BROOKHAVEN BULLETIN
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BROOKHAVEN NATIONAL LABORATORY

Glenn Jennings Takes Charge of Affirmative Action

The position of Assistant to the Director for Affirmative Action was filled on Tuesday, May 30, by Glenn A. Jennings, who comes to the Lab from the Detroit Edison Company, Michigan.

In announcing to all employees that Jennings has joined the staff, BNL Director Nicholas Samios noted, "He brings to us extensive background in the development and administration of Equal Employment Opportunity [EEO] policies and guidelines. I am confident that each of you will give Mr. Jennings the support and encouragement that will ensure an even more successful affirmative action program at the Laboratory.

"At this time," Samios continued, "I would like to thank Otto White who served in an acting capacity until Mr. Jennings arrived. Mr. White's contribution while in this position is much appreciated by the Laboratory."

Roger Stoutenburgh

Glenn A. Jennings

Mort Rosen

Otto White Jr.

Otto White began serving as Acting Assistant to the Director for Affirmative Action in June 1988, after the retirement of Earl Blanton. While assuming this function, White also maintained his responsibilities as Head of the Operational Health and Safety Section in the Safety & Environmental Protection Division. He has now returned his full attention to those duties.

Before he left the Affirmative Action Office (AAO), however, White shared his experiences with Jennings. "He gave me an immense amount of assistance," Jennings said. "by providing me with insights that only a person who has held this position can have."

Prior to coming to BNL, Jennings was the EEO Coordinator for Detroit Edison, a power utility with 11,000 employees. There, he said, "I ran everything as far as EEO and

(Continued on page 2)

Trim Coils to Keep SSC Beams on Course

Just as a ship's sails need to be trimmed to catch the wind, the magnetic fields of the 8,000 superconducting dipole magnets that will be used in the proposed national Superconducting Super Collider (SSC) need to be trimmed to keep the particle beams on course — so, that's where trim coils come in.

To be buried deep in the heart of Texas within an underground oval tunnel ten feet in diameter and 53 miles around, the SSC will be an accelerator with two beams of protons, each with an energy of 20 trillion electron volts. When not colliding head-on to produce new particles, the proton beams will orbit in opposite directions in separate beam tubes — bent around their course by dipole magnets.

Superconducting magnets are the technological foundation of the SSC — and Brookhaven is one of three national labs that devised a collaborative design for the SSC dipoles, or bending magnets.

"When SSC is built and the dipoles are operating, the proton beam will first experience the main magnetic field, which will bend the beam, but slightly out of focus," explains John Skaritka, a project engineer in the Accelerator Development Department (ADD) and engineering supervisor of the SSC Trim Coil Assembly Lab at BNL, in Bldg. 1006.

"The trim coils are said to trim the main field — their magnetic field steers the beam in the right direction by correcting for the wrong directions in the main field," he adds.

Working with Skaritka in the Trim Coil Assembly Lab are Dean Ince, technical supervisor; Rollins Otten, lead technician; and technicians Wesley Swensen and Hal Van Deroef.

Roger Stoutenburgh

Inside the Trim Coil Assembly Lab in Bldg. 1006 are: (from left) Dean Ince, Wesley Swensen, John Skaritka, Hal Van Deroef and Rollins Otten.

It is their job to wrap trim coils and their associated assembly components precisely around beam tube sections so that the entire assembly is very trim — no more than fifty thousandths of an inch thick.

In the past, in addition to being hand-wrapped, the trim coils themselves were assembled manually. Since the SSC will require more trim coils than magnets, manual production of trim coils would be too costly.

As one of the goals in building the SSC is to transfer the technology for making superconducting magnets and associated equipment to industry, Skaritka worked with the Multiwire Division of Kolmorgan Corporation of Hicksville, N.Y., to develop an automated way of producing trim coils.

The method uses a computer-controlled machine, which was developed by BNL and Multiwire. The wiring machine bonds a thirteen-thousandths-of-an-inch-thick superconducting wire, which is wrapped in a special plastic film called Kapton, onto an adhesive-coated Kapton-film substrate.

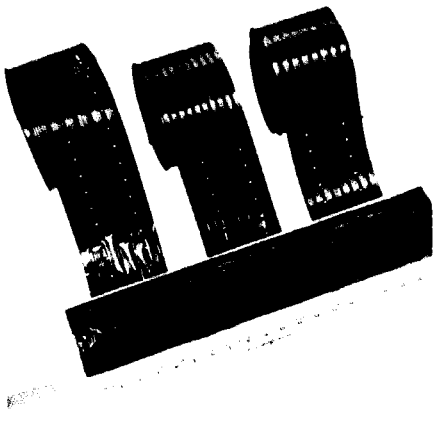
The machine can be programmed to lay the wire down in any pattern; the SSC trim coils are laid out in one of three flat patterns: a three winding-element sextupole; an octupole with four winding elements, or a five winding decapole (see box, page 2).

The length and strength of these trim coils have been determined through a magnetic-field computer-analysis performed by Physicist Patrick Thompson, ADD.

The technology for manufacturing and assembling SSC trim coils already has an intraLab spin-off — multipolar field correction coils for Brookhaven's proposed Relativistic Heavy Ion Collider (RHIC). Employing SSC technology, two RHIC trim coil assemblies have been completed.

"We're still working on refining the technique and materials to make trim coil assembly easier and less expensive," says Skaritka, in whose name a

(Continued on page 2)



Mort Rosen

To be mounted on the beam tube of the Superconducting Super Collider, these trim coil patterns produce (from left) sextupole, decapole and octupole magnetic fields to correct the main field of the dipole, or bending, magnets.

Culture and The Foods You Eat

Jacqueline Newman

Jacqueline Newman, professor at Queens College, will be the guest speaker for the next Brookhaven Women in Science (BWIS) dinner meeting, on Thursday, June 15, at 6:30 p.m., in Room A, Berkner Hall. She will speak on "How Culture Influences What You Eat: Case Studies in China and the United States."

Newman will begin with an overview of some of her early research and then concentrate on 1986 research done in cooperation with Mary Bertino of Monell Chemical Senses Center on aroma and taste differences between Chinese and Americans. Their research involved the use of scratch-and-sniff swatches, which were the same as those used in a 1986 National Geographic smell test.

She will also give an inside look at aroma and taste research that may lead to less invasive medical diagnostic tools. For example, Addison's disease can already be diagnosed by taste-testing.

Newman teaches experimental food science to both undergraduates and graduate students at Queens College, where she is the coordinator of the graduate program in home economics. Her research interests center on food habits, especially those of Chinese populations. This April, she completed her sixth trip to the People's Republic of China, where she was arranging to study China's 55 minority populations. She is also an authority on English language cookbooks on Chinese cooking, having a personal collection of over 900 volumes.

All are invited to the talk, which will be preceded by dinner at 5:30 p.m. For dinner reservations, at $14 each, contact Joyce Tichler, Ext. 3801, by June 13.

Get in the Swim . . . Give Blood!

Having fun in the water are three-year-old Sumit Sahni (left) and six-year-old Sonu Sahni, who live on site with their parents, Suresh Sahni, Department of Applied Science, and Sharda Sahni.

Sumit and Sonu are healthy kids, starting summer with a splash — and they are great to see. But let's not forget other kids, those who are too sick to play. The generous people who give blood are making sure that ailing children and adults have a chance to enjoy more summers.

You can donate at the BNL Blood Drive on June 20, 21 and 22. Two pledge cards have been sent to each employee so that friends and relatives may join the campaign. Please sign up as soon as possible. For more information, call Susan Foster, Blood Drive Chair, Ext. 2888, or contact your department or division Blood Program Captain.

Trim Coils (cont'd)

method of trim-coil production has been registered.

Trim-coil technology may be transferred to commercial industry, where it would be used to make trim coils for the magnets used in nuclear-magnetic resonance (NMR) devices, used for imaging and diagnosis in nuclear medicine.

Skaritka concludes, "By using this technique, not only can manufacturers increase their efficiency in making NMR trim coils, but, with the improved magnetic fields that result, their NMR machines will produce better images — and possibly improve the diagnostic capabilities of NMR."

— Marsha Belford

On-Site Chinese Look Homeward

For over a month now, they have sat transfixed in front of TV sets on and off site, watching tensely as events continue to unfold in the People's Republic of China. They are BNL's 45 visiting scientists and students from China, as well as about 50 Chinese-Americans who work at the Lab but who still have close ties to that beleaguered country halfway around the world.

Inan Feng, Biology, who became an American after leaving her native China 22 years ago, is the on-site liaison for Chinese nationals. She led a combined meeting of the Lab's two Chinese communities on Wednesday, with the goal of determining what support is most needed.

The group determined to focus on two actions, Feng said. First, they will support the demonstration planned for today to begin in New York City's Chinatown, and, as a diversity of participants is desired, they will encourage others to support it as well. Second, they will raise funds. Some of the monies will be used to try to increase communications with China, while others will be given to the International Red Cross to help their attempts to relieve the suffering of those injured during the recent crisis.

Anyone who would like to help should contact Ziping Chen, Ext. 5840, Bldg. 901A, or Hai-Qing Lin, Ext. 3890, Bldg. 510A.

Brookhaven Highlights

The latest edition of the Brookhaven Highlights, which discusses the Laboratory's 1988 activities, has been distributed to all employees. Additional copies are available to individuals through the Public Affairs Office, Bldg. 134. Larger quantities should be ordered through the Technical Information Division, Ext. 5068, as BNL report number 52165.

Attention: LIRR Riders

Afternoon Long Island Railroad riders bound for New York City must be at the Public Affairs Office, Bldg. 134, by 3:55 p.m., to be chauffeured by a BNL driver to the Mastic-Shirley station to meet the 4:25 p.m. train, which arrives at Pennsylvania Station at 6:19 p.m. To reserve a seat in the Lab car, call Public Affairs, Ext. 2345.

For morning riders to BNL, a Lab driver meets the 10:57 a.m. train at the Patchogue station, picking up Lab-bound passengers who left Pennsylvania Station at 9:31 a.m.

Photos on these pages by Roger Stoutenburgh.

A Trim Process: Step by Step

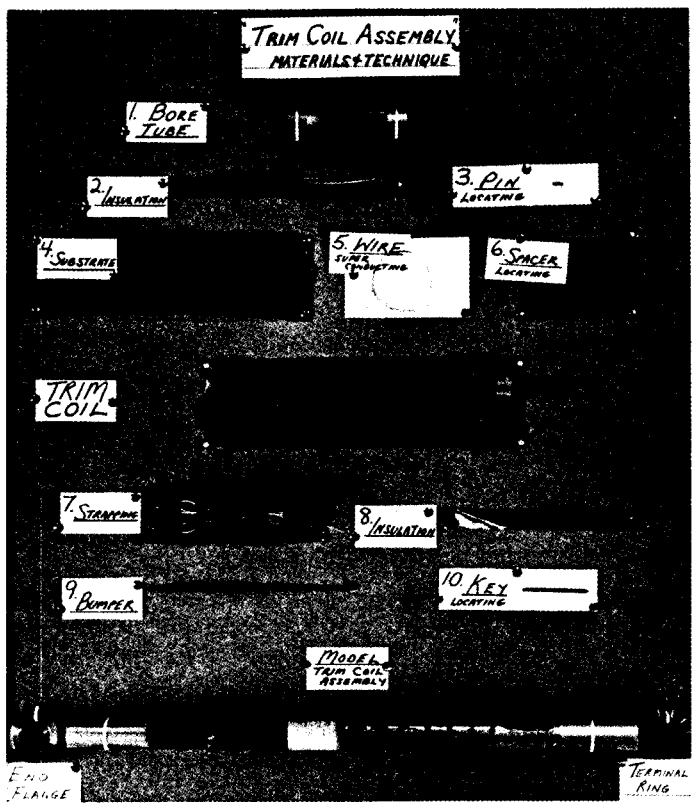
The correction magnet called a trim coil (center) consists of Kapton-coated superconducting wire (5) only thirteen thousandths of an inch thick, which is laid in one of three patterns on a substrate (4). The pattern shown in the picture has three windings and six poles, so it is called a sextupole.

Trim-coil assembly begins with a piece of stainless steel beam tubing (1). Plated with about three thousandths of an inch of copper, the approximately 1.4-inch-in-diameter by 62-foot-long sections of SSC beam tubing are believed to be the longest interior-plated tube of such a small diameter in the world.

After being insulated with Kapton (2), affixed with locating pins (3) and wrapped with fiberglass, the beam tube is encircled with trim coil patterns approximately equal to the length of the dipole magnet that they will correct. Before a glass strapping (7) is used to tie the patterns to the tube, the three-thousandths of-an-inch spaces between the trim coil's wires are filled with an alumnia powder-filled epoxy glue.

The assembly is then wrapped with another insulating layer (8). Then, a locator key (10) is fitted over the locating pins, which protrude through perforations in the wrappings. Long strips of embossed Kapton (9) are attached as bumpers.

Finally, the leads from the trim coil are connected at a terminal ring (bottom, right), which will eventually be hooked to power supplies controlled by computer, which will direct the trim coil's operation. During SSC operation, the different patterns of trim coil will operate independently, and so be able to respond as necessary to the travels of the proton beams.



All wrapped up neatly and tightly, the almost 1.5-inch-in-diameter trim-coil assembly is then ready to be installed inside a dipole magnet's main coils, before the rest of the magnet is built around it.

— Marsha Belford

Arrivals & Departures

Arrivals

Robert W. Burns ..... AGS
Raymond L. Dumont ..... Instrum.
Dragan Mirkovic ..... DNE
Matthew Randesi ..... Biology
Elizabeth C. Selcow ..... DNE
Thomas J. Shea ..... Accel. Dev.
Richard M. Spitz ..... AGS
Clifford J. Wiener ..... AGS

Departures

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

Andrew D. Galo ..... Reactor
George H. Grigg Jr. ..... DNE
James J. Savino ..... Accel. Dev.

ANS Meeting

Anthony Earley Jr., President of the Long Island Lighting Company, will be the guest speaker at the June meeting of the Long Island Section of the American Nuclear Society (ANS). His talk on "Energy Options for the 1990's" will begin at 8 p.m. on Wednesday, June 14, following cocktails at 6 p.m. and a buffet dinner at 7 p.m. The meeting will be held at the Islandia Hilton and will cost $25 per person.

For reservations, call Lydia Ryan, Ext. 2380, by Monday, June 12.

BNL Lecture Rescheduled

The next BNL Lecture, originally planned for June 14, has been rescheduled for Wednesday, July 19. Details about the lecture will appear in the July 14 Brookhaven Bulletin.

Jennings (cont'd)

affirmative-action compliance was concerned."

After six years in that job, Jennings began to look for new challenges. He was particularly interested, he said, "in coming to an institution that has a very aggressive and supportive affirmative action posture — and that's what I am finding here at BNL."

As a newcomer to BNL, Jennings is taking time to study the Lab's past efforts in affirmative action. What immediately impressed him, he said, "is that all the resources are here, and that BNL is probably far ahead in terms of having a mechanism to handle EEO concerns — for example, the Affirmative Action Advisory Committee and the Affirmative Action Representatives in the different departments and divisions. It's my charge to see to it that we all work together to go beyond what the federal guidelines state.

"Most people think of EEO as being concerned strictly with employees who are minorities," Jennings added. "I am very much interested in broadening that scope to include other groups, such as women, the handicapped and Vietnam veterans."

Jennings plans to do that with two words in mind: excellence and professionalism. He'll also do it with the help of his "extremely competent" AAO staff — Renee Flack and Frances Ligon.

Glenn Jennings earned his B.S. in social science/labor and industrial relations from Michigan State University in East Lansing, in 1976. Three years later, he received his M.A. in education/guidance and counseling at the University of Michigan, Ann Arbor.

While pursuing his master's, Jennings was first an employment representative at the University's Medical Center, and then a personnel assistant for Washtenaw County, where the University is located.

In 1980, Jennings became a field agent for the urban programs of the Michigan Department of Transportation in Lansing. He joined Detroit Edison in 1981, as a business analyst in administration operations, then moved up to his last position in 1983.

For Jennings, then, Michigan has always been home, and in Detroit, he was used to the tensions of the inner city. Though he came east for the first time with some reservations, on Long Island and especially at BNL, he's been pleasantly surprised by the "relaxed atmosphere."

"One of the things I truly like," Jennings stressed, "is the support and welcome everyone has given me. They seem truly interested in me and what I have to do."

Now he would like to return the hospitality. "I want to encourage any input, comments, suggestions," he said. "And I welcome all employees to stop by and share their concerns with me. I'm a very approachable person."

Jennings's office is in Bldg. 185A, and he can be reached on Ext. 3318.

Basketball Champs

Last year, they came in last. So this year, the Longshots were certainly the long shots of the BNL Basketball League. But, as long shots sometimes do, the team came through and captured this year's league trophy with an 11-1 season. Shown with their reward are (front, from left) team co-captains Bob Rowley and Troy Mayo; and players (back from left) Alex Ratti, Greg Mack, Fred Malone and Steve Springston. Steve Alonzo, Richard Bersak, Joe Wells and Jeff Winger. Rowley attributed their success to "a great bunch of guys and a good defense."

Cooking Exchange

New employees currently living on site are invited to join all those who have been members of the International Cooking Exchange within the last few years at its International Dinner on Monday, June 19, at 6 p.m., in the Brookhaven Center. Bring one of your favorite dishes. Baby-sitters will be available. If you are planning to come, call Kazuko Kuno, Ext. 3222.

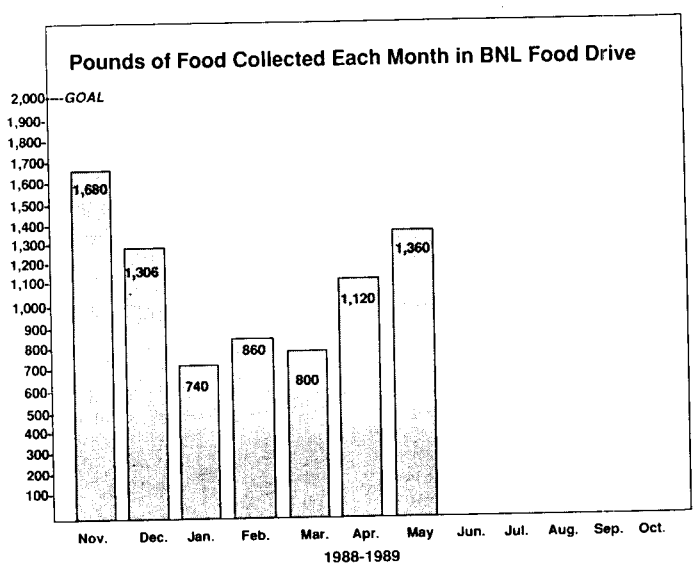
Cafeteria Menu

Monday, June 12		
Soup: Chicken noodle	(cup)	.75
	(bowl)	.95
Oven-fried chicken w/pot. or veg.		3.10
Lasagna w/garlic bread		3.10
Lite-line: Baked chicken w/veg.		3.10
Hot deli: Corned beef		2.85
Tuesday, June 13		
Soup: French onion	(cup)	.75
	(bowl)	.95
Sliced turkey w/dressing		3.10
Pork chop cacciatore w/spaghetti		3.10
Lite-line: Grilled turkey steak w/veg.		3.10
Hot deli: Western hero		2.85
Wednesday, June 14		
Soup: Cream of tomato	(cup)	.75
	(bowl)	.95
Meatballs in brown gravy w/rice		3.10
Quiche Lorraine w/veg.		3.10
Lite-line: Stuffed cucumber plate		2.85
Hot deli: Chicken salad melt		2.85
Thursday, June 15		
Soup: Mushroom barley	(cup)	.75
	(bowl)	.95
Yankee pot roast w/pot. or veg.		3.10
Macaroni & cheese w/veg.		3.10
Lite-line: Sliced roast beef au jus w/veg.		3.10
Hot deli: Chopped BBQ on bun		2.85
Friday, June 16		
Soup: Manhattan clam chowder	(cup)	.75
	(bowl)	.95
Seafood pasta w/garlic bread		3.10
Lite-line: Broiled whitefish w/veg.		3.10
Hot deli: Grilled ham, swiss & tomato		2.85

Badminton Champs

The Badminton Club runs a ladder tournament each year, from September until April. In the spring, an elimination tournament marks the end of the regular season. This year, the winners were: (from left) Jack Detweiler and Joe Pasciak, who came in first and second, respectively, in the doubles ladder; and See Meng Wong and Om Singh, who won the doubles elimination tournament. Singh also took first in both singles competitions.

Food Donations on the Rise



Food donations are on the upswing, so let's keep it going during the June Food Drive, which begins Monday, June 12. This month, BNL'ers will have some help as they continue their drive towards the monthly goal of 2,000 pounds of food collected: The staff of the American Physical Society in Ridge has volunteered to join Lab employees in contributing foods and other nonperishable necessities to those in need in Brookhaven Town.

Tennis Fun Day

Don't forget to sign up to participate in the Tennis Fun Day to be held Saturday, June 17 (rain date, Sunday, June 18), at the tennis courts from 9 a.m. to noon. You'll bring your own tennis balls, but refreshments will be provided and prizes will be awarded.

Sign up at the BERA Sales Office or by calling Nick Combatti, Ext. 3389; Om Singh, Ext. 5332; or Neal Tempel, Ext. 3418.

Softball

Standings as of June 2

League I		League II	
Phoubars	3-0	Cutting Edge	2-0
Cool 'n Gang	2-1	Magnuts	2-0
Six Pax	2-1	Titans	2-1
Blue Jays	2-1	Scram	1-1
Ravens	0-3	CCD	1-2
Light Source	0-3	Bombers	0-2
		Phase Out	0-2
League IV			
Snake Bites	4-0	Kidz-R-Us	2-2
Spacekadets	3-1	Hounds & Foxes	1-2
Simply Awesome	3-1	Foul Ups	0-3
Survivors	2-1	Farm Team	0-4

Look! Limericks!

You can work out at Brookhaven Lab
At the gym or the pool, take a stab —
With the clubs run by BERA
It would be a great error
To have body or brain go to flab.
— Bill Gunther
Department of Nuclear Energy

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Suggestions of Savings

Michael Schaeffer's position as a project engineer with Plant Engineering's Project Coordination Group takes him all around site. In his travels, Schaeffer observed that many of the timers used to automatically turn off air conditioners after a set period of time were not working. After conducting his own random test and finding many more timers out of order, he submitted a suggestion to the Employee Suggestion Program that the Lab should be surveyed for malfunctioning air conditioner timers, and that broken ones should be repaired as required. As it was estimated that this suggestion will save BNL $2,200 in the coming year, Schaeffer received an award of $220.

When Geochemist John Suen came to the Department of Nuclear Energy in January 1987, BNL moved him and his family to Long Island from California. From this first-hand experience, Suen formulated his suggestion to modify the Lab's policy for moving new employees' households. Since his idea has resulted in improved communications between the Lab and new employees, in greater Lab participation in household moves and in increased employee morale, Suen received a $100 award from the Employee Suggestion Program.

When she comes to work as a senior technician in the Reactor Division, Donna Vestal usually parks in the back of Bldg. 750. When she leaves at the end of the workday, Vestal's route takes her along Lawrence Drive, in front of the Alternating Gradient Synchrotron, Bldg. 911. Close calls in that area prompted Vestal to submit a suggestion that a yield sign be placed there. After the Traffic Safety Group in the Safety & Environmental Protection Division evaluated the area, yield signs were installed in two locations near Bldg. 911 — and Vestal received a $25 award, for an idea that is expected to increase Lab safety.

Classified Advertisements

Placement Notices

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

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

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

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

LABORATORY RECRUITMENT - Opportunities for Laboratory employees only.

4061. SECRETARIAL POSITION - Requires AAS in secretarial science or equivalent and a working knowledge of Laboratory policies and procedures. Will perform diversified duties for Advanced Reactor Safety Analysis Group. Duties will include extensive word processing, arranging foreign and domestic travel, and maintaining files. Previous MICOM or IBM PC WordPerfect required, as well as the ability to obtain and maintain DOE Q clearance. Department of Nuclear Energy.

4062. SECRETARIAL POSITION - (part-time) Requires AAS in secretarial science or equivalent experience. Responsibilities will include preparation of mathematical manuscripts using TeX. Experience with TeX, PCs and mathematical equations required. Additional responsibilities include routine clerical duties for Mathematical Sciences Division. (Reposting of Job No. 3088) Department of Applied Science.

OPEN RECRUITMENT - Opportunities for Laboratory employees and outside applicants.

4063. TECHNICAL POSITION - Requires AAS in mechanical technology or equivalent and excellent communication skills. Under minimum supervision, will assist in the design and fabrication of complex mechanical electromechanical devices, from initial conception to completion, installation and alignment. Previous machine tool experience necessary. Physics Department.

4064. ELECTRICIAN A - (2 positions) Under minimum supervision lays out, constructs, installs, maintains, repairs and operates electrical systems, equipment, controls and related devices. (Reposting of Job #4007) Plant Engineering Division.

4065. ENGINEERING POSITION - Requires BSEE and experience with hardware aspects of 80286-based computer architecture, including I/O hardware, digital electronics, instrumentation and communication bus design; interfacing with actuators and automated testing of circuit boards. Data processing and experience with AT software also desirable. Department of Nuclear Energy.

4066. TECHNICAL POSITION - Requires AAS in electromechanical technology or equivalent background and experience in the construction, testing and leak checking of vacuum systems. Will work in the Vacuum Group on the modification and maintenance of the new AGS vacuum system. Alternating Gradient Synchrotron Department.

4067. SCIENTIFIC ASSOCIATE POSITION - Requires a bachelor's degree in biology or the equivalent. Must have familiarity with organic chemistry, immunology and virology. Experience with radioimmunoassays, handling radioactive compounds, use of gamma and scintillation counters and mouse dissection is necessary. Biology Department.

4068. REFRIGERATION AND A/C ENGINEER - Requires substantial experience troubleshooting, repairing, installing and operating commercial/industrial air-conditioning and refrigeration equipment, including steam absorption, centrifugal and helical screw refrigeration machines. Successful completion of refrigeration and A/C apprenticeship program or related course work is highly desirable. Must be available to work shifts as required. Plant Engineering Division.

Motor Vehicles & Supplies

87 TRAVEL TRAILER - Prowler, 18', awning, picture window, rear bath w/tub, mint cond., 475-5849.

86 RAM CHARGER 318 - a/t, p/s, p/b, a/c, cass. tape, red/white,$5,800. 736-2039, 9 a.m.-5 p.m. weekdays.

86 IROC-Z28 - red/black, loaded, alarm, a/c, T-top, louvers, tinted windows, cruise, excel. cond., must sell, $10,500. Lisa, Ext. 2276.

86 HONDA EXPRESS MOPED - bought in summer of '87, 1k mi., $300. 369-0533.

85 HONDA MAGNA MOTORCYCLE - V30, 500 cc, black, garaged, 9k+ mi., helmet incl., $1,650. Dave, 286-9024.

85 NISSAN 300ZX - 2+2, w/T-top, digital, low mi., excel. cond., $10,500. Peter, 281-7035 after 5 p.m., leave message.

85 TOYOTA CAMRY - turbo diesel, a/t, a/c, p/s, p/b, am/fm stereo cass., cruise, 60k mi., economical, mint cond., $5,500. Ext. 4848.

84 FORD ESCORT - 2-dr., 4-spd., p/s, p/b, tan, 76,500 mi., runs well, $750. Richard, Ext. 3082.

83 NISSAN SENTRA - h/b, lt. blue, clean, 5-spd., s/t, avg. 35 mpg, am/fm stereo cass., $1,800. Sharon, Ext. 3995.

83 PONTIAC 2000SE - p/s, p/b, a/t, 78k mi., $3,800. Xuan, Ext. 3677.

83 YAMAHA VIRAGO MOTORCYCLE - 750 cc, black, garaged, low mi., mint cond., extras, asking $1,900 neg. Charles, Ext. 5211.

83 TOYOTA CELICA - 5-spd., a/c, new brakes, exhaust system, tires, clutch, excel. cond., asking $5,500. Danny, Ext. 4446 or 744-3027.

82 NISSAN STANZA - h/b, 4-dr., a/t, sunroof, high mi., one dent, otherwise clean, runs well, $900, priced to go. Lenny, Ext. 4467.

82 NISSAN STANZA - h/b, 4-dr., blue, good cond., $1,700. 281-7935 eves.

81 PLYMOUTH TC3 - h/b, good cond. Phil, 286-1348.

81 FORD MUSTANG - 4-cyl., a/t, 82k mi., good cond., $1,500. Ext. 2926 or 281-0268.

79 FORD LTD - 2-dr., 8-cyl., 81k mi., a/t, p/s, p/b, a/c, clean in/out, $1,000. Lee, Ext. 7540 or 3104.

78 CAMARO RALLY SPORT - no rust, needs some engine work, $1,200. Richie, 878-1580 after 5 p.m.

77 DATSUN B210 - 4-dr., hit on pass. side, new tires (165-R-13), rotors & clutch, rebuilt 4-spd. trans. & master cyl. Lou, Ext. 3499.

76 CHEVY NOVA - 4-dr. sedan, good cond., asking $425 neg. 689-6847 after 5 p.m.

76 SUZUKI MOTORCYCLE - twin engine, nice looking, good cond., $200. Ext. 7699 or 821-1138.

74 FORD LTD - runs well, useful as second or utility car, asking $150. Lonny, Ext. 5333.

73 JEEP MAIL TRUCK - 2wd, L.H.D., runs well, $250 neg.; 1 pr. 12:00x15 LT tires, $40 or best offer. 744-4386.

72 CHEVROLET C-10 PICKUP - 4-spd., tool box, good engine, $500. 878-2040 after 6 p.m.

72 COUGAR CONVERTIBLE - new engine, rebuilt trans., new exhaust, needs body work, make offer. 722-3338.

70 POP-UP CAMPER - sleeps 6, asking $275. Pete, 286-4805.

69 CLASSIC VOLVO 1800S - dual carb, red w/black int., good cond., $2,500. 924-6619 after 5 p.m.

69 CHEVY IMPALA - 100k mi., needs work, runs, $150. Jim, Ext. 3166 or 2562 after 6 p.m.

65 FORD MUSTANG - running, needs body work, $1,000. 727-8451.

FACTORY CAP - Ford, for 8' bed, asking $350; 8' power angle snowplow, $500. 474-5715.

ROOF RACK - for wagon or van, excel. cond., $40. Paul, 727-4859.

REAR AXLE - for 1979-86 Mustang, 3.08 ratio, $50. Bart, Ext. 3457 or 924-6761.

AIR-FLOW BOX - Nissan, T-top; orig. Datsun 280 trim ring Z tires (4); black bucket seats (2), make offer. Janet, Ext. 2345 or 929-3910.

TRIAXIAL CAR SPEAKERS - Jensen, brand-new, $80. 924-3004 after 4 p.m.

TIRE - new, Firestone 721, 235/75R15, Eldo rim, $50. Ernie, 588-4987.

Boats & Marine Supplies

26' SILVERTON - 1977, F/B, sedan, 225 h.p., sleeps 4, head, galley, good cond., $15,000. Bob, 718-357-9045.

25' WELLCRAFT NOVA 150 - 1977, w/twin 188 engines, best offer. Bill, 265-7089.

25' LANCER SLOOP - 1977, shoal keel, new Genoa, new Evinrude 9.9 ES, must sell, $4,100. 289-8693.

19' REINELL - 155 h.p. OMC, I/O, good cond, $1,200 neg. Bart, Ext. 3457 or 924-6761.

19' BAYLINER - cuddy, w/trailer, 125 h.p. o.b., elec. winch, asking $8,000. Mike, Ext. 2434 or 2417.

19' BOWRIDER CRUISER - 1972, w/1976 115 h.p. Johnson, Coast Guard pkg., trailer w/electric winch, $3,500. Frank, Ext. 2314 or 567-5131.

16' GARVEY CLAM BOAT - fiberglass over wood, extras, $200. Dave, 286-9024.

16' BAYLINER - 1986, w/trailer, 85 h.p. Force o.b. engine, 20 hrs., marine radio, many extras, must see. 472-0430.

14' FIBERGLASS BOAT - windshield, wheel, 35 h.p. Chrysler engine, needs work, excel. trailer, $600. Sheryl, Ext. 5384.

V-BOTTOM BOAT - 1980, w/1986 110 Johnson o.b., excel. cond., great for fishing, clamming, $4,000. 589-3072.

SAILING RIG - for canoe, incl. sail, mast, boom, gaff, rudder, leeboards, hardware, etc., Old Town, $400. Bob, Ext. 4044.

POWER TRIM & TILT UNIT - Merc, $250; 40 h.p. Evinrude, excel. cond., $400. Ext. 3457 or 924-6761.

Furnishings & Appliances

FREEZER - 6 mos. old, 19.5 cu. ft., energy efficient. Pat, Ext. 5392.

REFRIGERATOR/FREEZER - Hotpoint, harvest gold, 12 cu. ft., 61"hx28"wx29½"d, frost-free, excel. cond., $175. Jim, Ext. 4669.

GIRL'S BEDROOM - Bassett, white/gold, maple formica top, triple dresser, pediment mirror, student desk & chair, asking $150. 929-4714.

WASHER - H.D. Frigidaire, 4 yrs. use, $100. George, Ext. 4100.

CHEST - oak, w/5 drawers, decorative back, $150. Ext. 5130 or 874-3652.

FREEZER - large; dinette set; couch, assorted living room pieces, all reasonable. 363-7032.

MIXER - 3-spd., Black & Decker, 1-yr.-old., $9. Susanne, Ext. 3118.

FREEZER CHEST - 36 cu. ft., excel. cond., bought last yr. for $600, asking $400. Bill. Ext. 2214.

BED - double, headboard, w/mattress, excel. cond., $60. Roger, Ext. 3578 or 395-1969.

DRAPES - 1 pr. off-white, quadruple x95" long; 2 pr. white antique satin, triple, 95" long; 3 rugs, white wool flokat; best offer. Ext. 3270.

MATTRESS - queen-size, including boxspring, excel. cond., $100. 265-7089.

Tools, House & Garden

LAWNMOWER - Craftsman II, 3.5 h.p., 20" cut, rear bagger, cast-iron cylinder liner, 2 yrs. old, $150 or best offer. Wick, 758-6773 eves.

PATIO DOORS - 12', thermopane, 3 sections w/frame, cheap. Carl, Ext. 4420.

TOPSOIL - $19/yd. delivered, 5 yd. minimum, also sand & gravel delivered. 924-9427.

MACHINIST'S TOOLS - micrometers, 12" vernier, dial indicators, telescoping gauges, etc., USA made, $1,200 value, asking $500. Doug, Ext. 4175.

LAWNMOWERS - Lawn Boy chassis, 5 h.p. Briggs & Stratton eng., w/bag, $110; Lawn Boy mower parts. Dan, 698-7322 days or Ext. 4987 eves.

WATER PUMP - three-stage jet, Flint & Walling make, new GE 1½-h.p. motor, w/pressure tank, used 3 years. 821-3925.

GENERATOR - Niagara-Generac, 4,000 watts, never used, sealed in carton, $400. 744-3792.

TUNE-UP CENTER - Snap-on 3 meters, $250; brake bleeder, $125; 20-ton air assisted hydraulic jack. 474-5715.

Sports, Hobbies & Pets

VARI KENNEL - used once, airline approved, 2'x3'x2', paid $120, sell for $60. Ken, 369-0533.

MOTORCYCLE HELMET - size L, $20; Yamaha sissy bar, $20; surfboard, 6'8", $100; tennis rackets, midsize, $50, oversize $60. 589-0625.

DRYSUIT - Poseidon, man's large, like new, asking $500. 474-5715.

SLIDE TRAYS - 11, Kodak 750 slide projector w/remote control, all excel. cond., $85 takes all. 369-8452.

BIKE - 3-wheel, pedal or electric power, new battery, battery charger, rear basket for pkgs. or baby. 281-9250 eves.

GYM - Marcy home gym & D.P. equipment, new. Nick or Bob, 584-5717 after 5 p.m.

ARCHERY EQUIPMENT - Stemmler, 30 lb. rec., caston arrows, guards, quiver, $125/all or best offer. Ext. 2914 or 286-3742.

BICYCLE - Ross, 24" girl's, 3-spd., excel. cond., orig. $125, asking $60. Ext. 4449 or 751-8403 after 6 p.m.

EXERCISE BIKE - $40; rowing machine, $100; both $125; rabbit hutch, outdoor w/removable roof, $70. Tom, 698-3724 or 736-6691.

BUNNIES - Dwarf, $6. John, Ext. 3675 or 924-3528.

SPORT BICYCLE - Panasonic, 12-spd., good cond., extras, $150 neg. 331-9792 eves.

Audio, Video & Computers

TURNTABLE - Garrard, works well, needs minor electrical, $25. Roger, Ext. 3578 or 395-1969.

COMPUTER - TRS-80 model 4-P, transportable, excel. cond., $475. Tom, 698-3724 or 736-6691.

Miscellaneous

CRIB - sturdy, $18; lawn spreader, $9; hand-push lawnmower, $8; cast-iron, 10-piece shoe repair set, $15. 878-6637.

TICKETS - to The Who, July 3rd, Giants Stadium, $26 ea. 698-3724 or 736-6691.

RECORD ALBUMS - from 50's and 60's, $5 ea., maple seedlings, $1 ea.; brass lobster, $10. 744-2203.

CAR SEAT - Fisher-Price, excel. cond., $20. Bart, Ext. 3457 or 924-6761.

Free

COCKER SPANIEL - AKA, female, black & tan, sweet, affectionate, well trained, needs good and loving home. 331-9792 eves.

WOOD SAILING DINGHY - 8', needs work, but basically sound. Ext. 2799.

KITTENS - Lab-grown. Amber, Ext. 4790 or Ext. 3223 after 6 p.m.

COFFEE CANS - 1 lb., empty. Charlie, Ext. 4758.

Car Pool

BOHEMIA-OAKDALE-SAYVILLE - need 2 more drivers, also can meet at Exit 59 LI Expressway. Frank, Ext. 2314.

BELLPORT - 5th member wanted for established car pool. Liz, Ext. 2346 or Ed, 286-7539 after 6 p.m.

Lost & Found

LOST - Vrelov's *Cherenkov Radiation*. Please return to AGS library.

Real Estate

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

For Rent

BROOKHAVEN HAMLET - rent a room, share a house w/2 other professionals, roomy, on a wooded lot, convenient to Lab, $350/mo. all inclusive. Sidney, 286-4028, or Randy, Ext. 3835.

CORAM - Tanglewood Hills, 4-bdrm. ranch, 2 baths, 2-car gar., fenced ⅓ acre, 5 appl., 2 mo. security, refs., $900/mo. + util. 928-7154 eves.

EASTPORT - 1-room studio apt. in private home, 20 min. from Lab., $475/mo. all included, immed. availability, no pets. 325-0976.

E. SETAUKET - 4-bdrm. Colonial, 2½ baths, eik, l/r, d/r, fam rm., f/p, screened porch, fin. bsmt., 2-car garage, GHWH, avail. 8/1/89, 2-month sec. Shiue, Ext. 4395/3372 or 751-8224.

FLANDERS - one bdrm. on bay, good boating, fishing, summer or year round, large deck. 286-8740.

MASTIC - furnished 1-bdrm. apt., cable, private, $400 + elec., security, refs. 281-7844 eves.

PORT JEFFERSON - 4-bdrm. Colonial, 2½ baths, eik, l/r, d/r, fam. rm., f/p, near beach and elementary school, 10 mos. or 1 yr. lease, starting Sept. 1. Fiarman, Ext. 2921 or 473-3616.

RIDGE - 2-bdrm. condo, w/w, w/d, d/w, 2 miles from Lab, $700/mo. + util., security + refs. required. Ext. 4525 or 981-4696 after 6 p.m.

ROCKY POINT - new 1-bdrm. apt., full bath, l/r, eik, priv. ent., walk to beach, nonsmoker, no pets, $600/all. 744-6386.

SHIRLEY - 1-bdrm. apt., eik, l/r w/fp, bath, priv. ent., 10 min. to Lab, working couple or single, $650/mo. 399-1699 eves.

WESTHAMPTON/SPEONK - 2-bdrm., 1½ baths, 5 appliances, approx. 1000 sq. ft., 8 mos. old, immed. occup., 1 mo. sec., $850 + util. Rich, Ext. 4834 or 588-0507.

YAPHANK - 3-bdrm. 2-bath condo, Whispering Pines/Colonial Woods, avail. July 1. 473-1732.

CATSKILLS - 3-bdrm. chalet w/sleeping loft, fully furnished, great for fishing, rafting, hiking, golfing, swimming, near Hunter Mt. Music Festivals & Catskill Game Farm. Kay, Ext. 4501.

HILTON HEAD, SC - 2-bdrm. condo, sleeps 6, 2 baths, tennis, golf, beach, pool, $425/wk. Guy, Ext. 3147 or 585-9149.

For Sale

CORAM - 9-rm. Colonial, cul-de-sac, 4-bdrm., 2½ baths, fam. rm., f/p, eik, d/r, l/r, mud rm., i/g pool & lawn sprinkler, 2-car garage, extras, $195,000. Ext. 2303 or 732-3902 after 5 p.m.

CORAM - Tanglewood Hills, 4-bdrm., 2-bath, California ranch, cathedral l/r, 2-car garage, gas heat, fenced ⅓ acre, professionally painted, $130,000. 928-7154 eves.

HOLBROOK - 3-bdrm. townhouse/condo, 5 appl., w/w, 1½ baths, tennis courts, swimming pool, clubhouse, balcony & fenced-in patio, 15-20 min. to BNL, $129,000. Ext. 2873 or 472-3236.

MANOR PARK - 4-5 bdrm. Colonial, 1½-bath, l/r, d/r, fam. rm., part. finished bsmt., garage, ½ acre, South Manor SD, 5 min. from Lab, new roof & heat, $155,000. Roger, Ext. 3578 or 395-1969.

MASTIC BEACH - 3-bdrm. ranch w/det. gar. & Florida room w/fp, city water, low taxes, 80x100 property, $95,000. Sue, 395-3529 after 6 p.m.

MASTIC BEACH - one-bdrm., year-round house, OHWH, Andersen windows, bsmt., well insulated, 60x100, city water, good cond., $75,000. Frank, 281-8040.

MATTITUCK - wooded lot, Dutch Colonial, ½ acre, 4 bdrms., 2 baths, full d/r, l/r w/fp, den, oak plank floors, full bsmt., encl. breezeway, 2-car gar., cul-de-sac., tidal creek, $252,000. 298-5383.

MIDDLE ISLAND - Coventry Manor, 3-bdrm. townhouse, kitchen, l/r, d/r, laundry rm., 5 appl., paneled, ca/c, pool, tennis, clubhouse, asking $106,000. Ext. 3160 or 289-5704 after 6 p.m.

PORT JEFF. VILLAGE - 9 rooms, wooded ½ acre, cul-de-sac, 5- bdrm., l/r w/fp, d/r, eik, fam., study, 2½ baths, ca/c 2-car gar., excel. schools, walk to village & harbor, $279,000. 331-3846 eves.

REGO PARK, QUEENS - 1-bdrm. co-op w/24' terrace, pool, indoor parking, 24-hr. doorman, close to subway & shopping, low 70's, neg. 473-1732.

ROCKY POINT - 2 story, alum. siding, ¼ acre, 2-3 bdrm., eik & den, 12'x18' l/r, 1½ baths, new kitchen cabinets, carpets, drapes, w/d, OHWH, city water, low taxes, $117,000. 744-3792.

ROCKY POINT - 3-bdrm. ranch, 100'x100' lot, eik w/skylight, Andersen windows, half bsmt., large fenced yard, SCWA water, under 5 yrs. old, mint cond., all appl., beach rights. 821-3925.

SETAUKET - N. 25A, contemporized Cape on ⅓+ acre, 4 bdrms., country kitch. w/skylight, 2 baths, refinished hardwood floors., new carpet & roof, playroom, $221,000. P. Vincent, 689-8675.

SHIRLEY - 2-bdrm. Cape, city water, low taxes, large partially finished attic, quiet neighborhood, w/d, south of Montauk, $99,000. 395-4272.

SHOREHAM - 4-bdrm. Colonial, 2-car gar., i/g pool, beautifully landscape, excel. school. 744-7642.

WESTHAMPTON BEACH/SPEONK - Hampton Villas, 2-bdrm. townhouse, 1½ baths, ca/c, swimming pool, 5 appliances, $149,500. Rich. Ext. 4834 or 588-0507.

LOCKWOOD, NY - 46-acre campground, excel. hunting, ranch house, barn w/workshop, Finger Lakes area, full facilities, pond, stream, more, $140,000. George, 607-589-4248.

EFFORT, PA - one acre +, lovely wood site near ski areas, in the Poconos, 1½ hr. from Delaware Water Gap, pool and clubhouse in development, $25,000. Sue, 874-2315.

HOLIDAY, FL - Sandpiper, 3-bdrm., 2 baths, 1½-car gar., cathedral ceilings, corner lot, sprinklers, clubhouse facilities, close to Gulf, shopping, asking $75,900. 474-5715.

MADERIA BEACH, FL - 1 week time-share, Commodore Beach Club on Gulf, sleeps 4 adults, pool, jacuzzi, asking $5,000. 474-4515.

Wanted

LAWNMOWERS - old, used, any condition. Dan, days, 698-7322 or Ext. 4987 eves.

MOTORCYCLES - bent or broken, any age or cond. Kevin, 281-8031.

TO BORROW - monaural reel-to-reel recorder to listen to old tapes. Janet, Ext. 2345 or 929-3910.

WET SAW - for cutting bricks, rent or buy. Tony, 698-9274.

FRENCH ENTHUSIASTS - anyone interested in a French conversation group. Robin, Ext. 2420.

HOUSEMATE - to share large 2-bdrm., 2-bath apt., use of clubhouse, pool, tennis courts, $460 mo. Sue, Ext. 2531.

RACING PARTNER - for racing/cruising 30' sailboat in Peconic Bay. Ext. 7699, or 821-1138.

BLACKBOARD - in good condition. 689-7326.

GOLF CLUBS - woman's beginner set, good to excel. cond. Sharon, Ext. 2493.

ROOMMATE - nonsmoking, to share 2-bdrm. apt. in Middle Island, female, $475 + ½ util./mo. 345-5291.

PEOPLE TO HELP ME MOVE - on June 30, $15 per hr. Ron, Ext. 5502.

ALUMNI - BNL Summer Student Program, for possible reunion. Carmen Benkovitz, Ext. 4135.

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