BROOKHAVEN BULLETIN

Vol. 40 - No. 48 December 12, 1986

BROOKHAVEN NATIONAL LABORATORY

Peter Horton

BNL and Japan Team Up To Study Seismic Effects

On December 1, Laboratory Director Nicholas Samios and Takashi Fujii, president of the Nuclear Power Engineering Test Center (NUPEC) of Tokyo, Japan, signed an agreement to study the effects of seismic events on large diameter piping. NUPEC entered into the agreement as a representative of the Japanese Ministry of International Trade & Industry, the agency regulating nuclear power in Japan.

NUPEC will construct a half-scale, modified recirculation loop of a pressurized water reactor and then test it on the world's largest vibration table, located in Tadotsu, Japan. NUPEC plans to vibrate this loop such that some of the large piping will become inelastic and permanently deformed, to obtain data to validate computer codes analyzing the structure of piping when it becomes inelastic. The data will also be used to determine safety margins allowed for in designing nuclear reactor piping, which must withstand earthquakes.

In the agreement, which was negotiated by Department of Nuclear Energy (DNE) Deputy Chairman Walter Kato, BNL is representing the U.S. Nuclear Regulatory Commission (NRC) and the Electric Power Research Institute. The Lab will cooperate with NUPEC in developing test specifications and analyzing the loop before and after the test. The latter work will be conducted by a group headed by Charles Hofmayer in DNE's Structural Analysis Division, headed by Morris Reich.

Pictured above at the signing ceremony are: (seated, from left) Nicholas Samios; Takashi Fujii; Guy Arlotto, director of the Engineering Safety Division, NRC; (standing, from left) Charles Hofmayer; Morris Reich; James Richardson, chief of the Engineering Branch, NRC; Walter Kato; BNL Associate Director Seymour Baron; Takashi Tsuzuki, managing director, NUPEC; Hiroshi Mutsuo, assistant manager, Mitsubishi Heavy Industries, Japan; BNL Business Manager James Desmond; and Mr. Onuma, Mitsubishi International, New York.

Mort Rosen

Photons for the Factory, Part III

A third workshop on Compact Synchrotron Radiation Sources for X-Ray Lithography was held at BNL, November 17-18. The goal of this meeting was to develop a management plan and to estimate the cost of a research and development program at BNL that would allow the U.S. to regain leadership in the manufacture of high density, computer memory chips by 1995. The results from this and the previous two workshops will be presented to industrial and government leaders at a meeting of the National Academy of Engineering in the near future.

The third workshop was attended by 20 people, who participated in five working groups. The chairmen and the groups were: (seated, from left) Justin Kreutzer, Perkin Elmer, lithography facilities; Abe Seifert, National Synchrotron Light Source (NSLS), facilities planning; Richard Heese, NSLS, conventional magnet compact synchrotron; (standing, from left) Arnold Yanof, AT&T Bell Labs, x-ray lithography; Gwyn Williams, NSLS, steering committee chair; and Jules Godel, NSLS, workshop chair. Absent from the picture is Mark Barton, superconducting-magnet compact synchrotron.

BNL Lecture: Energy From the Earth

Using geothermal resources is hardly a new idea. Archaeology has shown that prehistoric people apparently drank the condensate from geysers, and the Romans were known to heat their baths with geothermal fluid. What is different today is that geothermal energy, or heat from the earth, is recognized as having potential far beyond a warm drink or a hot bath. To harness this heat as an electrical energy source, however, requires the development of new technologies for drilling geothermal wells and extracting the energy.

The Department of Energy has divided the responsibility for developing these technologies among three national laboratories — Brookhaven, Los Alamos and Sandia. BNL's role is to develop materials that will work in the high temperature environments of geothermal wells, which could ultimately reach 900° C (1,652° F).

Heading BNL's research into nonmetallic geothermal materials is Chemical Engineer Lawrence Kukacka, Department of Applied Science (DAS). He will discuss the Lab's geothermal energy program on Wednesday, December 17, in the 230th Brookhaven Lecture. His talk on "Tapping the Earth's Geothermal Resources — Hydrothermal Today, Magma Tomorrow," will be presented at 4:30 p.m. in Berkner Hall.

The title of Kukacka's lecture refers to the fact that energy from hydrothermal reservoirs — an underground mixture of steam and brine — is already being used to supply electricity. San Francisco and Oakland, California, for example, get most of their energy from these geothermal sources.

In this country, economically attractive steam or hot brine reservoirs are primarily situated in the western states, particularly California. Kuacka will explain how two processes could have far greater application.

The first, hot dry rock, involves drilling deep in the earth until the desired temperature (300° C or 572° F) is reached, then circulating fluid through the well to extract the heat. The second process involves drilling into magma bodies, to tap the heat contained in molten rock. Hot dry rock research is well under way, while drilling into magma will begin next year.

Kukacka plans to explain the materials problems to be solved in geothermal research, comparing the technologies with those employed in gas and oil drilling. He will also discuss the economics of the situation, explaining why he expects geothermal energy to be a significant part of the country's energy sources by the year 2000.

Mort Rosen

Lawrence Kukacka

Of course, he will talk about materials developed at BNL that should make this possible. These include high temperature cements for completing geothermal wells, high temperature elastomeric seals and non-metallic conductive materials that approach the conductivity of stainless steel and are used for heat exchangers.

Lawrence Kukacka earned his B.S. degree in chemical engineering at Clarkson University in 1953. After three years in the U.S. Army, where he was an electronics instructor, he came to BNL in 1956, in the Nuclear Engineering Department. His work on reactor development necessarily involved materials development. By 1969, Kukacka was with DAS, and his materials development work focused on polymer cements and concretes. Along with others in his department, Kukacka holds several patents on these materials, which are among those being developed for the geothermal program he has been involved with since 1976.

Kukacka is a member of the American Concrete Institute, the American Petroleum Institute and the American Society for Testing Materials.

All those interested in getting together after the lecture are invited to go with the lecturer to a restaurant off site. Anyone who would like to be part of this group should call James Reilly, Ext. 4502.

Alexander Hollaender Dies

Alexander Hollaender, the eminent radiation biologist who had been a consultant to BNL's Biology Department for 12 years, died on Saturday, December 6, after a long illness. He would have been 88 on December 19.

Beginning in the 1930's, Hollaender did pioneering research on ultraviolet and ionizing radiation-induced systems. His scientific discoveries first pointed to nucleic acids as genetic materials and to the existence of repair mechanisms.

Hollaender was the driving force behind the creation of the Biology Division of Oak Ridge National Laboratory. The division became a world center for research in biology, especially radiation biology, while he was its director from 1946 to 1966. He later served as senior research advisor, until 1973, when he established the Council for Research Planning in Biological Sciences.

The Council is located in the Washington, D.C., offices of Associated Universities, Inc. (AUI), and Hollaender served as its President until his death. In 1974, he became an AUI consultant to BNL's Biology Department. In that capacity, he worked closely with scientists at Brookhaven and assisted in organizing several Biology symposia. The Biology Department administers the Alexander Hollaender Fund Award, which he established in 1978 to honor the performance of outstanding high school students in the biological sciences.

In recognition of his scientific achievements, Hollaender was elected to the National Academy of Sciences (NAS) in 1957. Over the years, he also garnered several major awards, including the NAS's Award for Environmental Quality in 1979 and the Department of Energy's Enrico Fermi Award in 1983.

Alexander Hollaender is survived by his wife Henrietta Wahlert Hollaender of Washington, D.C.

Your Seat Belt:
A Ticket to the Movies — and to Life!

- *Every nine minutes someone dies in an auto collision.*
- *The primary cause of death and injury for Americans under 44 is highway crashes.*
- *Most fatalities happen in dry, sunny weather, at speeds under 40 mph, within 25 miles of home.*

Deadly facts. Chilling statistics. Yet mostly preventable in the easiest possible way —just by buckling your seat belt.

Crash dynamics involve two collisions (see illustration). First the car hits something and stops. Then comes the real crunch for people in the car. Their bodies do not stop when the car does, so they get slammed into whatever part of the car they are thrown towards. An unrestrained passenger in a 30-mph crash catapults into the dashboard with several thousand pounds of moving force.

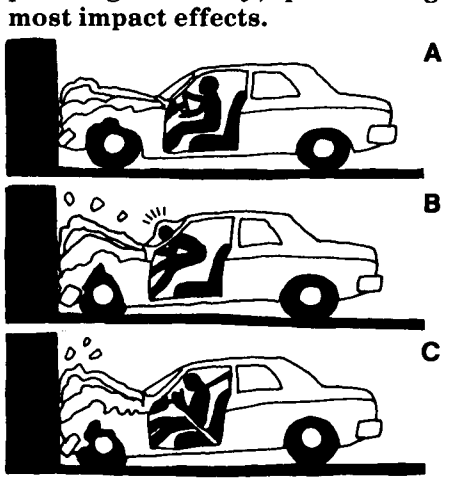
Outside of work, Frank Marotta, Safety and Environmental Protection (S&EP) Division, has been an Emergency Medical Technician for ten years. "When I go to an accident where people have been wearing a seat belt, the worst thing I usually see is a broken collarbone or hip. When not wearing a seat belt, victims may become hood ornaments. If I could show people what they will look like after an accident. . ."

Since September, the Safeguards and Security Division (S&SD) has been conducting a "Buckle Your Seat-Belt" drive, trying to encourage on-site seat belt use by giving a discount movie ticket to any driver found safely buckled up. Yet in a recent sampling, 34 cars had to be stopped to find ten buckled-up drivers. Said Ed Wojcicki, head of S&SD, "I don't understand. In a facility where safety and public health are such important concerns, we've got people who don't do anything to protect themselves. And not only do they disregard their own safety, they disregard New York State law."

S&EP Head Charles Meinhold was "very suprised to find that the people who work at BNL would not be more aware of a simple act that could insure a much larger margin of safety."

S&SD still has one more week to distribute discount movie tickets to five seat-belted drivers selected at random. Why not try to win one and increase your own odds of surviving a car crash at the same time? Buckle up!

In a crash, there are two collisions. (A) A moving car hits an object and stops. Then, one-fiftieth of a second later, one of two things can happen: (B) An unrestrained passenger is jerked forward to crash against the car. At 30 mph, the impact is four times greater than at 15 mph; or (C) A fastened seat belt holds the passenger safely, preventing most impact effects.



Mort Rosen

Annette Gremme, microbiologist in the Medical Department, and Harry Ulyat, Laboratory Supervisor in the Occupational Medicine Clinic, demonstrate that though stones may have veins, you can't get blood from them.

You Can't Get Blood From a Stone!

You may not be able to get blood from a stone, but the Greater New York Blood Program hopes to get at least 400 pints of blood from BNL donors during the next blood drive, on December 16 and 17.

This goal means 400 out of 3,233 employees must be generous enough to share their life and health with others. This goal may not seem hard to achieve, but it is. A very few people have never minded giving blood, but most non-donors are gripped by fear. The fear, however, can be overcome — and the need for more blood is so acute that many people are forcing themselves to donate.

Their rewards are great. First of all, they may save up to five other people, because one pint can be divided up for five different uses. Then, everyone who gives blood finds out that it is not painful and only takes from five to seven minutes. And the BNL drives have a friendly, warm atmosphere. A donor often goes with a friend, and there's almost a party going on, with cookies and jelly beans after the donation. Donors joke and feel happy because they are filling a vital human need. Last summer, those jokes included these one-liner reasons for giving blood, from some "un-stony-hearted" BNL donors:

"I'm helping patients in a pint-sized way!"

"My physician has stopped using leeches."

'It's needed and there's only one way to get it."

'Free jelly beans."

"There's nothing like it!"

"Wearing the 'Be nice to me' sticker is the only way I can get people to be nice to me!"

"What gets taken out of me gets returned to the community."

"Munchkins and seeing friends."

"I believe it is needed and my supply is overabundant."

"It's something no one else can do the way I do it."

"I hate the sight of blood, therefore I'm donating it!"

"Why not?"

Please join the party of generous donors. If you have not sent in your card, call Blood Drive Chair Susan Foster, Ext. 5126, or your department blood captain, to schedule an appointment.

Tune In!

After the 1987 Holiday Schedule was published in the November 14 issue of the Bulletin, the Editor received several Tune In! letters questioning the decision to select January 19, Martin Luther King's birthday, as a floating holiday for next year. The letters focused on both a concern that employees had not been asked to vote on the choice of a floating holiday and a preference for January 2, 1987, as the floating holiday, in order to create a four-day weekend.

Answer:

The selection of floating holidays is made on an annual basis and takes into consideration when the fixed holidays occur and the work needs of the Laboratory. In past years, department chairmen and division heads were asked for recommendations for the assignment of the two floating holidays. These recommendations were considered by the Director's Office in making their decision as to which days to designate as floaters.

This year, the Directorate felt it was desirable to recognize Dr. King's birthday, and many Laboratory employees had voiced support of this idea in the last several years. Due to fiscal restraints and the fact the Laboratory already observes 11½ holidays each year, which is more than the federal government and many private employers, it is not feasible to introduce an additional holiday. Therefore, it was decided to designate one of the floating holidays in Dr. King's honor. This does not mean this will be a fixed holiday in future years or that every year it will be one of the floating holidays.

Recognizing that January 2 of next year will be a popular day for vacation usage, the Laboratory will encourage supervisors to make every effort to accommodate as many vacation and LWOP requests as possible.

— Robert D'Angio, Manager, Personnel & Labor Relations

Inside Info

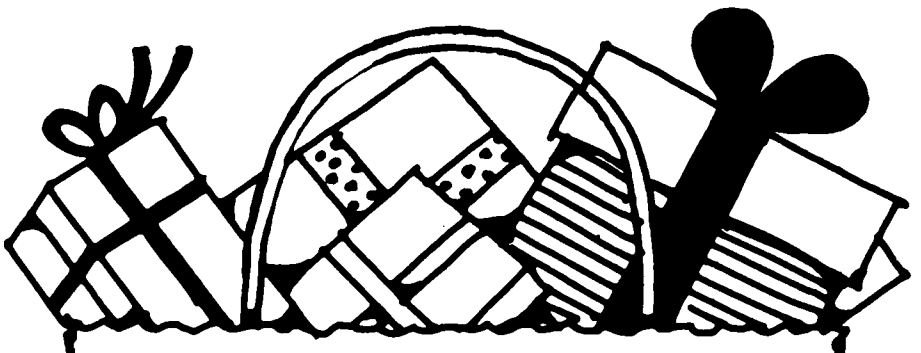
Gertrude and **Maurice Goldhaber** were informed recently that the Physics Department of Harvard University has received a gift of $5,000 in their honor. Per the donor's request, the funds will be used for partial support of a graduate student in physics, who will be designated a Goldhaber Fellow.

Both physicists, the Goldhabers came to BNL in 1950. In 1960, Gertrude Scharff-Goldhaber, a nuclear physicist, initiated the Brookhaven Lecture Series. Maurice Goldhaber was Laboratory director from 1961 to 1973. He is now AUI Distinguished Scientist emeritus.

In a letter to the Goldhabers, Frank Pipkin, chairman of Harvard's Physics Department, wrote, "This gift is a tribute not only to your immense contributions to Physics, but to your efforts on behalf of young people just getting started in Physics. . . .The faculty of the Harvard Physics Department has a high regard for the two of you and they have asked me to take this opportunity to express their appreciation of your service to 'Physics'."

Mort Rosen

There is a trade-off between emission levels and the costs of energy systems for controlling emissions thought to contribute to acid rain and the "greenhouse effect." Quantifying that trade-off is the goal of the new Annex III of the Energy Technology Systems Analysis Project of the International Energy Agency. As operating agent, the U.S. Department of Energy, acting through BNL, hosted the initial project workshop, held here November 17-19. Attending were representatives of 11 countries and international organizations, many of whom have come to know the Lab well during their work on the project, which dates back to 1976. Present at the workshop Executive Committee meeting were (from left) Clas-Otto Wene, Sweden; Shigeru Yasukawa (committee vice-chair), Seijiro Ihara and Nobuyuki Kawai, Japan; Douglas Hill, United States; Erwin Poenitz, Austria (committee chair); Gerhard Kolb, Federal Republic of Germany; John Hollins, Canada; Peter Love, Commission of European Communities; Sokrates Kypreos, Switzerland; Tom Kram, The Netherlands; Manuel Blasco, Spain.



Come to the

Winter Holiday Sales

at the

Science Shop in the Exhibit Center

and take home a bag of goodies for holiday gifts!

More than 50 original and creative items, including:

- **Hand Boiler** - Watch it boil right in your hand! $2.
- **Science Calendar** - Kids will enjoy trying a new experiment each month. $6.

Other items priced from 10¢ to $26.

Some items limited.

Open today and December 19, 10 a.m. to 3 p.m.

West side of Bldg. 701; please park in north parking lot.

Exhibit Center also open to employees on sale days.

For information, call Ext. 4016 or 4069.

Singers Wanted

More singers are needed for the Choral Group, now in rehearsal for the Christmas Concert on December 17. Rehearsals will be held today and Monday, at noon, in Berkner Hall. Sopranos would be especially welcome.

Dowling Offers Courses on Site

Dowling College will again be offering courses on site, during the Spring 1987 semester. Dowling has a transfer credit agreement with Suffolk County Community College (SCCC), which permits students to transfer much of their SCCC course work to Dowling. Therefore, the courses that Dowling offers will typically be fourth-or fifth-semester courses.

Dowling's offer of reduced tuition (1/3 off) to BNL employees will still apply, as will the Lab's usual tuition refund policy.

A memo has been distributed to all employees detailing the Dowling course offerings for the Spring 1987 semester. Our ability to offer one or more Dowling courses will depend upon enrollment. Registration will be held on Tuesday, January 6; Thursday, January 8; and Wednesday, January 14; from 11:30 a.m. to 2 p.m. A registration desk wil be set up outside the cafeteria in Berkner Hall on all dates. Dowling Admissions staff will be on hand to process registrations and to provide academic advisement. Transfer students from SCCC or other accredited academic institutions are requested to bring a copy of their unofficial transcripts to registration. Please direct any questions to either Mary White, Ext. 7994, or Pat Knisely, Ext. 7631.

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Santa's Coming!

Santa will arrive at BNL on Wednesday, December 24 — riding in BNL Fire Engine #2 and toting enough candy canes to satisfy all the children who live on site. For the fourth year in a row, Santa (Firefighter Rich Richard) and his favorite elf helper (Firefighter Chuck LaSalla) will begin their visit through the apartment area at about noon. And don't be surprised if they turn up elsewhere on site that morning.

Cafeteria Menu

Week of December 15

Monday, December 15		
French onion soup w/croutons	(cup)	.70
	(bowl)	.90
Chicken Parmesan w/1 veg.		2.65
Pork & cabbage crisp w/1 veg.		2.55
Hot deli: Meatball hero		2.55
Tuesday, December 16		
Bean soup	(cup)	.70
	(bowl)	.90
Sweet & sour chicken w/1 veg.		2.65
Seafood quiche w/1 veg. (lite-weight)		2.75
Hot deli: BBQ beef	(bread)	2.45
	(roll)	2.55
	(hero)	2.65
Wednesday, December 17		
Beef vegetable soup	(cup)	.70
	(bowl)	.90
Christmas Special		
Prime ribs of beef w/2 veg.		3.95
or		
Roast Long Island duck w/2 veg.		3.95
Hot deli: Pastrami	(bread)	2.45
	(roll)	2.55
	(hero)	2.65
Thursday, December 18		
Chicken gumbo	(cup)	.70
	(bowl)	.90
Taco plate w/chips		2.45
Beef stew w/biscuit		2.65
Hot vegetable plate (lite-weight)		2.20
Hot deli: French dip		2.55
Friday, December 19		
Boston clam chowder	(cup)	.70
	(bowl)	.90
Shrimp Creole w/1 veg. (lite-weight)		2.85
Baked chili macaroni w/chips		2.65
Hot deli: Turkey	(bread)	2.45
	(roll)	2.55
	(hero)	2.65

Arrivals & Departures

Arrivals

Denise Grisaffi ..... Medical
Fatah-Zouhir Khiari ..... Accel. Dev.

Departures

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

Richard G. Aggert ..... AUI
John M. Klein ..... Sfgrds. & Sec.
Henry G. Syers ..... App. Math
Larry B. Mullins ..... Sfgrds. & Sec.

Christmas Party

The BNL Hospitality Committee and the BNL Cooking Exchange will host a Christmas Party on Thursday, December 18, from 5 to 7:30 p.m., in the Recreation Building in the on-site apartment area.

Hospitality Committee and Cooking Exchange members and their families, as well as on-site residents and guests, are invited. A donation of $1.50 per adult is requested. We also are asking each couple/family to bring either an appetizer, some finger food or a main dish for approximately 15 people. Desserts and beverages will be provided.

We would like you to join us for the Christmas get-together. Please come and bring the children. Babysitting will be provided free of charge.

Swim Club

The Swim Club will hold its final workout of 1986 on Thursday, December 18, at 5:15 p.m. at the BNL pool. For more information, call Marsha Belford, Ext. 5053, or Peter Heotis, Ext. 2304.

Volleyball

Standings — Week of December 1

League I	
Upfagrabs	16-2
Dinkers	14-4
Xrayted	9-9
Phoubars	6-12
Bumpers	4-14
Net Results	5-13
League II	
Nuts & Bolts	15-0
TNT	10-5
Cannonballs	4-6
Chunga's Revenge	8-7
Misfits	2-15
Upton Ups	1-14
League III	
Floaters	13-2
Foul Ups	10-8
Printouts	8-7
Sorcerers	7-8
Not Yets	6-9
Screwballs	6-9
Odd Couples	4-11
Open League	
Phoenix	18-0
Dakota	17-1
Court Jesters	13-5
Odds & Sods	11-7
Target	7-11
Rowdy Radicals	6-12
Duituits	0-18
Out of Control	0-18

Holiday Hams

Holiday hams weighing from 18 to 20 pounds each may be ordered through the cafeteria, for $2.10 per pound, plus tax. Orders will be taken through December 19, and pick-up dates will be December 22 and 23.

Wise Women

One-hundred-six science teachers and guidance counselors from Long Island attended the workshop "Women in Science & Engineering" (WISE) held at the Lab on December 4. Hosted by Brookhaven Women in Science and funded by the Office of Educational Programs, WISE disseminated information and materials on career options in science, engineering and mathematics. Guest speakers included Susan Agruso, an associate in the New York State Education Department's Bureau of Science Education and a semi-finalist in the Teacher-in-Space program.

Runners Corner

The BERA Runners Club competed in the third annual Mosely Long Island Championship Five-Mile Run, in Dix Hills, on November 30.

In the Open Division, Peter Boni won, to make this the third straight year a BNL runner had taken top honors (Terry Sullivan won in 1984 and 1985). Also for the third successive year, the Lab team won the Corporate Division. This, year, BNL also fielded the second-place corporate team.

Following are individual times for the members of the Lab teams in the Open Division.

Women's team:		
Carol Federighi	39:31	
Sharon Hall	49:59	
Nancy White	42:03	
Sharon Zuhoski	36:38	3rd, age 30-34
Men's "A" team — 1st in Corporate Division:		
Peter Boni	25:32	1st overall
Jerry Hastings	28:28	
Trevor Sears	25:44	3rd overall
Men's "B" team — 2nd in Corporate Division		
Peter Lane	33:30	
Andrew Mathewson	28:56	
Ed Meier	30:54	
Gus Prince	33:55	1st, age 60+

In the Elite Division, running against national and Olympic class athletes, Terry Sullivan (24:38) won the 30-39 age group, placing tenth overall.

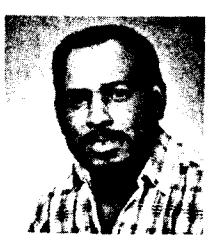
Nursery School

The Upton Nursery School is accepting applications for possible teaching positions for the current school year. Applicants are required to speak fluent English. Send resume to P.O. Box 324, Upton, NY 11973. For information, call Dottie Alessi, 924-5984. The Upton Nursery School is an equal opportunity employer.

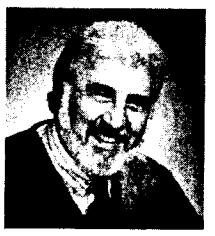
Juan Alverez

Jim Amandola

John Blydenburgh



Harold Bolling



Lou Di Carlo

Eddie Rosado

—photo by Rosen

Donations Mount As Beards Grow

They said they wouldn't shave till the $75,000 goal is reached, and as the United Way fund is mounting up, the beards are growing — on and on. The enthusiasm shown by these members of the Supply and Materiel Division is typical of their group, in which 60 of the 70 employees have donated.

All those in the Fiscal Division, Contracts & Procurement Division and Associated Universities, Inc. can be proud of 100% participation. Technical Information and Instrumentation are other departments whose generosity has already helped bring the fund up over last year's total.

So far, 960 of BNL's 3,233 employees have contributed $70,444. If the remaining 2,273 employees would help with the remaining $4,556, the BNL United Way drive would reach its goal, and these fellows could shave once again. And don't forget that everyone who donates is eligible to win $50 in a weekly drawing. The latest winners were John Heinrichs, Medical Department and Samuel Morris, Department of Applied Science.

Bowling

Red/Green League

J. Morris rolled a 225, L. Jacobson 221, K. Asselta 216/203, T. Holmquist 212, R. Adams 211, N. Combatti 210, R. Eggert 207.

Pink League

Maryann Reynolds had games of 200/188/171, Mary Grace Meier 195, Fern Coyle 171.

Purple League

Frank Gaetan had games of 237/209, Tony Natoli 214, Ben Belligan 206, Dan Clemente 204/200, Carl Jacobs 203, Mary Addessi 202, Jim Petro 200, Mary Scheidet 185, Fern Coyle 182, Pat Oster 182, Lee Barberich 180, Betty Jellett 176.

White League

Joe Mayeski rolled a 231/203, Ed Sperry IV 217/201, Pat Manzella 214/183, Bob Malachowsky 210, Ken Riker 207, Carlyle Murray 206, Maria Apelskog 191, Kay Conkling 188, Sharon Smith 183, Elaine Zukowski 180.

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.

THE VACANCIES LISTED BELOW HAVE BEEN EXEMPTED BY THE DIRECTOR'S OFFICE FROM THE CURRENT FREEZE ON OPEN REQUISITIONS.

OPEN RECRUITMENT - Opportunities for Laboratory employees and outside applicants.

2506. HEALTH PHYSICS ASSOCIATE POSITION - Requires BS or MS (preferred) in health physics, physics or nuclear engineering and a strong background in physics and measurements. Will provide professional support for an operational radiation protection program. ABHP certification and the possession of or ability to obtain a "Q" clearance highly desirable. Safety and Environmental Protection Division.

2507. TECHNICAL POSITION - Requires AAS in electronic technology or equivalent and several years' experience in the construction and testing of analog circuits and systems. Individual will be involved in the development and implementation of closed orbit beam position feedback systems and instrumentation for electron beam storage rings. Knowledge of digital circuits is desirable. National Synchrotron Light Source Department.

Autos & Auto Supplies

TIRES - & rims, P235 75R15, 6 lug w/caps & rings, good cond., $100. Ron, Ext. 4082 or 289-1003.

SNOW TIRES - (2) Dunlop GR78-15, steel-belted, on Olds five-hole rims, $60. Ext. 3392.

85 DODGE CHARGER - 2.2 ltr., 5 spd., htchbk., sunroof, louvers, spoiler, low mi., must sell. 727-2861 after 6 p.m.

SPARE TIRE CARRIER - for truck front, $15; rear seat, for Blazer or truck, $30. Bill, Ext. 2807 or Pager 923.

COMPRESSOR - 1 h.p., 12 gal., new cond., low hrs., $160; 3 spd. transmission, standard, low mi., Chevy, or trade. Joe, 929-8321.

66 FORD - Mustang, not running, $500. 399-0942.

78 DATSUN 200SX - 5 spd., $1,000. June, Ext. 4692 or 878-2040 after 6 p.m.

76 PLYMOUTH VOLARE - 4 dr. sedan, mech. sound, good second or station car, $450. Paul, Ext. 3372.

79 JEEP CHEROKEE - 4WD, quadra track, CB tape deck, excel. cond., $3,500. 981-5993 after 6 p.m.

79 PONTIAC SUNBIRD - 4 spd., 4 cyl., many new parts, new paint, sunroof, tilt wheel, asking $800. Bob Jr., 689-9234, eves.

80 200SX - a/c, 5 spd., htchbk, sunroof, 76k mi., am/fm, p/s, p/b, runs well, $2,800 neg. 654-0830.

78 MERCURY ZEPHYR - 4 dr. sedan, excel. cond., radio, p/s, p/b, 75k mi; 74 VW Beetle, good cond. John, Ext. 2667.

85 MITSUBISHI - Mirage, turbo-charged, red, 5 spd., am/fm cass. stereo, extras, 22k mi., $6,500. 286-3679.

75 VW BUG - yellow, nice shape, good running cond., $600. Fred, Ext. 7947 or Brian, 399-6333.

79 OLDSMOBILE - Cutlass Calais, runs like new, all pwr., positraction, very clean, asking $2,500. 475-6056, eves.

76 AMC MATADOR - wagon, a/t, excel. interior, very good body, 9 pass., needs work, best offer. 369-1844, eves.

79 DATSUN 310GX - htchbk, 4 spd., stereo, front WD, new brakes, muffler, good cond. Bill, 751-1126.

66 DODGE DART GT - conv., console a/t, p/s, bucket seats, $550; Slant 6 engine w/3 spd. stand. trans., hi mi., runs well, $50. H. Sauter, Ext. 3783.

79 CHRYSLER LeBARON - 318 V8, a/t, p/s, p/b, a/c, 4 dr., 76k mi., body & tires good, $1,950. 277-4091.

77 MUSTANG - 4 cyl., a/t, new brakes, master cyl., starter, good trans., $1,300 neg. 286-2379.

81 BUICK REGAL - like new, 49k mi., V6, a/t, a/c, p/s, p/b, am/fm, new batt., brakes, exhaust sys. $4,150. 744-5207.

85 RENAULT ENCORE - am/fm, 40+ mpg, new tires, 32k mi., excel., $3,400. Ed, Ext. 3293 or 477-2880.

TIRES - (4) 13" and alum. slot rims, best offer. Wayne, 698-1184 after 6 p.m.

75 FORD LTD - 4 dr., a/t, a/c, p/s, p/b, am/fm, mech. good., excel. body, $450 neg. 286-0601 or 698-0576.

FORD CARB - & manifold, 2 bbl, stock; chrome roof rack; small chrome tube grill. Ray, Ext. 3536 or 289-7615.

84 HONDA ACCORD LX - 2 dr., htchbk, 5 spd., p/s, cruise, am/fm cass., low mi., mint cond., log book, asking $7,250. Henry, Ext. 4547 or 727-7227.

83 MERCURY LYNX LS - 4 dr., htchbk, a/c, a/t, p/s, p/b, stereo cass., 65k mi., $3,900; bumper guards, new $20/pr.; Tony, Ext. 2462 or 269-9510.

81 CHEVETTE - 3 dr., 4 spd., stereo cass., 56k mi., excel. cond., $2,000 neg. Ext. 7162 or 928-0001.

85 SKYLARK - a/c, p/s, p/b, am/fm cass., sunroof, 40k mi., excel. cond., $5,400. Chun, Ext. 2014 or 3088, eves.

80 PLYMOUTH HORIZON - TC-3, 4 spd. trans., good cond., $1,200. Ed, Ext. 7943.

85 SUBARU - wagon, garaged, excel. cond., extras, owner moving, $7,900; 80 Subaru wagon, new tires, muffler, etc., $2,300. 288-3104, eves.

78 OLDSMOBILE - Cutlass Supreme, p/b, p/s, needs work, $500; 8' Slide-on camper, Winnabago, sleeps 4, light weight, $500. Slim, Ext. 3084.

78 DATSUN 280Z - 5 spd., blue, good cond., $3,500. Dave, Ext. 4088 or 298-5576.

85 PONTIAC FIERO - low mi., loaded, excel. cond., asking $8,500. Dick, Ext. 4313 or 722-4094.

81 CHEVY - htchbk, 62k mi., a/t, p/s, p/b, $1,695; 74 Dodge Big Wagon, good engine & a/t, $350. Ext. 2545 or 589-2759 after 6 p.m.

78 CHEVY NOVA - new a/t and exhaust, p/s, p/b, a/c, excel. mech. cond., $1,200. Ext. 2319.

78 PONTIAC - Grand Prix, 2 dr., 8 cyl., 301 eng., 74k mi., $2,500; 76 Pontiac Sunbird, 2 dr., 6 cyl, $500. Ext. 2314 or 567-5131.

50 FORD PICKUP - restored in 1983, collision damage, $1,400. Roger, Ext. 4677 or 878-8847.

SNOW TIRES - (2) L78-15, whitewalls, Atlas Weather Guard w/studs, like new, $20/ea. 423-7538 after 6 p.m.

81 THUNDERBIRD - 6 cyl., a/c, a/t, p/b, p/s, am/fm radio, sunroof, fully loaded, 43k mi., $3,500. Ext. 3692 or 567-4423 after 7 p.m.

65 JEEP PICKUP - J2000, many extras; 83 Plymouth Reliant 4 dr., 2.2 l, 4 cyl. Bob Kiss, Ext. 4428 or 467-4222.

77 FORD LTD - rebuilt 302 ci eng., overhaul, good cond., $1,000. 928-3022.

VW ENGINE - 40 h.p., rebuilt w/50k mi., inc. all access., $100. Ed, Ext. 4768.

77 CHEVY MALIBU - 4 dr., white, 8 cyl., rebuilt trans., clean, no dents, $900 firm. 744-5122 after 6 p.m.

69 PONTIAC - convertible, mean machine. Ext. 2023.

73 CAPRI - stand., sunroof, new tires, runs well, $400 neg. 744-0725.

78 TOYOTA CELICA - liftback, 5 spd., orig. owner, no rust, new battery, starter, $2,100. Bob Larsen, Ext. 4656 or 928-1806.

78 T-BIRD - black w/red int., excel. in/out, p/s, p/b, a/t, a/c, custom glass etching, wire hubs, new battery, exhaust, needs eng. work, $1,000. 727-0364.

85 MONTE CARLO - p/s, p/b, stereo/tape, p/window, low mi., $8,990. 473-0178, eves.

TIRES - (2) 225x14R, (2) F78x14, snows, $10 ea. 744-9677

Boats & Marine Supplies

28' OWENS - 63, wood, tight hull, eng. needs work, forced to sell, $500. Bert, Ext. 2050.

13' SLOOP - moving, must sell, reasonable price. John, 286-0542.

19' CARAVELLE - 135 h.p., Johnson rebuilt 8/86, extras, all excel., leaving L.I., must sell, $1,500. 281-4430.

Miscellaneous

HOLIDAY COOKIES - and fruitcake, $5.50/lb. Adrienne, 286-3211.

GIFTS - from SE Asia for sale: jewelry, scarves, more. Corinne, Ext. 4493 days or eves.

CHRISTMAS WREATHS - extraordinary, beautiful, handcrafted from nature's seashore bounty, pine. Mon. & Tues., Ext. 4393 or 587-0300, all week.

CHRISTMAS WREATHS - top quality, local greens, full, on Hillman rings, $15. Tom, Ext. 4084 or 878-1060.

SEWING MACHINE - Singer, $20; chandelier, $15; lawn chairs, toaster, snow sled. Ext. 3136.

ORIGINAL CABBAGE PATCH DOLLS - buy early for Xmas, large selection tooth & pacifier, $19.95. 929-4198.

SINGLE TICKET - Juilliard String Quartet, Tully Hall, 3 p.m., Jan. 17, Mendelssohn, Brahms, Dvorak, $12.50. Ext. 2916 or 286-3742, eves., wknds.

TICKETS - (4) Islanders vs. Flyers, Sat., Jan. 17, BNL seats, $20.50 ea. Nancy, Ext. 7996.

UNICEF XMAS CARDS - and gifts, free catalog/info./order. Ann, Ext. 2022 or 744-8386.

SKI BOOTS - Munarie, women's size 7½, 5-buckle, $10. Bill, Ext. 2906 or 929-6189.

SNOW BLOWER - Craftsman, 3½ h.p., 18", like new, $180. 928-6209 after 4:30 p.m.

BICYCLE - girl's 16" set up for a young male, $25. Ext. 4597 or 924-8213 after 3 p.m.

SKI BOOTS - size 7-8, $50; size 5½-6½, $25. 473-2473.

BICYCLE - girl's 20", heavy duty, training wheels, perfect condition. 286-0259 or 286-1331.

TROPHY ENGRAVING MACHINE - and accessories, for making trophies. George, Ext. 4688 or 473-5304, eves.

FLOOR POLISHER - electric, like new, $25. 475-4787 after 6 p.m.

VACUUM CLEANER - Sears cannister, good cond., $20. 751-3551.

PATIO DOORS - sliding, wood frame, thermopane, $40. Victor, Ext. 2395.

EYE SHADOW - blush & lipstick collection w/mirror, ideal stocking stuffers, 3 sizes. Judy, Ext. 5263 or 821-3290, eves.

WATER PUMP - Sears, 1 h.p., deep well, $55; sewing machine head, Singer, model #201, w/foot pedal, $50. 475-5448.

ELECTRIC HEATER - Toastmaster, $10; Lewyt cannister vacuum, $10; Farberware rotisserie, $20; caned seat chair, $15; lounge chair, $10. 744-6292.

DYNACO AMPLIFIER - pre-amplifier, tuner, $100; Hockey skates, 2 pairs, $10. Ext. 4098 or 736-4886.

ANSWERING MACHINE - Code-A-Phone, works well; antique stationary desk, Victorian, $50. 473-6294, eves.

TV - (2) 25" Heathkit, 1 console, 1 in-wall, w/testers & manuals, both $150. George, Ext. 4100.

DRAPES - for large window area, very good cond., $10. Morris, Ext. 4192.

COMPOSITE MONITOR - Zenith, STB graphics plus II Video Board, Okidata 92 printer; Royal typewriter; stand, best offer. Paul, Ext. 3372.

WIG BOXES - w/head forms, 2 small, 1 large, zipper, closed top handle. Ext. 2950.

EXERCISE CYCLE - $40; coffee table, maple finish, $20; women's vanity case, blue, $10. Judy, Ext. 2590.

VENTILATOR - new, power attic, $25; Englander twin bed/frame, $40. Ext. 4420.

STOVE - coal and wood, coal bin, approx. 2 ton. 727-1342 after 6 p.m.

SNOW THROWER - 4 h.p., 18", B&S engine, $150; Andersen awning type window w/screens & storms window, 63"x48", $40. I. Meyer, 929-4326.

ARC WELDER - Miller, 230 A, extra cables or trade for table saw, Ext. 4081 or 874-3844.

TYPEWRITER - 16 digit, liquid crystal display, 2k memory, graph capability, adapter, new, $120. Ext. 2625 or 467-8297, eves.

SKIS - men's, 205 cm, 200 cm, boots, size 10 med; women's skis, Harts 185 cm, boots; Faberware convection oven; dinette set. 475-0509.

GAS STOVE - 30", avocado, excel., $100; window, 3 double hung, Mullun alum., 85½"x45½", $25; Xmas tree, $7; chest of drawers, $20. 878-6637.

VIDEO CAMCORDER - 8mm GE, case, cables, extra batteries & full 8mm GE, VCR, $700; Sanyo super-beta hi fi VCR, $250. Tom, Ext. 5039.

AIR CONDITIONER - 5,000 Btu, Westinghouse, almost new, $150; quartz heater, $25; recliner, $20. Steve, Ext. 7862 or 5618.

KEROSENE HEATER - 8,000 Btu/hr., Teknika TKH-800E, used 5-6 times, orig. box & manual, 5 gal. can. George, Ext. 3061 or 751-0894 eves.

FIREWOOD - split, seasoned oak, 4'x16'x18" pieces, delivered, $105. 732-2849.

ICE SKATES - girls, size 7, excel. cond., $12. Pete, Ext. 4326.

MAGAZINES - Hot Rod, 77-81; Field & Stream, 77-81; Car Craft, 77-82; The World Encyclopedia of Motor Cycles. Ray, Ext. 3536 or 289-7615.

BATHROOM SINK - dark brown w/walnut cabinet, negotiable. 924-4097 after 5:30 p.m.

SKI BOOTS - Nordica, men's, 10½, gray, very good cond., asking $50. Paul, Ext. 4474 or 473-3689.

19" TV - black & white, solid state, good cond., $35. Jag, Ext. 5080 or 751-1884.

WATERBED - Q-size, heated, 95% motionless, Walnut w/leather bumpers, book case head board w/center mirror, $400 neg. 585-0178 after 5 p.m.

BICYCLE - 10 spd., $25. Ext. 2543.

ATTACHÉ CASE - Skyway, black chrome, 2 keys, included, hardly used. Ext. 2950.

BEDROOM SET - girl's, white, twin bed, dresser w/mirror, 4 drawer chest, night stand, desk w/hutch & chair, asking $500. 269-6357, eves.

FIGURE SKATES - size 9, black, $12. John, Ext. 3675 or 924-3528.

TAPE RECORDER - open reel, stereo, Sony, model TC-640, like new, best offer. 751-8403 after 6 p.m.

RANGE - (2) oven combo, GE, 1 new, w/microwave & convection ovens; 1 used w/2 ovens; china pedestal sink. Alice, 286-9483.

TABLE - sturdy, heavy formica, w/4 chairs, $40; w/china closet, $75; Kenmore gas stove, excel. $100. 878-6637.

PIANO - Baldwin Hamilton, walnut, excel. cond. Ext. 3765 or 744-5079.

CAMERA - 35mm Vivitar PS-35, auto shoot w/gadget bag & belt bag, $65. Ext. 3894 or 744-9812.

COLOR TV - 25", Philco Console, new picture tube, excel. cond., asking $100. Don, Ext. 4576 or 281-3093.

FISH TANK - 55 gal., new filter, hood, stand, gravel rocks, many extras, asking $225. 286-5962.

HEATER - Kerosun Omni 105, $50; cameras, Konica T3 SLR body, $50; SLR Konica TC, w/2x conv., 28mm or 50mm lens, $125. 286-8448.

B&W TV - new, 13", portable, GE, still in box, $60. 878-1056.

BICYCLE - boy's, 20", new back rim, good cond., $30. Ext. 4597 or 924-8213.

MATTRESS - box spring, frame, Q-size, good cond., $100 or best offer. 369-0419, eves. & wknds.

CLOTHING - boy's, size 14-16, excel. cond.; elec. car set w/many extras, $15; Xmas ornaments, toys & games, all excel. cond. S. Spark, Ext. 4111.

ICE SKATES - women's, white, size 8 and 10, $10/pair; Gibson freezer, upright, 13 cu. ft. cap., good cond., $150. 286-5125 after 7 p.m.

Car Pools

MASTIC - need ride to/from Lab, 8:30-5 p.m. shift, will pay. Jody, Ext. 2907 or 395-3963 after 6 p.m.

HUNTINGTON - Greenlawn, driver needed. Jim, Ext. 5057.

Lost & Found

FOUND - men's gloves, Fiscal parking lot. Ext. 2345.

LOST - bracelet, gold "snake" chain, extemely sentimental value. Pat, Ext. 7192.

FOUND - dog, Riverhead north vac., med. size, tan/orange and white, very friendly, now at pound, only 1 day to live. Henry or Carol, 727-7227.

Free

DOG - Labrador/Doberman mix, black w/brown markings, 5-yrs.-old, good disposition. John, 286-0542.

WINDOWS - alum. siding w/storms and screens (2) 46"x26", (1) 59"x23". Duke, Ext. 2957.

ICE SKATES - several pairs, you name the sex and size. Ext. 4008.

KITTENS - (2), black & white, male & female, Siamese mother, father unknown, 8 wks. 751-2655.

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

S. JAMESPORT - cozy cottage, 1 bdrm., l/r, eik, bath, porch, furn., suit couple, walk to beach, 20 mi. from Lab. (no children/pets), $400/mo. + util. Walt, Ext. 2907 or 698-0576.

MIDDLE ISLAND - Artist Lake condo, 1 bdrm., l/r, kit., full bath, a/c, new w/w, dishwasher, redecorated, pool, 5 min. to Lab., avail. Jan. 5, $650, heat inc. Ext. 3144 or 698-5046, eves.

HILTON HEAD, S.C. - 2 bdrm. condo, sleeps 6, many extras, golf, tennis and plenty of sunshine, $300/wk. 585-9149.

CORAM - new Bretton Woods condo, 2 bdrm., 2 bath, l/r, d/r, eik, w/w carpeting, 5 appl., golf, tennis, clubhouse, no pets, $800/mo. + util., 1 mo. sec. 289-0413.

CATSKILLS - chalet, 3 bdrms., sleeping loft, fully furn., near Hunter & Windham Mts., great for skiing, rent wknds, or weekly. Call Judy or Kay, Ext. 3595 or Bea, Ext. 3642.

QUOGUE/FLANDERS - new 3/4 bdrms., 2½ baths, spacious l/r, d/r, f/r, eik, fp, w/w, deck, 2 car garage, all appl., acre, near ocean and BNL, long or short lease. Ext. 4112 or 727-1782.

SETAUKET - family home, quiet street, 3 bdrms, 2 baths, den, fp, $950/mo. 689-7487, eves.

BAYPORT - furn., kitchenette, priv. ent., deck, mature working single, $450/mo. inc. util. 472-0706, eves.

SETAUKET - 3V schools, 3 bdrm., cont. Colonial, 2½ baths, huge l/r, d/r, f/r, eik, 2 car gar., fenced ½ acre, solar hw, $1,000. Ext. 4157 or 698-6103, eves.

SOUND BEACH - 20 min. from Lab, apt., cozy 2 bdrm., l/r, kit., new bath, $660 +; living room/bdrm combo, lg. kit., full bath, $440. +. 744-3284, eves.

MORICHES - charming 1 yr. old country cottage, 1 lg. bdrm., full bath, kitchen/dr/living area, w/w carpet, full bsmt., w/d hookup, cable, cac, more. 878-9284.

For Sale

POCONOS - chalet, 3 bdrms., l/r, d/r, f/r, kit. w/woodburning stove, w/w carpet, garage w/electric door opener, circular drive, paved roads, pools, lake, clubhouse, tennis, all entrances guarded 24 hrs. $115,000 neg. 286-4652.

SHOREHAM NORTH - 4 bdrm. Colonial, 2½ baths, den/fp, bsmt, fenced, patio, formal d/r. 744-1750.

DELRAY BEACH, FL. - 2 bdrm. condo, 2 bath, appl., enclosed porch, many improvements, semi-attached, near water, clubhouse, sauna, pool, sports, mature adults, $38,000. Ext. 4192 or 751-7787.

MASTIC BEACH - 2 bdrm. house, nice neighborhood, 80'x100' lot, taxes $700, great starter, needs heat, $62,500. 744-2821.

NORTH PATCHOGUE - 10-room cape, mother/daughter & sister too, 3 kit., 3 baths, priv. ent., terms possible, $120,000. Carol, 289-3917.

ROCKY POINT - 3 bdrm. Cape, cul-de-sac, priv. community, priv. beach, $177,500. 744-9343.

Wanted

TRAINS - Lionel, American Flyer, accessories, any cond. brings good price. Carole, Ext. 3352 or 924-4097, eves.

BABYSITTER - Pt. Jeff vacinity, Tues. & Thurs, 11 a.m. to 12:30 p.m., 2½-yr.-old girl. Linda, 744-0722.

17' CANOE - alum. or fiberglass. John, Ext. 7671.

CAMPBELL SOUP LABELS - please save, for C.M. elem. school, I'll pick up. 878-1514.

CHILDCARE - beginning Jan. 87 for 2 yr. old, within 5 mi., Riverhead, non-smoker, f/t, Mon.-Fri. 369-1844 or 727-3790, eves.

GERMAN LESSONS - young woman needs instruction. 286-0270, eves.

KEROSENE HEATER - a monitor-through-the-wall, vented type, will repair. Fred, Ext. 7947 or 4823 or 588-2268.

OUTBOARD MOTOR - 3 h.p. or less, must be running. J. Davis, 473-0495.

SOMEONE - to transfer 8mm movies to VHS cass., must be reasonable. Ext. 3350.

ONE/TWO FAMILY HOUSE - in Gordon Heights area. Ext. 2487 or 928-6930.

HIGH CHAIR - wooden, in good cond. Debbie, 242-3643.

CAP - for Chevy, C-10 pickup, 6' bed step side. 475-8440.

BASEBALL CARDS - any cond. Dennis or Michael, 744-7796 after 6 p.m.

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

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