

BNL and Continental Optical Win R&D 100 Award

At a black-tie banquet on Thursday, September 9, BNL will share the spotlight with Continental Optical Corporation of Hauppauge, as joint winners of a 1993 R&D 100 Award.

R&D 100 Awards are given annually by Research and Development magazine to the top 100 technological achievements of the year. Typically, these are innovations that transform basic science into useful products.

Brookhaven has garnered numerous awards in past competitions. This year, the winning device is the Long Trace Profiler II (LTP II), an optical instrument that can detect flaws in mirrors used widely in synchrotron light sources, such as BNL's National Synchrotron Light Source, as well as in space telescopes, such as NASA's Hubble.

The device represents a significant advance in absolute surface-figure measurement technology. It is so precise in measuring height errors on surfaces that it could accurately measure the diameter of a pencil lead at a distance of five football fields.

Principal developers of the LTP II are Peter Takacs, BNL; Shi-Nan Qian, University of Science and Technology of China; and Steven Irick, Lawrence Berkeley Laboratory. An earlier version of the instrument was developed



Roger Stoutenburgh

Among those who have brought the Long Trace Profiler II to its present status as an R&D 100 Award-winning device are: (clockwise from upper right) Peter Takacs, BNL; Manfred Grindel, Continental Optical Corporation; Steven Irick, Lawrence Berkeley Laboratory; and Eugene Church, of the Army's Research and Development Center.

by Takacs and Qian, in collaboration with Eugene Church of the Army's Research and Development Center.

The LTP II measures the shape and smoothness of flat and curved mirrors up to one meter long. It works on the

principle of pencil-beam interferometry: A narrow beam of light from a laser source is split into two parallel beams by a system of prisms and beam splitters. The two beams are directed down onto the surface being tested, reflected back into a lens and brought to a focus on a detector. When the beams recombine, the interference image is analyzed by a sophisticated computer program, resulting in a map of the imperfections of the surface.

Continued development of the LTP II as a commercial product is already under way under through a Cooperative Research and Development Agreement, or CRADA, between BNL and Continental Optical. Under the CRADA, Takacs has been working with Manfred Grindel, president of Continental Optical, to improve measurement accuracy and increase data-acquisition speed. The first two commercial units are now in place at the University of Chicago and at the Sincrotrone Trieste in Italy.

Brookhaven's development of the LTP II has been supported by the U.S. Department of Energy's Materials Sciences Division, under the Office of Energy Research. Participation in the R&D 100 competition is handled by BNL's Office of Technology Transfer.

— Mona S. Rowe

BNL Lecture: Using PET to Investigate Brain Pathways

Your physician prescribes medication, and you carefully read the insert describing possible side effects. Some of them sound benign, but others are very alarming. How can you tell which ones, if any, will affect you?

Right now, for the most part, you can't. You simply take the medication as prescribed and hope for the best. But ongoing research in BNL's Chemistry Department could pave the way for pinpointing who will get what side effects by providing insight into the responsible biochemical mechanisms.

Neuroanatomist Stephen Dewey, Chemistry, will describe his related research when he delivers the 289th

In the new *in vivo* microdialysis facility in the Chemistry Department, Stephen Dewey checks measurements of neurotransmitter concentrations in a freely moving body.



Roger Stoutenburgh

Brookhaven Lecture, the first of the 1993-94 series. His talk on "Using PET to Investigate Pathways in the Brain" will begin at 4 p.m. on Tuesday, September 14, in Berkner Hall. Senior Chemist Joanna Fowler will introduce the speaker.

Dewey will begin with a brief introduction to fundamental neuroscience — the study of the central nervous system. In discussing how the brain works, he will describe chemicals called neurotransmitters through which nerve cells transmit their signals, show how one region of the brain communicates with another and why

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1993-94 Brookhaven Lectures

As a multiprogram national laboratory, BNL's research covers many diverse areas — and people working in one area may have little opportunity to learn firsthand what is happening in another.

The Brookhaven Lecture Series provides such an opportunity. Founded in 1960, the series is overseen by the Brookhaven Lecture Committee, whose chairman is now Martin Woodle, National Synchrotron Light Source Department, with William Morse, Physics Department, serving as secretary.

Although the first talk in the 1993-94 series will be on a Tuesday (see story), each of the other lectures in the series, listed below, will be held on a Wednesday at 4 p.m.

Date	Speaker	Subject
Oct. 13	Robert Crease, Director's Office	An Historian Looks at BNL
Nov. 17	George Hendrie, DAS	CO ₂ and Global Change
Dec. 15	John Larese, Chemistry	Neutron Studies of Surface Films
Jan. 12	Gerry Bunce, AGS	The Muon g-2 Experiment
Feb. 23	To be announced	
Mar. 16	Paul O'Connor, Instrumentation	Monolithic Microelectric Circuits
Apr. 13	Andrew Sandorfi, Physics	Laser Electron Gamma Source
May 18	Jeffrey Coderre, Medical	Boron Neutron Capture Therapy
Jun. 15	To be announced	

All Brookhaven Lectures are recorded on audio and videotape, which employees may borrow from the Research Library, Bldg. 477.

BWIS Seminar

Cadmium-Induced Bone Loss: Increased Susceptibility in Women

Itai-Itai disease is a severe bone disorder related in part to exposure to cadmium (Cd). In Japan after World War II, the disease was diagnosed in postmenopausal women who lived downstream from a lead-zinc mine and thus were exposed to Cd from the river water, which was used for drinking and rice paddy irrigation.

Because more than 95 percent of these cases of Itai-Itai disease were in postmenopausal women who had borne many children, Maryka Bhattacharyya and her colleagues began to study the effects of dietary Cd on bone in female animals during pregnancy and lactation and after ovariectomy, as well as on bone organ-cell culture systems.

A senior biochemist at Argonne National Laboratory (ANL), Maryka Bhattacharyya will discuss these studies and their results in a Brookhaven Women in Science Seminar entitled

"Cadmium-Induced Bone Loss: Increased Susceptibility in Women," at 2 p.m. on Monday, September 13, in the large conference room of the Medi-

(continued on page 2)



Maryka Bhattacharyya

Old School Gets New Name: The Albert G. Prodell Middle School

When the sixth through eighth graders in the Shoreham-Wading River School District (SWRSD) go back to school on September 8, they won't be going to the Shoreham-Wading River Middle School.

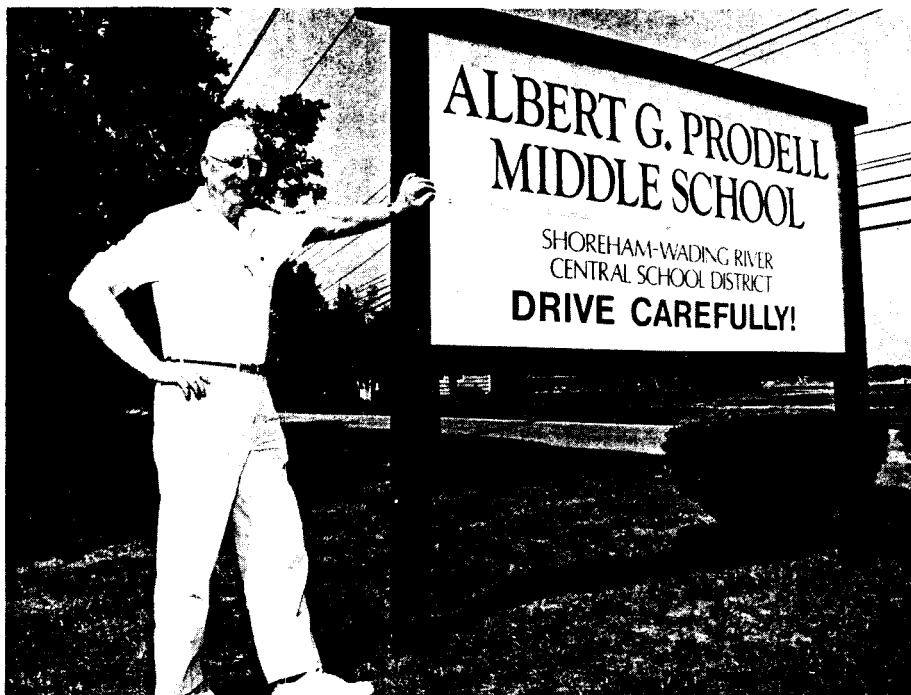
Though the building is still located on Randall Road in Shoreham, as it has been since it was opened in 1973, its name has been changed — to the Albert G. Prodell Middle School. The change came about as a result of a unanimous resolution of the SWR school board, which voted last June to honor BNL's Al Prodell for the 29 years that he has served on first the Wading River board, then the SWR board. He retired on June 30 as chairman of the SWR school board.

Now a tenured physicist in the Magnet Division of the RHIC Project, Prodell moved to Wading River in 1959, after coming to work at Brookhaven, first as a guest at the Cosmotron in July 1956 and then as an associate physicist in the Physics Department in July 1959. His interest in school affairs actually began in 1962, when he joined a group studying whether or not the Wading River School District should build a new school building.

At that time, Wading River had a three-room schoolhouse for grades one through three, its kindergarten was held in a firehouse, the fourth grade met in an office building, and grades five through 12 attended classes in Port Jefferson. To consolidate the primary grades, the study group recommended and the voters approved the building of the Wading River Elementary School, which opened in 1963.

In 1964, "when the first payment on the bonds for the elementary school came due, the residents were a little upset," recalls Prodell. With a Ph.D. in physics and one son in the district school system at the time, Prodell had a natural interest in advancing the cause of education and the school district's future, so he got himself elected to the Wading River school board in 1964.

In the early 70s, when Port Jefferson announced that soon it would no longer be able to accept secondary students



Albert G. Prodell

— Photos on this page by Roger Stoutenburgh

from Shoreham, Wading River and two other districts, Wading River voted in 1972 to merge with Shoreham, thus forming the SWRSD.

"After this vote and until July 1973, when SWR officially came into being, there were three school boards in existence, and I sat on two of them: the Wading River board and the Shoreham-Wading River board," muses Prodell.

The middle school that now bears Prodell's name was being built during the SWR merger, so "one of the first issues we had to deal with was to have a third wing built at the same time, so we could begin accommodating our own high school students," explains Prodell.

Since that was only a partial solution, the SWR voters approved the board's request to have a high school built, and it opened in 1975. While Prodell's older son, Michael, was graduated from Port Jefferson in 1976, his younger son, David, earned his diploma from SWR in 1980.

School buildings and his own children aside, Prodell continued on the board until this June because "my

involvement with all the people — members of the community, administrators, teachers and, especially, the students — was an enjoyable and enriching experience, and a way I could pay back for my own education and make a contribution to the future."

Prodell is realistic about that future: "Kids are a reflection of how society is changing, and, for better or worse, how we educate our children has to change along with society. Schools are being asked to do more and more of what used to be done at home within the family, but that, too, reflects what our society needs now."

In addition, Prodell believes, the exponential explosion of knowledge during this century must be incorporated into the curricula in a useful and meaningful way.

"How do you address the ever-increasing store of past knowledge and

history while, at the same time, covering all the knowledge and history in the making? Teachers say that, by teaching twice as fast, they succeed only half as much, so that's not the answer."

So, in today's information age, part of the answer, according to Prodell, is not only to be selective in what is taught, but also to teach school children how to learn.

"There's a story about I.I. Rabi at Columbia that illustrates this point," says Prodell. "Rabi came upon a group of students who were studying for their Ph.D. qualifying exams. He told them, 'You now know more physics than you will ever know — from now on, what is important is to know what you need to know, who to ask and where to look.'"

For students to obtain a modern education, Prodell believes in an old-fashioned notion: Regardless of how good the schools and teachers are, 90 percent of the responsibility for education of a child lies with the parents.

As a result, he is a staunch supporter of a program that has been in place since the Albert G. Prodell Middle School opened: Before the school day begins, students meet in small groups called advisories, each led by a teacher who gets to know the students, follows their grades — and keeps in touch with their parents.

With the recent arrival of granddaughter Terese Gabrielle, however, Prodell has become a first-time grandfather — so he has retired from the board to spend more time with his first grandchild.

The advice that he will give to Terese on her first day of school is the same as he would give to any student: "Give it your very best shot — you only pass this way once, so try to make the most of every opportunity."

— Marsha Belford

BWIS Seminar

(cont'd)

cal Department, Bldg. 490.

Widely distributed in soil and water, Cd is a byproduct of many industrial processes. In the U.S. popula-

tion, food and cigarette smoke account for most nonoccupational Cd exposure. The results that Bhattacharyya will share support the view that Cd exposure contributed to the incidence of Itai-Itai disease in the Japanese women and provide evidence that, prior to inducing kidney damage, Cd acts directly on bone.

Maryka Bhattacharyya earned her B.S. in chemistry at Tufts University in 1965, then completed her Ph.D. in biochemistry at the University of Wisconsin (UW) in 1970. She stayed on at UW as a postdoctoral fellow in the Biochemistry Department, becoming a research associate in 1971.

Bhattacharyya joined Argonne in 1974, as an assistant biochemist. Today, she is Leader of the Biochemistry of Metals Group in ANL's Center for Molecular Biology and Biotechnology. She is also an adjunct professor at Northern Illinois University.

From 1990-92, Bhattacharyya served as ANL's first Women in Science Program Initiator (see box). Also in 1990, a new Cd assay that she developed won a prestigious R&D 100 Award. In 1991, she won a Distinguished Performance Award, the highest honor the University of Chicago bestows for research at Argonne, and, in 1992, *Today's Chicago Woman* named her one of 100 "Women Making a Difference."

To join Bhattacharyya for dinner at an area restaurant Monday evening, contact Louise Hanson, Ext. 7709.

Hunter Senior Wins Chasman Award

Diana Friedland (left), a senior chemistry major at Hunter College of the City University of New York, was this year's recipient of Brookhaven Women in Science's (BWIS) Renate W. Chasman Scholarship. Scholarship Committee Chair Ruth Kempf (right), Department of Applied Technology, presented Friedland with a certificate and a \$1,000 check, at a reception in her honor held on site on August 10.

Since 1986, BWIS has given the Chasman Scholarship annually to a re-entry woman beginning her junior or senior year of college in a degree-oriented program in the natural sciences, engineering or mathematics.

Friedland entered the work force immediately after graduating high school in 1978, starting in the restaurant business, then moving on to the wine industry where she became the first female sommelier in a four-star restaurant in the U.S. Friedland entered Hunter part-time in 1985. In 1989, she quit her job and began full-time studies. After she earns her de-



gree in chemistry next spring, she plans to go on to graduate school to pursue a doctoral degree in either physical chemistry or biophysics.

Inside Info

Walter Kato, a senior scientist in the Department of Advanced Technology (DAT), has been reelected to a second consecutive three-year term on the Board of Directors of the American Nuclear Society (ANS).

With more than 17,000 members, the ANS's primary objectives are promoting understanding and advancement of nuclear science, technology, and the allied sciences and arts, and protecting the environment. On the

33-member board, Kato helps manage the society's business, and formulate and implement its policies.

Kato is a charter member of the ANS, which was founded in the late 1950s. An ANS Fellow since 1973, he previously served on the Board of Directors, 1974-77; currently, he has been on the board since 1990.

On BNL's staff since 1975, Kato served as Chairman of the Department of Nuclear Energy (DNE) from 1988 to 1991, when he decided to return to research. DNE became DAT this June.

Meet Argonne's First WPI

In 1990, Maryka Bhattacharyya was named the first Women in Science Program Initiator (WPI) at Argonne National Laboratory. She will speak about this program and her experiences at the next Brookhaven Women in Science (BWIS) meeting, on Tuesday, September 14, at noon, in Berkner Hall, Room A.

At Argonne, the WPI is a rotating position for woman scientists, covering 30 percent of their time for two years. The WPI addresses issues of educational outreach; recruitment, retention and promotion; career development; communication and visibility; and funding for WIS programs.

Elections of BWIS officers for 1993-94 will precede Bhattacharyya's talk, to which all are invited. Bring your lunch; coffee and tea will be served.

BNL Lecture (cont'd)

that's important, and provide insight into how medications may work.

Much of this work comes from research using a medical-imaging technique called positron emission tomography, or PET. Images from PET provide insight into how the brain functions.

At BNL's PET facility, Dewey is studying two antipsychotic drugs commonly prescribed to alleviate symptoms of schizophrenia — each of which can cause serious side effects. These studies grew out of the \$70,000 Established Investigator Award that he won earlier this year from the National Alliance for Research on Schizophrenia and Depression.

As Dewey will relate, the PET studies are shedding light on how side effects arise when medications alter normal neurotransmitter reactions.

Dewey will also talk about his new initiative using a complementary technique called *in vivo* microdialysis, which he undertook after receiving a \$100,000 Laboratory Directed Research & Development Program grant from BNL. Unlike the PET studies in which a subject must remain stationary during scanning, *in vivo* microdialysis permits measurement of neurotransmitter concentrations in a freely moving body.

Dewey will conclude by explaining how the new insights into schizophrenia and its medications can be extended to other medications and other neurological diseases.

Stephen Dewey took his B.S. in biology at Fairleigh Dickinson University in 1981. After earning a Ph.D. in anatomy at the University of Iowa in 1985, he came to Long Island to take up a postdoctoral fellowship in the Neurology Department at the State University of New York at Stony Brook.

Dewey joined BNL as an assistant scientist in the Chemistry Department in 1986, moving up to associate scientist in 1988, then scientist in 1990. Since 1992, he has held an appointment as a research associate professor in the Psychiatry Department of New York University School of Medicine.

Dewey was awarded a \$750,000 grant from the National Institute of Mental Health in 1992. That same year, he was on the Editorial Board of the journal *Synapse*, and was named sub-chairman of preclinical testing for the Society of Nuclear Medicine.

After the lecture, all are invited to join the speaker for discussion and refreshments. To accompany him to a dinner at a restaurant off site, call Lois Caligiuri, Ext. 4397.

Stockroom Closings

All Supply & Materiel Division (SMD) stockrooms will be closed for inventory on September 16 and 17, so all necessary stock withdrawals should be made by 3 p.m. Wednesday, September 15, to give SMD enough time to prepare for the inventory.

Process emergency requirements through John Scharpeger, Ext. 2974.

Concerts Feature Sitar on Stage, Pianist & Pizza at Gas Station

An Afternoon of Piano

One bay of the on-site Gulf gas station will be transformed into a concert stage on Sunday, September 12, when pianist Ian Shapinsky will perform there, beginning at 2 p.m.

Said to be among the nation's top 100 pianists, Shapinsky will play selections from such composers as Brahms, Chopin, Mussorgsky and Strauss. Trained at the Mannes College of Music, 1966-70, and the Juilliard School of Music, where he earned his M.S. in performance in 1972, Shapinsky has performed in Carnegie Hall and at the opening of the General Assembly of the United Nations.

In the late 1970s, Shapinsky diversified: He became a stockbroker. Today, when not performing as a concert pianist, he is a senior options principal with Camelot Investment Corporation.

Bill Widmer, head of Upton Industries, which assumed the station's operation in July, invites everyone — on-site residents, employees, guests, families and friends — to attend the free outdoor concert. Pizza will be served, but bring your own beverages and blankets or chairs to sit on. In the event of rain, the audience will be indoors.

An Evening of Sitar

Ustad Khurshid Khan, one of the foremost musicians of Bangladesh, will present an evening of sitar music on Friday, September 17, at 8 p.m. in Berkner Hall. A donation of \$12 per person is suggested for the concert, which is sponsored by the BERA Indo-American Association.

Ustad Khan comes from a family for which Indian classical music is a way of life. He was trained in the tradition of *Maihar gharana*, the style of North Indian classical music played by Ravi Shankar.

Noted for his own innovations, improvisations and nuances in playing the sitar, Khan has performed in major cities in the United States, as well as in Canada, China, England, Germany and North Korea. He is also well known as a teacher, having taught since 1965 at the Chayanat school of performing arts, in the Bangladesh city of Dhaka.

Khan will be accompanied on *tabla*, or drums, by Sri Tapan Madak, who is among the most promising young *tabla* players of Bangladesh.

Shoe Shop Shutdown

The on-site safety shoe shop on the northeast side of Bldg. 88 will be closed for two weeks starting September 7. During this time, call Ext. 2300 with questions about safety shoes. Normal hours will resume on Monday, September 20, at 10 a.m.

Gym & Pool Schedule

The pool will be closed for the Labor Day weekend, Saturday through Monday, September 4-6. Usual hours will resume on Tuesday, September 7, as follows:

Monday through Friday
 11 a.m.-1:30 p.m. employees only
 1:30 p.m.-2 p.m. reserved for speed swimming and training
 5 p.m.-9 p.m. employees, families, guests

Saturday & Sunday
 1 p.m.-5 p.m. employees, families, guests

Saturday hours at the gymnasium will resume on September 11, when the gym will be open from 9 a.m. to 6 p.m. for general activities.

Volleyball

The first 1993-94 Volleyball League captains' meeting will be held on Wednesday, September 15, at noon, in Room B, Berkner Hall. Captains or team representatives must attend. Rosters are to be submitted at this meeting and will not be accepted later.

Roster sheets will be sent to last year's team captains. Anyone else who would like one may contact Terry Sullivan, Ext. 2840. Anyone interested in playing who is not already on a roster should contact Sullivan.

Arrivals & Departures

Arrivals
 Laura J. Henderson Lewis DAS
 Xu-Chen Wang DAS

Departures
 This list includes all employees who have terminated from the Laboratory including retirees:
 Richard Domenech Sfgdrs. & Sec.
 Frank R. Thomsen DAS

WordPerfect Group

The WordPerfect Users' Group will meet on Tuesday, September 7, from 10 to 11 a.m., in the CCD seminar room, Bldg. 515. The topic will be "Columns vs. Tables." Call group moderator Pat O'Connor, Ext. 7341, by September 6, to confirm attendance.

Sign up for Stretch Or Aerobic Dance

It's September — time to think about getting back to class — with the Aerobic Dance Club. Instructor Pat Flood will lead the fall program:

- **Stretch** — choreographed exercises that concentrate on stretching and strengthening muscle groups.
- **Aerobic Dance** — emphasizing cardiovascular improvement through vigorous, choreographed exercise.

Classes in aerobic dance will be held on Tuesdays and Thursdays, while stretch classes will be held on Mondays. All classes run from 5:15 to 6:15 p.m. Participants may take any or all of these classes. Mats are recommended for floor exercises. The fee for each ten-week session (M, T or Th) is \$30, payable at registration, preceding the first classes:
 • **Aerobic Dance** — Tuesday, September 7, and Thursday, September 9, at the Recreation Building in the apartment area.
 • **Stretch** — Monday, September 13, at Physics, Bldg. 510.

Note to Diners

With the Lab closed on Monday, September 6, for Labor Day, food services will be as follows:

- At the **Cafeteria**, snack bar service will be offered from 9 a.m. to 2 p.m., Saturday through Monday, September 4-6.
- **The Tap Room at the Brookhaven Center** will be closed Sunday, but will reopen from 5 p.m. to 9 p.m. on Monday.
- **Vended food service** in Bldg. 912 will be in operation throughout the holiday weekend.

Call for Nominations: Waterman Award

The National Science Foundation (NSF) and the National Science Board will present the 19th Alan T. Waterman Award, in May 1994, to an outstanding young researcher in any field of science or engineering supported by the NSF. The 1994 award will consist of a bronze medal, a citation and grants of up to \$500,000 for up to three years for scientific research or advanced study in the biological, mathematical, engineering, physical, social or other sciences at the institution of the recipient's choice.

Nominees for this award must be U.S. citizens or permanent residents 35 years old or younger, or not more than 5 years beyond receipt of a Ph.D. by December 31, 1993. They should have completed sufficient scientific or engineering research to have demonstrated through their personal accomplishments outstanding capability and exceptional promise for significant future achievement. They should also exhibit quality, innovation and potential for discovery in their research.

Nominations for this award are due by December 31, 1993. To nominate a candidate, obtain forms by writing to Susan Fannoney, Executive Secretary for the Alan T. Waterman Award Committee, NSF, 1800 G. Street, N.W., Washington, D.C. 20550, or call (202) 357-7512.

Atlantic City Trip

More tickets are available for the BERA Atlantic City bus trip, September 11. Call Andrea Dehler, Ext. 3347, or Kay Dellimore, Ext. 2873.

Hospitality News

On Tuesday, September 7, at 9:30 a.m. in the Recreation Building, the Hospitality Committee will hold an informal get-together to welcome newcomers to the Lab, especially those residing in the housing area on site.

Spouses of Lab employees and guests are invited to come and get acquainted; children are welcome, but please bring toys to occupy them. Coffee, tea and cake will be served, with juice for the children.

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

Cafeteria Menu

- Monday, September 6**
 Snack bar service - 9 a.m. to 2 p.m.
- Tuesday, September 7**
 Soup: Vegetable .80/1.10
 Entree: Spaghetti w/red clam sauce 3.45
 Fitness Fare: California chicken w/veg. 3.65
 Carvery: Roast beef sandwich au jus 2.95
 Grill: Spanish omelet w/French fries 2.35
 Fitness Salad: Chef's seafood bowl
- Wednesday, September 8**
 Soup: Beef & vegetable w/rice .80/1.10
 Entree: Shrimp chow mein w/rice 4.25
 Fitness Fare: Oven-crisp chicken w/veg. 3.45
 Carvery: Baked Virginia ham sandwich 2.95
 Grill: Italian cheesesteak w/fries 2.95
 Fitness Salad: Fruit w/low-fat cottage cheese
- Thursday, September 9**
 Soup: Mulligatawny .80/1.10
 Entree: Baked liver & onions w/veg. 3.45
 Fitness Fare: Vegetarian green peppers 3.45
 Carvery: Corned beef sandwich 2.95
 Grill: Monte Cristo platter 2.95
 Fitness Salad: Cantaloupe bowl
- Friday, September 10**
 Soup: Seafood chowder .80/1.10
 Entree: Beef w/peppers, onions & rice 3.85
 Fitness Fare: Display cooking special
 Carvery: Hot turkey sandwich w/gravy 2.95
 Grill: Fried clam boat 3.25
 Fitness salad: Grilled chicken platter
Burger, Deli & Taster's Bar specials daily

BROOKHAVEN BULLETIN

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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.

SCIENTIFIC RECRUITMENT - Candidates may apply directly to the department representative named.

SCIENTIST/ENGINEER - Trained in applied physics, with experience in the design and operation of electron-beam ion sources (EBIS), to join the Ion Source Development Group and participate in the EBIS project. Experience in ion-source diagnostics, computer controls and cryogenics is desirable. Contact: James Alessi or Bill Weng, Alternating Gradient Synchrotron Department

SCIENTIST - Trained in nuclear physics or nuclear chemistry, with expertise in low-energy nuclear structure, to join a research program which focuses on studies of low-energy nuclear structure with emphasis on collective phenomena. Experience in experimental nuclear physics, including gamma-ray spectroscopy, lifetime measurements and pulsed electronics, and familiarity with nuclear models, especially for medium mass and heavy nuclei, is required. Contact: Richard Casten, Physics Department

POSTDOCTORAL RESEARCH ASSOCIATE - Trained in plant biochemistry, with experience in techniques of lipid analysis, to conduct research directed towards understanding the positional specificity of double-bond insertion in plant lipids and defining the pathway of insertion of unusual bond positions. Contact: John Shanklin, Biology Department

LABORATORY RECRUITMENT - Opportunities for Laboratory employees.

MK 108A. METAL CUTTER B - Under general supervision, cuts metal and other materials to standard cutting shop tolerances as specified by cutting orders, prints, sketches, requisitions or verbal instructions. Will set up and operate cutting machines and perform layout, preparation, measurement and preventive maintenance. Central Shops Division.

MK 108B. HELPER A - Under general supervision performs a variety of tasks in shops that require a substantial knowledge of a skill in the shops trade. Duties will include handling minor assignments and assisting crafts people in more complex assignments. Central Shops Division.

MK 108C. HELPER A - (temporary position o/a 9/13/93 to 12/31/93) Under general supervision performs a variety of tasks in shops that require a substantial knowledge of a skill in the shops trade. Duties will include handling minor assignments and assisting crafts people in more complex assignments. Central Shops Division.

NS 0785. POLICE CAPTAIN - Requires a broad background in security force operations and excellent communication skills. A minimum of five years' experience in military, law enforcement or private security operations and a minimum of two years' experience as a supervisor is necessary. Demonstrated leadership and training skills are a plus and a bachelor's degree is desirable. Must maintain defensive combative physical fitness standards and be able to obtain/maintain a DOE "Q" clearance. Safeguards and Security Division.

OPEN RECRUITMENT - Opportunities for Laboratory employees and outside candidates.

LS 2602. COMPUTER ANALYST POSITION - (term appointment) Requires MS degree in applied math, computer science or equivalent. Experience with UNIX, C, FORTRAN, shell scripts, LAN and SUN system administration, TCP/IP networks, PCs and Macintosh computers is required. Familiarity with relational database-management systems and graphic applications, as well as a strong background in mathematics and physical science, is desirable. Responsibilities include system administration for LAN consisting of SUN workstations, PCs and Macintosh computers, and development of programs for the analysis and graphical display of environmental data. Department of Applied Science.

Motor Vehicles & Supplies

86 CITATION TRAILER - 25', sleeps 8, awning, TV antenna, lg. refrigerator, am/fm stereo cassette, side bunks, \$6,000 neg. 286-9390.

86 LEBARON GTS - 4-dr. h/b, sport turbo premium, all opt., int. leather, new brakes & tires, low mileage, excel. cond., \$5,500. Ann, Ext. 5740 or 744-8386.

86 TRANS AM - black, T-top, fully loaded, 305 eng., excel. cond., asking \$5,800. Gina, 563-4468.

84 MERCURY GRAND MARQUIS - 87K mi., loaded, excel. cond., best offer. Jerzy or Elizabeth, Ext. 4331 or 341-1019.

82 FORD GRANADA WAGON - 6-cyl., a/t, ac, p/s, p/b, radio, new tires, good cond., runs well, \$800. Johan, Ext. 5258 or 341-1014.

82 DATSUN 210 - h/b, s/t, 220k mi., \$375. Bob, Ext. 4637 or 692-8659.

75 FORD VAN ECONOLINE - runs well, needs body work, roof rack, ladder, v.g. tires, \$500 neg. Vinny, 582-6241.

91 PONTIAC SUNBIRD - 38k mi., new brakes, hoses, filters, regular oil changes. \$7,500. Danielle, Ext. 3070.

91 MERCURY TRACER LTS - 11K mi., a/t, ac, 4-dr., 1991 Road & Track 10 best, excel. cond., \$8,995. Eric, Ext. 5875.

90 MITSUBISHI PICKUP - 5-spd., cap, ac, am/fm stereo, \$4,500 neg. 368-0934.

88 CHEVY ASTRO VAN - V-6, fully loaded, privacy glass, custom striping, 8-pass., 110k mi., \$5,000. Zal, Ext. 7598.

86 MAZDA 626 LX - full power, silver ext., blue int., \$3,200 neg. Mark, Ext. 2043 or 821-3169.

86 AUDI 5000S - runs but needs work, body & int. excel. cond., \$1,500, 878-1178.

86 SUBARU GL WAGON - a/t, p/s, p/b, ac, radio, new tires, exhaust system, \$2,300. Geir, Ext. 2211/5622.

85 NISSAN 200SX - 5-spd., orig. owner, 107k highway mi., excel. cond., \$2,800 neg., Vasilis, Ext. 2830.

85 FORD 250 VAN - extended, new tires, rebuilt eng., great work van, \$3,000. 289-8105.

84 CHEVY CAVALIER WAGON - 128k mi., good cond., needs brakes & shocks, best offer. Ext. 4948 or 736-6078.

82 CAMARO - h/b w/louwer, new V-6 eng. & clutch, m/t, sunroof, \$2,100 or best offer. Rich, 363-6845.

82 MERCURY GRAND MARQUIS - white/blue, all power, good body, runs well, needs real main seal, \$325. John, Ext. 4570.

80 BLAZER K5 - 250, 6-cyl., p/s, p/b, CB, stereo/radio/cass., p/booster, body excel. cond., runs well, \$3,500 or best offer. Ext. 2384 or 924-8558.

75 COLEMAN POP-UP TRAILER - sleeps 6, w/screen house, \$475. Dave, Ext. 5460.

67 MUSTANG - white, all original, 289 eng., must see; '87 Hyundai Excel, 5-spd., needs clutch, \$900. Wayne, 698-2798.

PARTS - '84 Mustang parts, right side fender, left side door & hood, willing to trade for other Mustang parts. Joe, Ext. 3120.

MOTORCYCLE HELMET - Bell 3/4 face shield & visor, \$80; rack & backrest for Honda CE750 or similar, \$30. Jim, 928-1291.

TRUCK CAP - for small pickups, \$175. Bob, 474-2655.

Boats & Marine Supplies

32' LUHRS SPORTSFISHERMEN - 1968, twin 318 Chry. eng. w/low hrs., head, galley, sleeps 4, elec., Bimini, extras, \$12,500. neg. Diane, Ext. 4269 or 878-8064.

23 1/2' BENETAU 235 SAILBOAT - 1989 racer/cruiser, priv. head, full galley, shower, sleeps 4, furler, 9.9-h.p. ob., perfect, \$15,000. Steve, Ext. 3230.

21' BOWRIDER - fg, w/full canvas, trailer w/115-h.p. Evinrude, lower unit has been rebuilt, \$3,200 neg. Fred, Ext. 5319.

18' COBIA RUNABOUT - 115-h.p. Merc, good cond., \$1,100. Roger, Ext. 7518 or 878-8847.

9' INFLATABLE - w/5-h.p. engine, w/all accessories, \$1,000. Rich, 363-6845.

WINDSURFING EQUIPMENT - 8'4" sailboard, Maui Custom, \$400; sails, 5.1, 4.4 Freedom Maui R.A.F., \$100 ea., all excel. Jim, 928-1291.

OUTBOARD - portable, 2.7-h.p., \$35. Steve, Ext. 4555.

WAVE JAMMER - 1988, like new, Yamaha runs well, \$2,000 neg. Marie, 744-5761.

JET SKI - 300, 1987, new batt, runs well, excel. cond., \$1,100, 878-1178.

DEPTH RECORDER/FISH FINDER - Sitex, paper print-out, model HE-357, cost \$340, ask. \$70. 543-7065.

MARINE COMPASS - Airguide, new, model 94-B Columbia w/night light; 6'4" boat cushion. 758-2340.

Furnishings & Appliances

AIR CONDITIONER - Friedrich Quietmaster, 8,000 Btu/hr., 10 EER, good cond., orig. \$570, asking \$275 or best offer. Ellie, Ext. 3395 or Ken, 325-1537.

BEDROOM SET - 3-piece, wall unit, armchairs, other items. Anthony, 423-9750.

BED - queen-size boxspring, mattress & frame, \$85; bathroom sink, \$15. Klaus, Ext. 3677 or 924-2062.

BED FRAME - solid cherry, headboard, footboard, rail, spindle style, \$50. Fred, Ext. 7824 or 261-5735.

BEDROOM SET - black triple dresser, mirror, 2 night tables, \$300 neg.; lamps, l/r, Col., \$25/ea.; wall paintings; 2 hanging lamps, 6 bulbs, \$50/ea. Ext. 7009.

BEDROOM SET - solid maple, chest, double dresser w/mirror, double headboard, \$475. 447-6528.

BEDROOM SET - triple dresser, mirror, chest; 2 sets of bunk beds, full size, bedspread. Ext. 4432.

TABLE - dining room, 40"x60", expands to 96" w/3 leaves, pads, chairs, local delivery, \$75 firm. Bill, Ext. 2378 or 758-3284.

TABLE - 1920, 2 chairs, porcelain top, \$65; china closet, glass door, \$45; chest of drawers, beveled glass top, \$45. 281-8943.

WASHER & DRYER - Sears, apt.-sized, 2 yrs. old, \$400. Mauro, 265-6542.

BED - double, used 5 mo.; dining table, 4 chairs, new, used 5 mo., must sell, moving. P. Som, Ext. 4239.

BEDROOM SET - King-size, 2 nightstands; l/r set, 2 tables, 12 chairs, TV center; desk & chair; TV & VCR, Sharp; microwave. Ext. 5861 or 924-1083 after 5:30.

BEDROOM SET - light wood, single bed frame, bookcase style headboard, nightstand, dresser, mirror, \$100. Ext. 2378 or 758-3284.

CARPETS - 2, beige & brown pattern, approx. 12'x18' & 11'x16', 3 mo. old, excel. cond., \$75/both. Ext. 3698.

CHAIR - & ottoman, corduroy, blue, overstuffed, swivel rocking, excel. cond., reas. 286-8552.

CHAIR & LOVE SEAT - gray, excel. cond., \$250. Penny, Ext. 2625.

CHINA - Christmas holly pattern, 2 boxes, 45-pieces ea., unopened. 727-5194.

COUCH - Ethan Allen, 7', excel. cond. 325-0447.

DINETTE SET - wrought iron, black top, 36"x48"x60", \$300. Allen, Ext. 3819.

DINING ROOM - pedestal table, 4 rush-seated armchairs, oak, \$250. Sue, 2888 or 286-1474 after 6 p.m.

DINING ROOM SET - rectangular table, 6 chairs, 2 leaves, excel. cond., antique early American, \$500 firm. Kathy, Ext. 2267 or 395-6520.

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



ELECTRIC RANGE - Caloric, 30", almond, solid elements, self clean, electronic timer, \$250. Kevin, Ext. 2963 or 744-0871.

FREEZER - large, Gibson, reas. 363-7032.

FREEZER - GE, 18 cu. ft., upright, white, built-in clock, excel., \$350. Ann, Ext. 5740 or 744-8386.

FREEZER - upright, 18. cu. ft., good cond., \$150. 543-7065.

LIGHT - Barn Door, studio light, good cond., \$100 firm. Bob, Ext. 4672 or 929-4753 eves.

MATTRESS - & boxspring, queen size, set, frame, Posturepedic, barely used, orig. \$850, asking \$250. Kathi, Ext. 7462 or 698-1971 after 3 p.m.

SOFA BED - \$50; Perego double stroller, \$100; child's car seat, \$5; child's booster seat, \$5; children's life jackets. 689-7326.

TABLE - 4' round, leaves, formica top, wood finish, kitchen type. Ext. 7947 or 588-2268.

WATER BED - queen-size mattress, semi-waveless, heater, frame, excel., \$100. Rosemary, 928-0030.

Tools, House & Garden

CHAINSAW - gasoline, McCulloch Eager Beaver, 14", never used, \$60. Ext. 3589.

STAIR-O-LATOR - 1/3 h.p., 115 Vac, chair lift, fits on side of existing stairs, best offer. Ray, Ext. 3695.

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

WINDOW - Andersen-type, double-glazed, 4'x6 1/2', track & trim, ask. \$250. Hughes, 286-3301 by 10 a.m.

HYDROPONIC GROWING SYSTEM - 5' long, complete, \$30. Judy, Ext. 2590

LAWN MOWER - Black & Decker, elec., double insulated, 18" blade, 6.5 A, 120 volts, 4,000 rpm, like new, asking \$100. Ext. 8302 or 878-1617.

LAWN MOWER - Snapper, 21", excel. cond., \$100. Rosemary, 928-0030.

LAWN TRACTOR - 11-h.p., 36" cut, riding, elec. start, lights, manual, \$500. Ext. 8302 or 878-1617.

LAWN TRACTOR - Sears Craftsman, 6-h.p., runs well, needs tune-up, \$100. Ext. 3078.

SANDER - belt/disc, \$40; tap/die sets, 80-pc., \$30; oxyacetylene rig, \$25; air impact wrench/hammer, \$15/ea. Steve, Ext. 4555.

WINDOWS - 2, white vinyl sliders, w/screen, 34"x34 1/2", never used, \$50/ea. or \$90/both. Donna, Ext. 2716.

Sports, Hobbies & Pets

BIKE - Schwinn Prelude, 14-spd., 19" frame, 27" wheel, toe clips, water bottle cage, orig. \$375, asking \$175. Debbie, 286-2959.

BINOCULARS - Sears model 6231, wide angle, \$20. Steve, Ext. 4555.

FISH TANK - 35 gal., steel stand, hood, light, filter, heater, air pump, vacuum, food, net, 4 fish thermometer, \$160 firm. Stephen, Ext. 4406 or 924-3944.

GUITAR AMP - GK250RL, \$200; wireless system, Nady 201, \$225. Doug, Ext. 4661 or 434-7812.

POOL - Doughboy, 16', all access., many new extras, chemicals, good cond., \$250. Leonard, Ext. 3354 or 472-3254.

SCUBA GEAR - wet suit, medium, hood, gloves, boots, fins, BC, weights, molds. Charlie, Ext. 2407.

SKIS - Head Express, poles, \$60; Raichle ski boots, woman's size 7 1/2, \$30. Debbie, 286-2959.

TRUMPET - new, w/case, \$225. Tim, Ext. 3814.

WEIGHT BENCH - DP, 120 lbs. of weights, w/3 bars. Lloyd Nelson, Ext. 5225.

Audio, Video & Computer

COMPUTER - 286 PC, 20 MHz, 2 floppy drives, 40 MB HD, mono. display, mouse, \$350. 821-2289.

Services

Services are listed in the first Bulletin of every month as a courtesy to BNL employees. They are neither screened or recommended by the Bulletin. Services forms are available in the Bulletin lobby, Bldg. 134.

ALTERATIONS - men's and women's clothes, call for estimate. Theresa, 289-0898.

AUTO REPAIR - basic repair, reasonable, free estimates. Bob, 395-4521.

BABY-SITTING - exp. mother will care for your child in my home, snacks provided, Rocky Point area. Lorjean, 744-5857.

BABY-SITTER - CPR certified, nurse's assistant, at my home in Wading River. Lorraine, 929-3910.

BALLOONS - showcase wrap your gifts inside a balloon, balloons for all occasions, parties, holidays, Halloween is right around the corner. 732-1528.

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

CARPENTRY - windows, doors, roofing, siding, any construction need, quality work. Keith, 878-1486.

CARPET/UPHOLSTERY CLEANING - spot, pet stains, odor removal, auto interior, fabric protector, free est., Lab discount. Jerry, 874-8259.

CHEESECAKES - delicious, homemade, various flavors & sizes, reasonable, 2 days notice. 286-3425.

CHIMNEY CAPS - fireplaces, wood, coal and oil flues, custom-made for pre-fab oil flues, stainless steel, lifetime guarantee. Mike, 821-5526.

CLOSETS - interior, custom design to your needs, increase the clothing capacity of your closets, free est. Fred, 369-9720.

CRAFTS - bridal/baby shower and gifts, any item custom-made, quilted photo albums, frames, bears and bunnies. 395-0584 eves.

DRYWALL - spackle, tape, painting, staining, int., ext., powerwashing, mildew control, fast, clean, quality work, reasonable. Scott, 325-0706.

ELDERLY CARE - on weekends in their homes, I give TLC and stay overnight, a break for the family, reasonable. Susan, 286-4225.

ELECTRICIAN - quality workmanship and service guaranteed, no job too small, lic./ins. 345-2502.

HOME IMPROVEMENTS - quality work, honest prices, extensions, dormers, decks, kitchen, baths, roofing, lic. & ins., refs., free est., Lab disc. Chris, 286-1348.

HOUSE CLEANING - reasonable, very efficient, refs. Marty, 399-3496, any time.

COMPUTER - IBM PS/2, model 30, 640K RAM, 65 MB HD, 3 1/2" & 5 1/4" drives, math co., mono. monitor, mouse, \$250. Mike, 878-3480.

COMPUTER TABLE - oak, assembled, mobile, 3 pull-out shelves, on ball bearings, \$50. 727-6818.

COMPUTER SCANNER - ATT full page, overview scanner, w/controller card, software, must sell, \$150 neg. Vinny, 582-6241.

OSCILLOSCOPE - Tektronix type 547 w/manuals, and plug-in modules, 1A4, CA, M, 1A7, 1M1, mobile cart. Art, Ext. 7755.

SPEAKERS - Bosc, compact for book shelf units, w/ audio power & individual woofer box, \$250. Fred, Ext. 5319.

Miscellaneous

HOT CURLERS - Clairol Benders, used twice, \$12; Richard Simmons exercise video, \$5; electric skillet, \$5. Brian, Ext. 2369 or 929-5407.

WEDDING GOWN - white, sophisticated sheath, size 10, lace, satin, pearls, sweetheart neck, magnificent train, perfect cond., \$400. Sue, 924-2062.

BASSINET - \$18; wooden swivel TV table, \$10; large white patio table, \$20; 35mm camera, \$30. Kathy, 744-2203.

COMIC BOOKS - great for collector or dealer, must see, \$1,100. 981-5993 after 6 p.m.

INFANT'S CAR SEAT - Evenflo joyride, \$25; new playpen, Grayco Disney Babies, \$45; Fisher Price bath tub, \$8; Sesame St. Playgym, \$8. Chris, 744-6874.

JEWELER'S SCALE - portable, electronic (grams, pennyweight, troy ounce), carrying case, \$225; port. jeweler's display case, \$35. Rosemary, 928-0030.

RASPBERRIES - farm grown, large variety, \$2.50/pint, order 1 day in advance. Barbara, Ext. 4963.

WEDDING GOWN - Eve of Milady, size 6, pearls, sequence, long scalloped train, tapered sleeves, beautiful veil, perfect cond. Cathy, Ext. 2541.

Free

BOAT - 16' Bowrider, good hull, work boat condition, motor not running. Bill, Ext. 2095.

DOG - big, beautiful Belgian sheepdog, please help him find a companion. Maria, Ext. 3033 or 744-1912.

Lost & Found