BROOKHAVEN BULLETIN
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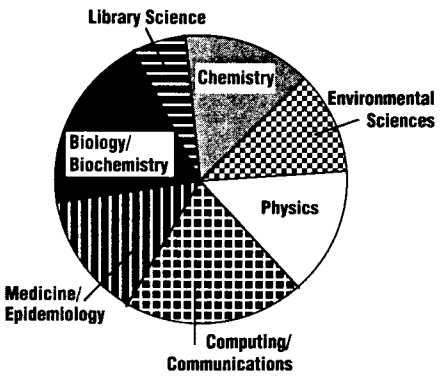
BROOKHAVEN NATIONAL LABORATORY

Summer Student Special Edition

The Next Generation of Scientists: A Profile

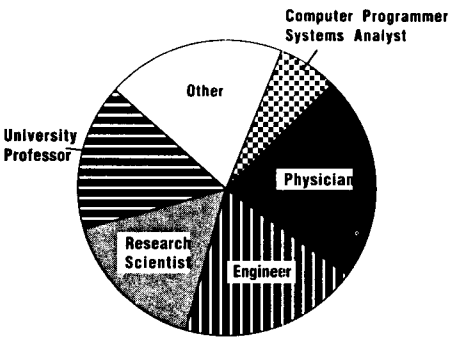
For this Summer Student Special Edition, the Bulletin surveyed BNL's summer students and other young visitors to find out their interests, goals and heroes. They were also asked to predict scientific achievements over the next two decades. Thirty-five students responded; here are their answers. Quotes from selected students are on page 2.

What are your research interests?



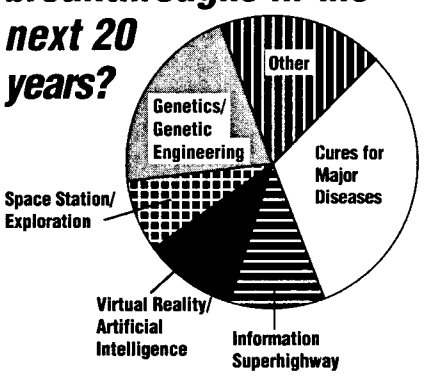
—Charts by Kara Villamil

What are your career goals?



Respondents could give more than one answer to each question.

What will be the most significant scientific breakthroughs in the next 20 years?



Who are your heroes, scientific or otherwise?

1. **Parents**
2. **Academic or professional mentor**
3. **Albert Einstein**
4. **Richard Feynmann**
5. **Isaac Asimov**
   Mahatma Gandhi
   Martin Luther King Jr.

Others mentioned: *Albert Camus, Bill Clinton, Norman Cousins, Marie Curie, Leonardo da Vinci, Bill Gates, Alan Greenspan, Stephen Hawking, Jesus, James Earl Jones, Abraham Lincoln, Gregor Mendel, Isaac Newton, Friedrich Nietzsche, Sandra Day O'Connor, Robert Oppenheimer, Linus Pauling, Max Planck, Socrates, Henry David Thoreau and James Watson & Frances Crick.*

Standing in front of the world's largest superconducting magnet, one of the muon g-2 experiment's critical components, are some of the summer students working on the project with Dave Zimmerman (front row, left), Alternating Gradient Synchrotron Department. They are: (front row, from second from left) Ming Deng; Melanie Wuthenow; (middle row, from left) Afshin Beheshti; Dan Kozieczny; Peter Allong; (back row, from left) Alex Grossmann; Dean Miller; and John Cummings. Not shown in the picture are: Matt Hare; Michael Saganich; and Dave Colbert.

Hands-On Experience a Plus For AGS Muon g-Minus-2 Students

While it seems obvious that scientists do science, a handful of students working at BNL this summer have learned what this fundamental principle really means: In the real world, they have discovered, there's more to science than meets the eye.

Working on the Lab's g-minus-2 (g-2) experiment at the Alternating Gradient Synchrotron, these students are getting the chance to witness a huge science experiment in the making — from the bottom up.

The g-2 experiment, scheduled to begin taking physics data in 1996, will allow an international team of scientists to measure the anomalous magnetic moment of the muon to a precision of 0.35 parts per million.

Though students are being taught the physics of the g-2 experiment in weekly classroom sessions, they have learned that they actually may be gaining more from their hands-on experience with the experiment and from tutoring by the scientists behind the scenes.

"You don't need to know much about physics to do my job," says Michael Saganich, a senior at Fairfield University, who is pulling electrical cables for the world's largest superconducting magnet, one of the experiment's critical components. "But, being around scientists, the science kind of rubs off on you."

"Before I came here, I didn't even know what a muon was," admits Melanie Wuthenow, who is working this summer on the g-2 experiment's home page on the Internet's World Wide Web. "You can hear something once, but you have to hear it five more times before it really sinks in," she says. Wuthenow, a participant in the Lab's Community Summer Science Program, was graduated from Westhampton Beach High School in May and will be a freshman at Cornell

(continued on page 2)

Students Reflect on Science in Modern Russia

"I love my country," avows Svetlana Burova, a chemistry student at the High Chemical College of the Russian Academy of Sciences. "But scientists in Russia have some problems with money." Namely, there isn't much to go around.

Burova, who is working this summer as a researcher in the BNL Chemistry Department, doesn't want to emigrate from Russia: Ethnically and culturally, she's rooted in her native soil. However, many scientists and students — including four other students also working as summer student researchers at Brookhaven — have left the former Soviet Union in search of brighter career opportunities.

Before the fall of the Soviet Union in 1991, says one of these students, Michael Vershinin, scientists enjoyed relative prestige in Russian society.

Now, however, according to Vershinin, who is working this summer in the Physics Department, money is so scarce in Russia — especially when it's coming from the government — that people from all walks of life must scramble just to make ends meet.

Over there, "It's business, business, business," says Vershinin, who left Russia with his family in 1991 and is now a senior at the Cooper Union for the Advancement of Science & Art in New York City. "People will do anything to make a buck."

Mikhail Faktorovich, a senior at the State University of New York (SUNY) at Stony Brook who is working this summer in the Department of Applied Science,

Svetlana Burova — Photos in this issue by Roger Stoutenburgh

(continued on page 2)

Contract Ratified

On Monday, July 31, members of the International Brotherhood of Electrical Workers (IBEW) Local 2230 ratified a two-year contract with Associated Universities, Inc., effective August 1. Among its provisions, the new contract calls for a 3½-percent wage increase for the first year and a 3¼-percent increase for the second.

As was negotiated, effective this October 1, employees covered under the new IBEW contract who wish to be covered by any of the Lab's medical insurance plans will be required to contribute toward the cost of those plans; this is the same as the requirement made of nonbargaining-unit employees, as was announced by Lab Director Nicholas Samios in a May memorandum to all employees.

In addition, IBEW members will now be subject to the memo's provisions regarding the reduction of sick-leave accrual and the elimination of excused time for voting.

Looking Into Their Own Futures: Young Scientists' Predictions

What will be the most significant and technical breakthroughs in the next 20 years? With their answers to this question, these students paint a colorful portrait of science into the 21st century.

Eddie Rivera

Age: 33.
School: Baruch College of City Univ. of New York.
Year in School: Junior.
Major: Computer Information Systems.
"A thinking computer will allow us to simulate the human mind. New forms of artificial intelligence will give a computer the ability to acquire knowledge on its own, helping us discover new frontiers in science and outer space."
Rivera, who is working this summer on computer installations and software applications in the Computing & Communications Division, is in the U.S. Department of Energy's Minority Scholarship Program.

Linda Oulton

Age: 24.
School: University of Southern Maine.
Year in School: Graduated May 1995.
Major: Biology.
"One of the biggest scientific breakthroughs would be a cure for the AIDS virus. With significant research effort, this virus could be eradicated in this country, as polio has been during this century."
Oulton, a student collaborator in the Science and Engineering Research Semester Program, is working in the Biology Department on the quantization of damage in cotton DNA by ultraviolet rays.

Giles Charleston

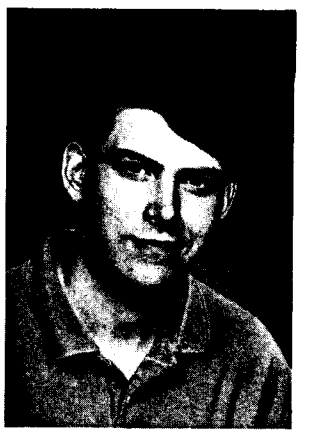
Age: 23.
School: University of Maryland at College Park.
Year in school: Second-year graduate student.
Major: Systems Engineering.
"The convergence of audio, video, telecommunication and computers into one network on the information superhighway will make the world smaller. With better means of data transfer, it won't be a problem to communicate with people any time, anywhere."
Charleston, a participant in the Graduate Engineering Minorities Program for students working on advanced degrees in science or engineering, is automating the leak tape detection system for the High Flux Beam Reactor.

Sharon Wells

Age: 22.
School: North Carolina A&T State University.
Year in School: Graduated May 1995.
Major: Chemistry.
"I think the building of the Space Station will open up whole new areas of science. It will give us unlimited opportunities to use microgravity in research on waste-management technologies, human physiology, and plant and bacteria growth."
Wells, a summer student in the Chemistry Department, is working on time-resolved Fourier-transform infrared spectroscopy of the photolysis products of benzoquinone and pyrizine.

Jeff Chagnon

Age: 19.
School: State Univ. of New York at Oswego.
Year in School: Junior.
Majors: Math and Meteorology.
"Progress is certainly helped along by money, so there will be the most progress in areas where there are immediate application since those who are funding science will want to make sure their money is being spent in the right places."
Chagnon works for Meteorology Services in the Oceanographic & Atmospheric Sciences Division of the Department of Applied Science. He would like to do field research on the evolution and structure of lake-effect snow bands.

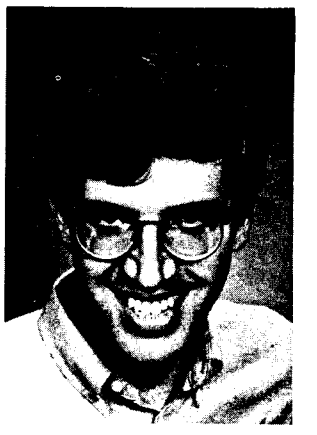


Elizabeth Hung

Age: 20.
School: Yale University.
Year in School: Junior.
Majors: Psychobiology and Music.
"Innovations in chemotherapy, radiation and surgery will make the success rate of cancer treatment nearly 100 percent. Ideally, completion of the human-genome map will allow scientists to use gene therapy to prevent cancer and other hereditary diseases."
Hung, a participant in the Science and Engineering Opportunities Program for Women and Minorities, is working in the Biology Department on the Human Genome Project, sequencing the pBluescript KS plasmid.

Brendan Wyly

Age: 29.
School: Univ. of Illinois, Champaign-Urbana.
Year in School: Second-year graduate student.
Major: Library & Information Science.
"If fusion energy is developed, it will be the most socially transforming technological development. However, we must be aware that the environmental problems arising from the way we use that energy may make our current environmental problems pale by comparison."
As a summer student in the Medical Department, Wyly is developing and organizing a geographic information system for the Long Island Breast Cancer Study Project.



AGS Students (cont'd)

University this fall.

Perhaps more importantly, these students are getting a closer look at what it's like to actually *be* a scientist. At the time in their lives when they are making critical decisions about their futures, they're finding out what they can expect from a career in science.

"It seems like a scientist spends one quarter of his time doing science and three quarters of his time doing the business of science," says Saganich.

John Cummings, a junior at Boston University, noticed what an important role management plays in such a large project. "If you want to do high-energy physics, you have to have a lot of people working on different jobs," he says. "And every job has to get done for the experiment to work."

For now, he concedes, being on the bottom rung isn't so bad. "My job gives me an opportunity to see the technical side of what's going on, but I don't have to be responsible for the entire project."

Dan Kozieczny, a sophomore at Princeton University, was impressed by the magnitude of the undertaking. "It took me a while before I understood that all these buildings were for the same project," he says. "It's been interesting to see how things go together."

Still, these students will not easily forget the real-world lessons they have learned on the job. According to Cummings, who pulls cables along with Saganich and Afshin Beheshti, a junior at the University of Minnesota, students have sometimes finished placing an entire section of cable only to realize that it has to be done over, correctly.

"It builds character," says Cummings. — Brad Keoun

Russian Students (cont'd)

left Russia in 1992. He says one of his friends still in Russia was a brilliant student double-majoring in economics and computer science. However, faced with financial crisis, the friend dropped out of college to peddle blue jeans and sneakers on the streets of Moscow. Recently, says Faktorovich, his friend made enough money to buy a car — a genuine status symbol in modern Russian society — by importing cheap goods from Turkey.

Burova says Russian scientists, though their modest paychecks have been scaled back considerably, continue to work assiduously in whatever labs they can find. With little government support, they work on projects that they find interesting. Still, admits Burova, Russian scientists "work very hard and earn very little."

Yefim Gorelik, a recent graduate of SUNY at Stony Brook also working in the Physics Department this summer, says he and his family left Russia in 1992, primarily because he didn't think he would be able to find a job in his field in Russia when he graduated from college.

In the old Soviet regime, according to Gorelik, a placement office would determine where graduates would work once they finished their programs: Top students — or those with connections — would get good positions with top companies; others would be placed at posts with lesser companies or — even worse — in Siberia.

Now, says Gorelik, "You have to look for a job yourself, but usually, you don't find one. Unless you major in something business-related, you're dead."

Deep vs. Broad Education

Unlike in the U.S., where students only have to declare a major by their third year of college, students in Russia have to decide what they want to study *before* they apply to college.

When they *do* apply to college, there are no SATs, no Achievement Tests, no Advanced Placement credits — just one chance at an entrance exam to the college they choose. What's more, since the entrance exams for all colleges in Russia are given on the same day, students can apply to only one college. Those who don't get in, says Gorelik, are inducted into the army.

Perhaps one reason it's hard for young Russians to forego their interest in science for a job in business is that colleges in Russia are so highly specialized. Vitaly Furman, a Columbia University senior who is working this summer in the Deparment of Advanced Technology, says that a Russian student's curriculum consists of a prescribed regimen of specific courses, and students are not trained for jobs beyond the scope of their major.

According to all these students, Russian education in general is deeper than it is here in the United States — but not as broad. For example, they agree that a Russian undergraduate degree, which takes 5½ years to complete, is equivalent to a master's degree in the U.S. But, on the other hand, a Russian physician-in-training goes straight from high school to medical school — skipping the liberal arts education at a four-year college that American students usually obtain before medical school.

Twenty-five of Burova's 30 classmates in her Russian chemistry program are working at internships in the United States this summer. Most of them, she says, want to remain in Russia after graduation, even though they acknowledge that science jobs won't pay well and will be hard to find.

For now, however, Burova keeps studying; once she finishes her education, she'll decide what to do. "In my university," she says, "people don't worry about their futures."

— Brad Keoun

Camera Club

A professional model will be the focus of a shoot by the BERA Camera Club, at noon on Thursday, August 10 in Room D, Berkner Hall. Club members and non-members are invited to attend; bring your camera and a roll of Kodak VPS portrait film. For more information, contact Ripp Bowman, Ext. 4672.

Opportunity Knocks for 30 Undergraduates

The 22 students pictured between Frances Ligon (left) and Nanci Hoey (right), both of BNL's Diversity Office, are part of this summer's Science and Engineering Opportunities Program for Minorities and Women. Sponsored by the Diversity Office and running from June 5 through August 11, this program is offering 30 first- and second-year undergraduates research and work experience, and mentoring by members of the scientific, professional and technical staff in all eight BNL departments and six Lab divisions.

Four of the students in this program are among the first 20 national NAACP/DOE scholars, including Damien Phillips (back row, fourth student from left), a freshman at Emory University who is working in BNL's Biology Department. The other scholars at BNL are: Taliah Givens, Alabama A&M University, who is working in the Computing & Communications Division; Akilah Harmon, Savannah State College, who is interning in the Technology Transfer Office; and Amber Polk, University of Georgia, who has an assignment in the Safety & Environmental Protection Division.

The NAACP/DOE Scholarship Program was established in 1993 by Energy Secretary Hazel O'Leary and is co-sponsored by the NAACP, to support students who are members of groups that are underrepresented in science and technology as they pursue undergraduate degrees in these fields. One requirement of the program is that scholars must participate in at least one summer internship at a U.S. Department of Energy facility. Today, in fact, the NAACP/DOE scholars, including BNL's four, will present their research at a Scholarship Program conference in Washington, D.C.

The Sky's the Limit for These Students

For newly minted Ph.D.'s, making the transition from grad student to full-fledged scientist can be rocky. But this group of 25 young, smiling atmospheric chemists got some help bridging that gap June 15-18, when they visited BNL for the third Atmospheric Chemistry Colloquium for Emerging Senior Scientists (ACCESS-III).

Sponsored by the U.S. Department of Energy, the National Science Foundation, the National Aeronautics and Space Administration, and the National Oceanographic and Atmospheric Administration, and hosted by the Environmental Chemistry Division of BNL's Department of Applied Science, the gathering brought together students hailing from eight countries who had been selected in a stiff international competition. While at BNL, participants presented research papers and heard from representatives of the four sponsoring agencies about their atmospheric chemistry research programs.

Along with the atmospheric chemistry grad students and agency representatives, those pictured include: ACCESS co-organizers and BNL Department of Applied Science (DAS) Senior Scientists (back row, center, with beard) Stephen Schwartz and (back row, seventh from right) Leonard Newman; and conference-support staff (middle row, center) Patricia Kriss, (front row, third from right) Judith Williams and (back row, second from left) Maggie Marsch, all of DAS.

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

Country/Western Dance

The BERA Country/Western Dance Club will again be offering dance lessons on Tuesdays after work, beginning in September. The classes' proficiency level will depend upon the experience of those who sign up. The cost and number of classes per session will also be determined by the number of people who register.

So, sign up now for great fun and exercise. New and continuing beginners through intermediates are welcome. For more information or to register, contact Marilyn Johnson, Ext. 2546, before next Friday, August 11.

Two Bucks Worth Millions To Kids in Mentoring Program

Last December, when Charlotte Bullock learned that a local mentoring program needed a few good men, she knew just where to look. If *she* had extra time, she reasoned, so must her fiancé, Terry Buck. After all, they were *both* planning their May 1995 wedding, although, actually, Terry seemed like he was already married — to his BERA defending-champion basketball team, Magic.

Despite his nightly appointments at the gymnasium, however, Terry signed up as a volunteer mentor. Soon, his lunchtime meetings with his mentee, Justin, a second grader at Charles E. Walters Elementary School in the Longwood School District, became a highlight of his week.

Now married, the Bucks are both volunteers in the New York State Mentoring Program. Terry, an assistant buyer in the Contracts & Procurement Division, and Charlotte, the Lab's cashier, of the Fiscal Division, spend an hour each week mentoring children from local elementary and middle schools who have low self-esteem or are at risk of dropping out of school.

The mentoring program was started at Brookhaven last year when Peter Soo, of the Department of Advanced Technology, called for Lab employees to volunteer as mentors. According to Soo, over 40 BNL employees have now been trained for the program. Currently, two elementary schools and the middle school in the Longwood School District are participating.

In the program, mentor and mentee are paired to match common interests, gender and race, so a kid can envision the mentor as a role model — and not just another grown-up with something to say. According to Soo, male volunteers are especially in need, since many of the kids at risk come from families in which the father is absent.

Charlotte and Terry Buck

Terry says more minorities should volunteer — especially professional black men. According to Charlotte, the boys at the school are shocked when they find out that Terry's "not a rapper, professional basketball player or drug dealer — just a successful businessman." Terry says such a simple thing as personal appearance can inspire his mentee: "He sees me dressed up in nice slacks, shirt and tie, and he says, 'Man, I can actually *be* like that.' "

According to Charlotte, the mentoring program is a great way for scientists and other BNL employees to reach out to the local community. "Though we may not all live in this area, we work within a community — and we need to get involved," she says.

To learn more about the mentoring program or to sign up as a mentor, contact Peter Soo, Ext. 4094.

— Brad Keoun

Longwood School District children enjoy lunch with their mentees during a June 12 visit to BNL, which included a presentation by Karl Swyler (left), Manager of the Office of Educational Programs.

Drawing Winner!

Public Affairs Office summer student Brad Keoun (left), who will enter the College of Journalism and Communications at the University of Florida as a graduate student this fall, presents a BNL backpack to David Saurino, a summer student in the Biology Department. Saurino's name was picked in a drawing of summer students' names.

BWIS Notes

Meeting, Talk by Laster

Brenda Laster, Medical Department, will speak about "Auger Electron Therapy (AET) for the Treatment of Malignant Tumors," at the next BWIS meeting, on Thursday, August 10, from noon to 1 p.m., in Room C, Berkner Hall.

AET is similar in concept to boron neutron capture therapy, now being done on malignant brain tumors at the Brookhaven Medical Research Reactor (BMRR).

A target atom, carried into a tumor on a biologically active molecule, gives off electrons upon interaction with a beam of radiation; the process is called Auger electron emission.

Laster's work at the National Synchrotron Light Source uses x-ray radiation to interact with indium atoms attached to porphyrin molecules and may find application in the treatment of prostate cancer. At the BMRR, she researches AET using gadolinium and thermal neutrons.

Laster came to BNL as a medical associate in 1983, working with Ralph Fairchild and changing her career in midlife from diagnostic cytology. Under the Lab's tuition refund program, she earned her Ph.D. in radiation biology in 1991. She was appointed an assistant scientist in 1993.

Chasman Scholarship Ceremony

On Friday, August 11, at 3 p.m., Brookhaven Women in Science (BWIS) will present the 1995 Renate W. Chasman Scholarship to Kristen S. Grace, a biochemistry student at the State University of New York at Stony Brook. All are invited to the ceremony and reception in Room B of Berkner Hall; refreshments will be served.

Software Demo

On Wednesday, August 9 in the CCD Seminar Room, Bldg. 515, representatives from Computer Associates will present information on their UNIX and PC systems-management products including their CA-Unicenter software. UNIX-platform software will be discussed at 10 a.m., while PC-platform software will be covered at 2 p.m.

CA-Unicenter is an integrated client/server systems-management software package that works across a number of platforms. Its benefits include security, workload management and scheduling, calendar management, backup and archive management, problem management and performance monitoring.

Arrivals & Departures

Arrivals

Elaine D. Cirillo.....Comp. & Comm.
Gary R. Steul.....Cent. Shops

Departures

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

Arlene F. Benkenstein.....Plant Eng.
Katherine J. Boggi.....Mgt. Info. Sys.
Gloria Cusimano.....Mgt. Info. Sys.
Sarah S. Ebron.....Plant Eng.
Marilynn B. Harned.....ISD
Anthony Ievolella.....Cent. Shops
Tammy Y. Kwan.....App. Science
Charles Lotridge.....Comp. & Comm.
Benjamin W. Rosen.....Mgt. Info. Sys.
William J. Ruppert.....Plant Eng.
Jinsong Sheng.....Biology
Wilford Stevenson Jr......Adv. Tech.
Virginia E. Waterman.....RHIC

Atlantic City Trip

Seats remain for the next BERA-sponsored, one-day trip to Bally's Grand Hotel and Casino on the boardwalk in Atlantic City, on Saturday, August 19. The initial cost will be $22, but the hotel-casino will give a $6 coin return.

The bus will leave the Brookhaven Center at 8 a.m. and return at approximately 11 p.m. There can be a pickup and drop off at LIE exit 63. Buy tickets at the BERA Sales Office, weekdays, 9 a.m. to 1:30 p.m. For more information, call Andrea Dehler, Ext. 3347.

Witholding Tax Error

Due to an error in the calculation of the New York State withholding tax for BNL monthly employees who claim single status, an excess amount of this tax was withheld, and this was reflected in these employees' July paychecks. As a result, affected employees will be reimbursed the difference between the excess and the correct amounts; an explanatory letter will accompany each reimbursement check.

The Fiscal Division regrets any inconvenience that this error may have caused. If you have a question regarding this matter, direct it to the Payroll Section of the Fiscal Division, Ext. 2470.

Cafeteria Menu

Monday, August 7	
Soup: Corn chowder	.90/1.20
A la Carte: Arroz con pollo	3.85
Lite: Manicotti & cheese straws	3.65
Deli: Corned beef & cabbage	3.20
Grill: Filet of fish	3.30
Tuesday, August 8	
Soup: Won ton	.90/1.20
A la Carte: Fried chicken	3.95
Lite: Meat lasagna w/focaccia	3.95
Deli: Turkey w/stuffing	3.20
Grill: Monte Cristo	3.30
Wednesday, August 9	
Soup: Sausage-tortellini minestrone	.90/1.20
Display Cooking: Pasta	4.75
Deli: Loin of pork	3.20
Grill: Cordon Bleu	3.20
Thursday, August 10	
Soup: Summer squash	.90/1.20
A la Carte: Baked macaroni & cheese	2.95
Lite: Veal Parmesan	3.65
Deli: BBQ brisket of beef	3.20
Grill: Turkey chili in a tortilla	3.30
Friday, August 11	
Soup: Seafood bisque	.90/1.20
A la Carte: Salisbury steak w/mushrooms	3.85
Lite: Vegetable au gratin	3.65
Deli: Rosemary leg of lamb	3.20
Grill: Philly cheesesteak	3.30

Bowling

Call for Bowlers

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

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

All BNL employees, retirees, on-site contractors and their families may join. You do not have to be a great bowler, just a willing one! For more information, call Debbie Botts, Ext. 7218, or Maryann Musso, Ext. 2352.

Attn: Team Captains

Registration for existing bowling teams is due by Wednesday, August 16, and will be given priority; new-team registration is due by Friday, August 18.

A meeting of bowling team captains will be held on Wednesday, August 23, at noon, in Room D, Berkner Hall.

Classified Advertisements

Placement Notices

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

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

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

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

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

OPEN RECRUITMENT - Opportunities for Laboratory employees and outside candidates.

DD 2079. TECHNICAL POSITION - Requires an AAS degree in electronic technology or equivalent experience, and a background in complex electronic and electromechanical equipment. Responsibilities will include operating, maintaining and modifying the accelerator and equipment at the Tandem Van de Graaff. Shift work required (reposting). Physics Department.

DD 2082. TECHNICAL POSITION - (term appointment) Will provide mechanical support for experimental research programs at the High Flux Beam Reactor. Under direct supervision, will assist in installation, assembly and maintenance of experimental equipment and facilities. Previous relevant work experience highly desirable. Physics Department.

Boats & Marine Supplies

24' NIMBLE SAILBOAT - 1989, double ender w/mizzen, roller furling, VHS, glass, brass, teak, cost $23,000+, sacrificing at $9,900. Bill, 878-4072.

20' SPORTSCRAFT - w/1985, 115-h.p. Mercury o/b, runs well, good cond., no trailer, in water, $1,600. Bill, Ext. 4201 or 567-5631.

19' CRUISER - fg, 115-h.p. Johnson, tilt galv. trailer, p/winch, $2,100. Jim, Ext. 3372 or 821-0250.

16' GLASTRON - 1968, navy top, w/1979 2k lb. capacity Shoreline trailer, both good cond., $325. John, Ext. 3422 or 929-4101.

16' STARCRAFT - alum., new navy top, 50-h.p. Evinrude, elec. start, trailer w/new elec. winch, $1,900. 924-6751.

STEERING CABLE - hydraulic incl. wheel, fits to 22', new, $75; bow rail s/s, new, $85; p/winch, 5k lb., excel. $85. 329-1277after 6 p.m.

CANOE - Mad River Expedition model, Kevlar, camouflage, 2 Kevlar paddles, 54 lbs., 1,100 lbs. capacity, new $2,500 , $1,700 or best offer. Ext. 3092.

IMPULSE 2830 - combination fish finder & Loran C, never used, new $695, now $225. Henry, Ext. 5725 or 727-7227.

OUTBOARD - 1989 Mercury, black, max 150, ss prop, 54 hrs., not running, best offer. P. VanGurp. Ext. 7362.

OUTBOARD - lower unit, OMC, V-6, $150. Bart, Ext. 2005 or 924-6761.

CANOE - yellow plastic, seats 2, w/paddles & life jackets, $75. Kara, Ext. 5658.

KAYAKS - 2 Perception Whitewater, Spirit lg. cap., Mirage med. cap., skirts, flotation incl., $400 ea., $700 both. Scott, Ext. 5319 or 929-4563.

WINDSURF BOARD - 11.5' Vinta w/3 matching sails and car carrier, $500. Darryl Kaurin, Ext. 7892 or 462-9085.

Furnishings & Appliances

AIR CONDITIONER - Fedders, 9,000 Btu, 115V, approx. 10 yrs. old, works well, $75. Tirre, Ext. 3288 or 281-0360 after 6 p.m.

AIR CONDITIONER - G.E., 12,000 Btu, $150. Naidu, Ext. 4263.

AIR CONDITIONER - 10,000 Btu, window mount, v.g. cond., asking $225; dehumidifier, v.g. cond., $25. Doan, Ext. 7535 or 345-0462.

BUNK BEDS - heavy-duty, v.g. cond., less than 2 yrs. old, orig. $369, now $200. O. Booker, Ext. 3082 or 727-5912.

BUNK BEDS - L-shaped, Formica, w/desk under top bed, asking $250. Henry, Ext. 5725 or 727-7227.

CHINESE ARMOIRE - red & black; bar stools, 4, brass & leatherette; make offer. 924-4927.

DINING ROOM - Colonial, table w/2 leaves, 6 chairs, large hutch, good cond., $200. Ext. 7488.

DRESSER - Bassett, children's, 2 door, 6 drawers, excel. cond., $100. Mark, 744-9308.

DISHES - service for 4, $5; recliner, $50; Fisher Price high chair, $10; coffee table, $15; loveseat, $10. Jeff, 924-7854.

ENTERTAINMENT CENTER - oak pressboard, easy installation, brand-new, $60; coffee table, Formica, black, $25. Chris, 399-7493.

FURNITURE - 4-drawer office file cabinet, $30; 2 upholstered/wood arm chairs, $40 ea.; upholstered swivel shair, $30. Mott, Ext. 7108.

FURNITURE - TV, couch, dining table, full and queen-sized beds, filing cabinet, moving, must sell, very cheap. Dileep, 471-6396 eves.

SOFA BED - Sealy, full-size, 6" inner-spring mattress, beige, Scotchguarded, $400. Denise, Ext. 5873.

Tools, House & Garden

CHAINSAW - chain, various sizes, some new, some used once, cheap. Bart, Ext. 2005 or 924-6761.

FILTERS - air, AFL-52, Sears & Lee brands, $10/4. Susan, Ext. 7647.

GARLIC - homegrown, *Inchelium Red* & *Nootska Rose*, $2.89/lb. Pat, 878-9117.

HEATING UNIT - Miller Gun, v.g. cond., $50. O. Booker, Ext. 3082 or 727-5912.

LAWN FURNITURE - glass-top table, chairs, chaise lounges, good cond. 325-0447.

LAWN MOWERS - Caldor, 22" rotary, $60; Greenbriar, 20" rotary, $60; riding lawn mower, Snapper, 11-h.p., elec. start, grass catcher, $600. Dan, Ext. 4220 or 698-7322.

LAWN MOWER - mechanical push type; rakes, shovels, etc. 924-4927.

LAWN SWEEPER - 30", Sears, good cond., $20. Ext. 4972 or 567-9025.

POOL LADDER - w/deck, 1-h.p. pump, Earth filter, best offer. John, Ext. 3302 or 924-0651.

RADIAL ALARM SAW - Sears Craftsman, electronic, hardly used, like new, $300 neg. Matt, 981-6234.

STORM DOOR - standard size, cross-buck, white, storm & screen, all hardware, excel., $75. 878-1303.

TREES - Japanese maple, $10-$45+. 265-6547.

Miscellaneous

TAPES - German language, Berlitz, in leather case, $40. Vera, Ext. 7108.

TOYS - LittleTykes, workshop $15; slide, 40", $10; car, $7; Duplo Lego, $1; Sega game software, new, $15. Park, Ext. 7933.

Free

CENTERBOARD - for Lightning sailboat, steel, you pick up. 286-0517.

Yard and Garage Sales

BELLPORT - Sat., 9/5, 9 a.m.-3 p.m., 94 Country Club Road.

Wanted

AFTER SCHOOL CARE - for 3rd grader in the Remsenberg-Speonk district. Ext. 7192 or 325-5546.

BICYCLE - tandem, any cond. okay. Ext. 2021 or 758-4770 after 5 p.m.

DISHWASHER - free-standing w/butcher block top; a/c for single room. Kara, Ext. 5658, 722-5462.

DRAWING TABLE - Anco-type, all wood, A-frame stand, 23"x31" size. John, Ext. 7671 or 765-1299.

FRIDGE - small, for dorm room. Amy, 744-5801.

HOUSE TO RENT - 2-3 bdrms., North Shore, non-smokers, no pets. J.H., Ext. 3889.

HOUSE TO SIT - Oct.-May, west of LIE Exit 60, will pay utilities, have refs. Bob, Ext. 5314.

LAWN MOWER - w/manual, working cond. Eileen, Ext. 4519.

ROOMMATE - to share 2-bdrm. apt., male, non-smoker. Ext. 2058.

ROTOTILLER - gas-powered, mini size. Harriet, Ext. 2800.

SINK - wall-hanging, vanity-type, any color, reas. cond., for elderly woman. Steve, Ext. 4475.

VIOLIN - good cond., reasonable, for young child. Mike, Ext. 7861.

Services

*Services are listed in the first **Bulletin** of every month as a courtesy to BNL employees. They are neither screened nor recommended by the **Bulletin.** Services forms are available in the **Bulletin** lobby, Bldg. 134.*

BRICKWORK - masonry, patios, walks, swimming pools, retaining walls, landscaping ties, Belgium block, 25 yrs. exp., Lab disc. Tony, 698-9274.

BUSINESS CARDS - raised lettering, many colors and layouts. Mike, 878-3480.

CARPENTER - to build decks and repairs of all kinds within the trade, reas. prices for Lab employees. Chris, 399-7493.

CHILD CARE - recent H.S. grad. seeks summer job, exp., prior camp leader, great w/children, Nesconset. Samantha, 588-4882.

CHILD CARE - mature, responsible mother will care for your child along w/2-yr.-old daughter, ages 2-5 pref., Wading River. Mary, 929-8613.

HOME IMPROVEMENT - carpentry, drywall, spackling, painting, plumbing, ceramic tile, electrical, free est., Lab disc. Don, 744-2921 after 5:30 p.m.

HOME IMPROVEMENTS - extensions, dormers, decks, kit., baths, siding, lic. & ins., refs. Chris, 286-1348.

HOME IMPROVEMENT - Sheetrock, doors, windows, trim, siding & decks, Lab disc. Gerry, 981-4518.

HOUSE CLEANING - vacuum, dust, floors, bathrooms, kitchens, etc., no job is too small, honest, responsible. Jenny, 345-5325.

HOUSE CLEANING - yes, I do windows, prof., hardworking, exp., college student, only $10/hr. Lisa, 929-4450.

HOUSE CLEANING - reliable, honest, thorough, refs., reasonable. Cathi, 281-0360.

JEWELER - special orders, repairs, honest, affordable, no job too large or small. Kelly, 821-5239.

KAYAK LESSONS - coastal touring, river playboats, $85/5 hrs., equip. supplied, intro to kayaking, $20/2 hrs. Ernie, 281-7873.

LAND CLEARING - trees, stumps, brush removed, topsoil graded and raked w/450 loader, $70/hr. Tom Muller, 878-1060.

LAWN MOWER & LAWN TRACTOR REPAIRS - fast, reliable work, have trailer, will travel. Dan, 698-7322.

LANDSCAPING - free estimates on grass cuts, clean ups, etc. Jesus, 286-5403.

LOCKSMITH - sales & service, 10% Lab discount, keys cut during lunch. Pete, 399-2813 after 5 p.m.

PAINTED FINISHES - prof., marbelizing, ragging, sponging, combing, graining, murals on floors, walls, ceilings & trim. Philip, 286-1348.

PAINTING & WALLPAPER - wallpaper-hanging specialist, int./ext. painting, free est., 20 yrs. exp. John, 277-3805.

PAINTING - int./ext., Sheetrock, tape, spackle, wallpaper, stain, powerwash, ins., refs. James, 399-4912.

PARTY TENTS - we set up & take down, many sizes & combinations. Fred Kuehl, 588-2268.

PARTY TENTS - 20'x30' w/side curtains, we set up & take down, $250/38 hr. 321-2889.

PARTY TENT RENTALS - set up & removal, 20'x20' & 20'x40' w/sides, tables & chairs. Marty, 758-0650 or Chuck, 654-4756.

PIANO LESSONS - all levels, Shoreham-Wading River area. Patti, 929-8277.

PIANO LESSONS - expert for beginners, trained in Japan, teacher w/20 yrs. exp., my studio, from Sept. Park, 474-5813.

PIANO LESSONS - for children and adults, exp. w/young beginners. Jun, 473-8406 eves.

PIANO TUNING & REPAIR - reasonable rates. Peter, 298-9560.

PLUMBING & HEATING ALTERATIONS - and repair work by retired BNL employee. Jim Morris, 472-1205.

SHEETROCKING & SPACKLING - free estimate. Kevin, 567-6621.

SKINCARE & BEAUTY CONSULTANT - nail care, facials, men's line, body care, free first-time facial, 25% Lab disc. Barbara Jean, 929-3235.

VIDEOGRAPHER - capture those precious moment on video, will tape weddings, parties, all occasions. Larry, 281-7240.

VIDEO SERVICE - have your special occasion videotaped on high-quality prof. equipment at price you can afford. Willi, 471-7189.

WISHING WELL - for rent, bridal showers, engagements, baby showers, $50 delivered. professional built, 4' high, 30" long, 24" high. Ora, 696-3436.

Ads left out of this issue due to lack of space need not be resubmitted to appear in the next issue.