BROOKHAVEN BULLETIN
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BROOKHAVEN NATIONAL LABORATORY

Eye Cancer Treated With I-125

The eye has three coats. The white of the eye, the sclera, is the fibrous protective outer envelope. The inner coat, the retina, receives light. Between the sclera and the retina is the choroid, the pigmented middle layer.

One person per six million per year will develop melanoma of the choroid, a malignant tumor comprised of pigmented middle layer cells. Of the 1500 new cases per year in the U.S., people who at the time of diagnoses have large tumors have about a 50% chance of surviving five years. Though it is an uncommon cancer, choroidal melanoma is the most common ocular malignancy in adults and one of the few diseases of the eye which can lead to death.

In search of a more successful cure for choroidal melanoma, ophthalmologist Samuel Packer divides his time between his laboratory in BNL's Medical Department and his practice at North Shore University Hospital, Manhasset. Using the results of animal research and clinical studies performed at the respective institutions, Packer and his colleagues have established the use of iodine-125 (I-125) as a successful method of irradiating choroidal melanoma.

Prior to his work with I-125 to treat choroidal melanoma, Packer either removed the afflicted eye or used cobalt-60 (Co-60), the most widely utilized source of radiation for treatment of choroidal melanoma. During a one-hour operation requiring general anesthesia, a platinum eye applicator called a plaque, containing Co-60, is positioned over the tumor and attached to the sclera. The eye plaque remains in place for four or five days before it is removed while the patient is under local anesthesia. The tumor does not begin to regress until six months to two years after radiation treatment.

Because Co-60 is a high-energy gamma-ray emitter, normal eye tissues are not shielded by the plaque from radiation which can cause eye and vision damage. As well, the patient must be isolated from others while the plaque is in place. By performing the surgery and dressing changes, the surgeon's hands received a radiation dose significantly greater than the maximum permissable dose for the public.

Peter Horton

Samuel Packer

"I was unhappy with the results from Co-60," says Packer. "Using Co-60, only 25% of the patients retained their vision in the treated eye. A good number of eyes had to be removed anyway because they were destroyed by the radiation."

From discussions with radiologist Marvin Rotman of the Downstate Medical Center, Packer learned that I-125, a low-energy artificial isotope which can be shielded with a minimal thickness of most metals, had become commercially available and was being used for prostate, pulmonary, and other cancers. He decided to compare I-125 to Co-60 in the treatment of choroidal melanoma induced in New Zealand rabbits in controlled experiments at Brookhaven. The local growth characteristics and metastatic pattern of the rabbit choroidal melanoma are similar to those in humans.

Since Packer only comes to the Lab regularly on Mondays and Thursdays, he relied on medical associate Dennis Greenberg to keep an eye on the development of the ocular tumors in his rabbits. "Greenberg would call me on a Friday to say that we'd better operate before Monday or else a tumor would be too big," explains Packer. "We'd both come in that Saturday to get it done on time."

After two years of lab research, Packer's studies showed that the rabbit eyes irradiated with I-125 suffered minimal radiation damage, and their tumors were sterilized. "Whereas the eyes irradiated with Co-60 showed substantial radiation damage, and the melanomas were incompletely treated," he notes. Since I-125 has a higher relative biological efficiency and can be shielded by the eye plaque, Packer concluded from his animal studies that I-125 was superior to Co-60.

Packer then moved this research to North Shore University Hospital where he conducted a clinical trial using I-125 as therapy for consenting patients. "I would explain to my patients that I had treated rabbits with I-125, and I would show them the results from the paper we published," explains Packer. "Though I believed in I-125, some patients didn't go for it, so we used Co-60 plaques in those cases."

Packer no longer offers his patients a choice between Co-60 and I-125 because his five-year clinical study proved what was true in his animal model was true for human beings. "I-125 seeds in a gold plaque allow you to sterilize the tumor while retaining the most vision because I-125 is a low energy source, and because the gold plaque protects the other structures of the eye while 'directing' the radiation at the tumor," explains Packer. The tumor receives about 10,000 rads.

"The complication rate with I-125 seeds in gold plaques is significantly less than that reported with other forms of radiation, despite the fact that we treated larger tumors and followed our patients longer," he adds. About 50% of the patients retain the vision they had before surgery.

Packer, however, does ask his patients to choose between I-125 or removal of the eye because the survival rate after either procedure is the same. "The obvious benefit of using I-125 is that it preserves the eye with as much vision as possible," comments Packer. "However, some patients strongly believe that surgical removal of cancer is more effective treatment than irradiation, so I go along with their wishes."

About a dozen ophthalmologists around the world have had one to three years experience using I-125 therapy. "Ophthamologists have contacted me regarding the procedure, I have invited them to watch the surgery, and they have gone home to use it successfully because it involves standard techniques used by any retinal surgeon," says Packer.

One drawback is that the gold eye plaques, unlike the platinum ones used for Co-60, are not yet commercially available and must be custom-made. After having the plaques made by the BNL machine shop, a jeweler and a dentist, Packer selected a dental lab to manufacture them on a limited basis for his research and practice. Each is made of 14 K to 24 K gold with an outer diameter larger than the visible diameter of the tumor. A plaque costs about $200 and is reusable after being sterilized.

Another disadvantage is that the half life of I-125 is only 60 days so a radiotherapist must place new I-125 seeds in each gold plaque every four months. For this reason, Packer and

(Continued on page 2)

Edge of Ice

Between Greenland and a group of Norwegian islands north of Norway called Spitsbergen, the pack ice of the Arctic Ocean meets the warmer water of the North Atlantic in the Greenland Sea, breaks up into pieces of floating sea ice, and melts. This ice edge is very productive: whales, seals and other animals congregate there to feed. To find out why a marginal ice zone is an Arctic Ocean oasis, biological oceanographer Sharon Smith, Department of Applied Science, has sent her assistants Cathleen Geiger and Peter Lane, DAS, to collect data among the ice floes between Greenland and Spitsbergen.

On June 4th, Lane and Geiger left for Tromsø, Norway, where they boarded the *Polarstern,* a new West German ship which is one of the largest icebreaking research vessels in the world. The two joined eight West German and five other American biological oceanographers and technicians, as well as researchers from other disciplines and other countries. They are involved in MIZEX, Marginal Ice Zone EXperiments, and are investigating ice, air, sea and sea-life interactions.

Smith is one of three MIZEX principal investigators examining the biology of the ice edge. Last summer, one of her collaborators, a biologist from the University of Tennessee, collected samples of microscopic plants and animals from the ice edge; the research vessel from which he worked was pictured on the 4 May 1984 cover of Science.

"Marginal ice zones exist all around the Arctic and Antarctic Oceans," says Smith, "so this is just one of many. But it is unique because it is the main outflow for ice and water from the Arctic Ocean.

"We are asking why the ice edge is so productive," explains Smith. "Our hypothesis is that as the ice melts, it stabilizes the upper part of the ocean. The fresh water from the melting ice is less dense than the sea water, so a freshened layer floats on top of the sea water. The freshened layer is 30 to 50 meters deep, and it traps the microscopic plants near the surface in the sunlight, allowing the phytoplankton to photosynthesize, grow and divide.

"In turn, the phytoplankton are food for the zooplankton, or microscopic animals, which are then food for birds,

(Continued on page 2)

Roger Stoutenburgh

Peter Lane and Cathleen Geiger

Peter Horton

Pat Collins, Under Secretary of the Department of Energy (rear, second from left) spent a day at the Lab on June 22 and was particularly interested in programs on conservation and renewable energy. One of his stops was at the Brookhaven House, accompanied by Department of Applied Science staff: (rear, from left) DAS chairman Bernard Manowitz, Mr. Collins, Thomas O'Hare, DAS associate chairman, Russell Dietz; (foreground) John Andrews, Ralph Jones and Anna Portu, staff assistant to Mr. Collins.

Notes on Nutrition

A sensible approach to nutrition was presented by Dr. Ashok Vaswani in the June 20 seminar of the Employee Wellness Program. Vaswani, who spoke on "Nutrition: Facts and Fallacies," had the following suggestions to make:

- Use Metropolitan Life Insurance tables as an approximate guide to find your ideal body weight.
- Eat 0.8-1 gram of protein daily for every kilogram of your ideal weight. (One pound equals 0.454 kilograms.) Sources for protein include milk, eggs, and meats.
- Use variety in the protein groups that you eat in order to get all essential amino acids.
- Use polyunsaturated fats, such as vegetable oil, rather than saturated fats such as butter, lard or palm oil.
- Broil rather than fry food.
- Drink one to two liters of water daily.
- Increase daily calcium intake from one gram to 1.5 grams after menopause. Sources for calcium include dairy products and green vegetables.

Referring to America's tendency to over-emphasize vitamin and mineral supplements, Vaswani says bluntly, "American urine is the most expensive in the world." According to Vaswani, it is only when you are sick or dieting for a long period of time that you might need supplementary vitamins or minerals. Since your body simply excretes the vitamins and minerals it does not need, most of the supplements are, in fact, wasted, and an excess consumption of vitamins may be toxic. Those who have vitamin or mineral deficiencies will have symptoms which can be confirmed by specific blood tests and then corrected.

—Sally Sargent

Employee Seminar: Physical Fitness

The next employee wellness seminar is scheduled for Thursday, July 19, at noon. Ken Cody, exercise physiologist at North Shore Rehabilitation and Sports Medicine Center, Port Jefferson, will speak on "Physical Fitness: Evaluating Different Exercise Programs." His talk will cover getting started, equipment needed, benefits expected, and problems often encountered in the most popular fitness regimens.

The seminar should be useful for employees who may be considering an exercise program as well as those already exercising regularly. Supervisory approval is required prior to attending.

Cancer (Cont'd)

Ralph Fairchild, Medical Department scientist, are working in the lab with samarium-145, another low-energy isotope which has a one year half life and could be used for two years.

"I-125 is the best form of radiotherapy for intraocular malignancies now available," says Packer, "but it is certainly not the final answer." Continuing his search for a better choroidal melanoma cure, Packer is currently collaborating with guest medical associates Paul Finger and Paul Svitra, and Robert Paglion of RCA Laboratories to develop a hyperthermia device to be used in conjunction with I-125. After the lab work at BNL is completed, Packer will use the device in clinical studies at North Shore University Hospital.

"Our work with I-125 demonstrates one of the strengths of Brookhaven," says Packer, who has been affliated with the Lab since 1972. "BNL is a great place to work on techniques in the lab, and from which to take them into a clinical setting for further study and eventual use."— Marsha Belford

Ice (Cont'd)

fish and baleen whales," continues Smith. "If these plants aren't able to stay in the upper layer of this 3,000 meter deep water, they sink and die from the lack of light."

To test this hypothesis, Geiger and Lane will be measuring upper water layer stability, and collecting plant and animal samples from distinct layers of the ocean. They will observe the feeding, growth and reproduction of microscopic animals. "We are concerned with the lower trophic levels and will stop our research at planktonic animals," says Smith.

"Basically, two microscopic animal communities exist," explains Smith. "The main North Atlantic animal is *Calanus finmarchicus,* which we also find off Long Island. It flows northward with the North Atlantic waters in the West Spitsbergen Current. *Calanus hyperboreus* is the dominant Arctic Ocean animal, and it is carried southward out of the Arctic Ocean with the ice floes. We think that at least one of these two animals lays more eggs in the ice edge than anywhere else.

"Right now all we know are the names of the animals," continues Smith, "and that they seem to reproduce more actively in the ice edge than in the open water or under the ice. Since the number of eggs these microscopic animals produce is a function of the food supply, I suspect the reason for the egg increase at the ice edge is that there is more food there. And when these animals reproduce, they become food for the next level.

"Another possibility is that as the ice melts, algae in the ice are released into the water," adds Smith, "so that is why the ice edge is so productive. We are going to attempt to evaluate that hypothesis by collecting samples of water and ice using a coring device, and comparing their cell numbers and cell types."

Lane and Geiger are also going to float a sediment trap, a series of tubes designed by Gil Rowe, DAS, to see if they can catch algae sinking under the ice floes. Smith wants to know if the phytoplankton community under the ice is the same or different as that coming out of the melting ice, for there is evidence on both sides.

In addition, instruments that measure the amount of light and concentration of microscopic plants will be attached to a meter that measures the speed and direction of the current, and water salinity and temperature over a 600-foot water column. "Where the waters of the North Atlantic and the Arctic meet there are going to be countercurrents," says Smith. "We think that the plants may sink to the countercurrent level and accumulate there."

The ice edge follows the coast line of Greenland, and during this expedition, the *Polarstern* will break sections of ice perpendicular to the edge. Three other research vessels will be sent among the ice floes, and two ships not ice strengthened will be in the North Atlantic water. The *Polarstern* will be moving between the open water and the ice, and several helicopters will shuttle researchers between the vessels and the ice. Lane and Geiger will return on July 19, and Smith anticipates that it will take a year or more to get full results from their work. —Marsha Belford

CREF Values

June	67.12	July	65.43
August	66.13	September	67.02
October	65.95	November	67.06
December	66.84	January	66.50
February	64.21	March	65.37
April	65.34		

May 60.81

Bulletin on Vacation

Because of the holidays on July 4 and 5, the Bulletin will not be published on July 6. However, we will be back on the newsstands July 13.

Pilot on the Ground, Plane in the Air

Since 1979 the "Fun Flyers," as they call themselves, have been flying airplanes at the eastern end of the Laboratory. These planes, however, are somewhat different from those generally seen in the skies — they're miniature aircraft.

The BNL Radio Control Model Aircraft Club's (R/C) 15 members build and fly their own airplanes all year round, weather permitting. Members see it as a great diversion and source of pleasure. "We don't compete," says club president Ken Morton, "we do it for the enjoyment."

Most members build their planes out of kits, usually made of balsa wood or plastic. Depending on the size, Morton estimates that an average kit can cost anywhere between $35 and $150. Construction of the planes range from an A.R.F. — Almost Ready to Fly Kit — which is 90% complete, to the other extreme, starting from scratch.

When built, the planes have a wingspan anywhere from 36 inches to about ten feet, and they require many of the same features as do everyday private aircraft: throttle control, elevators and a rudder.

A typical flight lasts about 15 minutes. The pilot on the ground sends the appropriate commands from a hand-held transmitter to the plane's receiver, and thus activates the craft's movements. The planes run on a mixture of methanol, castor oil and nitromethane.

Morton says that one of the difficulties the ground pilot has is that he can react only to changes he can see in the plane's direction, whereas the air pilot is able to respond to changes he feels as well.

When electronics are summed into the total cost of a plane, figures range from $600 to $700. As a result, members are wary of crashes and midair collisions, and planes are flown with great care. Most crashes are due to batteries dying while in the air, Morton says.

R/C plane flying has come a long way since its inception in the early 1950's. Club vice president Joe Buzzeo recalls that wires used to connect the pilot to the plane when he first started around 1954, and before that, "we used to use rubber bands as far back as I can remember."

Buzzeo has enjoyed working with his hands since he was a youngster, and model planes have been a way for him to continue to keep up with many different hobbies in one: carpentry, painting, electronics and flying. "Building something and seeing the beauty of the finished product is a satisfaction that I enjoy," he says.

R/C flying has grown rapidly over the years, both competitively and recreationally, and annual national conventions have drawn as many as 30,000 hobbyists.

On Wednesday, July 11, the club will put on a static and flying show out on the softball fields at noon. It will be a good introduction to the sport for those who are interested, and members will be on hand to answer questions.

—Maurice DuBois

(Summer Student in the Public Relations Office)

Peter Horton

New R/C Club member Bob Sikora takes his aircraft for a test flight out on the eastern end of the Laboratory. The balsa-wood plane has a wingspan of 68 inches and is powered by a glow-plug engine that is fueled by an alcohol/methane mixture. The plane is less than eight feet away from the camera.

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Service Awards

The following employees received service awards during the month of June:

Thirty-Five Years

Frederick L. Horn .... Nuclear Energy
Andrew W. Sunyar ..... Physics

Thirty Years

Edward Caruso ..... Biology
Charles W. Flood, Jr. ..... S&EP
William J. Ruppert ..... Plant Eng.
Julius Spiro ..... Accelerator
Edward J. Walsh ..... S&ES
Genevieve C. Zaharakis ..... S&M

Twenty-Five Years

Arland L. Carsten ..... Medical
B. Bryan Culwick ..... Light Source
Marion D. Janes ..... P&GA
Andrew Kevey ..... Physics
Ottmar Kistner ..... Physics
Thaddeus F. Kycia ..... Physics
James E. Rutherford ..... Physics
George E. Schwender .... Light Source

Twenty Years

Mulki R. Bhat ..... Nuclear Energy
Stephen C. Biemer ..... Plant Eng.
Lorraine G. Elmore ..... Physics
Susan S. Lamm ..... Biology
Elizabeth A. Pergan .. Applied Science
Louis E. Repeta ..... Accelerator
Benjamin W. Rosen .... Man. Info. Sys.
Susan M. Sevian ..... Applied Math.
Stephen T. Waski, Jr. ..... Plant Eng.

Ten Years

Thomas R. Brown ..... Accelerator
Edward Harmer ..... Central Shops
Margaret J. Matkovich ..... Medical
Morgan May ..... Physics
Raymond V. Moore ..... Plant Eng.
Norman D. Rohrig ..... S&EP
Richard S. Rozensky ... Central Shops
Arthur G. Tingle ..... Nuclear Energy
Randi B. Vogt ..... Reactor
Wolfgang Wulff ..... Nuclear Energy

Acoustics Seminar

William A. Allen, internationally known architect, will speak at an open seminar, sponsored by the Department of Applied Science, on "Acoustical Considerations in Architectural Design." The seminar is scheduled for Thursday, July 12, at 10:30 a.m. in the Hamilton Seminar Room.

A pioneer in acoustical design, Allen conducted considerable research on the acoustics of theaters and concert halls and developed ways of achieving high levels of sound reduction without increasing the weight of the construction. He was a member of the design team of the Royal Festival Hall in London and co-founded the Institute of Acoustics. Allen is also known for his work in illumination and for espousing principles affecting human response over those dealing only with engineering.

He is a founder of Bickerdike Allen Partners, an architectural firm in London. He was recently made an Honorary Fellow of the American Institute of Architecture at ceremonies in Phoenix, Arizona.

Arrivals & Departures

Arrivals

Richard R. Allard ..... Accelerator
Robert N. Best ..... NSLS
Abbie G. Freeman ..... Biology
Ramon J. Jarazo ..... Plant Eng.

Departures

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

David P. Belanger ..... Physics

Peter Horton

A reception was held on June 15 in the Physics Department for members of the staff observing recent BNL anniversaries. Front (L): Ted Kycia (25 years), Morgan May (10 years), Carolyn Albert (20 years), Rae Greenberg (12 years), Donald Tuttle (35 years), Edward DerMateosian (35 years); Rear (L): Richard Lorenz (25 years), Lawrence Littenberg (10 years), Joseph Scheliga (30 years), Irving Feigenbaum (35 years), Andy Sunyar (35 years), Otto Kistner (25 years) and James Rutherford (25 years). Absent from photo: Andy Kevey (25 years), Vic Emery (20 years), William Lenz, Sr. (20 years), Lorraine Elmore (20 years), and William Dieffenbach (10 years).

NYC Train Trips

The Hospitality Committee is planning the following group railroad trips to the city in the next few weeks.

Date of Trip:	Fare must be received by:
Saturday, July 7	Friday, July 6
Wednesday, July 11	Friday, July 6
Wednesday, July 18	Thursday, July 12

The train for the Saturday trip leaves at 8:31 a.m. The round-trip fare is $6.50. Reservations will be accepted on a first-come, first-served basis.

The train for the Wednesday trips leaves at 7:55 a.m. The round-trip fare is $5.00. Refunds will be made only if cancellations are received by the Monday morning preceding the trip.

Children under five years ride free. All departures are from the Patchogue LIRR station. To reserve a ticket, send your fare through the U.S. mail to BNL, P.O. Box 322, Upton, NY 11973. Checks or money orders should be made payable to BNL. Do not send cash. Put the date of your trip, your telephone number and BNL life number on the check. Tickets will be given to you on the train.

Specials For Summer Visitors

Roller Skating: July 12, 7:30 p.m. Skating party — free transportation to rink. $5.00, paid in advance, includes admission, skate rental, wine and cheese. Deadline for bus reservations — July 5.

Hershey Park, Hershey, Pa., August 11, 7:00 a.m. Price $30 — includes transportation, admission to park, snacks and soft beverages. Limited seats, money due on or before July 20.

For further information, contact Renee Flack or Alethea Futch, Ext. 3316, Bldg. 460.

T-Shirts — white with blue printing. Cost $5, cash or money order. Send to Renee Flack — T shirts '84, Bldg. 460 (Ext. 3316).

PC User Meeting

The PC/Workstation User Group will meet on July 10 at 10:30 a.m. in the Applied Math Seminar Room. The topic will be "Advanced Concepts in the Use of LOTUS." For information, call Kurt Fuchel on Ext. 4116.

Hospitality News

The Hospitality Committee's next morning get-together will be on Tuesday, July 3, from 9:30 to 11:30 a.m. at the Brookhaven Center. A formal program will not be presented in order that the time may be spent in meeting newcomers and visitors to the Laboratory and greeting old friends.

Wives of employees and guests are welcome. Please come and bring the children. Babysitting will be provided free of charge. Coffee, tea and danish will be served.

Vanderbilt Viewings

The Vanderbilt Museum, Historic House and Planetarium at 180 Little Neck Rd, Centerport, hosts many events designed to be of interest to the general public. Here are some of the programs on view this summer.

July 3 — Sept. 3 Sky Theater, "Return to the Moon," Apollo moon-landing celebration, and "Worlds of Voyager," travels to Jupiter and Saturn. Tues. 3 p.m.; Wed. and Fri. 1, 3, 8 p.m.; Thurs. 3, 8 p.m.; Sat. 2, 4, 8 p.m.; Sun. 1, 2:30, 4 p.m. $2.50 adults, $2 children/seniors.

July 3 — July 31 Sky Theater, "Star Dreams," for pre-school children and their families. Tues., Thurs., Sat. at 11 a.m. Tickets are $2.

July 3 — July 31 Sky Theater, "Life Elsewhere." Explore the fascinating microcosm and macrocosm that combine to form our universe. For children 12 and under, 1 p.m. Tickets are $2.

July 9 — Aug. 31 Summer Nature Workshops for Children, investigating birds, animals, the moon and the stars. Two-day workshops in both July and August, each for ages 5-6, 7-9, or 10-12. Limited tickets, are on a first-come, first-served basis — $10 for non-members, $8 members. Call 261-5656 for further information.

July 13 Sky Theater, "Return to the Moon," and tour the Planetarium studios and shops with the staff. 8:30 in the Planetarium, $2.50 adults, $2 children, free to members.

July 13 — July 29 Planetarium, "Apollo Celebration." Celebration of man's first moon landing 15 years ago this year. Hands-on workshops with lunar and meteorite samples, a lunar rock display, historic NASA Mercury, Gemini, and Apollo films, and Grumman lunar speakers. 10-4 Tues.-Sat., 12-5 Sun.; for details, call 757-7500.

Diners Note

The cafeteria will be open only from 9 a.m. until 2 p.m. on Saturday, Sunday, Wednesday and Thursday, June 30, July 1, 4 and 5.

The Center Club will be closed on Wednesday, July 4, reopening Thursday, July 5 at 5 p.m.

The vended food service in Bldg. 912 will be in continuous operation.

Cafeteria Menu

Week Ending July 5

Monday, July 2

Cream of tomato soup	(cup)	.65
	(bowl)	.85
London broil w/mushroom gravy & 1 veg.		2.20
Taco platter w/mixed fried rice		1.90
Hot Deli — Chicken patty club	(bread)	2.15
	(roll)	2.30

Tuesday, July 3

Vegetable beef soup	(cup)	.65
	(bowl)	.85
Chicken fingers & fries		1.95
Broiled fish fillet & 1 veg.		1.85
Hot Deli — Chili dogs		2.00

Wednesday, July 4
Snack Bar Service — 9:00 a.m. — 2:00 p.m.

Thursday, July 5
Snack Bar Service — 9:00 a.m. — 2:00 p.m.

Friday, July 6
Pot Luck — Various prices

—BERA News—

Softball

Games for week of June 18

League I
Blue Jays 16 — Ice Pops 2
Six Pax 12 — Moles 9
Ravens 19 — Phoubars 3
Renames vs. Big Sticks
No score reported
Makeup of rained-out game
Phoubars 7 — Moles 5

League II
Magnuts 20 — Random Errors 2
Dirty Sox 8 — Medical 7
Lights Out vs. Faze II
No score reported
Titans vs. Scram
No score reported
Makeup of rained-out games
Magnuts 6 — Titans 4
Dirty Sox 14 — Lights Out 10

League III
Survivors vs. No Names
Game rained out
E-Z Riders vs. Nads
No score reported
Farm Team vs. Source
No score reported

League IV
TNT vs. Turkeys
Game rained out
Septembers 14 — Mole-Esters 13
Kidz-R-Us 9 — Underalls 8

League V
Space Kadets vs. Mudville Sluggers
Game rained out
No Feedback 9 — Who Cares 5
Foul-Ups 21 — Erasers 7
Makeup of rained-out game
Who Cares 26 — Erasers 5

Golf

The fourth tournament of the BGA season will be held on Monday, July 16, at the Indian Island Suffolk County Golf Course in Riverhead. Tee times may be obtained by contacting George Speidell, Exg. 2022 (Bldg. 912). There is a $1 entry fee for BGA members; $2 for non-members. Greens fee for Suffolk County residents is $6.50, with proof of residency.

Sixty-one golfers braved the weather to play in the third tournament held at Timber Point. The winners of the gross Stableford competition were: Flight A — Doug Sweely, Flight B — Bob Gallagher and Flight C — Marshall Elzinga. The winners of the net Stableford competition were: Flight A — Bill Laws, Flight B — Art Dick and Flight C — Bob Ritter. Les Lawrence won the long drive contest and Dick Hildenbrand won the closest to the pin contest.

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. 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 Personnel Placement Supervisor, Ext. 2882.

OPEN RECRUITMENT - Opportunities for Laboratory employees and outside applicants.

2082. REFRIGERATION AND A/C ENGINEER -Requires substantial experience troubleshooting, repairing, installing and operating commercial/industrial air-conditioning and refrigeration equipment including steam absorption, centrifugal and helical screw refrigeration machines. Successful completion of refrigeration and A/C apprenticeship program or related course work is highly desirable. Must be available to work shifts as required. Plant Engineering Division.

Autos & Auto Supplies

74 MUSTANG - 4 cyl., 4 spd., 2 dr. sedan, good transportation, body rust, $500. 924-5533, Ext. 214 weekdays or 286-4605.

78 KAWASAKI KZ400 - 14K, saddle seat, roll bar, rack, recent tune up & serviced, new battery, tires, chain & sprockets, asking $950. Ext. 7148 at noon.

74 CAMARO - w/rebuilt 1977 350 CI, blue, p/s, p/b, a/c, am/fm, $2,500. 732-8768.

1981 SUBARU DL WAGON - am/fm stereo cassette, new clutch, 77,000 mi., excel. cond. 928-6921.

75 CHEVY NOVA - 2 dr. hatchback, $1,495. 727-1324 after 6 p.m.

77 OSSA MOUNTAINER - 350 cc, good cond., white, $750. Tony, Ext. 4605 or 281-0336 after 8 p.m.

75 MGB - convertible, am/fm 8-track, 80K mi., fine shape, $2,600. John, Ext. 7671.

82 OMNI DELUXE - 2-tone, 4 dr., auto., radio, roof rack, low mi. w/Dodge guarantee, $4,500. 331-9572 after 4 p.m.

75 PONTIAC ASTRE - while, auto., am/fm cassette, 22 mpg, low mi., excel. cond., $1,000. 289-1449.

78 HONDA MOTORCYCLE - CB550F, 14,000 mi., many extras, excel. cond., $950. George, Ext. 7654.

77 BUICK CENTURY - V6, excel. cond., 4 dr., asking $2,500. Frank, 929-8317.

77 MERCURY MARQUIS BROUGHAM - all power, a/c, cruise control, am/fm, CB radio, $2,000. Lorraine, 548-3885.

80 TOYOTA CELICA - 5 spd., a/c, am/fm, cassette, sunroof, $5,000. Ext. 5024 or 369-0478.

80 KAWASAKI MOTORCYCLE - 650 LTD, red, crash bars, excel. cond., must sell, $1,200. Bob Johnson, 475-2305 or 283-4741.

74 MUSTANG - 4 spd., 6 cyl., am/fm, fair cond. 744-6668 after 6 p.m.

73 CADDY - 2 dr., am/fm, a/c, 8 cyl., good cond., extras, $850. 727-0560 after 5 p.m.

69 OLDS CUTLASS - runs well, serious rust, good tires, $250. 286-3675.

81 CHEVY VAN - black, 8 cyl., std. shift, 3 spd., 44,000 miles, am/fm cassette, $5,300. Ed, 878-0992.

73 VW STATION WAGON - some rust, runs well, $600; 71 Caddy, 4 dr., sedan, good cond., $700 firm. Ext. 3942 or 727-1412.

67 CADILLAC - all power, mech. good, needs muffler, body fair, $200. Ext. 3828 or 751-7250.

81 HONDA LX - 5 spd., stereo, a/c, hatchback, excel. cond. Bob, 589-6151.

75 TOYOTA COROLLA - runs well, rusted, $400. Ext. 7977 or 744-2461 after 3 p.m.

72 OPEL WAGON - 120 K, standard, needs muffler, $300 negotiable. 727-1789 eves.

82 SUZUKI - GS750T, like new, must be seen, low mi., $2,000. Paul, 475-7243 days, or Ext. 3305 after midnight.

76 COROLLA WAGON - 5 spd., clean, good transportation, trailer hitch, radio, a/c, $1,450. 286-0259.

76 OLDS OMEGA - 4 dr., a/c, low mi., asking, $2,250, excel. cond. Kevin, 567-6651.

81 KAWASAKI - 440 LTD, 8,000 mi., w/'82 motor, 100 mi., $1,000. Carl, 744-2069.

81 HARLEY DAVIDSON - 1000 cc, Sportster, very low mi., like new. 929-3455.

64 MUSTANG - white, new interior, 6 cyl., auto., very good cond., $2,500. Chris, 369-2272.

77 TOYOTA COROLLA - 108,000 miles, a/t, good running cond., $1,400. 472-4871 after 6 p.m.

TIRES - C78-13, excel. cond., $40/pr. Susan, Ext. 4267.

MOTORCYCLE SISSY BARS - padded backrests, $10/ea.; misc. Honda 450 and 500 Twin parts. Frank, Ext. 2022 or 399-4480.

TIRES - (4) Bridgestone, HR-78-15, mud & snow steel belted radials on white spoke rims, excel. cond., best offer. Jerry, Ext. 2907.

71 SPORTABOUT AMC - $350. 732-7288.

79 FIAT 124 SPYDER 2000 - conv., 5 spd., am/fm stereo, asking $3,950. Ext. 5182 or 924-5513.

83 HONDA NIGHTHAWK - 650 cc, 2,000 mi., mint cond. Tina, 821-9111 eves.

82 CHEVY CHEVETTE - 2 dr., straight shift, excel. cond., 30,000 mi., $3,795. Ext. 5271 or 286-9725 after 6 p.m.

69 TOYOTA WAGON - inspectable, runs well, new brakes, radials, exhaust, struts, starter, $350. Dave, 282-4254.

TRAILER HITCH - 82 Camaro/Firebird, 2,000 lbs., receiver type, includes ball and chrome cap. Larry, Ext. 3515.

74 AUDI FOX - 4 dr., auto., new battery, tires, runs well, 71,000 mi., rusty, $400. 751-8240.

68 VW BUG - runs; 69 VW BUG for parts. Ext. 4938.

75 CHEVY MALIBU CLASSIC - wagon, 4 dr., clean, 83K, $1,200. Ext. 7144.

71 TORINO - p/s, V8, 2 dr., h.t., runs well, w/2 snows on rims, $400. Cesar, Ext. 4077.

79 CHEVY IMPALA - a/c, p/s, p/b, am/fm, $3,500. John, 475-3614.

78 SILVER ANV. CORVETTE - black, white int., p/s, p/b, a/c, t-roof, $11,300. Jack, 757-1380.

76 VW RABBIT - high mi., needs minor work. 821-0692 after 6 p.m.

79 MERCURY MONARCH - a/c, am/fm radio, 4 dr., good cond., green, asking $1,800. 475-7250.

75 HONDA MOTORCYCLE - CB200T, excel. cond., hardly used, great gas, $400. Ext. 2705 or 286-2964 eves.

76 CHEVY NOVA - excel. mech. cond., 65K mi. Ext. 2073 or 928-8071.

81 KAWASAKI 650 - $850; Starcraft trailer, pop up, sleeps 6, $950. Jack, 757-1380.

78 CHRYSLER LeBARON - p/s, p/b, a/c, am/fm radio, loaded w/extras, $2,800. 234-7307.

Boats & Marine Supplies

16' STARCRAFT - 1982, aluminum boat, 1982 25 HP Mercury, 1982 Highlander trailer, many extras, $2,100. 821-0080.

WINDSURFER SAILRIDER - good cond., $350. 282-4187.

11' ROW BOAT - wood, good cond., asking $125. Ext. 7148.

15' SEASPRITE - 1982, 1983 35 HP Johnson, 1983 Shoreline E-Z Load trailer, excel. cond., asking $3,800. 331-9424.

28' OWENS - sleeps 4, sink, ice box, stand-up head, new 1983 canvas & hard top, very good cond., 327 cu. in., needs minor work, asking $3,000. Ext. 7148 noon.

MARINER OUTBOARD - 1981, 48 HP, very good cond., $1,100. 653-5306 or 653-9017.

MERCURY OUTBOARD - remote shift & throttle contol w/2 sets of Telex cables, $25. Ext. 2423.

15' FIBERGLASS BOAT - w/25 HP Johnson, very good cond, $1,000. Ext. 3604 or 878-0516 after 5:30 p.m.

27' BRISTOL - excel. cond., new 10 HP Evinrude, four sails, fathometer, full keel, $13,500. Bill, Ext. 2108.

CLAMRAKE - 18 tooth, t-handle, $30. Bill, Ext. 2050 or 281-0557.

MERCURY OUTBOARD - shift and throttle, remote control, w/2 sets Telex cables, $25. Ext. 2423.

TIRE & WHEEL - for boat trailer, 5.30-12, new, never used, $30. Joe, Ext. 2575.

Miscellaneous

DINING ROOM TABLE - walnut w/pads & leaves, $100; bedroom dresser vanity & night table, antique, $170. 286-8517.

UTILITY CABINETS - (2) metal, 72" tall, $25; chest of drawers, painted, $20; large black vinyl swivel chair, $10. 878-6637.

BICYCLES - (2) Schwinn Suburban, 27", 1 male, 1 female, perfect cond. 589-3608.

DRILL MOTOR - Black & Decker, 1/2", 375 RPM w/1-16"-1/2" drills & index, asking $50. Katherine, 281-8021.

SPLASHER POOL - 3', Coleco filter, ladder, used 2 yrs., excel. cond., $50. Tom, 286-1899 after 6 p.m.

RUG - beige, nylon, jute backing w/pad, 11' x 11', $10. Gordon, Ext. 4095.

DOOR LOCK - double cylinder, jimmy proof, complete hardware, instructions, $15. Jag, Ext. 5080.

MARQUIS DIAMOND RING - 2 baguettes, total 1.0 pt., appraised at $3,125, asking $2,400. Mary Ann, 286-2435.

STEAM JENNY - commercial type, very good cond., $250. Tony, Ext. 4605 or 281-0336 after 8 p.m.

POOL - 12' x 18', oval, motor, pump, sand filter, ss tank, $250 or best offer. Bob, Ext. 5016.

FUJICA CAMERA - ST701, 35 mm, SLR w/50 mm, 1.8 lens & ac/batt., electronic flash, $95. Ext. 2168 or 744-7679.

CONSOLE STEREO - Telefinken, am/fm/sw, record player, solid wood, 27" x 50" x 17", good working cond., $150. 286-9510.

CULLIGAN WATER SYSTEM - Mark 49, iron filter & neutralizer tanks, auto. cleaning, 3 yrs. old. Ext. 4576 or 281-3093.

GIRL'S BICYCLE - Schwinn, 20", banana seat, $45; aluminum storm & screen door, 32-1/2" x 80-1/4", $20. Ext. 4532.

BEDROOM - vintage 1950's, mahogany, triple dresser, chest, 2 nightstands, headboard, must see, $350. 751-1562.

WOMEN'S BICYCLE - Huffy, 3 spd., $25. Ext. 2423.

LAWNMOWER - rear bagger, self propelled, new, 1980, used 2 seasons, $110. Joe, Ext. 2975.

PARAKEET - & wooden cage, $10. Anita, Ext. 3630.

MARATHON POOL - 18' x 48', filter, motor, ladder, vacuum, leaf bagger, etc., asking $500. 878-0516.

BASEBOARD HEATING - 25' slant fin, all or any part, $2/ft.; GE 100 amp breaker box, $20. Ext. 4532.

COLONIAL ACCENT PIECES - planter; glass and wood centerpiece; mirrors; pitcher/bowl; lamp w/globes, all reasonble. Jody, Ext. 2907 or 654-9094 after 8:00 p.m.

BONTEMPI ELECTRIC ORGAN - single keyboard, w/bench and music, $125; (2) antique dressers and night tables, $160. 286-8517.

GE ELECTRIC DRYER - 18 lb. heavy duty, excel. cond., $140, 751-0061.

FISHING ROD - 9' Olympic, w/Mitchell salt water reel, asking $35. Glenn, Ext. 3336 or 472-1419.

VIOLIN - 1/4 size, Suzuki made, case and bow, $150; tape recorder, Tandberg model 64, 1/4 track, open reel deck, $200. Ext. 3828 or 751-7250.

KENMORE MICROWAVE - large capacity, $225; Farberware Convection, $125; Nordkware Micro Carousel, $25, all excel. cond. 929-8443.

GE CLOTHES DRYER - electric, new coils and belt, works great, $50. 475-6938.

KOEHLER SOFA - 4 seat, floral pattern, soil resistant, excel. cond., $150. 363-2070 eves.

BUNK BEDS - mattresses included, $80. 286-1169 eves.

CUISINART FOOD PROCESSOR - model Dlc-10E, used four times, four attachments included, $65 firm. Aug, Ext. 2898 or 363-7620.

TECHNICS CASSETTE DECK - RS-M224 Dolby NR system, metal tape, brand new, box never opened, $125. Bob, Ext. 4656 or 928-1806.

TWIN BEDS - solid oak w/bookshelf, headboard; club chair w/ottoman; oak and glass book shelves. 751-4234.

FARBERWARE CONVECTION - turbo oven, self clean, $100; 20 gal. aquarium, all accessories, heat, pump, filter, cover w/light, $45; Tandem bicycle, $115. Aug, Ext. 2898 or 363-7620.

DINING ROOM TABLE - walnut w/leaves & pads, $100; upholstered swivel chair, red, $35; lobster pots, standard, 6/$65. 286-8517.

BOX SPRINGS - (3) twin bed size, good and clean, $10/ea. Ext. 3589.

GE REFRIGERATOR/FREEZER - self-defrosting, seven years old, excel. cond., $350. Lois, Ext. 2959 or 751-0023.

DRAPERIES - lined, 2 pr., 144" and 132", gold and green print, $20/ea.; motorcycle dungarees, padded 32" waist, never worn, $10; walnut dining rm. hutch, $75. Ron, Ext. 7696 or 289-1003.

WINDOW TREATMENTS - vertical blinds, mini-blinds, wovenwood shades, custom colors and sizes. Jim Griffin, 281-2849.

SKY KENNEL - small size. Al Campbell, Ext. 2043.

VIOLIN - fifty years old, German made, $900. 744-3744.

PORTABLE COLOR TV - needs minor work, $50; Singer sewing machine w/cabinate (circa 1940), $50. 744-5752.

TODDLER SHOES - and sandles, never used, sizes 4, 5 & 6, $1.50/pr. Chandra, 924-0582.

KENMORE WASHER & DRYER - heavy duty, good cond., $100/ea.; sleep lounge, $75. Diana, Ext. 2108.

COMPUTER - Texas Instrument, 99/4A software and joysticks included. Ext. 3392 or 475-8330.

REFRIGERATOR - 10 cu. ft., white, excel. cond., $150. 924-0813.

HONEY - local wild flowers, unfiltered, unheated spring flow, will deliver to BNL, $1.75 lb. George, 744-3289.

PVC DARKROOM SINK - 72" x 27", splashboard, print drying racks, cabinet underneath, excel. cond., $250. 732-6822.

BICYCLE - Huffy, women's 3 spd., $25. Ext. 2473.

WINDOW FAN - 20", excel. cond., $15. Ext. 4341 or 475-4005.

DINING CHAIRS - (2) Nichols and Stone ladder-back, black w/gold stenciling, rush seats, $75/ea., Aug, Ext. 2898 or 363-7620.

HI-RISER - w/head and footboard, $100; end tables, Mediterranean style, $90/pr. 289-5607.

JR DINING ROOM SET - Medit. country, $275; portable washer, $150. 399-6684.

Yard Sales

CENTER MORICHES - group yard sale, 6/29-7/1, large variety of everything, 71 Belleview Ave., 9-4 p.m.

SHOREHAM - Jomar area, June 29, until everything goes. 821-0080.

WADING RIVER - community yard sale, Bayberry Rd., June 30, Sat.-Sun. 929-8287.

CENTER MORICHES - 6/30, Hewitt Blvd., 10-5, assorted items.

WADING RIVER - Quail Hollow, Manor Road, Sat. & Sun., June 30 and July 1.

Car Pools

BELLPORT - individuals needed to increase 2 person carpool, 8:30 to 5:00 p.m. George, Ext. 7654.

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

SHOREHAM - waterfront, woodsy, garden setting, 5 room house w/big porch overlooking water. 744-9749 or Box 609, Shoreham.

STONY BROOK - 4 bdrms., two full baths, cape, w/w, new floor, Three Village School district, walk to University, reduced to $104,000. 689-9409 eves.

MILLER PLACE - 4 bdrms. colonial, formal l/r, d/r, country kitchen, family rm., w/brick fireplace, .9 acre, $158,000. 331-1718.

CORAM - Birchwood at Bretton Woods, condo, Dalton, 3 bdrms., den, formal d/r, 1-1/2 baths, patio, 1/2 block to clubhouse, gas heat, central air, many extras. 732-6822.

WOODSTOCK, CONN. - lake front cottage, 2 bdrms., $24,000, will hold mort. if interested. Jack, 757-1380.

POQUOTT - builder's home, on mini estate, 4 bdrms., 3 patios, basement and oversized garage, plus carport, oak flooring, mahoghany panelling and flagstone family room. Ext. 3480.

For Rent

S. JAMESPORT - cozy house in country setting, 3 bdrms., l/r, kit., d/r, utility rm., walk to beach, 20 miles from Lab., avail. Sept. 1, $400/mo., plus utilities, (no pets). Walt, Ext. 2907 or 698-0576 eves.

SHOREHAM NORTH - 4 bdrms., colonial, 3 baths, washer/dryer, den, fireplace, all carpeted, garage, lg. property, avail. immed., $1,250/inc. all. 744-8659.

GORDON HEIGHTS - furn., 1 bdrm., private, utilities incl., security, references, must see. Ext. 3316 or 698-1362 after 5:30 p.m.

HOLBROOK - immaculate, quiet, lg. furn. rm., private entry, 20 min. from Lab., $195/mo. incl. all plus 1 mo. security. 467-2859.

RIDGE - 2 bdrm., townhouse, 1-1/2 bath, washer/dryer, dishwasher, no pets, preferably no children, avail. Aug. 15, $550/mo. plus util. Betsy, Ext. 5182 or 924-5513.

MIDDLE ISLAND - Artist Lake, 2 bdrm. apt., immed. occup., central a/c, washer & dryer, dishwasher, swim pool, tennis courts, $625/mo. inc. heat & gas stove. 654-2303 or 286-2339 after 5 p.m.

Wanted

RIDING LAWN MOWER - 8 HP or larger. Jack, 757-1380.

HOUSE TO SIT - free, responsible, caring, any period, any duration, July 30 to Nov. 1. J. Allentuck, Ext. 2412.

CAMPING ITEMS - lantern, bug tent, tarp, etc. Dan, Ext. 2319 or 938-3051.

GOLF CLUBS & BAG - used, right-hand, reasonably priced. R. Dietz, Ext. 3059 or 744-7242.

JOURNAL OF PHYSICAL CHEMISTRY - Volumes 73 to 82, for donation to college library. Judy, 876-3046.

GOOD HOME FOR KITTENS - orange/white/tan; grey, tiger, males. Lois, Ext. 2959 or 751-0023.

TUBE KEY - that might fit old wooden tool chest. Ext. 3565.

MARINE BAND UHF - ok cb radio, good used compass. Frank, Ext. 2022 or 399-4480.

390 FORD ENGINE - will buy whole car if engine is in good running cond. Betty, Ext. 3681.

COMPOUND LIGHT MICROSCOPE - suitable for veterinary school, 3.5x, 10x, 40x, 97x, lenses. 286-9450 after 6 p.m.

Free

FIREWOOD - you cut you take. 281-7844.

REFRIGERATOR - works, 1953 vintage, must pickup, located in Sound Beach. 744-5871.

Classified Ad Policy

Deadline is 4:30 p.m. Friday for publication Friday of the following week.

1. The Brookhaven Bulletin's classified section may be used only by active and retired Laboratory employees.
2. All items for sale or rent must be the advertiser's property.
3. Ads for material acquired for resale in association with a full or part-time business cannot be accepted.
4. Ads for the sale or trade of firearms will not be accepted.
5. Ads not carried because of space restrictions will be held for publication in the next issue.
6. Ads are run only once and must be resubmitted if they are to be repeated. One ad per person per week.
7. **Property for sale or rent cannot be accepted on this form. Special Real Estate Ad Forms are available at the office of the Brookhaven Bulletin, Building 134.**

☐ For Sale: Autos & Auto Supplies
☐ For Sale: Boats & Marine Supplies
☐ For Sale: Miscellaneous
☐ Car Pools
☐ Lost & Found
☐ Wanted
☐ Free
☐ _____

Please print your ad below in 15 words or less using one word per block. Include name and phone number to call.

Note: The following must be completed for your ad to appear.

NAME (Please Print) .....

Employee's Signature ..... Life No. ..... Ext. .....

Send to: Brookhaven Bulletin, Building 134 (Ext. 2345).

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