BROOKHAVEN BULLETIN
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BROOKHAVEN NATIONAL LABORATORY

AGS Sets World Intensity Record

How many protons can fit into an accelerated pulse? Ask the staff of the machine that holds the new world record for that category — BNL's Alternating Gradient Synchrotron (AGS).

On July 20, just before the end of its 1994 run, the AGS successfully accelerated a pulse of 4×10^{13} — that's 40 trillion — protons around its ring. With that accomplishment, it simultaneously met its goal for the year and bested the world's dozen other proton accelerators.

"We're now treading in a beam intensity region where no machine has been before," said AGS Department Chairman Derek Lowenstein. "It's a fantastic effort by the entire AGS Department."

The record was achieved with the help of several new and upgraded systems, all cooperating to enable the densely packed beam to remain stable on its way to experimental beam lines.

It trounces last year's record of 2.36×10^{13} protons per pulse (p/p) and paves the way for future achievements: The AGS has set its sights for 1995 on an intensity goal of 6×10^{13} p/p. And, with every improvement in intensity, the possibility of using accelerators for other scientific endeavors, such as neutron sources, edges closer to reality.

New and Improved

Protons generated in the Linac, the linear accelerator that is the AGS Booster's injector, enter the Booster ring in pulses — bursts lasting about 400 microseconds. After being accelerated first in the Booster and then around the 0.8-kilometer (0.5-mile) AGS ring until they reach the desired energy — 24 billion electron volts during the record-setting run — the protons are sent down beam lines toward experiments.

Roger Stoutenburgh

At one of ten new rf cavity power amplifiers installed for the 1994 run of the Alternating Gradient Synchrotron (AGS) are rf group members: (from left) Ken Rogers, senior technical specialist; John Butler, principal technician; Nick Laloudakis, senior technical specialist and Joseph DeLong, technical specialist.

To achieve the peak intensity of 4×10^{13} p/p, and the 3.5×10^{13} p/p shift averages that occurred throughout the summer, required stellar performances by several existing systems and stunning debuts by others, said AGS Accelerator Division Head Bill Weng.

The Linac was running at a healthy current of 27 milliamperes when the record was set. And the Booster, which was commissioned in 1992, now routinely exceeds its design goal to inject a stable and intense beam into the AGS ring.

Also essential were upgrades to the AGS radio frequency (rf) acceleration system performed over the past three years, including the introduction of rf feedback to cure an effect known as beam loading. Without the feedback, Weng explained, the protons would interact with the rf cavity and beam intensity would decline; with it, the effect is killed.

Ten new power amplifiers were installed on the AGS ring to power each rf cavity. Also brand-new this year was another system crucial to sustaining high-intensity beams: the gamma transition jump system.

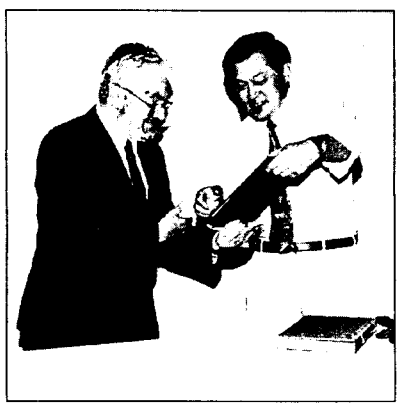
Built by a group headed by Research Engineer Anne Dunbar and commissioned under Physicist Willem Van Asselt, the system first effectively holds the beam safely below "transition" and then rapidly forces the beam through and safely above.

Transition is a brief interval in the acceleration cycle when, because of relativistic effects, the rf acceleration system actually destabilizes part of the beam. "It's always a delicate point

(continued on page 2)

Chinese Honor Ernest Courant

Ernest Courant, AUI Distinguished Scientist emeritus, accepts a silk-bound declaration making him an honorary professor of physics at the University of Science and Technology of China (USTC). USTC president Tang Honggao presented the honor July 29 at a conference on instability in accelerator storage rings. While on USTC's campus in Hefei, People's Republic of China, Courant also delivered a talk on the history of accelerator development. He is a key part of this history: In 1952, he was one of the three codiscoverers of alternating gradient, or strong focusing, the principle that made possible BNL's Alternating Gradient Synchrotron (AGS) and almost every major accelerator constructed or proposed since then.



BNL Involved in Two Multilab CRADAs to Help U.S. Textile Industry

The U.S. textile industry is a vital force in the nation's economy: Two million people work in the industry, making it the country's largest employer, and consumer sales of domestically produced textiles rank second only to food. The industry makes a contribution to the gross national product that is greater than the automobile, electronics or petroleum industries.

But, with U.S. wages significantly higher than those of many foreign companies, it is becoming increasingly difficult to compete in the worldwide textile market. Over the last ten years, some 400,000 jobs in the U.S. textile industry have been lost due to imports.

To improve the industry's competitiveness, BNL is participating in two Cooperative Research and Development Agreements (CRADAs). These agreements promote the transfer of scientific expertise and technology from federal laboratories to industry. Both of these CRADAs are part of a collaboration with the textile industry called AMTEX (AMerican TEXtiles).

An Electronic Marketplace

The first and largest is a multimillion-dollar, five-year CRADA called Demand-Activated Manufacturing Architecture, or DAMA, and it involves eight other national laboratories, four universities, five nonprofit organizations and approximately 30 industrial partners.

DAMA's objective is to provide an electronic marketplace for use by all elements of the U.S. textile complex. In the course of the project, AMTEX will link all sectors of the textile industry via a computer infrastructure.

BNL is playing a major role in DAMA, implementing computer-based communication, analysis and simulation systems to integrate the American textile industry. This is a massive project in an industry that produces as many as 15 billion pieces of apparel annually. Roughly 100,000 U.S. retail stores rely on 21,000 apparel and other fabricated product suppliers, and up to 1.65 million unit transactions take place weekly between a single retail company and one supplier.

Roger Stoutenburgh

Displaying a T-shirt from North Carolina State University's College of Textiles are BNL participants in two CRADAs involving the textile industry's AMTEX collaboration: (from left) John Usher and John Taylor, Department of Advanced Technology, and Arnold Peskin, Computing and Communications Division.

"We plan to reduce lead times by bringing companies and customers closer to the manufacturing process via computer," said the Computing and Communications Division's Arnold Peskin, BNL's principal investigator in DAMA. "With computer-aided improvements, we expect the textile industry will regain a share of the market that has been lost to foreign interests."

The electronic marketplace will enable the industry to transmit information on consumer demand quickly to scattered parts of the industry. This speedier, computer-aided communication is expected to eliminate waste and make the industry more competitive by decreasing inventory, overproduction, shipping costs and consumer prices.

First-Year Initiatives

"In this first year of the project, we've initiated several activities," said Peskin. "For example, we've developed tutorial programs for industrial partners to learn the uses of Internet — the complicated but very useful 'information highway.' Also, with the aid of software from the Parsons School of Design, we are creating a graphics program for buyers that will allow them to compare and custom-order merchandise directly on the computer screen."

(continued on page 2)

Fire-Fighting Five Score Fastest Time in Extrication'94

When a car is mangled in an accident, the time saved in extricating its injured occupants can mean the difference between saving a person's life and limbs — and losing them.

Which is why fire department rescue squads practice, practice, practice using their extrication tools: Not only must they master the skill of using the tools and using them safely, but they also must master time.

A team of BNL firefighters proved its mastery of extrication time during a local heavy-rescue tournament: On Saturday, June 25, in 95° heat, five fully suited-up members of BNL's Fire/Rescue Group scored the fastest extrication time — 8 minutes 45 seconds — of the 15 teams entered in Extrication'94.

"Our team's performance put this fire department on the map," says Sergeant Chuck LaSalla, who captained the BNL Fire/Rescue team.

"Before, we were an unknown quantity, except to the local fire departments that we work with regularly. Afterwards, we got nothing but compliments from the chiefs of the other departments."

The BNL team was made up of Firefighters Roy Barone, Dan Harrow, Al Licata and Ken Licata, who practiced for and participated in Extrication'94 on their own time. On hand at Fireman's Field in Ridge to cheer their team on were Fire Chief James Roesler and Deputy Chief Michael Carroll.

Hosted by the Centereach Fire Department, Extrication'94 was sponsored by Firematic Supply Company of Shirley and Hurst Rescue Systems.

Hurst manufactures what is known as the Jaws of Life and its associated extrication equipment, which were originally developed to cut race-car drivers out of their wrecks. Hurst tools have been used by BNL's Fire/Rescue Group for over 15 years, and every member of the group is a Hurst qualified operator and has passed the Suffolk County heavy-rescue course.

In a bad car accident, "The vehicle is usually too twisted to get the doors open — so you have to extricate the occupants — and we have saved people's lives with these tools," says LaSalla, referring to rescues made on site and on the William Floyd Parkway by the Main Gate. "Last year, we used them about a half dozen times, which was a record."

Extrication'94 involved three rounds of competition. To start the first round, the names of the departments involved were randomly drawn to pair them off. BNL was paired with the Brentwood Fire Department to compete on opposite sides of a junked vehicle.

In the first round, each team was required to use its extrication tools to remove two doors, move the front seat back four inches and displace the dashboard. Each was scored on its actual extrication time plus a safety-penalty time assigned by the judges for practices that were not consistent with qualified-operator procedures.

The fire-fighting five from BNL's Fire/Rescue Group who scored the lowest extrication time at Extrication'94 are: (from left) Dan Harrow (standing), Roy Barone, Chuck LaSalla, Ken Licata and Al Licata.

The Fire/Rescue team's strategy was to use as few tools as possible to accomplish the job, "to save time by not having to switch from one tool to another," explains LaSalla. So, out of all the Hurst tools available to them, they chose the actual Jaws of Life tool and what is called the O cutter.

And, each firefighter was assigned particular tasks: Dan Harrow was in charge of stabilizing the car and removing glass; Roy Barone used hand tools and the O cutter; and Ken Licata and Al Licata handled the Jaws of Life.

Based on the team's first-round extraction time, Harrow concludes, "Our strategy was correct."

When penalty time was added to BNL's 8:45 extrication time, Fire/Rescue's first-round score was 11:55 — which was better than Brentwood's 22:03 and the lowest score set during the entire competition.

So BNL's fire-fighting five moved into the second round to face the Selden Fire Department on opposite sides of a Buick Regal, where the two teams had to remove one door, make a third door and displace the dash. BNL scored the second lowest extrication time of the competition — 9:55 — but, with penalties, its score totaled 16:34 vs. Selden's score of 12:07. So, the BNL team was stopped before the third and final round.

The eventual winner was the Middle Island Fire Department, which also earned the lowest penalty time, 0:40, in the last round.

"We've got the speed, we've got the skills, confidence and esprit de corps, and we are now more aware of what the judges want — so next year, with more practice, watch out," concludes LaSalla. — Marsha Belford

Tips of the Trade: On Being Extricated

If you have the misfortune of having to be extricated from a vehicle, BNL's Fire/Rescue Group recommends that, first and foremost, you stay still.

"Don't move — and, as hard as it sounds, try to remain calm and have faith that the heavy-rescue people will get you out and the medical people will take care of you," advises Sergeant Chuck LaSalla.

As you are being extricated, "The sounds of breaking glass and metal being sheared are scary, and your rescuers will most likely place a cover over you as soon as they can, to shield you from the debris," explains LaSalla. "Above all, be glad you are alive and don't worry about the car — that's why you have insurance."

CRADAs (cont'd)

Another sophisticated computer tool developed by the DAMA project is a software-based model of the textile industry, which will enable managers to simulate the effects of various problems and devise solutions. For example, they can ask, "What if there is a recession?" "What if the price of cotton goes up?" "What if there is a truckers' strike?" Acting out these dramas via computer can help managers make better business decisions.

Conserving Energy

The other CRADA is known as the Textile Resource Conservation (TReC) program. This is a multiyear CRADA that involves four other DOE facilities and 31 industrial partners. Brookhaven's role in this CRADA is to perform strategic planning for energy conservation in the textile industry.

Experts from the other DOE facilities, along with Brookhaven researchers, will gather data from their industrial partners to gain a broad picture of energy use by the industry and determine the areas in which energy conservation would offer the most promise. Further, they will decide which laboratories would be best-equipped to deal with various technologies either to reduce energy consumption or increase production using the same amount of energy.

"The industry is a heavy energy consumer," said the Department of Advanced Technology's (DAT) John Usher, who is a principal co-investigator in this part of the CRADA with John Taylor, also of DAT. "Both dry processes like weaving and knitting, and wet processes, such as dyeing and finishing fabric, require a lot of energy. After our analysis, we might recommend combining various processes to conserve energy."

Taylor summed up, "We might also recommend modifying or changing equipment — for example, microwave dryers might be more efficient than electric or gas dryers. We are identifying the most promising opportunities for saving energy and developing a detailed report of research needs."

— Diane Greenberg

Inside Info

Patricia Williams was named Manager of the Safety, Training and Quality Assurance Group in the Plant Engineering (PE) Division, effective May 2, responsible for ensuring that the safety and health of all PE staff and contractors are considered in planning and carrying out every PE function. She also oversees PE's quality-management and training programs.

"As a certified safety professional and a mechanical engineer, Pat brings a wealth of experience to this position," said PE Manager Bruce Medaris. "Coming from the Safety & Environmental Protection [SEP] Division, Pat has extensive knowledge of the Lab's environment, safety and health culture and its safety-oversight network. Having been safety representative for Plant Engineering, she was so familiar with our procedures and problems that she hit the ground running."

With a B.E. in mechanical engineering from the State University of New York at Stony Brook, Williams joined the Lab in June 1987, serving as an SEP safety engineer reviewing all nonradiological operations at the Alternating Gradient Synchrotron.

In February 1988, she became safety representative for five divisions, including PE. She was named staff engineer in October 1988, project engineer in October 1991 and an SEP group leader last January.

Williams chaired BNL's Traffic Safety Committee 1988-93. Since 1988, she has been a member of the Lab's Firearms Safety Committee and BNL's representative to the U.S. Department of Energy's Firearms Safety Committee. She is working toward her M.S. in mechanical engineering through an on-site program with Manhattan College.

AGS Intensity (cont'd)

in the acceleration cycle," said Leif Ahrens, Accelerator Division associate head.

The effects worsen with increasing intensity, resulting in large beam losses. But, Ahrens continued, by quickly pulsing six quadrupole magnets built especially for the gamma transition jump system, the beam remains stable and the once-tricky transition becomes easier.

Onward and Upward

Experimenters at the AGS welcomed news of the record, although Ahrens joked that their appetite for beam intensity seems almost insatiable. Lowenstein noted that increased intensity especially benefits those AGS experiments investigating rare kaon decays.

But, Weng explained, a broader audience is interested in news of intensity records: Those who hope to use accelerators as sources of neutrons for scientific experiments.

The neutrons would come from atoms disintegrating in spallation reactions, which result when protons bombard targets, rather than the nuclear fission used at research reactors such as BNL's High Flux Beam Reactor. But to build a spallation neutron source would require dozens of pulses per second, each above 6×10^{13} p/p. Therefore, every step toward that intensity at conventional accelerators brings such a lofty goal closer.

"The AGS certainly is going to be a major test bed to understand the problems associated with high intensity beams" for spallation neutron sources, Lowenstein predicted. — Kara Villamil

ANSYS Training

The Computing & Communications Division may offer advanced training in ANSYS on site, covering such subjects as heat transfer, dynamics and fluid flow. Each participant will be charged a fee. For more information, call Bob McGonigle, Ext. 3299, or e-mail magoo@bnl.gov.

Two Women Win BWIS's Chasman Scholarship

Lillian Vulin of North Babylon and Marjaneh Issapour of Hicksville were the two winners of this year's Brookhaven Women in Science (BWIS) Renate W. Chasman Scholarship. The scholarships, in the form of $2,000 checks and certificates, were presented at a reception held on site August 10.

"Usually this award is given to one woman each year, but we are glad to be able to present the $2,000 award to two women in 1994," Kempf said. "We are eager to assist students while we can, as the pool of women who meet all of our criteria for the scholarship — particularly, that their education has been interrupted by family or other responsibilities — is shrinking. Fewer women today are willing to interrupt their schooling."

Since 1986, BWIS has offered the Chasman Scholarship annually to a Long Island, Brooklyn or Queens woman reentering school at the junior or senior undergraduate level or at the first-year graduate level in a degree-oriented program in the natural sciences, engineering or mathematics.

Vulin will attend Rensselaer Polytechnic Institute this fall as a junior, working toward a bachelor's degree in electrical engineering. Her path to her degree, however, has been long and circuitous. After graduating high school, she attended Suffolk Community College (SCC) as a liberal arts major, but she lacked financial support to continue. In 1985, she enlisted in the U.S. Army, where she worked in military intelligence as a Russian and Serbo-Croatian voice transmission interceptor and transcriber.

After an eight-year stint in the Army, Vulin decided to return to SCC to study electrical engineering, and, eventually, she wants to earn her doctorate in physics.

Vulin said, "I was fortunate in having a second chance to achieve my goal, and I think it is a great honor to have my efforts recognized and supported by Brookhaven Women in Science. I hope to have the opportunity to return to Long Island and teach part-time so that I can influence more young women to pursue careers in engineering and science."

Growing work and family responsibilities had prevented Issapour from pursuing her doctorate for eight years, but this past spring, she became a graduate student at the State University of New York (SUNY) at Stony Brook, where she hopes to earn her Ph.D. in materials science engineering.

Issapour, who was unable to attend the awards ceremony, earned her bachelor's degree in electrical engineering from SUNY Stony Brook in 1985, and then took a position as a design engineer at AT&T Information Systems. While working full-time, she earned her master's degree in the same field from Columbia University. Currently, Issapour is an assistant professor in the Electrical Engineering/Technology Department at SUNY Farmingdale.

Lillian Vulin (left) accepts a certificate and a $2,000 check from BWIS Scholarship Committee Chair Ruth Kempt.

Kick Up Your Heels in Country/Western Dance Club

Interested in the Tush Push, the Boot Scoot'n Boogie and the Texas Two-Step?

Then sign up now for the BNL Country/Western Dance Club's ten-week class in country and western couples and line dancing. The forms are available through Carmen Falkenbach, Ext. 2663; Lois Marascia, Ext. 3315; or Ginny Morante, Ext. 3555.

The class is open to BNL employees and their spouses, and to guests signing up as partners of BNL employees. However, it is not necessary to sign up with a partner. Line dancing does not require a partner, and singles can pair up for couples dancing.

The class is limited to 50 people, first-come, first-served. Classes will be held every Tuesday beginning September 20 in the North Room of the Brookhaven Center, from 5:30 to 7 p.m., and the cost is $30 per person.

The Country/Western Dance Club, which was started by Marascia and Morante in May, is sponsored by the Brookhaven Employees Recreation Association, and this is the second time classes have been offered.

(From left) Carmen Falkenbach, Ginny Morante, Joel Piereth and Lois Marascia invite you to strut your stuff with the BERA Country/Western Dance Club.

Photos on these pages by Roger Stoutenburgh

"Country and western dancing is just a lot of fun," said Marascia, an administrative assistant with Associated Universities, Inc. "It's also good exercise. The response was overwhelming the first time we offered the class in May. We had to turn people away."

Those who took the first class can learn new dances, in addition to reviewing dances already learned. Newcomers are welcome.

The class's instructors will be Joel Piereth and his dance partner of one and a half years, Elise Prado, both of Montauk. They have taught classes in Montauk, the Hamptons and Greenport.

They will teach the BNL class on the beginners' level, Piereth said, starting with the Texas Freeze, a line dance that demonstrates most of the basic steps. The rest of the class, he added, will cover many of the most current and interesting dances, including the new Seminole Shuffle.

Class members will have a chance to strut their country and western stuff at dances outside of the Lab, such as those held at area restaurants and clubs, said Morante, a senior secretary in the Director's Office.

"You can country-western dance seven days a week if you want to," she said. "There is something going on all the time. The people are all so friendly and willing to teach you a step you don't know."

If response remains strong, the club hopes to run both beginners' and intermediate classes next time around, Morante said. — Georgia Moore

Tennis Dance Tickets Available

Some tickets still remain for the Tennis Awards Night and Dance Party on Friday, August 26. Sponsored by the BERA Tennis Club, the party is open to everyone — not just tennis buffs. Ballroom, disco and country-western dancers are all welcome. The party begins at 5 p.m. with a cold buffet, and the dancing runs from 6:30 p.m. to midnight.

Tickets are $15 per person with dinner, or $5 for the dance alone. Contact Rudy Alforque, Ext. 4733, or Om Singh, Ext. 5332, for tickets.

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In Memoriam

The following retirees passed away recently:

Robert C. Aldridge, whose 14 years at BNL were devoted to the Alternating Gradient Synchrotron (AGS), died July 8, at the age of 76. He started in the Accelerator Department on July 5, 1967, as a technician 3, and retired May 31, 1981, as a technical specialist, returning in a guest capacity for several short periods through 1985.

Harriet E. Barry, who was a secretary 3 in the Biology Department at the time of her retirement on December 31, 1975, died on July 18. She was 83 years old. Her first day at BNL was January 19, 1948, when she joined Biology as a stenographer B. In 1951, she began a 13-year interruption in her BNL career, returning to Biology in 1964.

Rene J. Massard, who retired from the Accelerator Department as a design engineer on May 6, 1982, died on August 4, at the age of 68. He began his BNL career on April 22, 1963, as a senior designer in the Mechanical Engineering Division.

Robert H. Hill, who was Brookhaven's oldest retiree and one of the Lab's earliest employees, died August 12. He would have been 99 years old on October 17. Hill joined BNL on April 3, 1947, as a helper A in the Cabinet Shop of the Architectural Planning & Plant Maintenance Department. He worked his way up to being a carpenter, then a cabinetmaker B, in the Plant Maintenance Division, retiring from that position on December 30, 1960.

Golf Tournament

The Brookhaven Golf Association (BGA) is sponsoring a call-in golf tournament at Indian Island Golf Course on Monday, August 29. Make your own reservations using the Green Key and the county course call-in reservation system. To register your foursome with the BGA after you have your tee time or if you have any questions, contact Joe DePace, Ext. 3034, or Curt Bergh, Ext. 7501.

Softball

Standings reported as of August 12

League E1		League M1*	
Blue Jays	14-2	Goodtimers	11-1
Phoubars	13-4	Sting Rays	9.5-2.5
Magnuts	9-7	Snakebites	7-4
Six Pax	8-9	Simply Awesome	6-7
Up & Atom	6-10	Just-4-Fun	6-7
Ravens	4-12	Personnelities	5.5-6.5
Cocoon - dropped from League		Strike Force	3-10
		Parke Avenue	2-10

League E2		League M2	
Titans	13-3	Well Heads	11-2
Older Butt Wiser	12-4	Varmints	9-4
Lights Out	12-4	What's on Second	8-5
Hy Tech	12-4	Stray Cats	4-9
Lunatechs	11-5	Skeleton Crew	4-9
Sure Fire	9-7	Service America	4-9
Scram	8-8	Lead Bottoms	2-11
Hammerheads	8-8	Tandooris	2-11
Big Sticks	6-10		
Medical	5-10		
Phase Out	5-10		
Out of Control	5-11		
The Feds	2-13		
Bombers	2-13		

**Standings reported as of August 5.*

Arrivals & Departures

Arrivals

Gerald K. Cook ..... Chemistry
Dan Melamed ..... App. Science

Departures

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

Wen-Quan Feng ..... AGS
Walter L. Kehoe ..... RHIC
Bernard Keisch ..... Adv. Tech.
Eric Kramer ..... Plant Eng.
Lisa N. Lo Sordo ..... NSLS

Cafeteria Menu

Monday, August 22	
Soup: Chicken noodle	.90/1.20
A la Carte: London broil w/mushrooms	3.85
Fitness: Italian calzone	3.50
Deli: Pastrami	3.20
Grill: Reuben	3.30
Tuesday, August 23	
Soup: Cream of broccoli	.90/1.20
A la Carte: Liver & onions	3.70
Fitness: Pasta w/marinara sauce	3.50
Deli: Virginia ham	3.20
Grill: Western omelet w/fries	3.30
Wednesday, August 24	
Soup: Bavarian lentil	.90/1.20
A la Carte: Pork chops	3.65
Fitness: Vegetable lasagna	3.50
Deli: Roast beef	3.20
Grill: Italian cheesesteak	3.30
Thursday, August 25	
Soup: Beef vegetable	.90/1.20
A la Carte: Deviled hens	4.00
Fitness: Spinach & feta quiche	3.65
Deli: Corned beef	3.20
Grill: Ham & cheese	3.30
Friday, August 26	
Soup: Seafood chowder	.90/1.20
Display cooking: Oriental	4.25
Fitness: Baked flounder d'Uxelles	3.95
Deli: Turkey	3.20
Grill: Fried shrimp boat	3.30

Call for Bowlers

Although summer is not yet over, it's time to "think bowling" again!

Applications for the Tuesday night men's league in Port Jefferson and the Thursday night mixed league in Shirley are available at the BERA Sales Office. Priority registration for existing teams is due by Friday, August 19; new team registrations are due by Friday, August 26. A captains' meeting will be held on Wednesday, August 31, at noon, in Berkner Hall, Room D.

So sign up. You do not have to be a great bowler, just a willing one! For information, contact Debbie Botts, Ext. 7218, or Maryann Reynolds, Ext. 2352.

Amateur Radio

The Amateur Radio Club will next meet on Thursday, August 25, at noon in the Recreation Building in the apartment area. John McNeil of the Relativistic Heavy Ion Collider Project will conduct a discussion of repeater etiquette.

All Lab employees, guests and licensed amateur-radio operators are invited to attend. For further information, contact Chris Neuberger, Ext. 4160, or Nick Franco, Ext. 5467.

Classified Advertisements

Placement Notices

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

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

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

For more information, contact the Employment Manager, Ext. 2882, or call the JOBLINE, Ext. 7744 (282-7744), for a complete listing of all openings.

OPEN RECRUITMENT - Opportunities for Laboratory employees and outside candidates.

DD 2884. ENGINEERING POSITION - Requires a BS in engineering with the knowledge of nuclear reactor systems and familiarity with safety analysis reports. Must have excellent verbal and written communications skills. Responsibilities include the development and implementation of a plan for upgrading the safety analysis report for the Brookhaven Medical Research Reactor. Ability to obtain and maintain a security clearance also required. Reactor Division.

LS 0039. BIOLOGY ASSOCIATE POSITION - Requires a BS or MS in chemistry, engineering, physical science or equivalent, and knowledge of computing and instrument design. Familiarity with fabrication and electronic-interfacing techniques is preferred. Responsibilities include assisting in the daily operation of capillary electrophoresis instrumentation and interacting with others in the Genome Sequencing Facility. Biology Department.

NS 7777. ASSISTANT EMPLOYEE TRANSPORTATION COORDINATOR - (term appointment) Requires a bachelor's degree and familiarity with the NYS Employee Commute Options (ECO) Program. Strong verbal and written communication skills and experience using WordPerfect, LOTUS 1-2-3 and Windows necessary. Work-related experience in transportation management is preferred. Will assist Transportation Coordinator with the implementation of the ECO compliance plan, development of promotional materials, preparation of progress reports and follow-up surveys, etc. Safety & Environmental Protection Division.

Motor Vehicles & Supplies

91 MAZDA NAVAJO LX - blue/gray, 4wd, 5-spd., 72k mi., excel. cond., $13,500. Pete, Ext. 4028.

89 NISSAN SENTRA - blue coupe, 5-spd., ac, am/fm cass. stereo, 80k mi., excel. cond., $3,500. Emilio or Tom, Ext. 3734 or 928-0541.

89 FORD BRONCO - full-size, Eddie Bauer, 302 eng., 73k mi., mint cond., $11,500. Mike, 621-0965.

88 TOYOTA COROLLA - blue, a/t, 50k mi., ac, am/fm, new tire, brake, muffler, $5,000. 921-1582 after 7 p.m.

87 PLYMOUTH SUNDANCE - 67k mi., well maintained, 2-dr., driver's door needs repair, $3,000 neg. Wayne, Ext. 7238.

87 TOYOTA SUPRA - loaded, 75k mi., mint cond., $7,000. Ext. 3695, leave message.

87 CHEVY CELEBRITY - 4-cyl., 4-dr., new tires & battery, excel. cond., $2,750. Nick, 758-9197.

87 PLYMOUTH VOYAGER MINI VAN - 4-cyl., a/t, ac, cruise, folding bed, new tires, battery, brakes, body excel., $3,900. Bob, Ext. 4637.

85 CUTLASS CIERA - 4-cyl., 100k mi., dependable transportation, needs minor mech. work, ask. $1,100. Joe, Ext. 5139.

85 CUTLASS SUPREME OLDSMOBILE - p/s, p/b, ac, 75k mi., asking $1,900. 924-4927.

85 CHRYSLER LEBARON - 4-cyl., 4-dr., 36,928 mi., one owner, v.g. cond., $2,000. O. Booker, Ext. 3082 or 727-5912.

85 BMW 325e - 4-dr., a/t, ac, sunroof, new tires, asking $3,500. Ed, Ext. 4645.

85 FORD LTD - ac, am/fm, cruise, new tires & muffler, runs well, asking $1,250. Cristina, Ext. 7249.

84 ACCORD - 4-dr. sedan, 5-spd., ac, stereo cass., $1,800; '84 Corolla, 4-dr. sedan, 5-spd., ac, sunroof, $3,500. Susan, Ext. 2184 or 821-5836.

84 OLDS DELTA 88 ROYALE - 4-dr., V-8, a/t, p/s, p/b, a/c, cruise, new exhaust & tires, good cond., asking $1,700. Chen, Ext. 4331.

84 FORD LTD CROWN VICTORIA - 4-dr., p/everything, leather, trailer hitch, blue, new tires, $850. Ken, Ext. 2011 or 281-5565.

83 CHEVY VAN - ¾-ton, deluxe window, 6.2L truck diesel, ac, a/t, p/s, p/b, runs well, Bill, 298-8657.

82 HONDA CIVIC - a/t, 4-dr., runs well, 140k mi., $750. Vinny, Ext. 2642.

81 CADILLAC COUPE DE VILLE - 89k orig. mi., excel. cond., must sell, best offer. Ext. 1373 or 4795.

80 VOLVO 240 DL - runs well, dependable, $1,200. Pete, Ext 4798.

79 CAMRY - am/fm radio, make offer; '79 Jeep, am/fm/CB radio, CB doesn't work, make offer; '89 Camry, factory repair manual, $25. Jim, Ext. 4617.

78 FORD LTD - 58k mi., clean, new tires, one owner, garaged. 286-3906.

86 ISUZU TROOPER - best offer. 286-5870.

FORD FALCON - collector, all orig., mint, low mi., reasonable, must see. 727-1071 eves & wknds.

TIRES - P225x75R14, 2, excel. cond., $40/ea. 698-9274.

HITCH - heavy-duty Class I for Subaru or other small vehicles, bolts to vehicle's frame, asking $40. Gary, 758-5592.

TIRES - 3, Michelin MXL 175/70R13, excel. cond., $25 ea. Ext. 4706.

SPARE - wheel & tire for Toyota Tercel, unused, $20. Peter, Ext. 4094 or 751-6575, eves.

ROOF RACK - gutter-mount HD, v.g. cond., asking $15. Jan, 929-4522.

TRAILER HITCH - Class III, Draw-Tite model, removed from Dodge, $20. Don, Ext. 7237 or 744-2921 after 5:30 p.m.

Boats & Marine Supplies

26' ELIMINATOR - 1988, twin Mercs., trailer, $25,000. Steve. 277-7312.

23' THUNDERBIRD - fg hull in excel. cond., cuddy cabin, no motor/trailer, you haul. 281-1832 eves.

23' SAILBOAT - all fg, sleeps 4, galley, fixed keel, mooring dinghy, motor, sails good shape, extra sail, $2,000. Mike, Ext. 7861 or 698-3967.

21' RENKEN - 1980, cuddy cabin, solid boat, 140-h.p. F.W.C. Volvo Penta, runs well, ready for water, trailer. Patrick, Ext. 5377.

21' CRUISERS CAMPER - 150-h.p. Johnson ob., will demo in water, $1,995. Ext. 2168 or 744-4948.

19' BOWRIDER CRUISER - 115- h.p. Johnson, nearly new trailer w/elec. winch, $2,500. Jim, Ext. 3372 or 821-0250.

19' GALAXY BOWRIDER - 1986, W/1987 trailer, needs work, $650 neg. Scott, Ext. 7160.

17' MCGREGOR VENTURE SAILBOAT - fg, w/swing keel, sleeps 4, 24" draft, new galv. trailer, 10 hrs. on 6-h.p. motor, $2,000. Ext. 2360 or 929-5914 eves.

16' STARCRAFT - 35-h.p. Evinrude, Cox galvanized trailer. 325-0447 after 6 p.m.

16' O'DAY SAILBOAT - 1969, fg, good cond., 4-h.p. 1988 Force ob., $600. George, Ext. 5288 or 878-8177.

16' BOAT - 1935 Wilbur Ketcham motor launch, 8-h.p. Palmer ib., $1,900; 14' Sea Nymph, alum., 15-h.p. Evin., trailer, $1,100. Roger, Ext. 7518 or 878-8847.

SKIPJACK SLOOP - classic, fg, excel. cond., new motor. 475-0690.

ARROWGLASS BOAT - 1989, center console, 150-h.p. Merc., galv. trailer, DF, showroom cond., $7,900. 329-5419.

SHORELINE BOAT TRAILER - galv., new, 3,000-lb. axle, new lights, excel. cond. for 17'-21' 13" wheels, $775. Carl, Ext. 4420.

MARINE BATTERIES - 12V, in plastic cases, super crank heavy-duty 600 A, $65/both. Marty, Ext. 2214.

BNL Dance Club
with
Swing Dance Long Island
invites all to the

September Sock Hop

a '50s-style swing dance

Friday, September 9, 1994

7:30-11:30 p.m.

North Ballroom, Brookhaven Center
Brookhaven National Laboratory, Upton, New York

INCLUDES

Swing Dance Refresher Class
7:30-8:30 p.m.
taught by Giny Rae and Peter Sciurca
of Dance Magic

AND

'50s Sock Hop
8:30-11:30 p.m.
to the music of DJ Chris Patti
with Big Band and ballroom requests taken

CASH BAR AVAILABLE

Tickets: *$5 per person*

MUST BE PURCHASED IN ADVANCE

For tickets, contact:

- Violet Bezler, Ext. 3771, Bldg. 510B
- John Millener, Ext. 3853, Bldg. 510A
- Ron Ondrovic, Ext. 4553, Bldg. 355
- Nedy Santiago, Ext. 3402, Bldg. 197C
- Alison Tilp, Ext. 4465, Bldg. 515
- Gwyn Williams, Ext. 7529, Bldg. 725D

Furnishings & Appliances

BEDROOM SET - full-size, dark wood, Col., 6 pieces, good cond., $400. John, Ext. 7411 or 928-6791.

DINING ROOM - hutch, table, 6 chairs, excel. cond., $300. Ext. 2214.

DRESSERS - 3 matching, 2 & 4-drawer, light wood color, good cond., $90. Bryce, Ext. 3668.

END TABLES - 2, pecan wood, 1 coffee table, excel. cond., $100/all. Marty, Ext. 2214.

HOPE CHEST - antique, excel. cond., must sell, $350. 325-8116 eves.

HOSPITAL BED - full-size, barely used, 6 positions, vibration, orig. $1,400, asking $700. H. Frei, Ext. 7898.

REFRIGERATOR - Gibson, side-by-side, 19 cu. ft., self defrost, 32"Wx32"Dx63"H, works well, $125. Frank, Ext. 5377 or Vita, 277-0464.

STOVE TOP - Caloric, s/s wall oven; Kenmore dryer, white, 24"; extra-large capacity washer. 654-3128.

TABLE - dining room table, white, Formica w/drop-in leaf, 6 swivel armchairs, $150. Don, Ext. 7237 or 744-2921 after 5:30 p.m.

TV - 13" color, w/black oak entertainment center, new. Elise, 589-8964.

TRASH COMPACTOR - Sears, like new, works great, orig. $200, now $50. Bob. Ext. 3509 or 289-9533.

WALL UNIT - 3-piece, v.g. cond., $300. Sydell, Ext. 3389 or 727-6385.

WATER BED - black/mirror soft-sided, wall unit, 2 dressers, heater, massage unit, almost new. Elise, 589-8964.

Tools, House & Garden

ELECTRIC GRILL - outdoor charbroil, w/cover, lava rocks, like new, $75; gardenia plant, large bush, in clay pot, $75. 325-8116.

LAWN MOWER - Lawn Boy, 21", push-type, w/bag, needs small repairs, runs well, ask. $50. Joel, Ext. 5038.

LAWN MOWER - Snapper, excel. cond., 21" cut, 3½-h.p., rear bag, 2 yrs. old, $175 firm. Dan, Ext. 4677.

TREES - Japanese maples, $10-$45+. 265-6542.

VANITY - 30", oak vanity w/clamshell sink, faucet, like new. 289-8105.

Sports, Hobbies & Pets

ANIMAL CAGE - 21"x41"x26", s/s, collapsible, like new. Ext. 2831.

BICYCLE - Huffy Stalker, 24", 12-spd., mountain bike, needs tube for rear tire, $40. 589-5490.

CIRCUIT TRAINER - Body by Jake, 16 different exercises, great cond., hardly used, $80. Evelyn, Ext. 4446.

FISH TANK - 70-gallon, filters, lights, $225. 588-9325.

DALMATION PUPPY - good bloodlines & lineage, female, 1 blue eye, 1 gray eye, paper trained, shots. 924-8558.

HOME GYM - Huffy Exo-flex 1900, adjust. bands, padded bench, foam-covered bars, new cond., orig. $130, asking $65. Linda, Ext. 2733 or 878-8491.

JACK RUSSELL TERRIERS - 9 wks. old, extremely cute, $350. Dennis, Ext. 4028 or 765-3012.

R/C CAR & TRUCK - 4WD, w/radios, batteries, charger & spare parts, $100/all. Dave, 924-4927.

SKIER/ROWER - XC, exercise equipment, like new, $50. Ext. 3589, Wednesdays only.

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

SKIS - Dynamic Edition, w/Salomon bindings, $80; Salomon ski boots, size 11, $50. Emmanual, Ext. 3202.

STAIR CLIMBER - Bruce Jenner Plus, like new, w/videotape, $40. 325-8116 eves.

SURF CASTER - 10½' Ugly Stik, w/Penn 7042 reel, hardly used, perfect cond., $125. Dan, 758-3215.

Audio, Video & Computers

COMPUTER DESK - roll-out keyboard shelf, roll-out printer shelf w/separate paper storage, on casters, $75. Don, Ext. 7237 or 744-2921 after 5:30 p.m.

SCANNER - AT&T, 300x300 dpi, w/software, $200; internal fax/modem card, w/Prodigy membership, $50. Gerardo, Ext. 7907 or 924-4936 after 5 p.m.

STEREO CABINET - & Colonial dry sink, walnut stained pine cabinet, $25. Bob, Ext. 3509 or 289-9533.

VIDEO GAMES - Sega Genesis, w/Spiderman & Wheel of Forture, used 2 times, $150; tabletop copier, $125. Joe DeVoe, Ext. 4639.

WOOFERS - 15", 175 watts, 350 peak, 70-oz. magnet, brand-new, ask. $140/pr. 924-4927.

Miscellaneous

BABY BACKPACK CARRIER - Gerry, alum. frame, like new, $40. Donna, 821-3739.

CHANGE MAKERS - for $1 bills; 2 used, $100 ea., 1 new, $110; or $300/all. Jan, 929-4522.

COAT - Persian lamb, size 12-14, mink stole, $100/both; Sears portable sewing machine, $25. 473-4217.

CRIB - Bassett, maple, no mattress, excel. cond., $75; changing table, $35. John, Ext. 7411 or 928-6791.

ELECTRIC TYPEWRITER - IBM, $25; floor waxer & polisher, like new, orig. $400, sell for $125. 924-4927.

GOWNS - size 3/12, shoes, high heel, narrow widths. Ext. 5938.

HIGH CHAIR - Fisher Price, $30. 928-6791.

PLAYPEN -Graco, portable, excel. cond., $50; Century stroller, good cond., $50; Fisher Price infant swing, $30; walker, $10. Tom Russo, Ext. 7330.

PORT-A-CRIB - in orig. box, brand-new, orig. $90, sell for $45. Bob, Ext. 3509 or 289-9533.

STROLLER - Century Royale, excel. cond., $40. John, Ext. 3422 or 929-4101.

TICKETS - 2, Metropolitan Opera, Wed., 9/28, 8 p.m., first row balcony, *Rigoletto*, $34/ea. Carmen, Ext. 4135.

TICKETS - 2, James Taylor at Jones Beach, 9/3, 17th row on the floor, $72. Sue, 874-2090.

TYPEWRITER - Smith Corona, electric, needs minor repairs, best offer, orig. $170. 821-6856.

Free

BILKO DOORS - used , you haul away, still in good shape for bsmt. 924-8558.

PARAKEET - w/cage, free to good home, no cats. Patti, 929-8277.

Yard & Garage Sales

BELLPORT - 8/20-21, rain date 8/27-28, 61 Station Rd., Bellport.

MASTIC BEACH - multifamily, 8/27-28, major appli., toys, furn., lawn mowers, housewares, clothes, 86 Peeker Ave.

Car Pool

PLAINVIEW - LIE exit 43, 4th driver needed. Ron, Ext. 2175 or Elliott, Ext. 2495.

Lost & Found

LOST - watch, silver & gold, at BNL pool. Mary, Ext. 5923.

Wanted

BASEBALL CARD SETS - Topps 1970s; boat, 12' aluminum, for 3 people. (718) 721-4271 weekdays or 821-6698 weekends.

BOAT TRAILER - 14'-16', decent cond. Ed, Ext. 5529.

CARS, TRUCKS & MOTORCYCLES - reasonable. Bill, 467-1343.

DEHUMIDIFIER - good condition. 878-1617.

HAMSTER/GERBIL HABITAT - w/races and tunnels for preschool. Susan or Dennis, Ext. 2360 days or 929-5914 eves.

MARINE FISH - looking for healthy, inexpensive tropical, saltwater fish. Jim, Ext. 4617.

MOVIE PROJECTOR - Super 8. Peter, Ext. 4094.

OUTBOARD MOTOR - 7.5-9.9 h.p., long-shaft, good cond. Chris, Ext. 2022 or 395-6112.

PEOPLE TO JOIN - nondenominational Christian fellowship group, every Thurs., noon, Rec. Bldg., apt. area. Pete, Ext. 3297.

ROOMMATE - share house, 3 min. from BNL, $100/wk. Chris, 345-0682.

TIRES - P205/75R15 for Jeep Wrangler. Ext. 2831.

In Appreciation

I thank all the people at the NSLS and my other friends at BNL for the departure party and gifts. The times at BNL will be remembered. — Ed Gaudet

I thank my friends at BNL for your cards and sympathy. Your friendship and support are a great comfort. — Karen Adelwerth

Farewell Gatherings

FAREWELL PARTY - for Joe Cardamone, friends to celebrate on Sept. 7, 5:30 p.m., Brookhaven Center, $16/ea., RSVP by 9/1. Lori, Ext. 3560.

Classified Ad deadline is 4:30 p.m. Friday for publication Friday of the next week.

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