

Multiple Meetings at BNL . . .

Future Perspectives in HEP Explored at ICFA Seminar

Panel discussions focusing on future cooperation helped crystallize the ideas of 128 physicists from 28 countries who attended the International Committee for Future Accelerators' (ICFA) Seminar on Future Perspectives in High Energy Physics, held at BNL October 5-10.

The aim of the seminar was to form specific recommendations that might lead to more international and inter-regional collaboration — not only in carrying out experiments, where such cooperation is already well developed, but also in accelerator research and development work and in accelerator design and construction.

To achieve this goal, the conference opened with updates of ongoing major accelerator construction projects. Most of these had been classified as future facilities at the last such ICFA seminar, held at Japan's KEK laboratory in 1984. Today's future facilities, such as the U.S.'s proposed Superconducting Super Collider, and projects under design, such as CERN's Large Hadron Collider, were the subject of another session.

How these accelerators fit into the high energy physics picture was made clear in a session on "Physics as a Function of Energy and Luminosity." There, theorists looked at the physics these machines might explore, while experimenters discussed problems and strategies associated with energies in the two-trillion-electron-volt region.

These perspectives gave a common background for the subsequent two-part panel discussion on "Future Cooperation in Accelerator Construction" and the final panel discussion on "Future Cooperation in Accelerator and Detector R&D Work and the Role of the ICFA Panels."

Four ICFA panels had been established, to stimulate worldwide cooperation in high energy physics research and development, as a direct outcome of the 1984 seminar. The recommen-



The heads or leading representatives from nine of the world's major accelerator facilities offered their personal viewpoints in the first panel on "Future Cooperation in Accelerator Construction," then fielded questions from seminar attendees in the

second such panel. Participating in the panel were: (from left) Wolfgang Panofsky, SLAC, Panel Chairman; Volker Soergel, DESY, West Germany; Herwig Schopper, CERN, Switzerland; Tetsuji Nishikawa, KEK, Japan; Leon Lederman, Fermilab; Nikolai Tyurin, Serpukov, USSR; John Mulvey, University of Oxford, England; Shou-xian Fang, Beijing, China; Maury Tigner, SSC Central Design Group; and Ronald Ruth, SLAC, who spoke for Burton Richter, SLAC, who arrived later.

Photo above by Mort Rosen.

Photo at left by Peter Horton.



Horst Foelsche (left) was the Local Chairman for the Organizing Committee for the ICFA Seminar on Future Perspectives in High Energy Physics. At BNL, Seminar Secretary Pat Tuttle (second from right) received assistance from Pam Campbell (fourth from right) and Rae Bailey (second from right). Also on the Organizing Committee were: (from left) Owen Lock, CERN; Herbert Kinney, BNL; Helga Schmal, CERN; Penny Baggett, BNL; and Per Dahl, BNL. Art Greene, BNL, is not pictured.

dations that will come out of last week's ICFA seminar are now being refined and will be made public in the near future.

Electroresponsive Polymers: Recent Advances Discussed

Polymers are usually thought of as insulating and structural materials. In contrast, electroresponsive polymers are organic systems that are electrically, magnetically and optically active.

Electroresponsive polymers include electronic and ionic conductors and nonlinear optical materials. In the last ten years, they have emerged as a major interdisciplinary field of study. For this reason, the Symposium on Electroresponsive Polymers was held at BNL from October 4 to 7.

At the symposium, some 80 scientists with interests ranging from synthetic organic chemistry to theoretical physics heard lectures on such topics as electron and ion conducting polymers; redox polymers; piezo- and pyroelectric polymers; nonlinear optical systems; and applications of polymers.

Photographed here are the organizers of the symposium: (from left) Allen Goland, Department of Applied Science (DAS); Betty Ivero, DAS, conference secretary; Yoshi Okamoto, Polytechnic University; and Terje Skotheim, DAS.



Mort Rosen

Measuring Magnets — A Strong Attraction

A bond of interest in measuring magnets for use at accelerators drew researchers together, 60 strong, at the Magnet Measuring Workshop held at BNL, September 28-30. This was the fifth in a series of informal meetings held to discuss new information about measuring the strength and shape of magnetic fields. Among the magnet measurers exchanging ideas, techniques and experimental experiences were: (from left) Branko Berkes, Swiss Institute for Nuclear Research; Peter Wanderer, Accelerator Development Department, who organized the workshop; Alan Otter, TRIUMF, Canada; and Alexander Harvey, Los Alamos National Laboratory.



Peter Horton

BNL's Fabulous Forty

This is one of a series of interviews with employees who observe their 40th service anniversaries during 1987, BNL's 40th anniversary year.

"Everything was rolling. New accelerators, the Hot Lab and the Graphite Reactor were being planned, all on a scale never before attempted. It was an exciting time, and I very much wanted to be a part of it."

That's how Bernard Manowitz, Chairman of the Department of Applied Science (DAS), remembered his first impression of the Lab 40 years ago.



Bernard Manowitz

At that time, Manowitz had just finished his master's degree in chemical engineering at Columbia University. He went out to the Lab to see Warren Winsche, Lyle Borst and others with whom he had worked on the Manhattan Project in 1944 at "X 10," which later became Oak Ridge National Laboratory.

"In 1947 at BNL, Lyle was in charge of the whole Graphite Reactor project," recalled Manowitz. "Warren was responsible for heat transfer and fluid flow in the reactor and also for designing the Hot Lab. They suggested that I join them, and I did. To me, those early days had the challenge of a great adventure, and right from the first, I thought the adventure would last."

On October 1, 1947, Manowitz signed on with the Department of Reactor Science and Engineering, with life number 1499. His principal responsibility was to design and construct a radiochemical waste disposal system for the Lab. The system he designed used vapor compression evaporation and diffused filters, then finally incorporated the waste in concrete.

By 1953, these methods were in use at the Lab and at many reactor sites both in the U.S. and abroad. "Frankly," said Manowitz, "one of my proudest achievements is that the system I designed at that time is still in use today."

Manowitz was also responsible for proposing and building the High Intensity Radiation Development Laboratory (HIRDL), which operated from 1960 to the mid-70's. At HIRDL, engineering data on different gamma radiation sources were obtained and handling techniques developed.

For example, the design information on cobalt-60 sources first evaluated at HIRDL is the basis of irradiators now used by industry to sterilize medical supplies such as bandages and plastic gloves. Gamma radiation is also used in insect control and food preservation.

Because of his work, Manowitz was requested by the Atomic Energy Commission to coauthor a U.S. volume entitled *Radiosotopes and Radiation*, to be presented to the delegates of the 1964 Geneva Conference on the Peaceful Uses of Atomic Energy. Then,

in 1971, he received the Radiation Industry Award of the American Nuclear Society.

"One thing I learned early," said Manowitz, "was the need to diversify my research interests. If a project lost funding, we had to find another to replace it, but without compromising the quality of our work. It was Leland Haworth who insisted that everything done at BNL meet high-quality standards. He set the standard, and we all followed it."

Diversifying his research interests led Manowitz into work with Meyer Steinberg on a new kind of polymer concrete, far stronger than any previously made and invaluable for such uses as bridge deck-building. This project was undertaken during Manowitz's years as Associate Head of the Chemistry and Chemical Engineering Division, 1960-1962, and Head of the Radiation Division in DAS, 1962-1974.

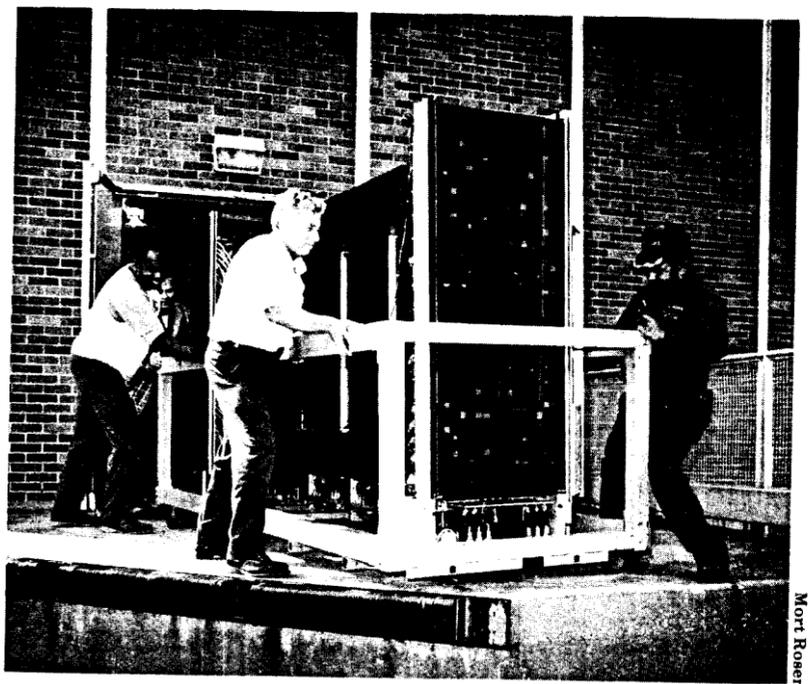
Thereafter, his administrative responsibilities increased. From 1974 to 1979, Manowitz served as Associate Chairman, Environmental Programs of DAS, and he has been DAS Chairman since 1979.

During the 70's, his main interest was in materials research and the impact of nuclear and fossil energy sources on the environment. He co-authored important papers describing the use of sulfur isotopic ratios to understand atmospheric reactions and the behavior of sulfur compounds.

As DAS Chairman, Manowitz directed innovative research in programs such as atmospheric science, oceanography, terrestrial and aquatic ecology, energy analysis, coal combustion and superconducting materials. As a result of his initiating the on-going program enabling Southampton College students to intern at the Lab, the College awarded Manowitz an honorary degree as Doctor of Science in May 1982.

"There are always mountains left to climb," said Bernard Manowitz. "After all this time, I still see brand-new ideas here and frontiers to pioneer. People still work weekends and late into the night because they are interested, not because it's their job. It's still an adventure."

— Liz Seubert



Mort Rosen

Memories Are Made of This

There are memories made of moonlight and roses or picnics in the rain. But here, heaved onto a giant dolly and rolled out the back door of the Applied Mathematics Department (AMD), is another kind of memory.

This memory is made of metal, wires and dark blue plexiglass. It belonged to the CDC 7600, once the most powerful computer of its day. New at BNL in 1974, it had a main "memory" capacity of 650,000 bytes.

But the CDC 7600 has been supplanted. For the last year, an IBM 3090 has been working in its place. Leslie Lawrence, head of Computing Services at AMD, explained that the new computer is at least three times faster than the CDC 7600. Its operating costs are significantly lower — and its memory is almost 50 times bigger, at 32,000,000 bytes.

On October 1, (from left) Lawrence Johnson, James Cardinal, Anthony Di Pierro and Frederick Ligon of Plant Engineering eased the CDC 7600 out to a dump truck and on to oblivion. "We can't even give it away," said Michael Losquadro, Hardware Manager of AMD. "It costs too much to run. But it's seen a good many projects through in its time."

So, CDC 7600, thanks for the memory.

— Liz Seubert

Train Taxi

Every weekday, a Laboratory driver meets the 9 a.m. train from Pennsylvania Station on its arrival at 10:37 a.m. in Patchogue. BNL-bound travelers are then brought to their individual destinations on site.

At 4:25 p.m. every weekday, New York-bound visitors may take a Lab car to Shirley to meet the 4:55 p.m. train, which arrives at Penn Station at 6:32 p.m. The car leaves from Bldg. 134, Public Affairs, and passengers should be on hand by 4:20 p.m. To reserve a seat in this car, call Ext. 2345.

Tour Talk

In fiscal year 1987, 14,099 people had something in common: Each of them visited BNL's Exhibit Center and Science Museum. These visitors included 8,787 students participating in school tours from elementary, junior high school and high school classes, and 5,312 members of the general public, who came to the Lab during the eight Sunday tours held this summer.

Though they did not visit the Exhibit Center, 707 college, university or special interest groups also toured BNL. These groups visited individual facilities and were given tours and talks by members of the Lab staff.

L.I. Gardening — Month by Month

The 1988 Long Island Gardening Calendar is now available through the Cooperative Extension Association of Suffolk County.

Each month, in its "Timely Tips" column, the calendar gives specific suggestions on what to plant, what to prune and how to fertilize and water flowers, vegetables, interior plants, lawns and landscape plants. Special features and line drawings illustrate each month's gardening theme.

To order calendars, which cost \$3 each, call the Cooperative Extension Association at 727-7850, or write to them at 246 Griffing Avenue, Riverhead, NY 11901.



Photo taken in 1958 by Alf Christoffersen.

Bernard Manowitz, DAS, shows actress Myrna Loy and her husband around the Lab. In 1958, the Atomic Energy Commission asked Manowitz to organize a BNL conference on thorium, which was being considered as nuclear reactor fuel. In the old Manhattan Project days, many of these substances had code names: Uranium-238 was "Tube-alloy," uranium-235 was "Ore-alloy" and thorium was "Myrnalloy." Since most participants were familiar with the code, Manowitz asked Myrna Loy if she would open the conference. She did. Said Manowitz, "She was a total surprise and the start of a most successful meeting."

Those Nice Round Life Numbers: 18,600

This is the second in a series of articles welcoming new employees who have been issued nice round BNL life numbers — those divisible by 100.

On September 19, life number 18,600 was assigned to Dominic Ciardullo, who joined the Accelerator Development Department as a Research Engineer II.

When Ciardullo arrived, he was prepared for "the usual job where you come in and read books for three months." So he was very pleased when, right away, he was asked to make "a very small piece" of equipment, to be used in the Very High Frequency Dilution Cavity Project. When the project is completed, it will prevent loss of particles when the Alternating Gradient Synchrotron (AGS) passes through transition energy. Particle loss at transition, a problem at present AGS beam intensities, will

become critical in the AGS Booster (scheduled for completion in FY91), which will increase AGS intensity fourfold.

Said Ciardullo, "I was told that Brookhaven is a good place for engineers. What we do here is very developmental. I was given the specs, then left to evaluate different design approaches. It's your decision — and that makes it a real challenge."

Ciardullo obtained his B.Sc. degree in electrical engineering at Rensselaer Polytechnic Institute (RPI) in 1982. "My first two years in college were at Nassau Community College, where I got an A.Sc. in engineering science," he said. "That was a good place to start. It was cheaper to live at home with my family in Massapequa Park, and there was a very good program at the college that steered students on to Rensselaer."

During the summers and part-time while he was at RPI, Ciardullo gained useful experience as an engineering aide in a small lab, where he built equipment for doctoral students' experiments. His first job after graduating from college was at P.R.D. Electronics, part of the Harris Corporation in Syosset. After two years, he said, "I decided to try radio frequency, and eventually got a job here at Brookhaven. It's very satisfying."

Now, Ciardullo and his wife have settled in Nesconset with their two boys — one two-year-old, one two-month-old. "We're kept busy at home, too," he said. "At the moment, if we sleep through a whole night, it's quite a plus!"

Ciardullo's outside interests also include classical music, and he is looking forward to the concerts scheduled at BNL.

— Liz Seubert



Dominic Ciardullo

Peter Horton

Reports Available

The following reports are now available to the Laboratory staff and to affiliates of the DOE, AUI and NRC. Others may purchase the reports from the National Technical Information Service, U.S. Dept. of Commerce, 5285 Port Royal Rd., Springfield, VA 22161. Staff members should call the designated contact at the extension listed.

NUREG/CR-2331
BNL-NUREG-51454
Vol. 6 #3

Contact: J. Wilson, Ext. 2922
Safety Research Programs Sponsored by Office of Nuclear Regulatory Research. Quarterly Progress Report, July 1 - Sept. 30, 1986. A.J. Weiss et al.

NUREG/CR-4552
BNL-NUREG-51961

Contact: D. Faivre, Ext. 2276
A Review of the Seabrook Station Probabilistic Safety Assessment: Containment Failure Modes and Radiological Source Terms. M. Khatib-Rahbar et al.

BNL-51989
Contact: A. Van Slyke, Ext. 7993
Manufacture of Thin-Film Photovoltaic Cells: Characterization and Management of Phosphine Hazards. V.M. Fthenakis et al.

BNL-52020
Contact: K. Hauser, Ext. 2223
Development of a Computerized Data Base for Low-Level Radioactive Waste Leaching Data. Topical Report. D.R. Dougherty et al.

NUREG/CR-4739
BNL-NUREG-52021
Contact: L. Hanlon, Ext. 7517
RAMONA-3B Calculations for Browns Ferry ATWS Study. P. Saha et al.

NUREG/CR-4868
BNL-NUREG-52057
Contact: A. Constantini, Ext. 2274
Metallurgical Evaluation of an 18-Inch Feedwater Line Failure at the Surry Unit 2 Power Station. C.J. Czajkowski.

BNL-51444
Rev. 1
Contact: E. Kelly, Ext. 2399
Nonreactor Nuclear Facilities: Standards and Criteria Guide. W.J. Brynda et al.

BNL-52045
Contact: E. Pinkston, Ext. 4194
National Synchrotron Light Source Annual Report 1986 [For the Period of Oct. 1, 1985 through Sept. 30, 1986]. S. White-DePace and N. Gmur.

BNL-51976
Contact: N. Nelson, Ext. 2383
Probabilistic Risk Assessment. Brookhaven Lecture #219. R.A. Bari.

BNL-51988
Contact: G. Williams, Ext. 7529
Using the Light Fantastic. Brookhaven Lecture #211. G. Williams.

BNL-52062
Contact: S. Zuhoski, Ext. 3359
Technical Assessment of a Condensing Oil-Fired Pulse Combustion Hydronic Boiler. R.J. McDonald and J.D. Nally.

BNL-52074
Contact: K. Hauser, Ext. 2223
Solidification of Low-Level Radioactive Wastes in Masonry Cement. H. Zhou et al.

NUREG/CR-4883
BNL-NUREG-52061
Contact: M. McGrath, Ext. 2815
Review of Research on Uncertainties in Estimates of Source Terms from Severe Accidents in Nuclear Power Plants. H. Kouts.

NUREG/CR-4897
BNL-NUREG-52066
Contact: A. Spira, Ext. 2352
Low-Level Waste Source Term Evaluation: Review of Published Modeling and Experimental Work, and Presentation of Low-Level Waste Source Term Modeling Framework and Preliminary Model Development. Topical Report. T. Sullivan et al.

BNL-52067
Contact: E. Taylor, Ext. 4075
Annual Report for the Period 1 October 1985 - 30 September 1986.
1) Cable Insulation Development
2) Superconducting Power Transmission System Development.

Information Desk: L.I. University

Representatives from Long Island University (LIU), Southampton, will be in Berkner Hall on Friday, October 23, from 11 a.m. until 1:30 p.m. At an information desk near the cafeteria, employees' questions about LIU's educational programs will be welcomed.

Touch Football

Scores — week of September 24			
Untouchables	35	-	Rangers 0
Raiders	26	-	Roga 7
The Other Guys	33	-	Raiders 7
Untouchables	35	-	Roga 7
Scores - week of October 5			
Roga	26	-	The Other Guys 7
Raiders	12	-	Rangers 7
Roga	12	-	Rangers 7
Untouchables	33	-	The Other Guys 6
Standings - as of October 12			
Team	W	L	
Untouchables	5	0	
Roga	3	2	
Raiders	2	2	
The Other Guys	2	3	
Rangers	0	5	

BNL-52036
Contact: B. Orlowksi, Ext. 3481
Future Possibilities Data, Hardware, Software and People. Rear Admiral Grace Murray Hopper, USNR.

BNL-52042
Contact: K. Hauser, Ext. 2223
Accelerated Leach Test[s] Program. Annual Report. D.R. Dougherty et al.

BNL-52069
Contact: A. Lancsarics, Ext. 4519
Proceedings of the VIIIth Combustion Research Contractors' Conference. Held at Airlie, VA, May 28-30, 1986. R.B. Klemm.

BNL-52071
Contact: J. Giordano, Ext. 3051
Shelf Edge Exchange Processes Phase I [SEEP-1] Hydrography Report July 1983 - October 1984. W.J. Behrens et al.

BNL-52027
Contact: A. van Slyke, Ext. 7993
Atmospheric Deposition of Nitrogen: Potential Benefits to Agricultural Production. E.A. Coveney et al.

BNL-52052
Contact: A. van Slyke, Ext. 7993
An Environmental Source Book on the Photovoltaics Industry. P.D. Moskowicz et al.

BNL-52079
Contact: M.J. Murtagh, Ext. 3874
Proceedings of the BNL Neutrino Workshop. Opportunities for Neutrino Physics at BNL. Held Feb. 5-7, 1987. Ed: M.J. Murtagh.

BNL-52082
Contact: J. Depken, Ext. 4697
Proceedings of the 1986 Summer Workshop on Antiproton Beams in the 2-10 GeV/c Range. Ed: D. Lazarus.

PC Users Group

Ira Kaye of Software Publishing, Inc., will demonstrate various software packages on Tuesday, October 20, at 2 p.m. in the Applied Mathematics Department Seminar Room. Software to be presented includes: Harvard Total Project Manager, Harvard Business Graphics and a first-time-user, integrated package, which includes a file manager, spreadsheet, simple word processor and note maker.

Indoor Tennis

Sign-up for indoor tennis in the gymnasium will begin today, October 16. The gym is available for tennis from 5 p.m. to 9 p.m. on Tuesdays, and from 1 p.m. to 5 p.m. on Sundays.

Reservations can be made in person at the BERA Sales Office in Berkner Hall between noon and 2 p.m. on Monday for play the next day, and between noon and 2 p.m. on Friday for play the following Sunday.

Players are reminded that they are limited to one hour of court time per week for singles or two hours each per week for doubles.

Social Club

The date for the Social Club's ski & tour trip to Austria has been confirmed for February 19 through 27, at a cost of \$900 per person. As soon as all details have been settled, additional information will appear in the Bulletin. For more information, call Doris Terry, Ext. 2228.

PSI News

Decision making by professional women will be the focus of a video entitled "Hard Choices," to be presented at the next monthly meeting of the Upton Chapter of Professional Secretaries International. A discussion will follow the video on Tuesday, October 20, at 6 p.m., in Berkner Hall, Room C.

Note to Diners

The Cafeteria will be closed on Saturday, October 17. On that day, snack bar service will be available from 9 a.m. to 2 p.m. at the Brookhaven Center.

Cafeteria Menu

Week of October 19

Monday, October 19	
Beef barley soup	(cup) .75
	(bowl) .95
Baked ham w/pineapple slice & 1 veg.	2.95
Hungarian goulash over noodles	2.85
Stuffed tomatoes w/chicken salad	
(lite-weight)	2.25
Hot deli: Chicken patty sandwich	(bread) 2.65
	(roll) 2.75
	(hero) 2.85
Tuesday, October 20	
Old-fashioned Dutch green bean soup	(cup) .75
	(bowl) .95
Braised Swiss steak w/1 veg.	2.95
BBQ spareribs w/1 veg.	2.85
Sautéed liver w/onions & 1 veg.	2.85
Hot deli: Roast beef	(bread) 2.65
	(roll) 2.75
	(hero) 2.85
Wednesday, October 21	
Split pea soup	(cup) .75
	(bowl) .95
Roast turkey w/stuffing & 1 veg.	2.95
Fried fish w/1 veg.	2.85
Chef salad cold plate (lite-weight)	2.25
Hot deli: Baked ham	(bread) 2.65
	(roll) 2.75
	(hero) 2.85
Thursday, October 22	
U.S. Senate bean soup	(cup) .75
	(bowl) .95
Chicken vegetable Oriental	2.85
Spaghetti and meatballs w/garlic toast	2.85
Roast pork loin w/apples & prunes	2.95
Hot deli: Sloppy Joe on a bun	2.65
Friday, October 23	
Chicken rice soup	(cup) .75
	(bowl) .95
Baked fish supreme w/1 veg.	2.95
Macaroni and cheese	2.65
Chicken nuggets w/BBQ sauce	2.85
Hot deli: Corned beef sandwich	(bread) 2.65
	(roll) 2.75
	(hero) 2.85

BROOKHAVEN BULLETIN

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

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Bowling

Red/Green League

High games were bowled by P. Ouvrard 232 612 scratch, F. Griswold 226, N. Combatti 222, H. Arnesen 215, J. Morris 214, C. Bohnenblusch 213, J. Muller 208, J. Ferrante 205.

Pink League

Sandy Asselta rolled a 192, Renie Rosati 191, Maria Apelskog 175, Kathy Folkers 172, Maryann Reynolds 169.

Purple League

Ed Meier had a 202, Jim Marsch 199, Jim Carroll converted the 4/7/10 split.

Note: Substitute bowlers are needed for the mixed league on Thursday in Shirley. If interested, contact Fern Coyle, Ext. 3969.

Arrivals & Departures

Arrivals

Randall C. Furlong Physics
Marian Clare Geib Fiscal
Diane P. Hanna Fiscal
James J. LaBounty Accel. Dev.
Joseph D. Logan Reactor
Shawn C. Small Reactor
Michael Wiplich Physics

Departures

This list includes all employees who have terminated from the Laboratory, including retirees:
Kristin D. Elmore Biology
Frank A. Toldo AGS
Long-Gui Wang Biology

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.

2701. LABORER - Plant Engineering Division.

2702. SECRETARIAL POSITION - Requires excellent secretarial and communication skills. Will perform diverse secretarial duties and be involved in extensive word processing for Nuclear Safeguards Group. Knowledge of MICOM word processing necessary. IBM/PC experience helpful. Requires ability to obtain DOE "Q" clearance. Preference will be given to current DOE "Q" clearance holders. Department of Nuclear Energy.

2703. SECRETARIAL POSITION - Requires an AAS degree in secretarial science or equivalent appropriate experience and knowledge of word processing. Excellent secretarial, organizational, and interpersonal skills are essential. Will be responsible for providing diverse secretarial support functions for the Employment Group. Personnel Division.

OPEN RECRUITMENT - Opportunities for Laboratory employees and outside applicants.

2704. SALARY AND WAGE ADMINISTRATOR - Requires a bachelor's degree or equivalent (master's degree preferred) and five to ten years compensation experience, including supervisory experience. Excellent analytical, presentation, and quantitative skills as well as effective writing skills are required. Responsibilities will include: administration of the Laboratory's salary and wage program, including such tasks as preparation of annual salary increase budget, performance of job evaluations, analyses of market data, and supervision of salary and wage group. Personnel Division.

Motor Vehicles & Supplies

78 JEEP WAGONEER - V8, 4 dr., 4wd, quad track, p/s, p/b, p/w, digital stereo cass., cruise, hitch, \$3,000. Ernie, 588-4987.

77 CHEVY CHEVETTE - 4 speed, hatchback, runs well, very reliable. \$550 or best offer. Ext. 4859 or 821-3071.

74 FORD MAVERICK - p/s, p/b, a/t, 4 dr., very good cond., \$350. David, Ext. 3362.

79 CHEVY C-60 - 350, new cab, chassis & paint, very good cond., asking \$4,500. 475-2509.

67 FORD PICKUP - 6 cyl., 3 speed, stick, \$495; Ford 302 V8, C-4 a/t, very good cond., complete, \$245. 475-6797.

80 CHEVY CHEVETTE - 4 dr., hatchback, cloth int., am/fm, good cond., \$750 or best offer. Ext. 5299 or 924-0848.

69 DUMP TRUCK - International Load Star, V8, 5 speed, low mi., rebuilt trans., good tires, good cond., \$750. Tom, Ext. 4084 or 878-1060.

77 CHEVY CAPRICE - a/c, am/fm cass., p/s, p/b, 4 dr., very good cond., \$1,300. Ken, 744-0722.

81 HONDA ACCORD - 4 dr., a/t, loaded, 96k mi., some rust, asking \$2,700. Walter, Ext. 3499 or 757-6392.

85 CHRYSLER LeBARON - 4 dr., p/s, p/b, a/c, a/t, am/fm stereo, excel. cond., \$7,995. 281-2208 eves/wknds.

78 ASPEN TRANSMISSION - \$150; whole car \$175. 924-0960 after 5 p.m.

54 PONTIAC - 4 dr. sedan, flat head, 8 cyl., 70k orig. mi., ready to drive, \$1,800. 499-6518.

85 CAMARO Z28 - 5 speed, am/fm stereo cass., 14k mi., \$9,100. Barry, Ext. 5624 or 727-5956.

70 FORD MUSTANG - new paint, 6 cyl., tinted windows, mint cond. Judy, Ext. 5263 or Sunil, 821-3290.

65 MUSTANG HT - a/t, 6 cyl., many extras, snows, orig. owner, excel. cond., \$4,000. 929-4701.

82 FORD EXP - 4 cyl., red, 2-seater, 55k mi., very good cond., must see. Joan, Ext. 2260 or 331-9264.

VETTER MOTORCYCLE FAIRING - Quicksilver, black w/gold pinstripe, frame mount, full lighting, perfect, \$100. Henry, Ext. 5110.

77 FORD MUSTANG II - 4 speed, new brakes, clutch, must see, \$900. 758-8592 eves.

75 GRANADA - 2 dr., bucket seats, runs well, needs minor work, \$500. Ext. 4081 or 874-3844 after 5 p.m.

86 CAMARO SPORT COUPE - V6, 5 speed, guarantee from GM. Bob, Ext. 4672 or 929-4753.

SUZUKI 90CC ATV - good shape, licensed for road, blue/white, \$249.95. Tony, Ext. 4095.

78 FORD SUPERCAB PICKUP - 4 speed, 300 cu. in., tow pack., slotted wheels, more, excel. cond., \$3,300. Artie, Ext. 4987 or 325-0743 after 5 p.m.

77 PLYMOUTH ARROW - 2000cc, a/t, moonroof, make offer. Ext. 2011.

76 AMERIGO SLIDE-ON - 11', fully self-contained, \$2,200. Hank, Ext. 3848 or 472-0553.

79 CHRYSLER LeBARON - 4 dr. sedan, 318 cu. in., a/t, a/c, p/s, p/b, excel. cond., runs well, \$1,495. 277-4091.

80 TOYOTA TERCEL - needs trans. work & windshield, \$1,000 or best offer. Ray, 289-0883.

76 CHEVY - 3/4 ton, 4x4, \$1,700. 924-6761 after 5 p.m.

81 FIREBIRD - p/s, p/b, a/c, a/t, new tires, mint cond., must see, \$3,950. Andy, 878-4177.

86 JEEP CHEROKEE - 4wd, Laredo pack., 4 cyl., 5 speed, p/s, p/b, a/c, 10k mi., \$13,000. 475-4792 eves.

BEDLINER - for Chevy 510 7', running boards, wheel flares. Richie, Ext. 5320 or 325-1756.

86 SUZUKI SCOOTER - FA50, bright blue, new helmet, \$325. 821-0250.

76 GRANADA - 2 dr., excel. tires, exhaust, good body, \$600. Rog, 475-4678.

78 FRD F250 - 4x4, p/s, p/b, a/c, many extras, \$4,000. C. Barrett, Ext. 4558 or 325-0013.

79 THUNDERBIRD - black, all power, a/t, p/s, am/fm, excel. cond.; 76 Pontiac Firebird, red, 350, p/s, p/b, am/fm cass., good cond. 475-5591.

REAR STEP BUMPER - for GM truck, new, \$75; front bumper, \$40. Ext. 2462.

77 MERCURY GRAND MARQUIS - 2 dr., 92k mi., garaged, \$1,600 neg. 744-2805.

83 RENAULT ALLIANCE - a/t, am/fm tape, sunroof, 2 dr., very good cond. Ext. 3908 or 585-4038.

77 AMC HORNET - 4 dr., 6 cyl., a/t, p/s, p/b, a/c, \$600. 928-6791 eves.

77 DODGE ASPEN - V8, runs, cheap. Jim, 744-6287 eves.

80 CITATION - 4 dr., 4 cyl., new tires, radiator, battery, good cond., must sell, \$700. Tom, 475-0084.

73 SUZUKI GT550 - 3 cyl., 2-stroke, excel. mech., extras, \$500 or best offer. Jory, Ext. 5508/5303 or 3244.

78 FORD LTD - 8 cyl., a/c, p/s, p/b, black, \$1,100; 80 Z Camaro, a/t, T-tops, full power, low mi., \$5,900. 737-1957.

83 CAMARO Z28 - a/t, a/c, 43k mi., full power, tilt, cruise, mint, must see, \$7,500. Joan, Ext. 2922 or 395-1588.

84 CAMARO - V6, 5 speed, am/fm stereo, a/c, p/s, p/b, 57k mi., \$6,500 neg. Paul, 273-6796.

79 FORD FAIRMONT - 2 dr., am/fm, 4 cyl., very good cond., asking \$1,500. Nestor, Ext. 3073.

74 VW BUS - new a/t, heat, steel-belted tires, w/engine to be installed, \$300. Steve, Ext. 3988 or 286-2151.

SERVICE MANUALS - for 78 Chevy & 83 Ford, \$20/each. Tony, Ext. 2462.

85 FORD ESCORT - 4 dr., hatchback, a/t, p/s, p/b, am/fm tape, 27k mi., \$3,800. Ext. 4846 or 363-6940.

67 CHEVY TRUCK - 1/2 ton, new paint, clutch, cap, good cond., tires good, \$750. 288-3629.

78 YAMAHA - 14k mi., good cond., inspected, \$400. 473-9223 after 5 p.m.

76 RENEGADE JEEP - a/t, p/s, 8 cyl., new soft-top, brakes, alternator, shocks, steering stabilizer, voltage regulator, 2 tires, \$3,500. Ext. 4142.

84 NISSAN SENTRA - wagon, am/fm cass., 67k mi., \$3,500. Ext. 4515 or 878-4271.

ROLL BAR - for mini pickup, w/hardware, \$50. Al, Ext. 5454 or 231-4613 after 5 p.m.

Boats & Marine Supplies

16' HOBIE CAT - w/trailer, multi-color sail, extras. Ext. 4122 or 286-0872 after 6 p.m.

18' SANNIBEL - 1984, centerboard sloop, 3 sails, sleeps 4, extras, asking \$4,000. 473-1761.

21' BAYLINER - 1986, sleeps 5, I/O, swim platform, radios, canvas & more, in water. 878-0480 eves.

65 H.P. MERCURY - controls, prop, power head, needs repair, \$125. Charlie, Ext. 3217 or 754-2471 eves.

21' GALAXY - 1983, Volvo I/O, fiberglass, cuddly cabin, stereo, trailer, \$8,200. 654-3333 eves.

Miscellaneous

MAPLE HUTCH - \$25; white & yellow dresser/mirror, \$50; canopy bed, \$25. 289-8212.

BIKE - 20", \$75. 399-4822 after 6 p.m.

COAL STOVE - Franco Belge, 60,000 Btu, self feed, excel. cond., orig. \$900, \$300. Ext. 4081 or 874-3844.

SKIS - Hart, 160 cm., w/Tyrolia bindings & poles, \$85; boots, 8 1/2M, \$40; both for \$110. Dave, 744-7981.

SKIS - X-Country, Jarvinen, 150 cm., \$40; 170 cm., with bindings & poles, \$40. Ext. 3692 or 567-6564 after 6 p.m.

LAWN MOWER - Briggs & Stratton, 3 1/2 h.p., rear-bagger, rotary, 21" cut, excel., \$90. Dan, Ext. 4987 or 698-7322.

TV - 12" & 9", w/powerpacks, needs repair, \$5/each. Karson, 281-5532.

SEARS PORTABLE WASHER - \$40; kerosene heater, \$50. 821-0754.

STEREO - cabinet type, am/fm, 8-track, turntable, \$50. Jim, Ext. 4758.

STUDENT CELLO - all wood, full size, w/bow & stand. 878-9418.

TORO RIDING MOWER - 5 h.p., 25" cut, \$300; self-prop mower, \$50. Ernie, 588-4987.

ORIENTAL RUG - 9x12, \$25; wooden étage, \$10; couch/loveseat, velvet w/wood trim, \$100; table, \$20; coffee table, \$35. 689-7259 after 6 p.m.

MATTRESS - queen size, Stearns & Foster, orig. \$350, now \$175; changing table, crib bumper, humidifier, car seat, toys. 929-3347 eves/wknds.

BED KIT - reproduction pencil post, Bartley collection, queen size, \$400. Ext. 3128.

GARAGE DOOR - 8'w x 6'6" h, wood, w/low profile hardware, top windows, good cond., \$35. Tom, Ext. 4084 or 878-1060.

DINING SET - Colonial, trestle table, 4 ladderback chairs, hutch & server, \$1,000; Colonial captain's deck, \$300. 584-5197.

LAWN MOWER - Sunbeam 19" electric, needs work, \$65; apartment size washer & dryer, \$450. Tom, Ext. 5350.

XMAS TREE - new, in orig. box, 7 1/2' Scotch Pine, orig. \$200, \$60. Tony, 698-9274.

TOP SOIL - 5 yards min., delivered, \$15/per yard. 924-7746 or 924-9427 eves.

CHINA CHERRY HUTCH - \$250; woman's leather shoes, brand-new, size 8. 924-0960.

SOFA - Ethan Allen, 4 cushion, orange; chair, Ethan Allen, gold. Ext. 2950.

FUEL TANK - 275 gallon capacity, good cond., \$49. 924-3236.

KITCHEN TABLE - expandable leaf; 4 black wrought iron chairs, \$65. 929-4701.

BLUE MASKED LOVEBIRDS - pair, two years old, large cage, \$100 neg. John, 281-4726 after 6 p.m.

HI-FI SPEAKERS - & turntable; fish tank w/stand & accessories. Kristin, 744-6287 eves.

WOOD STOVE - Fisher, airtight, welded steel, brick-lined, 50,000 Btu, orig. \$600, \$150 or best offer. Ext. 3254 or 924-4756.

WOOD STOVE - w/equipment, flue pipe, screen, mint cond., must see, repainted, new seal, \$250. 758-5592 eves.

SEARS TRASH COMPACTOR - hardly used, \$75; wood stove, fireplace insert, black wood/coal w/fire bricks, \$75. 758-9197.

STEEL CAGE - for small pet, excel. for house training or transportation, orig. \$65, \$25. Peter, Ext. 4094.

SEARS FREEZER - frost-free, 19 cu. in., \$100. Lydia, Ext. 2380 or 929-8142 after 6 p.m.

UNICEF XMAS CARDS - & gifts. Ext. 2022 or 744-8386.

CONSOLE TV - 25", Zenith, early American cabinet, new tube, needs work, \$100 neg. Rick, Ext. 3932.

UPRIGHT PIANO - \$50. Ext. 7687 or 744-1112.

BOWLING BALLS - & bags, 3, \$25. H. Henck, 281-5626.

DINING ROOM SET - wood, lighted breakfront, 5 chairs, mint cond., 737-1957 after 5 p.m.

TREESTANDS - custom made, portable, all metal, light weight, \$50; Baker Ladder type, 9'-14" high, w/3' extension, \$95. Bob, Ext. 2514 or 757-3178.

GE REFRIGERATOR - 13.6 cu. in., brown, 5 years old, very good cond., \$200. 281-7844 eves.

SILVER FOX PIECE JACKET - worn one season, size 10, appraised at \$1,500, \$500. Darcy, Ext. 3362.

LADY KENMORE WASHER - portable, excel. cond., \$125; 3 bamboo-style blinds, 32"x72", \$25. Lois, Ext. 4904 or 929-4753.

HARDWICK GAS RANGE - 30", white, good cond., \$50. Jim, Ext. 2957.

DINING ROOM TABLE - solid maple, w/extensions, 4 chairs, \$150. Audrey, 727-0499 after 6 p.m.

FIREWOOD - split, seasoned, mixed, no pine, delivered locally, \$110/cord. Glenn, 924-6918.

WINDOWS - 2, Andersen Thermo Pane, new, 2'x4', casements, \$135/each. Fred, Ext. 5320.

ANIMAL CAGE - w/water bottle, 2'x17"x14", used for rabbit, \$10. Pete, Ext. 3297 or 821-9547.

FIREWOOD - seasoned oak, delivered, \$130/cord. 732-2849.

COMPUTER MODEM - Volkmodem-12, 1200 baud, auto dial/answer, RS232 & Commodore cables, \$150. Witkover, Ext. 4607 or 368-8018.

YORK GYM EQUIPMENT BENCHES - Everlast weights, body/bag, many extras. 728-3618 after 6 p.m.

CANNING JARS - 6 dozen, \$15; 4-quart pressure cooker, \$5; 3 boxes of Mechanic, Science & Mech. Illustrated books, 1950's & up, \$15. 878-6637.

COUCH - 7', 2 chairs, traditional, 3 glass tables w/lamps, must see, \$850. Ext. 4216.

APRICA FOLDING STROLLER - ideal for travel, wooden baby swing. Ady, Ext. 4531 or 331-3785.

KITCHEN SET - white formica \$ oak, w/4 brown swivel chairs, \$400. 475-4792 eves.

U-PICK PUMPKINS - weekends, 9 a.m. to 6 p.m., Beaver Dam Rd., Brookhaven Hamlet.

Free

KITTENS - orange & black tiger, 5 weeks old, need loving homes. Paul, Ext. 2447 or 878-1486.

FIREWOOD - you cut the trees & keep the wood. Walt, Ext. 2907 or 698-0576 after 6:30 p.m.

POODLE-TERRIER MIX - 4 years old, needs home w/small family. Dan, Ext. 7518.

MAPLE TABLE - w/4 chairs; 9'x12' area carpet. Ext. 4904 or 929-4753 after 5 p.m.

EXTERIOR DOOR - w/window, 32"x79 1/2". 286-0517.

WASHER - Ext. 5400 or 874-3447.

Yard Sales

SELDEN - toys, furniture, jewelry, Fri. & Sat., Oct. 16 & 17; 47 Riviera Dr., 10 a.m.-3 p.m. 698-0057.

YAPHANK - multi-family block sale, Oct. 24, Oct. 25-rain date, Rustic Rd. 924-4097.

BROOKHAVEN HAMLET - multi-family, Oct. 16 & 17, Oct. 23-rain date, corner Beaver Dam Rd. & Marydale, 10 a.m.-4 p.m.

Car Pools

STONY BROOK - non-smoker wishes to join car pool. Paul, Ext. 3097/3051.

BELLMORE - Wantagh, Seaford, Massapequa, driver to join 2-man car pool. Victor, Ext. 2395.

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 Sale

MILLER PLACE - north of 25A, 3 bdrm. custom ranch, entertainment area, l/r, family rm., custom f/p, 24'x26', 2-car garage, finished bsmt., much more. 282-3353 or 473-5786.

HILTON HEAD, SC - 3 bdrm. condo, sleeps 8, 2 baths, washer/dryer, wet bar, 6 tennis courts, 3 pools, golf, ocean view, asking \$89,000, will rent. 929-8912.

RIDGE - 3 bdrm. L-ranch, bsmt., garage, 1/3 acre, fenced, sewers, city water, 4 miles north of Lab, \$126,900. Marie, Ext. 7716 or 821-3556 after 3 p.m.

ONEONTA - 28 acres, 10x55' trailer, 12x14 deck, elect., excel. for hunting, 600' frontage, on good road, \$29,500. Jack, Ext. 4482 or 589-8290.

For Rent

BLUE POINT - 2 bdrm. house, l/r, new kit. & bath, d/r, w/d, central a/c, f/p, w/w, bsmt., fenced yard w/shed, 1/4 mile to Nicolls Rd., 20 min. to Lab, \$800/mo. + Henry, Ext. 5110 or 399-3087.

HILTON HEAD, SC - sleeps 6, pool, beach, tennis, golf, some Oct., Nov. & Dec. openings, \$300/wk. 585-9149.

HAMPTON BAYS - 2 bdrm., furnished house, waterfront, w/w, avail. Oct.-May 15, \$440/mo. + util. 728-2104 eves.

NORTH SHIRLEY - 2 rm. apt., furn., skylight, eik, w/w, private ent., 5 min. to Lab, 1 person only, non-smoker, no pets, no children, security, \$475/mo. incl. util. 281-8044.

BELLPORT - 3 rm. apt., priv. ent., single only, 1 mo. sec., \$575/mo. incl. util., & cable. 286-9482.

PORT JEFFERSON STATION - 3 bdrms., 2 full baths, no pets, \$850/mo., 2 mo., sec., 1 mo. rent. 473-8637.

BAYPORT - large upstairs studio, furn., carpet, priv. ent., single prof., non-smoker, no pets, references req., \$495/mo. incl. util., 1 mo. sec. 472-1734, 10 a.m.-8 p.m.

SOUTH SETAUKET - 4 bdrm. Colonial, 2-car garage, all appliances, gas heat, avail. immed., \$1,100/mo. + util. Ext. 4094 or 751-6575 eves.