BROOKHAVEN BULLETIN
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BROOKHAVEN NATIONAL LABORATORY

Tristan Makes BNL Debut

Tristan is alive and well, and on-line at the High Flux Beam Reactor. So reports Bob Chrien, head of the Neutron Nuclear Physics Group, on the reconstructed mass separator which was transferred from the Ames Laboratory two years ago.

Tristan is used for the study of unstable nuclides, rich in neutrons, which are produced by fission, and, otherwise not found in nature.

A successful development run was concluded early in July and, according to Chrien, "if I can believe what s coming out now, we are probably better by a factor of 100 in terms of intensity and activities than any other similar facility." Although Tristan is the only reactor-based, on-line mass separator in the United States, comparable facilities are at Studsvik, Sweden and Grenoble, France.

Tristan was in operation at Ames for 12 years, and after the shutdown of the reactor there, was moved to Brookhaven in May 1978. The transfer was negotiated by DOE's Division of Basic Energy Sciences. Since that time, it has undergone many modifications and improvements. The installation of the complex apparatus at the beam line took a year, and another year was spent developing the all-important ion source.

Mass separators can be put either at a reactor or an accelerator. Both provide a beam of particles – in the *former case, neutrons*, and the latter, protons – that break up the nuclei and produce the isotopes.

At the HFBR's H-2 beam line, a U-235 target is placed in a neutron beam and undergoes fission, resulting in a vast assortment of fission fragments. These fragments are ionized in the plasma discharge of the source, and accelerated through 60 kilovolts in this device. They are then swept into a magnetic field and separated according to mass through a slit in the focal plane of a 90° magnet. By means of a beam switching magnet, the resulting particles are sprayed on a mylar tape which is moved past various solid state radiation detectors.

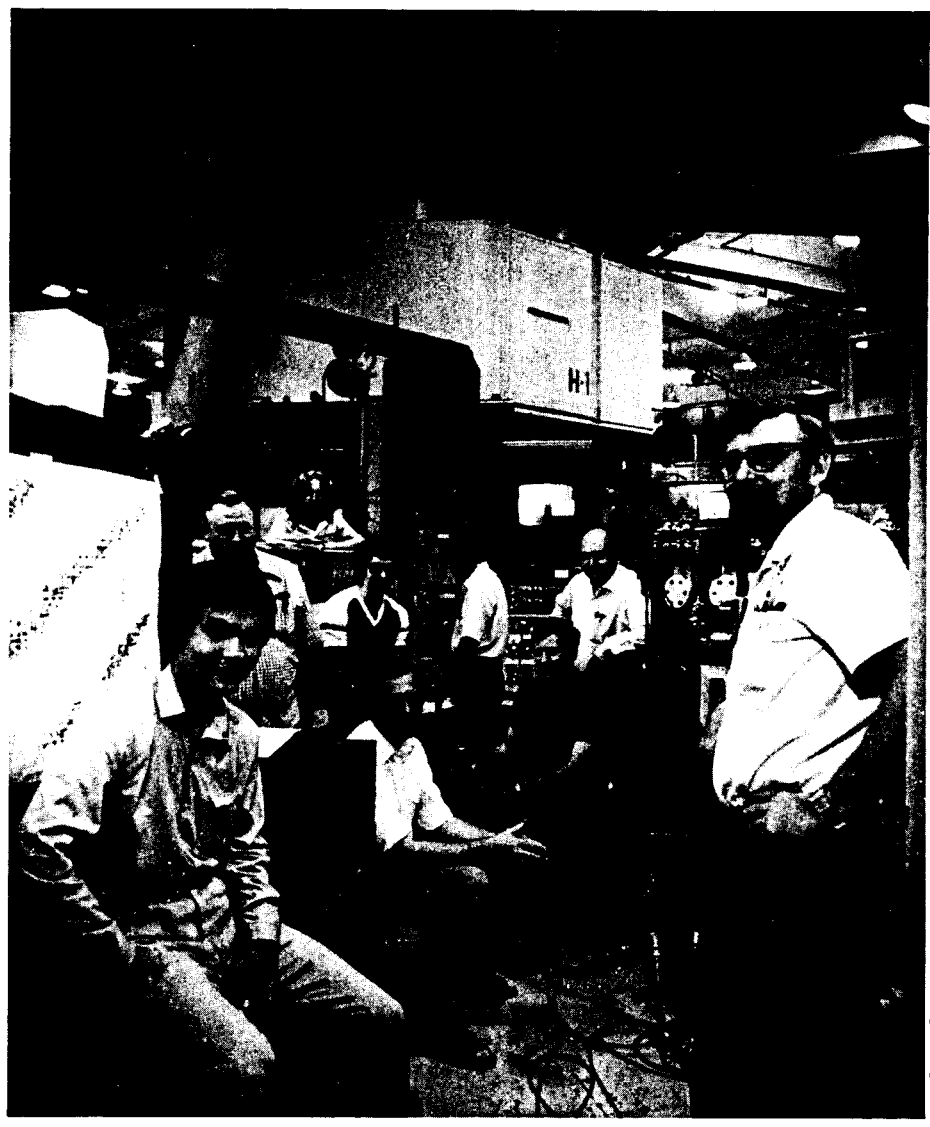
From the analysis of beta and gamma radiation, scientists get a picture of the structure of these nuclei. Other principal experiments at Tristan will include the study of delayed neutron emission, and measurement of nuclear masses.

The basic research done at BNL will be useful in the design of reactors. For instance, how reactors cool down after shutdown depends on the decay of fission fragments. Of course, a great deal of work has been done on this, but Chrien says details on which fission fragments produce the heat, and how the decay occurs in time, are still not fully understood.

Ron Gill, who received his Ph.D. from Iowa State, and spent several years working at the Ames Tristan, was primarily responsible for installation at the beam line, and contributed to the development of the ion source. Another developer of the source was Moshe Shmid, a visiting physicist from Israel. They were aided by technical specialist Warner Hayes. Physicist Marion Stelts played an important part in the evolution of the computerized data acquisition system, along with programmer Horng-ing Liou and engineer Vito Manzella. Fred Paffrath and Dean McDonald, technical members of the Neutron-Nuclear Physics Group, also work on the project, as do post-docs Chien Chung and Greg Gowdy.

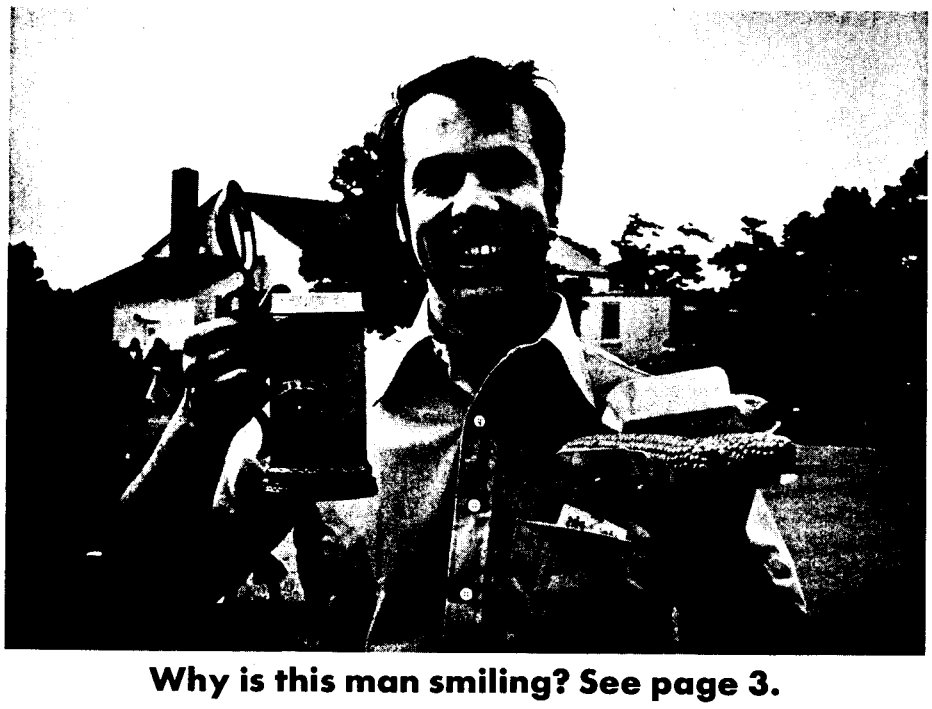
So far, Chrien says, about 60 scientists from universities and other laboratories have expressed interest in doing experiments here. A number of potential users have already spent time at Brookhaven collaborating with the BNL staff on the creation of Tristan II. The Users' Group is chaired by Daeg Brenner of Clark University.

The August reactor cycle at the HFBR will be devoted also to Tristan development, and Chrien says, "now we should be ready to complete some significant experiments in that cycle."



Doug Humphrey

The Tristan team at the HFBR's H-2 beam line (from left) Chien Chung, Warner Hayes, Dean McDonald, Ron Gill, Kornelius Sistemich, H.I. Liou, Daeg Brenner, Bob Chrien, Marion Stelts. Not present for the photo were Fred Paffrath, Moshe Shmid and Greg Gowdy.



Why is this man smiling? See page 3.

Weekend Tour

The Brookhaven House, an innovative energy-efficient home currently being constructed at the Lab, will be featured in this weekend's tour. The design of the house combines a number of energy-related concepts, including the use of passive solar energy and natural thermal storage. Visitors will be able to see the house and talk to architects about the different design elements that result in dramatic energy savings.

The complete tour of the Lab also includes a viewing of Brookhaven's "Quest," a guided bus tour of the site, and a visit to the Exhibit center.

Two Facets Of Fruitful Research

Most people think of fruit flies as a mild annoyance they have to put up with if they like to have bowls of fresh fruit around. But to many biologists, fruit flies, or *Drosophila*, are valued research tools.

They don't take up much space, and they're cheap and easy to breed. They take just ten days to develop from eggs to adult. Fruit fly test systems have been used for years and have provided quick and reliable answers to all kinds of scientific musings.

Purushottam Kale, a scientist with the Safety and Environmental Protection Division, uses fruit flies to evaluate genetic effects of exposure to various environmental conditions.

What Do Fruit Flies Have In Common With People?

You might not think so, but biologically speaking, fruit flies are in the same class as humans. We are both eukaryotes – a term for higher organisms that have rigidly structured chromosomes.

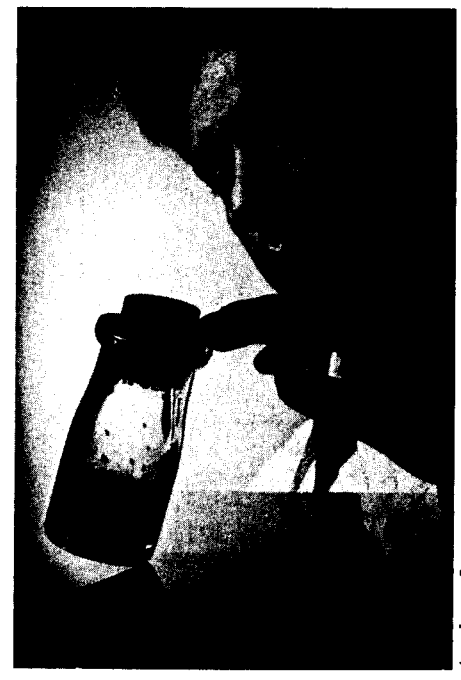
Fruit fly DNA is similar to human DNA. So genetic studies using fruit flies can have meaning for humans.

Exposure To Magnetic Fields

One of Kale's projects, funded by DOE, uses fruit flies to evaluate genetic effects of high magnetic fields.

We live every day, with no obvious ill effect, in the earth's magnetic field of 0.5 Gauss (G). Why study high levels of magnetism?

Fusion reactors may be part of our energy future. High strength magnets, probably with fields up to 100,000 G, will be used to contain plasma a fourth state of matter – hot, ionized gas) in a fusion reactor. Even with shielding, reactor workers may be exposed to a residual magnetic field.



Doug Humphrey

Purushottam Kale breeds half a million fruit flies a year for his research on genetic effects of high magnetic fields and chemical pollutants.

Kale has exposed fruit flies to magnetic fields ranging from 13,000 to 37,000 G. For the lower end of the range, he uses a small magnet in an office adjacent to his. For the higher levels, he uses superconducting magnets at the AGS.

The encouraging news is that after two years of testing, Kale has found they suffer no genetic damage. But the project isn't over. Next, he will experiment with the synergistic (combined) effects of high magnetic fields

(Continued on page 2)

A Spokesman's View

Doug Humphrey

James Kent – "Famous World War I Flying Ace"

Ed. note: *The* Bulletin's *summer student, James Kent, recently participated in a 14-mile bicycle race in Newburyport, Massachusetts. Under threat of having his bottle of white-out confiscated, he was persuaded to file this report.*

During a practice lap around the circuit, I had run over some very moist gum and was still trying to unstick the mess from the rear brake when the starter waved his arm and called "All seniors. . . please form three lines across the street. . . lines of five please. . ."

I hustled onto my bike, bubble gum and all, and swung into line. The other riders were talking nervously with each other, taking their last slow sips of water. The sun was like a hundred suns and the road ahead shimmered. "Here," I mused, strapping on my helmet and adjusting my sunglasses, "is the Famous World War I Flying Ace, chatting calmly with his ground crew before another dawn patrol. Death lurks ahead. . ."

While the starter recited Robert's Rules of the Road ("And no passing in the turns. It's very dangerous.") I took stock of my competition. Although it doesn't tell all, equipment tells lots. At least who has money – or had money.

The row of bikes off my bow included a few Sears Special Racers: no problem. There were also a couple of Raleighs: could be problems. To my stern, a few French makes: could be sleepers. And there off my starboard stern was a green machine with no markings: a definite problem. Premium bicycles exude understatement. One small decal, no pinstriping, no chrome. This bike was built for speed.

The bike's rider was also suspect. He had blond hair and grossly overtrained legs. He had blue eyes and fit perfectly what I imagined Hermann Goering's aide-de-camp looked like. I nicknamed him Hermann Goering and decided he was The Enemy.

Half apologizing for the heat, half asking if we really wanted to do this, the starter said "Go. . .?" and we shoved off.

The race is staged on a ⅞ mile circuit around the "Pond at the Mall." The tight loop offers two long straight-aways, one wall and three hair-pin turns. Townspeople crowd along the curbs and shout encouragement, obscenities and occasionally squirt water.

The clump of riders had quickly strung out into a long thin line down the road, with the eager and inexperienced ones racing up the flanks toward the front of the pack. Always eager and usually inexperienced, I sprinted forward and found Hermann leading a few Sears Racers.

One by one, I edged out the Sears contingent and got behind Hermann, cruising easily in his draft. He looked back. I smiled and waved. He swung from side to side; I swung from side to side. He picked up the pace and a few of us, closely packed behind Hermann, broke away from the group and formed a lead pack.

As the race pounded on, the lead group shrunk to three riders: Hermann in front, someone who looked like Valery Giscard d'Estaing second and me third. A pace motorcycle kept a few dozen yards in front of us, properly apportioning each rider his Minimum Daily Recommended Allowance of carbon monoxide and other noxious fumes.

By the rules of the race, any riders lapped by the motorcycle had to drop out. By lap 12, the field was cleared down to ten of the original 15.

On the 15th lap, Goering switched on his booster rockets and disappeared over the hill into hyperspace. Since I immediately lost the benefit of his stern wave, I fell behind quickly but was still significant seconds ahead of the other riders.

By lap 18, Valery and I, by trading off the lead and breaking each other's wind, managed to enter Goering's space-time warp. Sensing danger, he shifted to a higher gear and the pace lifted to 28 mph.

All the preceeding laps I had managed to save my strength by drafting behind the lead rider, and taking the front only when urged to by other riders. Now, I thought, in the final lap, I'll cash in my savings.

While I pondered the management of my energy budget, Hermann and Valery began jockying Kamikaze-style for the optimum sprint position. The final stretch approached. I was in the wrong place. I was behind Valery, who was behind Hermann. The tape was just after a turn, so the rider order entering the turn would be the rider order crossing the tape.

Lacking the killer instinct, I made my last sprint attack too late, and was unable to pass Valery, who had the unfair advantage of a Gaulish, aerodynamically sleek nose. But the finish line is for effort, so I crushed all my life into the toestraps and hoped a sniper would bring down Goering before the finish. But it wasn't to be. We crossed the tape in order of our strategic intelligence, Hermann first (32 minutes, 1 second), Valery (32:3 and me (32:4).

PINY/BNL Courses

Final registration for the PINY/BNL extension courses in nuclear engineering will be held from 6 to 7 p.m., Tuesday, September 9 in the conference room of Bldg. 318 (across from the bank). PINY courses to be offered at BNL this semester are: NU 606-Principles of Radiation Protection, and NU 712-Radiation Shielding. Days, times, and instructors will be announced later.

Professor John Lamarsh, Head of the PINY Nuclear Engineering Department will be here during registration to advise prospective students. These courses are available to BNL employees under the tuition refund policy. They are also open to guests and collaborators, and to a limited number of persons not affiliated with the Laboratory.

Singers In Concert

Helen Wilkinson mezzo-soprano and Elisabeth Palmedo, soprano, will give a diverse musical concert at Berkner Hall on Wednesday, August 13 at 8:30 p. m. Their program includes music by Brahms, Dvořák, Fauré, Mendelssohn and Purcell, as well as Irish and Italian folk songs.

Wilkinson, who studied at the University of Stellenbosch in South Africa, has concertized in that country, as well as in Sweden, England and the U.S. Recently she recorded a program of lieder to be presented on the BBC, and is preparing a series of concerts with organist and conductor, John Birch.

Palmedo, who is well known to BNL audiences, graduated from the New England Conservatory and made her debut at Carnegie Recital Hall in 1976. She specializes in chamber music and is a founding member of the North Shore Pro Musica.

Helen Wilkinson Elisabeth Palmedo

The singers will be accompanied by pianist Bea Satz, a graduate of the Curtis Institute who has accompanied many famous singers at the Metropolitan and New York City Operas.

A contribution of $3 is suggested.

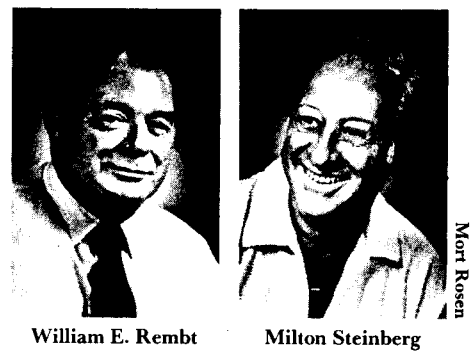
Tati Is Back

It is becoming a tradition for *Le Cercle Français de BNL* to present a Jacques Tati film during the summer. "Playtime" and "Mr. Hulot's Holiday" were shown in 1978 and 1979, and this year the series will continue with "Traffic." The film will be screened in Berkner Hall at 8 p.m. on Tuesday, August 12.

Those familiar with Tati's acting and directing will have no difficulty in recognizing the master's touch. This time Mr. Hulot is a zany inventor attempting to deliver his latest masterpiece, a gadget-laden camper, to the Amsterdam International Motor Show. His trip is beset by the obstacles of international bureaucracy. As usual in a Tati film, a lot of social commentary lurks beneath the surface comedy. "Traffic, ' released in 1971, was selected as one of the Ten Best of the Year by Vincent Canby of The New York Times.

Non-members of The French Group of BNL will be asked for a donation of $2 ($1 for students). Refreshments will be served after the film.

Retirees



Mort Rosen

William E. Rembt Milton Steinberg

William E. Rembt, Heavy Equipment Mechanic Operator in the Plant Engineering Division, retires today after 18 years with the Lab. He and his wife are taking a trip to Hawaii this year. After that, they'll travel around visiting grandchildren.

Milton Steinberg retired August 1 from his position as Master Welder in the Central Shops Division. He had been with Brookhaven since 1966. Steinberg hasn't made any definite retirement plans. He says he's going to take it day by day.

Woman In Science

The next business meeting will be on Tuesday, August 12 at noon in Room A, Berkner Hall. Nominations for officers will be announced, and elections will be held at the September meeting.

BNL summer students are extended a special invitation. They will meet women in science at the Lab, and learn about the aims and accomplishments of the group.

Fruit Flies (Cont'd)

and low level radiation.

Exposure To Chemical Pollution

Another of Kale's fruit fly projects, this one funded by EPA, looks at genetic effects of chemicals in ambient air. Fruit flies have been used before to test for mutagenic effects of certain chemicals mixed in food. But those experiments were done with chemical concentrations several thousand times greater than what is normally found at polluted sites. Kale wanted to know if fruit flies were suitable for detecting low concentrations.

Using a test chemical, ethylene dibromide (DBE), a common pesticide soon to be banned by EPA, he exposed fruit flies to concentrations as low as 0.2 parts per million in air. Recessive lethal mutations were induced even at these low concentrations.

"Now we know," says Kale, "that fruit fly test systems can readily be used to monitor gaseous mutagens in ambient air at polluted sites."

NYC Train Trip

The Hospitality Committee is planning a group railroad trip to the city on Wednesday, August 20. Departure will be at 7:55 a.m. from the Patchogue LIRR station. Round-trip fare is **$3.25**, children under six years ride free.

Reserve a ticket by sending your fare through the U.S. mail to P.O. Box 322, Upton, New York 11973, no later than **Thursday**, August 14. Make checks payable to "Brookhaven National Laboratory." Your tickets will be given to you on the train. Refunds will be made only if cancellations are received by the Friday preceding the scheduled trip.

Selected Reading

Science 209 (4453), July 1, 1980
Organic farming becomes "legitimate". L.J. Carter. 254-6

U.S. News & World Rport. LXXXIX (2), July 14, 1980
New products to make summertime easier. 61-2

Sci. Am. 243 (1), July 1980
Megalithic monuments. G. Daniel. 78-81 +

Time 115 (25), June 23, 1980
Issue the U.S.S.R. Special Issue. 20-88

Lecture Reminder

Vera Kistiakowsky, Professor of Physics at M.I.T., is the next speaker in the Women in Science Lecture Series. She will talk on "High Energy Interactions – An Emerging Understanding" on Thursday, August 14, at 3:30 p. m. in the Physics seminar room, Bldg. 510.

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CARL R. THIEN, Public Relations Officer

Medical Film

A film describing the Marshall Islands project that began in 1954 will be shown Monday, August 11 at 7:30 p.m. in the large conference room of the Medical Department. Interested students and other BNL employees are invited to see the movie, entitled "Thyroid Disease as a Late Sequela of Radioactive Fallout."

Softball

League I

Rained Out

League II

AMD 10 - Roga 3
Moles 14 - Titans 10
Cardinals - Dirty Sox
(Rained Out)

League III

Nuke Powers 14 - Binary Bombers 6
Medical 12 - Brewmasters 4
Ice Pops 10 - Lights Out 7
Huff & Puff 18 - Big Sticks 17

League IV

Diamond 16 - Nads 14
Jim Griffin was 5 for 5. Good hitting by Dot Lundgren who was 2 for 3 with a stand-up double and a single.
Survivors 9 - Thrids 7
E-Z Riders 23 - Turkeys 5
Grand slam by Doug Gillette. Larry Musso was 5 for 5. Gary Goldstein and Dennis Hall were 4 for 5.
Balls& Strikes 14 - Random Sample 8

League V

Mudville Sluggers 9 - TNT 6
In a come-from-behind upset victory, the Mudville Sluggers defeated the TNT's by a score of 9 to 6.
Who Cares 13 - No Feedback 11
No Names 14 - Who's On First 8
Source III 11 - Underalls 8
Makeup game:
No Names 7 - Who Cares 6

Safety Shoes

The Safety Shoes office, located at 14 S. Railroad (Bldg. 88), will be closed the week of August 11th, and will reopen on August 18.

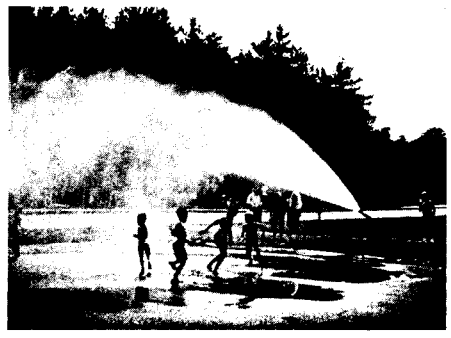
Arrivals & Departures

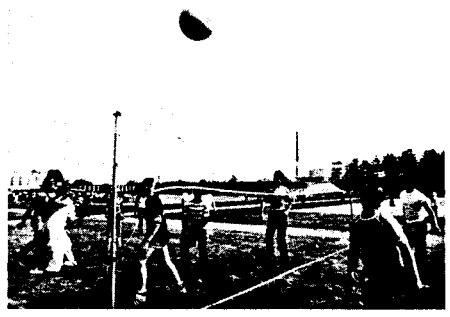
Arrivals

Michael R. Curtis.....Plant Engrg.
Harris E. Fischer.....Energy & Env.
Andres J. Kreiner.....Physics
Patrick A. Thompson.....Accelerator
Nancy J. White.....Physics

Departures

Carl H. Distenfeld.....Saftey & Env. Prot.
Marie A. Hesekiel.....Medical
Hwei-Lin Hong.....Energy & Env.
William L. Keith.....Accelerator
Alan D. Isaacson.....Chemistry
Rosemary Kanuga.....Medical
Pamela T. Kydes.....Physics
Donna E. Moguel.....Accelerator
Joanne Rosinski.....Biology
Neil Ross.....Chemistry
Rudolf E. Slovacek.....Biology
George A. Zimmer.....Nuclear Energy





Outing '80

Ed McFadden is smiling because he was at the last picnic in '74. He had such a great time that he already has a ticket to the one on August 23, from 1 - 8 p.m. He's not going to miss out on the **freebies, parade, dance contest,**

and. . . games and activities like tennis, softball, volleyball, badminton, ping pong, horseshoes, bicycle races, running races,

and. . . performances by a drill team and a bagpipe band,

and. . . demonstrations of karate, fly tying, and model airplane flying,

and. . . special tours of the Exhibit Center, 10 a.m. to 2 p.m.

Don't wait until the last day of sale, August 15, to buy your tickets. Do it today, and make planning easier for the picnic committee. Tickets are on sale from department secretaries and receptionists. If they haven't come around to you, go to them.

Cafeteria Menu

Week Ending August 15, 1980

Monday, August 11		
Potato leek soup	(cup)	.45
	(bowl)	.55
Roasted turkey & stuffing w/ cranberry sauce		1.55
Western omelete & 1 veg.		1.40
Hot Deli - Roast beef	(on bread)	1.55
	(on roll)	1.65
Tuesday, August 12		
Split pea soup	(cup)	.45
	(bowl)	.55
Chinese pepper steak on rice		1.50
Poached fresh fillet & 1 veg.		1.45
Hot Deli - Pastrami	(on bread)	1.45
	(on roll)	1.55
Wednesday, August 13		
Cream of spinach	(cup)	.45
	(bowl)	.55
Stuffed pepper w/spaghetti		1.45
Pork butt steak w/mushroom sauce		1.55
Hot Deli - 8 ft. Hero		.75 per inch
Thursday, August 14		
Lima bean soup	(cup)	.45
	(bowl)	.55
Meat cakes & buttered noodles		1.45
Scalloped ham & potatoes		1.40
Hot Deli - Monte Cristo sandwich		1.45
Friday, August 15		
Fish chowder	(cup)	.45
	(bowl)	.55
Barbecued spare ribs & 1 veg.		1.55
Seafood platter w/french fries		1.87
Hot Deli - Sausage, egg and pepper hero		1.45

Children's Program

Pool Special

Everyone went home happy from last Friday's Pool Special which featured relay races. Winners were: (Ages 4, 5, 6) 1st – Kathleen Holden, Richard Melucci, Rachel Tanguay, Alex Crabb; 2nd – Derek Spark, Daniel Gutlich, Shigehiko Eto, Janna Crabb. (Ages 7, 8, 9) 1st – Alyse Holden, Keith Holden; 2nd – Karen Mills, John McAdam, Katja Guelich. (Ten years and older) 1st – Kristen Holden, Maurissa Holden, Megan Holden; 2nd – Sean Holden, Greg Holden, John Moschitta, Andrew Chan.

Coming Events:

This Friday – ping-pong ball and cup races
Next Friday – balloon and ping-pong ball races

On-Site Program

After a strenuous hour of scavenger hunting last Friday morning, the kids were delighted to return to the recreation building and be treated to ice pops.

Coming Events

This Friday – Halloween day
Next Friday – County fair

As an extra special event, the annual International Dinner for families of children enrolled in the On-Site Program will be held on Thursday, August 14 at 5:30 p.m. at the Recreation Building. Families are asked to bring two dishes of food specialties from their native countries for all to sample. A first-rate movie will be shown after dinner.

School For Tots

The Upton Nursery School is now enrolling three and four-year olds in classes beginning in September. Children participate in a stimulating program either two or three mornings a week. Tuition fees are reasonable. Parents may assist in the classroom, or pay an additional modest fee for the services of a teacher's assistant. For information, call Karen Brunschwig, 924-0030, Ruth Fernow, 929-8465, or Colin Stewart, 286-9616.

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, with preference to those within the immediate work group; (2) present employees within the Laboratory as a whole; and (3) outside applicants.

The determination of the best-qualified candidate for available positions will be based upon education, experience and other job-related criteria. Such factors will be evaluated and measured against the demonstrable requirements of the available vacancy, as well as the Laboratory's Affirmative Action objectives.

The Laboratory is committed to a policy of Equal Opportunity in its selection and placement of personnel. Its objective is equality of opportunity in employment, training, and promotion without regard to race, color, religion, national origin, sex, age or handicap.

Each week, the Personnel Office lists new personnel placement requisitions. The purpose of these listings is, first, to provide open placement information on all nonscientific 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, as indicated below. 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 Personnel Placement Supervisor, Ext. 2882.

POSITIONS OPEN: Scientific. The following staff positions are open. Candidates may apply directly to the department representative named, or through the Office of Scientific Personnel, Ext. 3338.

STATISTICIAN - Seek PH.D. in statistics or biostatistics for statistical consulting and collaborative research in the life sciences; to join departmental statistical research group. Contact: Dr. Ronald Peierls, Chairman, Applied Mathematics Department.

LABORATORY RECRUITMENT: Opportunity, for present Laboratory employees.

1428. ADMINISTRATIVE POSITION - Requires AAS or equivalent in accounting and several years experience with administration of sub-contracts. Familiarity with data processing systems is desirable. Will be responsible for coordinating subcontracts and invoices, producing status reports and maintaining liaison between principal investigators and Contracts and Procurement Division. Department of Energy and Environment.

1429. SECRETARIAL POSITION - Requires excellent secretarial and communication skills. Capability to learn to use word processing systems is essential. Will join secretarial staff group and primarily be responsible for the typing of technical documents and reports. Department of Nuclear Energy.

1430. SECRETARIAL POSITION - Requires AAS in secretarial science or equivalent experience handling diversified secretarial duties. Excellent typing ability is essential. Will assist primary secretary with general office responsibilities. Department of Energy and Environment.

OPEN RECRUITMENT: Opportunity for present Laboratory employees and outside applicants.

1431. OCEANOGRAPHY ASSOCIATE - Requires BS or equivalent in (biological) oceanography or marine sciences with ability to collect, sort and maintain living zooplankton. Ability to spend extended periods of time (two weeks - two months) on oceanographic research cruises is essential. Capability to perform preliminary computer analysis and write scientific reports is desirable. Will assist in laboratory and field experimental work with live marine zooplankton. Department of Energy and Environment.

1432. EXPERIMENTAL MACHINIST - Requires experience in job print interpretation, layout, and machine set-up. Candidates must demonstrate ability and imagination in all phases of machine work. Will function as all-round machinist for nonproduction work in research and development shop. Project assignments range from raw material to final assembly. Central Shops Division.

1433. TECHNICIAN POSITION - Requires AAS degree or equivalent experience in electronic technology to operate and maintain the Tandem Van de Graaff accelerators and associated equipment. Should have background in complex electronic, electro-mechanical and mechanical equipment including some exposure to vacuum systems. Rotating shift schedule. Physics Department.

Autos & Auto Supplies

75 COUGAR - XR7. Elaine, Ext. 4357 or 289-2420 after 5:30.

TIRES - (2) F78, 15" mounted on Ford rims w/hub caps, brand new. $50. Frank, Ext. 4709 or 281-4607.

76 CORVETTE - excel, cream w/brown leather, interior, a/c, am/fm stereo, all options, 32,000 miles, $7,900. Mike, Ext. 7941.

77 TRANS AM - Brown, T-top, louvers, p/w, must see. $4,800. 924-7677.

74 PLYMOUTH - Sta. wgn, good cond. $350. 884-2868 after 2 pm.

TIRES - (5) glass belted radial tires w/w 78-14, (1) new, (2) slightly used, (2) used. $50. John Zahra, 727-4515.

69 FORD - Fairlane, 4 dr., sedan, a/t, p/s, p/b, 302 V8, am radio, new battery, running. $175. Dennis, Ext. 4259 or 736-2534 after 6 pm.

SNOW TIRES - H78-15 Atlas weatherguard, new, never used. $45. ea. Ext. 4918.

74 VEGA - std trans, 4 cyl, good cond, economical, approx. 90,000, one owner. Ext. 3838 or 924-3104.

71 RENAULT - R10, excel body & motor, 40 mpg, brand new engine & battery, must see. $850. 475-4199.

REAR WINDOW - for 1975 Ford pickup truck, $25. Bill, Ext. 7148 or 744-7577.

WINDSHIELD - and hood for 71'-73' Chevy Vega, $20. ea. Ext. 2050 or Sue, 475-5834 after 6 pm.

72 VW - Square back, new tires, brakes, more, must see, excel cond. 734-7584 after 6 pm.

71 MERCURY - Montego, excel cond, 4 new tires, new trans. $400. 924-8682 after 6.

78 KAWASAKI - KZ650, 4,600 mi., excel cond. $1,700. 728-9038.

65 PONTIAC - Tempest, 326 win, 4 dr. sedan, reliable trans. $200. Bill Stars, Ext. 4278 or 298-9648 eves.

67 FALCON - auto, 6 cyl, new battery & exhaust, runs well. $200. 331-2762 eves & wkend.

TIRES - (2) FR70x14 w/w, steel belted radials, like new, $30. (1) H78-14 Uniroyal, $10. Bill, 744-5714.

78 HONDA - Motorcycle, Cafe racer, 100% chrome, 2 modified engines. $6,000 invested, best offer over $3,500. 928-0158 after 6 pm.

76 PINTO - need a wagon? 6 cyl, a/t, a/c. $2,100. Kevin, Ext. 4901 or 924-7283.

70 TORINO - excel running cond, clean, some body damage, ps, p/b, a/c. $300. Alison, Ext. 2381 or 475-7263.

70 FORD - best offer for two door sedan. 286-9611.

65 MUSTANG - 6 cyl, good running, no rust. $900. 665-0741 eves.

76 CAMARO - small 305, p/b, p/s, a/c, maroon vinly top, mint in & out, 46,000 mi. Ext. 3657.

79 YAMAHA - 750 Special, black, Hiway pegs, sissy-bar, excel cond. $2,200. 734-5963 5 pm - 8 pm.

74 BUICK - Electra 225, 2 dr. all power, good mech. cond, needs body work. $750. 698-7591 eves after 6.

CAMPER - Cox pop up, v. g. cond, except top canvas. $225. Ext. 4489 or 473-2821.

79 FORD - E250 Van 300, 6 cyl, 4 spd, p/s, p/b, capt. chairs, 8 trk, extras. $5,400. 273-4258.

TIRES - (2) Delta Trans/Am H60-15, new, raised white letters, $65. Kevin, Ext. 4261 or 654-8553 after 6.

55 STUDEBAKER - good for parts. 732-3073 after 6 pm.

68 CHRYSLER - Newport. $350. Ext. 3031 or 7107.

78 CHEVY - 4x4 Pickup C-10, blue in v. g. cond. Ext.. 4033 or 727-5532.

MAG WHEELS - (4) 15" w/chrome lugs & center hubs, 5 holes. $100. for all. Ext. 4247.

74 BUICK - Sta. wgn, excel cond, new tires. $975. Ext. 3134 or 2432.

71 VW - excel engine, body needs minor work. $900. Ext. 7584.

HARDTOP - white, for 1967 Corvette, will fit 1963 - 1966 also. $350. excel cond. 286-1285.

72 DATSUN - Pickup, new paint, 4 cyl, radials, stereo. $1,100. Henry, 727-0216 after 6 pm.

78-550 CKB - Honda 4-cyl., 5 spd., black, 1300 mi. Excel cond. Asking $1,700. Dick, 473-9307.

VW PARTS - Engine, doors, fenders, glass, lites, from 68 + 69. Augie, Ext. 4220.

TRIUMPH TR 3 - 4 front suspension $75.00. Differential $50.00. Toni, Ext. 2926

Boats & Marine Supplies

STARMASTER - (sharpie-style) clam boat w/mariner motor, 18' fg/w professionally made 1974; 48 HP 1979. Lee Lawrence, 472-0721.

SUNFISH - green/white, excel cond, accessories. $500. 286-8528 after 6 pm.

CLAM RAKE - 20", $20. Ext. 3354.

21' INTERNATIONAL - 120 HP, I/O, sleeps 2, hard top, ss radio, safety equipment, rods, reels, 744-2707.

20' SHARPIE - heavy oak contruction, pilot house, late 1978, 48 HP, mariner engine, excel. $1,500. 286-0534.

12' SEARS ALUM V - bottom boat, like new. $225. 473-0178 eves.

DOCUMENTED - 44' twin cabin, twin screw yacht hull & engine in good cond, needs interior work. 475-0868, 9 am to 5 pm.

24' SAILBOAT - selfrighting keel type wood sloop, in water w/spinaker, jib, mainsail & custom trailer. $1,200. Jerry, Ext. 2934 or 744-2816.

14' CLASS SLOOP - "JET 14" w/cox trailer, beautiful molded mahogany hull. $850. Ext. 3915/744-5375.

MERCURY OUTBOARD MOTOR - 1974, 4½ hp, excel cond. Mike, Ext. 2081, 878-9384 eves.

Miscellaneous

AIR COND - Fridgedaire, almost new, 7,500 BTU's. $200. Elaine, Ext. 4357 or 289-2420 after 5:30.

SEWING MACHINE - zig/zag, portable, excel cond. $75. 751-2655.

HEYWARD WAKEFIELD - maple 42" round table, leaves, four mates chairs, used. $65. must pick up. Ext. 4717.

CRIB - and dresser, J.C. Penney Sesame St., white, needs work, $50; full cord wood, pine & hard. $150. Pete, Ext. 4612.

WEED EATER - Black & Decker, excel cond. $8. Ext. 4551.

TENT - Morsan's Best, 8x10, see erected. $25. A. Brems, 289-1758 or Ext. 2907.

AIR COND - 11,000 BTU Carrier, 220V, $60. Paul, Ext. 4045 or 289-5770 after 6.

GARDEN TRACTOR - Waterbury, 5 HP w/plow, discs, cultivator, lawnmower, 42" pusher blade. $300. 473-0775.

TABLE - African blk. mahogany rectangular shape, 18" x 72" closed & 36" x 72" open, four upholstered chairs, $130. Plotkin, Ext. 4717.

MOORING ROPE - 3" dia, 100', $30; antenna rotor, $10; TV stand, $5. 744-5867.

WINDOW - (2) excel cond, both 4' height, $25. ea. 654-2304 after 12 pm & wkends.

ARTIST CANVAS - 7x9, 60¢ per pk. of 3; dice game battery, $3.50. Susan, Ext. 4267.

POOL TABLE - good cond, ¾ slate, best offer, you haul, must be dismantled. 543-0079.

TV - stand, good cond, holds up to 26" TV, w/rack for papers. $10. J. Skora, Ext. 3431 or 744-9677.

CAMPER - Viking, hard top pop-up, fully equipped, excel cond, sleeps six. $1,500. 437-2881.

TAPE CASE - 8 trk, commerical size, holds 250 tapes, 3½' x4½'. $20. Barry, Ext. 4533 or 727-5956.

AIR COND - 7,000 BTU Carrier, $60; bicycle, (1) blue 20' girls, (1) red 16' b/g conv. $15. ea. 744-7981.

BOOKS - Photography, Time/Life series, complete set & index. $65. Fred, Ext. 4407.

LAWNMOWER - Ariens, 30" reel type w/24" snow blower attachment, excel cond. $300. 581-7656.

MOVIE CAMERA - Bell & Howell, zoom lens, light & projector, excel cond. $175. Kathy, Ext. 4615.

OIL PAINTING - beautiful floral still life, 12 x 24 in large gold frame. $20. I. Merritt, 589-5126.

PACHYSANDRA PLANTS - Healthy & thriving, 25 plants for $2. Jean, 929-4522.

PIANO - antique white Wurlitzer spinet, v.g. cond. $800. Ext. 3701 or 751-8128 eves.

TRICYCLES - (2) $12. 727-5912.

WINTER JACKET - brand new, blk. leather, imported, size 42, list price $125. Asking, $80. 751-2709.

TV - 19" Emerson B/W, good cond. $20. Al, Ext.3273.

REFRIG - GE, No-frost, 18.1 cu. ft., harvest gold, side by side, too large for owner. $200. Ext. 3995.

RABBIT HUTCH - professionally built, bale of hay & food for $20. 727-3608 after 5.

LYMAN RELOADER - all 12 & 20 ga. 6 or 8 segment crimp 2 ¾' & 3" shells, $70. C. Nielson, Ext. 3935 or 325-0968.

RANGE - GE, 40", double oven. 929-8653.

DISHWASHER - Kitchen aid built in model. $50. 286-1097.

CRIB - & mattress, J.C. Penney white Sesame St., needs work, $50; brown chifforobe w/decals, $10. Chris, Ext. 4612 or 281-7379.

TABLE LAMPS - $10./pr; standing lamp, $5; B&W TV, $10; child's carseat, $8; fish tank w/accessories, $8. Morris, Ext. 4188.

GUITAR - $25; accordian, $150; aquariums, $75. & $50. Frank, Ext. 4709.

TWIN SIZE BED - boxspring & mattress w/frame, $35. Mike, Ext. 7941.

COAL STOVE - 1979 Hass Sohn, all ceramic tile plus one ton coal. $750. 744-8319.

TORO - "Lawn tractor", 7 HP, 36" wide cut, 4 spds (1 reverse), electric key starter, excel cond. 878-0717.

POOL FILTER - diatrimotroos earth, $50. Don, Ext. 2022 or 878-2215 after 5 pm.

RADIAL ARM SAW - shopmaster, $125; stained 30" & 24" inside flush doors, $5. 589-9103.

LAWN MOWER - needs tune-up, new blade, $35. Ext. 2616 or 751-5868 after 6.

SEWING MACHINE- portable, straight stitch & zigzag. good cond. $45. Rowe Ext. 2345. 878-9384 eves.

SKI BOOTS - men's size 9, Lang competition. $15. Len, Ext. 4487.

PEANUT MACHINES - 10¢ & 25¢ dispenser w/heat & stand, like new. $50. Barry, Ext. 4533 or 727-5956.

FREEZER - 15', 9 cu. ft. upright coldspot, white. $200. Firm. Tom, 325-1913.

COUCH - overstuffed style, nice, natural cotton slip cover. $40. Tom, Ext. 3128.

FENCING - 18 pc. 6' stockade fence, used, excel cond, priced to sell. 654-0050.

HAMBURGER MAKER - transistor; iron; heater; rollerskate: skate board. Ext. 3027.

REFRIG - Sears 15 cu. ft. "Freezer Mate" brown w/ ice maker. $50. or best offer. 581-6432.

DINETTE - w/4 chairs, $120; sofa, excel cond, $300; bed, queen size, mattresses, Usha, Ext. 3922 or 924-6720.

WINEMAKERS UNITE! - prepare for 1980 vintage. Grape purchase, for infor call Tom, Ext. 4674 or 286-2505.

CAMERA - Yashika A-120, $30.; 35mm film winder, $10. 724-2923.

WEED EATER - Black & Decker, $8; Bi-pod car jack, $10. Bob, Ext. 4551.

AIR COND - 8,600 BTU, 115 V, 7.5 amp, Sears Coldspot, excel cond. $150. Marian, Ext. 7214.

FIRE EXT. - CO^2, 10 lb. $45. 924-6348.

BUNK BEDS - frame & pallets. $25. Kurt, Ext. 4116.

Real Estate

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

For Sale

PROPERTY - Wading River, No. of 25A, exclusive area, lovely wooded building plot, slightly under 2 acres. Owner asking $18,000. 928-0158 NO BROKERS.

CENTRAL ISLIP NO - 1 acre, hi-ranch, 8 rms, 1½ baths, 24 x 28 sunken patio, possible M/D, many extras. Yani, Ext. 2514 or 234-8564.

MASTIC BEACH - 3 bdrm ranch, corner lot, roofed patio, pleasant location near water. Low 30's. 281-7531.

SHOREHAM - large 4 bdrms, 2½ bath colonial, wooded ⅓ acre lot on quiet street near Miller Ave. School, no. of 25A, 2 car garage, eik, fam rm. $68,000. 744-4787.

PORT JEFF. STA. NORTH. - 3 bdrm ranch, full bsmt, attached garage, gas heat, walk to everything, excel cond. $38,000. 928-6944.

BELLPORT SO. - 4 bdrm, 2 story Colonial, full bsmt, attached garage, carpeting, hd. wood floors, in-ground pool, assum. 8% mort, .4 acre, 11 yrs. $45, 000. A. McInturtt, Ext. 4845 or 286-8890.

MASTIC - 6 rms plus porch bunalow, low taxes, good cond. $18,000. Terms. 744-8680.

WADING RIVER - 3 bdrm ranch, fp, D/R, ½ fin. bsmt. 929-8733.

MASTIC BEACH - 3 bdrm, panelled L/R w/new w/w carpet, eik, outdoor & indoor front porches, complete insulation, elect. heat, new asphalt driveway, ¼ acre, taxes $550. $25,000. Chris, 281-7379.

For Rent

LAKE GROVE - room to rent w/priv. adjoining bath, $160/mo. w/util, yard & kitchen privileges, can share house if desired, garage & attic storage available. Ext. 2360.

YAPHANK - German Gardens, sm. 2 bdrm bungalow, ideal for single. $190/mo. 924-3946.

HOLBROOK - house, 6 lg. rms, gas hot water heat, ½ acre, garage, immaculate, avail. Sept. 1st or later. $450/mo. 981-1871.

ROCKY POINT - 2 story house for rent, upper kitchen, L/R, bdrm, lower kitchen, L/R, heat. $250/mo. for 10 months. 212-TA3-5531 or 744-0811.

SHIRLEY - 2 rm studio apt., walking dist. to shopping center, priv. ent., 5 min. from Lab., ideal for student, no pets, includes all util. security dep. required. Sal, 281-4178 after 6 pm.

STONYBROOK - studio apt., unfurn, priv. ent., parking space, $275/mo. util incl., 1 yr. lease & security deposit required, single occupancy only, available in August. 751-3889 or 345-4044.

YAPHANK - 5 rm Modern duplex apt, 3 mi. from BNL, L/R, D/R, kit, 2 bdrms, full bsmt & patio. $400/mo. 1 mo. security, includes heat & water. 581-2909.

WADING RIVER - cliff house w/panormamic water view, stone fp, sleeping loft & bdrm, D/W, wash/dryer. $325/mo. + util. Sept. - June 25th. Ext. 2440 or 929-8165.

PORT JEFF STATION - 3 bdrm house, L/R, den, D/R, dinette, kit, 2 baths, central a/c, gas heat, 2 car garage. Avail. Sept. $500/mo. 473-1895.

Wanted

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

USED RADIO/TV - Tower sections to 25-30 ft., reasonable please. Bill Sanchez, Ext. 3848 or 698-3145.

GASOLINE ENGINE - 3 to 5 HP, from reel type mower. Ext. 4033.

APARTMENT - 1 or 2 bdrm in Miller Pl./Sound Beach area. Nick, Ext. 2524.

ROOMMATE - share 4 bdrm country home in Ridge, 2 car garage, furnished. $150. + util. Tom, Ext. 3273 or 924-9143.

LADDER - used Alu. extension ladder, reasonable. Bill, Ext. 3848 or 698-3145.

HOUSEKEEPER - Mon-Fri., 7:30 to 1:00 pm; care for house, 2 children (ages 6 & 7), do errands, some cooking, must be reliable, have own transportation. 744-4611 after 7.

HOUSEMATE - to share 4 bdrm, 3 bathroom house in Coram, $155/mo. + share util. 928-8379 eves. Ext. 2521.

HEAVY PUNCHING BAG - any cond. Ed or Chuck, Ext. 4095.

HOME - for thoroughbred German short haired pointer, male, 4 yrs. old, has had shots. Lois, Ext. 2959 or 751-1131.

PRESSURE/CANNER - 8 qt. & access.; homemade ice cream maker. Bob, Ext. 3565.

TRUMPET - for 10 year old. Ext. 3372.

1 PAIR WATER SKIES - 744-8063 days; 345-2926 evenings. Ask for Donna.

Car Pool

STONY BROOK - M section of Strathmore, 8:30 to 5:00, forming or joining. Dick, Ext. 7635 or 689-8605.

FARMINGVILLE - 8:30 to 5:00, regular or occasional. Walt, Ext. 2907 or 698-0576.

STONY BROOK/STRATHMORE - Join existing car pool 8:30 to 5:00. Morris, Ext. 7146.

Lost & Found

FOUND - sunglasses at the cafeteria. Please identify. Carl, Ext. 7905.

FOUND - case for Texas Instruments Mini computer. Ext. 3655.

Services

FIRESIDE CHIMNEY SWEEPS - F/P, stove chimneys; protect against chimney fires, insured. Lab employee discount. 584-6425.

CARPETS INSTALLED - repaired, quick dependable service, free estimates. Jim, 821-0187.

LAWN MAINTENANCE - yard clean ups, rear tines mulching rototilling. Tony, 281-0350.

Ads left out of this issue due to lack of space need not be re-submitted to appear in next week's issue. Please note that ads may not be more than 15 words long and must be received in the Bulletin office by 4:30 p.m. Friday, for inclusion in the following week's Bulletin.