger of Plant Engineering celebrated his 25th year at BNL in May. But when Terwilliger received the February issue of his alumni magazine from Syracuse University, he realized that his association with the Lab site may have begun much earlier. When Terwilliger attended Syracuse, from 1947 to 1951, he lived in a barracks camp on East Colvin Street known as Col-

lendale, which had sprung up primarily to house the huge influx of veterans that nearly tripled the University's enrollment after World War II. In reading an article in *Syracuse University Magazine* about this era in the campus's history, Terwilliger was not surprised to see this photo of the barracks. But he was surprised to read that they had been "shipped in from Camp Upton."

## Classified Advertisements

### Placement Notices

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

Each week, the Personnel Office lists new personnel placement requisitions. The purpose of these listings is, first, to provide open placement information on all non-scientific staff positions; second, to give employees an opportunity to request consideration for themselves through Personnel; and, finally, for general recruiting purposes. Because of the priority preference policy stated above, each listing does not necessarily represent an opportunity for all candidates. As a guide to readers, the listings are grouped according to the anticipated area of recruitment.

Except when operational needs require otherwise, positions will remain open for one week following publication date.

For further information regarding a placement listing, contact the Employment Manager, Ext. 2882.

**LABORATORY RECRUITMENT** - Opportunities for Laboratory employees only.

2617. ACCOUNTING POSITION - Requires bachelor's degree in accounting/business administration, or equivalent professional experience, and a minimum of 5 years' accounting background. Excellent communication skills, knowledge of BNL procedures and documents, and experience utilizing spreadsheet software on a PC is necessary. Physics Department.

**OPEN RECRUITMENT** - Opportunities for Laboratory employees and outside applicants.

2618. P&GA SPECIALIST - Requires a minimum of two years' experience in the operation of the AM Varityper Comp/Edit 5810 phototypesetter and its associated equipment. Familiarity with scientific and tabular typesetting required. Must possess good "paste-up," proofreading and English skills. Photography and Graphic Arts Division.

2619. TECHNICAL POSITION (3 positions) - Requires an AAS degree in electronic technology or equivalent. Responsibilities include testing of ferrites for high power rf cavities, construction of power amplifiers and rf system troubleshooting. Experience in fabrication and debugging of analog and digital circuits, instrumentation and multikilowatt power supplies desirable. Accelerator Development Department.

### Autos & Auto Supplies

77 BMW 530i - 4 dr., standard, \$4,000. 821-0686.

77 DODGE ASPEN - 4 dr. sedan, yellow, 80k mi., new exhaust, very reliable, orig. owner, \$800. 751-6139.

79 PONTIAC LEMANS - a/c, a/t, am/fm, 94k mi., runs well, good cond. Ext. 3780 or 331-4538.

TRANSMISSION - 68 Plymouth, 6 cyl., Torque Flite, rebuilt, \$25. never used. Ext. 4597 or 924-8213.

VW FLARE FENDERS - misc parts, 56 motor w/work stand, \$300; tires, (4) A78-13 Sears, (2) 7.35-14 Snow Riverside, \$3./each. John, Ext. 4761.

FORD TRUCK TIRES - 10.5LT/15, mounted on 15x7" 5-lug white sport rims. Ext. 2075 or 473-4937 after 6 p.m.

71 PLYMOUTH DUSTER - reliable, runs well, needs tune-up, brakes, asking, \$350. 654-0407 eves.

77 TREK CAMPER - 10 1/2' slide-on, sleeps 5, fully self contained, \$1,800. neg. Kevin, Ext. 2350.

77 PONTIAC FIREBIRD - p/s, p/b, V-6, gold/tan, good cond., am/fm cass. 331-6284.

82 JEEP CJ-7 LIMITED - 2 tops, a/t, cruise, p/s, p/b, many extras, \$6,600. 744-7577.

50 FORD PICKUP - restored in 1982, collision damage, \$1,400; 75 BMW motorcycle R-90, 900cc, v.g. cond., \$2,000. Roger, Ext. 4677 or 878-8847.

REAR SEAT - Blazer/Van type, non-folding, \$25. Bill, Ext. 2807 or Beeper 923.

81 CHEVY CITATION - 4 dr., stick shift, dark green, good cond. 475-7272 after 6 p.m.

81 MUSTANG - 4 cyl., 4 spd., 3 dr., hatchback, new tires, v.g. cond., 100k mi., orig. owner, \$1,100; Murray/Puch Moped, 250 mi., \$150. Bill, Ext. 3199.

84 DODGE ARIES - 4 dr., p/s, auto, a/c, am/fm. 40k mi., runs very well, reliable, \$3,900 or best offer. 981-7715.

78 MALIBU WAGON - V6, a/t, p/s, cassette, \$600. Ext. 2627.

73 CHEVY IMPALA 350 - p/s, p/b, a/t, \$250 firm. Ext. 4024.

79 PINTO - hatchback, p/s, p/b, a/c, am/fm cass., interior very clean, runs well, \$1,395. 821-0758.

75 CHEVY MALIBU - poor body, very good running cond., 137k mi., must sell, \$200. Ext. 2229 or 3220.

RIMS - (2), 15", 5 hole on 8" B.C.; (2), 15", 5 hole on 4 1/2" B.C., 2 3/4 hole, \$1/each. John, Ext. 4761.

WEST COAST CHROME MIRRORS - & frames, off Ford truck. Ext. 2075 or 473-4937 after 6 p.m.

81 HONDA CM400A - auto., windshield, low miles, excel. cond., \$800. Dick, Ext. 3273.

84 FIREBIRD - new tires, exhaust, V6, a/t, a/c, \$7,200. neg. John, 588-7594.

77 CHEVY NOVA - 6 cyl., stick, good cond., reliable. \$600. Ext. 4605 or 281-5456 eves.

83 YAMAHA VIRAGO - 750, black, mint cond., garaged, asking \$2,000. neg. Charles, Ext. 7749.

84 SUBARU - 5 spd., 4 cyl., excel. cond., \$6,000. neg. JoAnn, Ext. 4120 or 588-8492.

77 TOYOTA COROLLA - good mechanical cond., new brakes, reliable, \$250. 744-5096.

79 FIAT SPIDER - convertible, 49k mi., body & engine excel. cond., mag. wheels, \$2,750. Torsten, Ext. 3817 or 878-1210.

76 DATSUN B-210 - a/c, a/t, rebuilt engine, \$250. Al, Ext. 4636 or 231-4613 after 5 p.m.

74 FORD PINTO - \$250; 78 Volkswagon Dasher, high mileage, asking \$700. Mary, 288-9086.

78 HONDA CIVIC - 88k mi., runs or for parts, new exhaust, brakes & carburetor, \$300. Ext. 7183.

78 PLYMOUTH HORIZON - 4 spd., rebuilt engine, new tires, \$750. Ext. 4597 or 924-8213.

76 OLDS TORONADO - full power, a/c, \$175. Frank, Ext. 3976 or 399-1307.

TIRES - (2), Dunlop gold, steel belted, P215/75B15, 15k mi., like new, \$50; (2), 15" Volvo rims, excel. cond., \$20. Ext. 3369 or 929-6442.

80 SUZUKI GS1000S - limited edition, excel. cond., extras, must sell, \$1,500. 325-1287 after 5 p.m.

70-72 DUSTER DEMON DOORS - \$20/each; 70-76 windshield, \$20; 65 Ford Mustang, 6 cyl., 200 c.u. short block, needs rebuilding, \$50. 727-3608.

86 BUICK REGAL - limited, V8, fully loaded, mint cond., many extras, 8k mi. Carol, Ext. 7215 or 472-3332 after 6 p.m.

80 CHEVY CITATION - 2 dr., 4 cyl., a/t, p/b, p/s, a/c, am/fm, \$1,200. neg; Sears top rack, like new, \$15. Akos, Ext. 4973 or 3170, 10 a.m.-5 p.m.

82 CHEVY CITATION - a/t, 4 dr., hatchback, p/s, 67k mi., 30 mpg, excel. running cond., clean in/out, \$2,875. 286-3211.

72 CHEVY ENGINE - 350 2-bolt main w/head, completely rebuilt, extras, \$725. Ken, 473-7460.

72 OLDS DELTA 88 ROYALE - 2 dr., p/s, p/b, excel. running cond. 941-4328.

80 MERC BOBCAT - 65k mi., mechanically good, \$850. 744-7947.

76 FORD MAVERICK - good cond. in/out, price neg. 924-7476.

86 HONDA ACCORD LX - burgundy, 4 dr., loaded, 13k mi., at, mint cond. Angela, Ext. 2456.

83 FIREBIRD - gray, 6 cyl., a/t, p/s, p/b, p/w, a/c, am/fm cass., very good cond., \$6,000. Ext. 2902.

78 VW RABBIT - 4 spd., 4 dr., sunroof, 89k mi., am/fm cass., \$1,000. neg. Steve, 744-8087 eves.

82 OLDS CUTLASS SUPREME - a/c, a/t, cruise, am/fm cass., deluxe interior, sunroof, excel. cond., \$5,000. 878-0391.

66 FORD F350 - dump, new 390 motor, tires, excel. cond., \$2,250; 8" Corvette rally wheels. Dick, Ext. 3499 or 589-9103.

86 DODGE DAYTONA - 5 spd., a/c, stereo cass., 5 yr. extended warranty, excel. cond., 15k mi. 588-0507 eves.

79 PONTIAC SUNBIRD - stand., excel. cond., best offer; 77 Camaro, V8, a/t, well-maintained, excel. in/out. 744-0725.

81 CHEVY MALIBU - classic wagon, a/c, roof rack, 73k mi., good cond., \$2,500. Brant, Ext. 4552 or 929-3310 eves.

69 CHEVY - station wagon, good for parts, best offer. John, 744-4386.

81 CHEVETTE - am/fm cass., steel radials, new muffler, starter, timing belt, \$1,200; 74 Datsun 610, steel radials, needs work, \$25. 878-8177.

81 OLDS 98 REGENCY - new tires, exhaust, tune-up, velour int., full power, a/c, \$5,100; (2) radials for Chevy Nova, \$20/each. Glenn, 737-3327.

### Boats & Marine Supplies

23' SEARAY - 1977, cuddy cabin, 115 h.p. Johnson, w/extras, asking \$7,500. 878-8774.

28' PEARSON - w/two 225 h.p. Chrysler engines, glass, auto., tabs, heads, recorder, loaded, \$9,500. Jim, 765-3041.

83 BAYLINER - 85 h.p. Chrysler, trailer, asking \$4,500. Ext. 2951.

18' RENKEN - 1983, I/O 120 h.p. OMC, w/trailer & full cover, excel. cond., \$4,500. Ady, Ext. 4531 or 331-3785.

20' FIBERGLASS - cuddy, 150 h.p. Merc. gauges, compass, trailer, in water, will demo., \$2,650. Jack, Ext. 7527.

19 1/2' BAYLINER CAPRI BOWRIDER - 1984, Volvo I/O, trailer, top qual. coast guard equip., full canvas, many extras, \$7,700. Ext. 2981 or 473-7809.

SAILING RIG - for canoe by Old Town, used once. Bob, Ext. 4044.

16' HOBIE CAT - sailboat, 1976, good cond., \$1,200. Ext. 7643.

CHEVY CHRISRAFT HEADS - (2), 283, rebuilt, never used, \$50/each. Bill, 822-5144 eves.

26' FIBERGLASS SLOOP - Polaris, W. Tripp design, shoal draft, keel CB, 25 h.p. inboard, 7 sails, \$4,500. Ext. 4368 or 928-3371 eves.

19' SPORTCRAFT CUDDY - 1969, new Bimini top & seats, \$800; 1979 Mercury 90 h.p., 140 hours, \$1,500. 878-8177.

### Miscellaneous

WALLPAPER - 5 rolls, new, \$25; Mura red ear-phones for Walkman, new, \$6. Susan, Ext. 4267.

LAWN MOWER - B&S, \$80; sofa & 2 arm chairs, \$200; bookcase/wall unit, \$60. Ext. 7734 or 395-1635.

WALKMAN - SONY WM-F10II, \$40, neg. Rick, Ext. 2813.

VIDEO CAMERA - Toshiba, color, for portable VCR, \$450; Sony 8 mm Camcorder, 6-1 zoom, auto focus, plays on any T.V., \$900. Paul, 727-4859.

GARAGE WINDOW PANEL - Woodco, 4 section, each 23"x41", overall 165"x23", \$55. 727-3145.

AIR CONDITIONER - Fedders, thru wall, \$25; 1/2x1 1/2 welded chain, 25' long, \$5. John, Ext. 4761.

OAK OFFICE DESK - painted; metal clothes closet; Prego carriage w/stroller insert; all reasonable. 475-7272 after 6 p.m.

FIREPLACE INSERT - good cond., make offer. 475-2509.

WOOD CABINET - mahogany bar/server, 26" wide, 37" high, 15" deep, \$80. 744-6874.

REDWOOD PICNIC TABLE - & benches, \$30. Ext. 2543.

WASHER - auto., \$50. Ext. 5400 or 874-3447.

STORM WINDOWS - & screens, alum., 3 sets 31"x24", 1 set 37"x24", \$2./ea. Bill, Ext. 2906 or 929-6189.

BEDROOM SET - Provincial, white, 6 pieces, single bed, new; dining room set, Colonial, table, 6 chairs, large hutch, neg. Ext. 2456.

PHOTO PRINTING EASEL - proof neg. printer, other photo & darkrm. supplies. Ext. 7338.

BEDROOM SET - Ethan Allen, white, seven pieces, excel. cond., new \$2,100, asking \$900. 286-1213 eves. & wknds.

PIANO - beautiful, maple spinet, \$850; black & gold heritage eagle loveseat, \$30; educational toys & games. 821-0250.

LIGHTING FIXTURES - 2 chandeliers, glass & brass finish, \$35 ea.; pole lamp, \$40. 878-0874 eves.

ANDERSEN WINDOW - #2842W, 2'9"x4'5 1/2", still in box. 878-1255.

BEDSPREADS - (2) double-bed size, brown wool & various greens; long gown, beaded front & jacket, size 12-14, taupe, paid \$245. 286-0975 eves.

LAWN MOWER - Snapper, 3.5 h.p., 21", just overhauled, excel. cond., bag, \$100. Ext. 4024.

BIKES - girls, 20"x24", \$10. ea.; desk & chair, metal & formica, 30x60, \$45; small freezer, 33hx19w, \$35; 2 doz. jars, \$5. 878-6637.

BABY STROLLER - like new, \$15. Akos, Ext. 4973 or 3170 between 10 a.m. & 5 p.m.

REFRIGERATOR FREEZER - Coldspot, bottom freezer, right-hand doors, white, good cond., asking \$50. 289-1883.

COLOR T.V. - 25", w/Colonial cabinet, 2 matching end tables, price neg. 286-4145.

COLOR T.V. - 13", 1 yr. old, excel. cond., \$100; radio w/speakers, \$30. Ext. 2229 or 282-3220 after 6 p.m.

KITCHEN TABLE - octagonal, formica top, cast iron base, w/4 chairs, \$65; 40" maple desk w/chair, \$50. 929-4529.

SWIMMING POOL - Coleco, 18'x4', round, 3/4 h.p. pump & filter, access., \$200. 751-8240 eves.

LAWN MOWERS - re-cond., A-1 cond., 20", Torro, self drive w/2 bags, \$80; 3 1/2 h.p., Briggs, 22" cut, \$65. Dan, 698-7322 days or Ext. 4987 eves.

CD PLAYER - Fisher, AD 823, \$100. Ext. 7901.

BICYCLE - boy's, 20", \$20. Ext. 4597 or 924-8213.

HEDGE TRIMMERS - Craftsman, double-edge, elec., \$30; records, 50's & 60's Rock & Roll, Polka records, 45's & LP's. Frank, Ext. 3120.

FRESH FISH - blues, some weaks, fluke, etc., wholesale prices. C. Ruger, Ext. 2107, leave number.

STRAWBERRIES - pick your own, during June, easy picking in almost weed free patch. Chris, 878-0621 for time.

STRAWBERRIES - U-pick, Meadows Farm, Old Stump Rd., Brookhaven, 7 days, 9 a.m.-5 p.m. No chemicals used.

MOVING SALE - Bellport, furniture, many other items. 286-9051.

SAND FILTER - 1 h.p., \$100; pool ladder, \$50; both used one season, excel. cond. 924-3756.

WEDDING DRESS - train, veil, size 12, \$75. 744-7590.

AIR CONDITIONER - 6000 Btu, old, works well, \$35. Ext. 4153 or 732-5829.

WOMEN'S ROLLER SKATES - Reidell Snyder, size 10, \$45; Yamaha 32 note PS-1 organ, brand new, \$45. 744-8140.

DIRECT CONNECT MODEM - fits all color and TRS-80 computers, all accessories, brand-new, \$45. Vinner, 928-5065 after 3 p.m.

GIRL'S BICYCLE - 26", 3 spd., \$25; Encyclopedia Americana, 1954 edition, 30-volume, \$30. Ext. 3741.

REMOTE CONTROL AIRPLANE - w/7 channel radio, brand-new, 1-hour flying time, \$400. 928-0687.

WATERBED - king-size, all accessories, \$100. Mary, 288-9086.

PIANO - upright w/bench, \$475. 581-7656.

SEARS MICROWAVE RECIFE-300 - auto defrost, delayed start, time/temp., 4-stage cooking, like new, \$325. 435-6243 or 435-6403.

ROWING MACHINE - Precor, model 612, almost new, \$175. Sandy, Ext. 3369 or 286-1022.

MATTRESS - full-size, very good cond., \$25. Carol, 878-0885.

GAS STOVE - apartment size, \$30. 924-7476.

ALUMINUM DRIP EDGE - white, 30 lengths, 10' each, \$1.50/each. Ext. 4500 or 374-3447.

TABLE SAW - 10", hardly used, \$200. 928-0687.

REFRIGERATOR - side-by-side, harvest gold, 24 cu. ft., \$125. Frank, Ext. 3976 or 399-1307.

BICYCLES - (4), 26", (1) 10-speed; (2) 3-speed; (1) exercycle, all excel. cond., \$75/each; window air conditioner, runs well, \$50. 277-4091.

SONY CAMCORDER - 8 mm, 6 to 1 zoom, auto. focus, records/plays on any TV, all accessories, like new, \$900. Paul, 727-4859.

BABY STROLLER - \$15. Akos, Ext. 4973 or 3170, 10 a.m.-5 p.m.

### Yard Sales

CORAM - June 13 & 14, 39 Haliday Road, multi-family, lots of everything. 698-9603.

GARAGE SALE - June 6 & 7, 10 a.m.-4 p.m., moving out of state. 928-5737 after 7 p.m.

BELLPORT - June 13 & 14, 10 a.m.-4 p.m., 54 Country Club Road, (off South Country Road), huge, 35+ years' accumulation, no toys/clothes.

### Car Pool

PATCHOGUE - van pool seat open. Ext. 4669, leave name & number.

### Free

PUREBRED GOLDEN RETRIEVER - 1 year old w/papers, great with kids, moving. 744-0024.

CALICO KITTEN - cute, litte, needs loving home, 5 weeks old. Ext. 7745 or 722-3938.

### Real Estate

Real Estate advertised for sale or rent is available without regard for the race, color, creed, sex or national origin of the applicant.

### For Rent

HILTON HEAD, SC - 2 bdrm. condo, sleeps 6, beach, pool, tennis, golf, many extras, some summer openings; taking fall rentals, \$400/wk. 585-9149.

SOUTH BELLPORT - elegant furn. rm., priv. bath, garage, microwave, frig., cooking, short walk to Fire Island ferry, quiet non-smoker, rent for at least 6 mos., \$380 mo. pays all. 286-1479.

SOUTHAMPTON - 4 bdrm. house and 2 bdrm. cottage, both waterfront, spectacular views, furn., 2-yr. lease beginning Sept., house \$1,200/mo. + 2 mo. sec; cottage \$950 mo. + 2 mo. sec. Ext. 2666 or 283-5376.

EAST SETAUKET - vacation rental, avail. June 23-Aug. 27, 3 bdrm. ranch, l/r, d/r, den, f/p, cable TV, bsmt. Ext. 5012 or 331-3790 eves.

BERKSHIRES CHALET - 3 hrs. from NYC, 3 bdrms., 2 baths, fully equipped kitchen, electric heat, deck w/spectacular view, near lake and Tanglewood Theater, avail. weekends and weekly. 929-6946 after 6 p.m.

HILTON HEAD, SC - 1, 2, or 3 bdrms., sleeps 4-8, full kitchens, 6 tennis courts, 3 pools, ocean, golf & full recreation program, reasonable rates. 929-8912.

SOUND BEACH - 1 bdrm., unfurn., kitchen, l/r-d/r combo., full bath, w/w, cable, priv. entrance, 2 months' sec., business person or couple preferred, all util. incl. 744-0725.

RIDGE - 2 bdrm. townhouse in Strathmore Ridge, 1 1/2 baths, 5 appliances, w/w throughout, lease required, \$650/mo. plus util. Ext. 4904 or 4525.

MASTIC BEACH - 2 bdrm. house, l/r, d/r, kitchen, bath, large garden, \$675/mo. Ext. 7734 or 395-1635.

MORICHES - waterfront, room for rent, shared house, \$315/mo. & util. 874-3729 eves.

HOLTSVILLE -