

## Carbon Monoxide: Future Resource?

Carbon monoxide all too often makes the news as a killer of unsuspecting victims who pass out in closed garages with a car engine running. But another view of this deadly poison is taken by the catalysis group in BNL's Department of Energy and Environment. Scientists there propose that future fuels and chemicals in the U.S. will be derived from carbon monoxide, which can be converted, with the proper catalysts, to virtually any organic commodity, from methane to margarine.

Why carbon monoxide? It can be readily derived from coal, and this country has abundant, long-term reserves of coal.

Presently, the common way to derive carbon monoxide from coal is by a method called gasification. Coal is reacted with oxygen and water to form carbon monoxide and hydrogen. The process, however, is affected by variability in ash components in coals and in reactive differences due to oxygen and volatile contents.

The BNL catalysis group proposes an alternative to conventional gasification, a process in which coal is reacted with oxygen to make primarily carbon monoxide. Note the difference between this and gasification: water is not used in the initial reaction, and only a very small amount of hydrogen is produced with the carbon monoxide. Scientists in the group feel that this producer reaction has possible cost advantages in addition to having the potential for making carbon monoxide in large amounts more rapidly than current gasifiers.

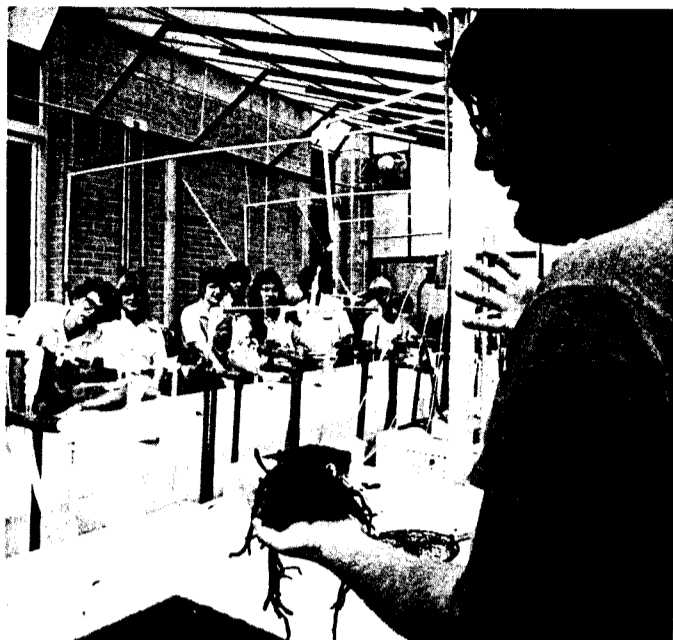
The simple devices which accomplish this reaction, called producers, have been known for well over two centuries and were widely used decades ago for such diverse applications as the production of town gas, powering automobiles and in the refining of metal ores. The catalysis group is interested in reviving this process, in the context of future economics and demands.

Carbon monoxide is already commercially important in the manufacture of many important materials, including fabrics, fertilizers, insulation and plastics. Looking ahead, perhaps the most significant use of carbon monoxide will be the synthesis of methanol, which can be used as a clean liquid fuel and a fuel additive. Methanol can also be used to produce high octane gasoline, it can be transformed into polymers and olefins, and it is a key chemical intermediate, such as in the synthesis of esters, formaldehyde, acetic acid and higher alcohols.

The BNL catalysis group believes that almost all demands for fuels and petrochemicals can be met with small advances in the existing coal-based technology. They also feel that the best way to successfully substitute coal for gas and petroleum is to convert it first to simple carbon monoxide molecules. Besides working on efficient ways to do that, the scientists are also developing new catalysts to use in the reactions of carbon monoxide with water to produce valuable materials. If the group is successful, the resource of the future may indeed prove to be carbon monoxide.



James Egan, DEE, explains the operation of a high temperature calorimeter to David Brinley and his sister Terri. The Brinleys, from Ogden, Utah, conducted a three part study on storing solar energy using eutectic salts.



Assistant Research Scientist at Stony Brook's Marine Science Center, Dennis Hanisak, explains the properties and uses of seaweed to winners of the special DOE Awards.

Doug Humphrey

## Cream Of The Crop At BNL

The energy crisis becomes a more serious issue every day as we continue to use valuable natural resources to satisfy our energy needs. While some of us fret over how we will heat our homes and run our cars in the future, others are doing something about it.

Ten of those others are students between the ages of 17 and 19 who were selected as winners of a special Department of Energy award at the International Science and Energy Fair in Milwaukee, May 11-14. The winners and their sponsors have been here at BNL this past week for an all expense paid energy research orientation session.

Of the 482 projects entered, ten percent were energy related. These students were selected from that group and judged on the scientific excellence and educational value of their projects. Their understanding of relevant science and technology was probed during interviews with the DOE judges.

R.C. Anderson and Glenn Price, who were among the 11 judges for the special DOE awards, greeted the students on Monday. After seeing "Brookhaven's Quest," the group spent the rest of the day touring BNL's different departments.

Iris Terashima, who arrived late from Hawaii due to the air traffic controllers' strike, has found that it's a small world. Her project, which was prompted by concern over the dying sugar cane industry in her state, utilized the plant as a starting material for the efficient production of ethanol as an alternate energy source. Iris won four additional awards for her work and has consequently met people all over the U.S. in her travels. She plans to attend Northwestern University in the fall for chemical engineering.

Andrea Smith from Bluefield, West Virginia, was impressed with the Brookhaven house, which the group visited Monday afternoon. Her project, "Let the Sunshine in but Don't Let the Heat Out," was a study of optimum heating between storm window panes. "I like to look out of windows because the view is beautiful," she said "but I also like to be warm in the winter."

The following day's activities included a tour of the Shoreham nuclear power plant, a trip to Stony Brook's Marine Science Center, and dinner in

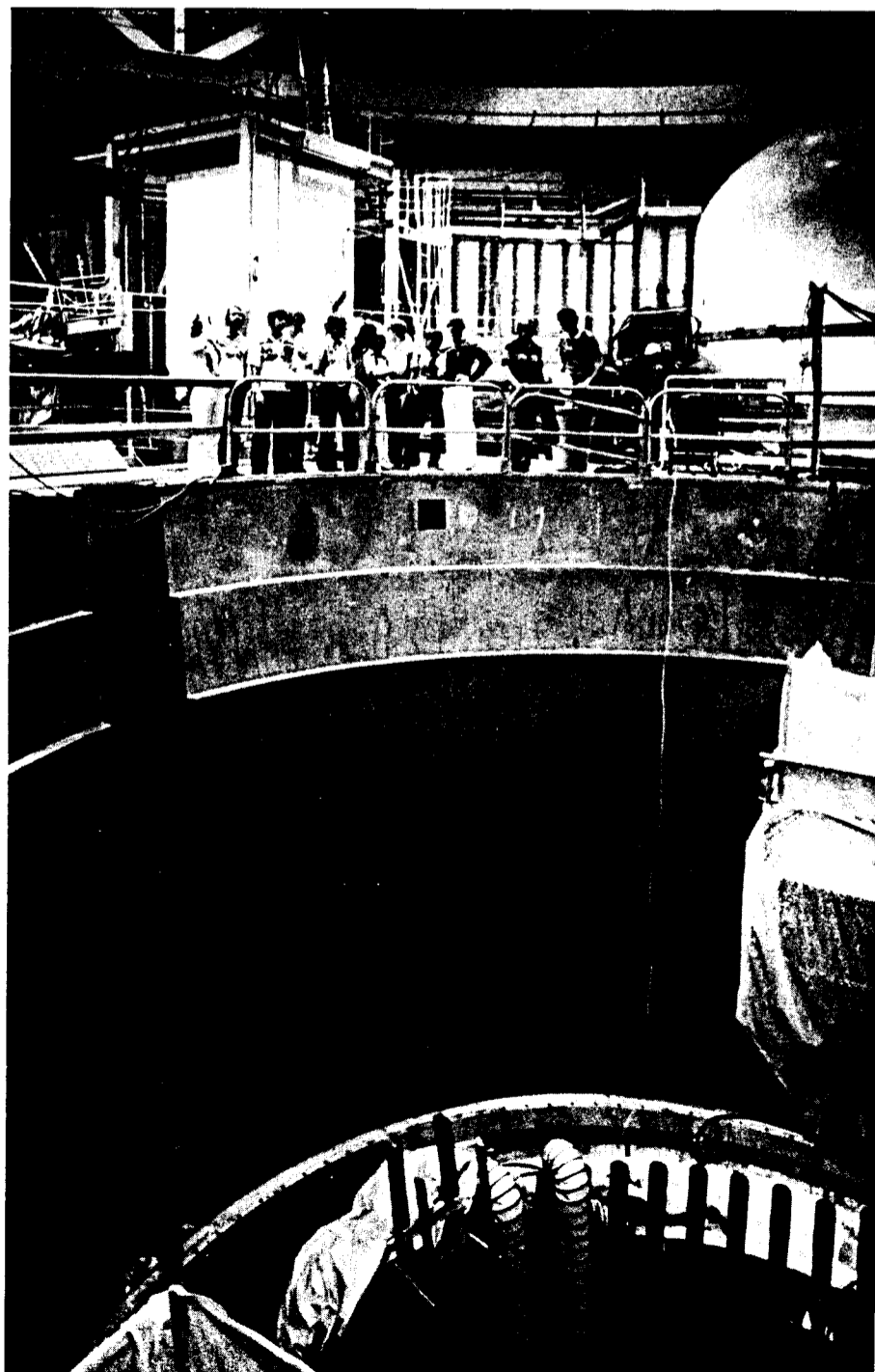
Port Jefferson followed by a show at the Vanderbilt Planetarium.

At the Shoreham plant, students from the southern states such as Mark Wilson from Andrews, Texas, expressed their surprise at how much Long Islanders pay to heat their homes. Mark's experiment dealt with enhancing alcohol production by vitamin stimulation of the fermenta-

tion process. He will derive mathematical equations to expand on his theory at Texas A.&M. next year.

Heat conservation was the theme of Neill Germann's project. His "Linear Tracking Thermostat" keeps an electrical heating element on constantly, but at a reduced rate which varies proportionally to temperature

(Continued on page 2)



The bright young scientists gaze into the cavity which will house the nuclear "boiler" at Shoreham's nuclear power plant.

Doug Humphrey

**Sunday Tours**  
10 a.m. - 3 p.m.  
Through August 30

## Equipment Demo

A multichannel analyzer equipment and application demonstration will be held Wednesday and Thursday, August 19 and 20, from 10 a.m. to 4 p.m. in Rooms B and C of Berkner Hall. Sponsored by the scientific instrument service group in the Instrumentation Division, the comprehensive, two-day demonstration will be given by all the manufacturers in the field: Canberra, Davidson, FFT, Lecroy, MCS, Norland Inotech, Nuclear Data, ORTEC, PHA, SIG-AVG, and Tractor Northern. For additional information, call Tom Stuart, Ext. 4227.

## Young Scientists (Cont'd)

changes. "I wanted to lower the heating bill in my house," said the Ohioan. "With this device, a well insulated house can save the owner 16-18 percent on heating bills with a power savings of 4-10 percent." Neill plans to continue work on this project at Ohio Northern University.

Still a bit sore from an evening skating party, Tim Thompson from Barry, Illinois, was busy taking pictures while at Stony Brook. "My town is so small," he said "that half the neighborhood will be over to see these pictures when I get home." Tim's project investigated the microbial production of alcohol from corn cob substrate for use in gasahol. Tim thought perhaps he could utilize discarded corn cobs in an economical fashion since they are readily available. His plans are to study microbiology at Western Illinois University.

On Wednesday, each student worked with a BNL scientist in his or her field of interest. During that time, sponsors toured Hargrave Vineyards and explored the town of Greenport.

Some of the sponsors happened to be related to the student they were representing. For instance, Jeff Foran brought his mother as a thank you for providing funds and support for his expensive study into a rare plant's ability to provide biomass energy.

Nettie Wallace from Konowa, Oklahoma, is also a relative of her student. She doubles as a teacher and a mother to Michael Wallace. Mike's project, a "Phase II Optimal Fermenter," can make fuel alcohol using solids and/or liquids. His method, recently patented, surpasses others by saving time and utilizing raw materials. His invention was meant to help the farmer, and at one point he even left school for a while to start his own agricultural plant. Mike will attend Stanford University, and said "The first thing I'm going to do when I get there is buy a surfboard."

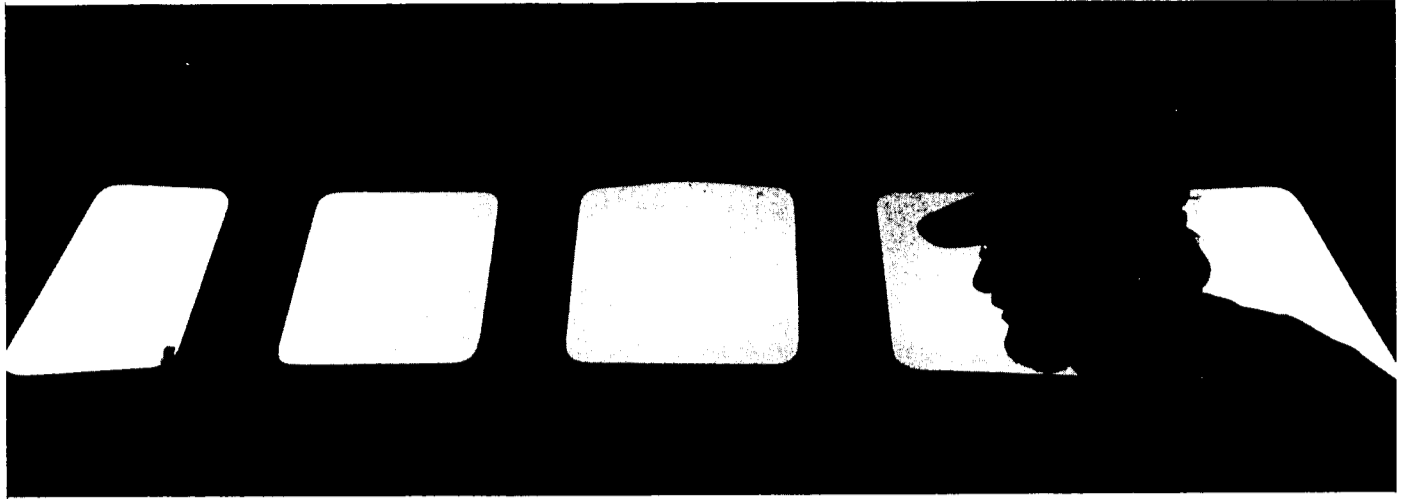
Early Thursday morning, the group took a ferry to Fire Island to see the Sunken Forest and spend the day on the beach. That night, students were invited to a summer mixer at the Brookhaven Center while sponsors saw a show at a nearby restaurant. They left BNL early this morning.

These students have been referred to as ten of the brightest young scientists in the U.S. Some of them may go on to solve world energy problems, others may find satisfaction in other fields. Jason Johnston of Alabama, whose project involved desulfurization and Btu retention in coal, said he may not even end up in science. "I may go into chemical engineering, or I might try graphic arts," he said. "I'm not sure at this point." Regardless of which road they choose to follow, one thing is for sure — these students have already made a contribution by showing their concern.

— Myra Aronson

Experience does all of her teaching backwards; she gives a test before explaining the lesson.

Sign in an optometrist's office: "If you don't see what you're looking for, you've come to the right place."



The crafter in his craft, looking out over Peconic Bay.

Doug Humphrey

## A Real Dreamboat

For some people, to dream is enough; others must make their dreams come true. Robert Diem, an AGS Main Control Room Operator at BNL, is one of the latter.

With only 20 hours of extra help, he has constructed an awesome 50 foot steel hull fishing boat at a clearing near Peconic Bay in South Jamesport. If all goes according to plan, "My Lady" should be floating in the Bay by this December.

Judging from Diem's past record, it probably will be. By working no less than 30 hours a week and never missing a day due to weather, he is already a year ahead of schedule. His calculations for purchasing materials were so accurate that the steel left over couldn't even fill the back of a pickup truck.

Diem has been a shift worker at the AGS for 20 years. Previously, he worked for Grumman, and spent time in the Navy as an electrician's mate. Diem grew up in the Peconic Bay area, so one can understand the origin of his inspiration. "I know every inch of the bottom of the bay," he said, gesturing toward it with a wave of admiration. "I'm just crazy about boats."

Diem is also crazy about challenges. When he began this project three years ago, he had already built a house for his family of five and several wooden boats. But he knew nothing about steel welding. Rather than hire someone to do it for him, he taught himself through books. That,

he says, means more to him than the boat itself.

It was designed by a West Coast naval architect and Diem adjusted the boat according to his own specifications. It is rigged for trolling and pot setting, a weekend business in which Diem has already become established. "My Lady" will roam the waters of the Atlantic, including Rhode Island, Montauk and Shinnecock Bay. Due to its versatility, Diem calls it an "East Coast/West Coast" boat.

She can run with a minimum crew of three (including a hired captain), has the working deck of a 60 footer, and is longitudinally framed. This, as opposed to vertical framing, is highly unusual according to Diem. The bow and stern are also unusual. "Most bows are shaped like a wedge of cheese," he said. "Mine is tapered so it will want to pick up out of the water." Thinking ahead, Diem also made it possible to remove the 8V71 Diesel motor if ever necessary.

"It all seems glorious," said the avid outdoorsman. "But there are hardships." Most are monetary. When Diem found that comparable rigs priced at \$35-50,000 were "junk," he decided he'd have to build his own. "You have to have good equipment to run a good business," he said. "But you have to pay for it." Without labor, "My Lady" has an estimated total cost of \$100,000.

Working on the boat also cuts into

the time Diem has to spend at home. He rises at 5:30 a.m., heads for BNL if he happens to be on day shift, returns home for a quick bite to eat and begins work on the boat. "When you do a project like this," he said, "everything else goes down the tubes." Diem claims he has not been able to grow a decent lawn in years.

"At first it was really hard not being with my family," Diem said. On holidays for instance, everyone else would be living it up while he was busy welding the boat only three blocks away. "But now that it's almost finished, everyone wants a piece of the action."

Diem receives about ten visitors a day from engineers and curious passersby. "I've lost lots of man hours explaining the thing," he said. "but I enjoy talking about it too." Diem also enjoys the nest of swans at the edge of the pond by his construction site. Since they provide company during coffee breaks, he finds he has grown attached to the graceful creatures. "I've learned a lot about wildlife working out here."

Despite the great amount of time and labor Diem has invested in "My Lady," his manifest destiny is yet to come. "My lifetime goal is to build an 85 footer," he said, glowing at the thought of it. And for a man who has built a house, a boat, raised a family and maintained a cheerful disposition, it is not unlikely that he will.

— Myra Aronson



Bob Diem, AGS, is standing before his newly painted steel hull fishing boat. Diem built the boat himself, and expects to have it floating in Peconic Bay this winter.

Doug Humphrey

# BROOKHAVEN BULLETIN

Published weekly for the employees of BROOKHAVEN NATIONAL LABORATORY

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## Letters To The Editor

To The Editor:

I am sure I join all who have viewed the recent exhibit "Camp Upton" at Berkner Hall in saying thank you for an exceptionally fine job to all who organized and set it up.

As pointed out earlier in the Bulletin, much of the work was done on personal time, for which people should be particularly commended.

Viewing the exhibit brought back memories of friends and relatives who passed through Camp Upton in time of war, plus memories of my days in the Army.

Again, thank you.

—Chris Harbach (ISA)

## Day Care Center Changes Listed

Two important changes have been announced by Steve Held and John Campbell, directors of the Kids-R-Us Day Care Center located in the Middle Island Presbyterian Church on Longwood Road.

An alternative fee schedule is now in effect for families with an annual income of \$18,000 or less. In this case, the monthly rate for full-time care for one child is \$200. For more than one child from the same family and for less than full-time care, the rate will be lower.

The Center will now accept pre-school children beginning at 18 months of age. This is a change from the previous two year old minimum age.

If you are planning to send your child to Kids-R-Us, or if you need more information, call the directors at 744-6015 or the Center at 924-8021.

## Cafeteria Menu

### Week Ending August 21, 1981

<b>Monday, August 17</b>	
Corn chowder	(cup) .60 (bowl) .70
Broiled chicken livers & 1 veg.	1.55
Sweet & sour pork over rice	1.65
Hot Deli: Pastrami	(on bread) 1.65 (on roll) 1.75
<b>Tuesday, August 18</b>	
Beef vegetable soup	(cup) .55 (bowl) .65
Seafood creole over rice	1.60
Roasted turkey & stuffing w/ cranberry sauce	1.60
Hot Deli: Sausage hero	1.70
<b>Wednesday, August 19</b>	
Navy bean soup	(cup) .55 (bowl) .65
Fried rice w/ pork	1.60
Chicken pattie parmesan w/ spaghetti	1.60
Hot Deli: Roast beef	(on bread) 1.65 (on roll) 1.75
<b>Thursday, August 20</b>	
Chicken noodle soup	(cup) .55 (bowl) .65
Roasted top round of beef & 1 veg.	1.65
Hot Deli: Roasted turkey breast	(on bread) 1.65 (on roll) 1.75
<b>Friday, August 21</b>	
Fish chowder	(cup) .60 (bowl) .70
Beef Stroganoff over noodles	1.65
Fish & chips	1.60
Hot Deli: Chili dog	1.60

**Soul Food Picnic Tomorrow**  
Info — Ext. 3316

## 1981 Tennis Champs



Doug Humphrey

From left, Andy Kevey, Tom Koetzle, Saeko Suzuki and Jag Dalal are winners in this year's BNL Tennis Tournament. Tom Koetzle took mens singles over Naresh Bhagat, 6-2, 6-1. Saeko Suzuki went three sets to beat Marie-Christine Saitta, 6-1, 2-6, 6-3. Saitta, who is missing from the picture, teamed up with Suzuki to beat Helen Quinby and Rose Brennan in womens doubles, 6-1, 6-2. Mens doubles was taken by Jag Dalal and Andy Kevey over Junichi Iwai and Darrel Joel, 6-2, 6-1. Kevey paired with Shizue Iwai, also missing from the picture, to take Saitta and Peter Vanier in mixed doubles, 6-2, 7-5.

## Selected Reading

- New Scientist 90 (1254) May 21, 1981**  
Women: smoking's new victims. Bobbie Jacobson. 506-508.
- JAMA 245 (23) June 19, 1981**  
The professional identities of women physicians. C.M. Rinke, M.D. 2419-2421.
- Lancet 1 for 1981 (8232) June 6, 1981**  
Headaches after red wine. G.H. Kalish, M.D. and Herbert Kaufman, M.D. 1263.
- Scientific American 245 (1) July 1981**  
Values and attitudes of the Polish people. Stefan Nowak. 45-53.
- The Architecture of Christopher Wren. Harold Dorn and Robert Mark. 160-173.

## IAEA Openings

Periodically, the International Atomic Energy Agency posts notices of openings on its technical and administrative staff. These positions are generally for a period of two years in Vienna. Anyone interested in investigating the openings should contact the Office of Scientific Personnel, Bldg. 460, Ext. 3338. OSP maintains a file of IAEA vacancy notices which describes the appointments available in some detail.

## Bringing In The Harvest

For home gardeners who are wondering when to pick their bounty, the chart below summarizes suggestions from the Cooperative Extension Association of Suffolk County.

Collecting The Crop		
Vegetables	Harvest...	Problems/Comments
Beets	when 1-1/2 to 2" across	Older beets get woody, tend to crack.
Broccoli	before yellow flowers appear	
Brussels sprouts	when firm, compact, bright green	
Cabbage	when firm and feeling heavy	If left too long, head will split open.
Cauliflower	when head diameter is about 6"	If yellowing occurs, heads are too mature or weren't blanched properly.
Cucumbers	when still dark green, firm	Do not let mature on vine.
Musk mellons	when they can pulled off vine easily	
Onions	almost anytime for fresh eating; to store, wait till tops fall over, turn brown.	
Snap beans	2-3 weeks after flowering; pod shows slight bulge from developing seed inside.	Beans left on vine too long will be tough. Keep picking to prolong harvest.
Summer squash	when small, 6-8" long (then skin)	When they are older, larger, they become tough with woody seeds.
Sweet corn	when silks are dry, dark; kernels are plump, milky	Kernels should pop when squeezed. Irregular kernel development may be due to poor pollination. Next time, try planting in blocks of several short rows.
Tomatoes	for best taste, allow to turn completely red on plant; when frost threatens, pick all that show pink, wrap in newspaper to ripen (never put underripe fruit in sunlight).	Blossom drop is usually due to adverse night temperatures (below 65° F, above 75° F). Blossom-end rot occurs when soil is dry. Misshapen fruits are associated with first fruits and with low temperatures during flowering.
Watermelons	when bottom is creamy yellow and top is dull rather than glossy	

## Arrivals & Departures

### Arrivals

Yves J.C. Bizais..... Medical  
Mark K. Culp..... Plant Engrg.  
Willibald K. Eberl..... Central Shops  
Saswati D. Ghosh..... Chemistry  
James A. Harper..... Medical

### Departures

This list includes all employees who have terminated from the Laboratory, including retirees:  
Grady D. Carney..... Chemistry  
Sati P. Mitra..... Nuclear Energy  
Thomas G. Rizzo..... Physics  
Babette P. Chenet..... Biology  
Andrew M. Huber..... Plant Engrg.

## Softball

### Scores For Week Of 8/3

#### League I

All games are double headers.

#### First Game:

Blue Jays 12 — Six Pax 11  
For the Six Pax, J. Usher was 3 for 4. For the Blue Jays, G. Oldham was 3 for 4 with a homer. Tom Prach also had a homer. Wally Shaffer and Hank Arnesen were 2 for 3.

Phoubars 16 — Ravens 13

#### Second Game:

Blue Jays 20 — Six Pax 3  
For the Six Pax, J. Usher was 2 for 3. For the Blue Jays, Frank Palmeri was 4 for 5 with a homer. Steve Munson was 3 for 4 with a homer, Nick Pisco was 3 for 4. Danny Oldham and Bob Jansson also had homers.

Phoubars 4 — Ravens 2  
For the Phoubars, John Ingoglia hit a home run and Mike Buchman had 4 hits. For the Ravens, Leroy James hit a home run.

#### League II

Moles 25 — AMD Bombers 9  
Roga 14 — Cardinals 13  
Big Sticks vs. DEEgenerates  
Game postponed.

#### League III

Nuke Powers 9 — Dirty Sox 7  
Medical 17 — The Forties 8  
Ice Pops 8 — Electric Company 5  
Magnuts 22 — Lights Out 10  
Electric Company (won) — Medical (lost)  
Dirty Sox 18 — Lights Out 4  
Binary Bombers — bye

#### League IV

TNT 21 — Balls & Strikes 11  
Turkey 17 — Random Sample 4  
Survivors 25 — Nads 4  
Thrids vs. E-Z Riders  
Game postponed.

#### League V

Who's On First 15 — Who Cares 12  
Source III 23 — Solar Power 4  
Underalls 31 — No Feedback 15  
No Names 12 — Mole-Esters 11

#### Makeup Games:

Mudville Sluggers 24 — No Feedback 11  
Who's On First vs. No Feedback  
Makeup game for the first half will not be played because it will have no effect on league standings.

## Drivers Note

If you rent cars for official or personal use and don't recognize this

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## Theater Group

The BNL Theater Group will meet Wednesday, August 19, at 8 p.m., in Berkner Hall auditorium. There will be a program and a discussion of the next play.



# 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 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 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, 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.

**LABORATORY RECRUITMENT:** Opportunities for present Laboratory employees.

1611. FACILITIES OFFICE ASSISTANT (2) - Bargaining unit position. Plant Engineering Division.

**OPEN RECRUITMENT:** Opportunities for present Laboratory employees and outside applicants.

1612. HEAVY EQUIPMENT MECHANIC OPERATOR - Requires demonstrated ability to maintain, repair and operate all material handling, earthmoving, road and ground maintenance and related equipment. Plant Engineering Division.

1613. TECHNICAL POSITION - Requires AAS or equivalent experience in electro-mechanical areas, knowledge of the proper use of hand tools and the ability to exercise care in component assembly. Duties will involve assembling and testing of ISABELLE magnets. Accelerator Department/ISABELLE Project.

1614. BIOLOGY ASSOCIATE - Requires Bachelor's degree in science or engineering, or equivalent work experience. Knowledge of FORTRAN language and DEC operating systems is essential. Duties will include system software development for small-angle x-ray scattering station. Biology Department.

1615. COMPUTER OPERATOR - Requires AAS degree in data processing or successful completion of computer operations training program or equivalent experience assisting in the operation of a large electronic digital computer. Must be willing to work rotating shifts. Applied Mathematics Department.

## Autos & Auto Supplies

73 VW SUPER BUG - less than 1,000 mi. on new engine, new clutch, brakes, sunroof, immac., excel mi., orig. owner. \$2,500. Doris, Ext. 3488 or 924-7832.

73 CAMARO - 350 rebuilt engine, a/t, p/s, p/b, bucket seats, needs body work & paint. Pat, Ext. 3148 or 588-3359.

78 HONDA - Hawk II, excel cond., low mileage, extras, must see. \$1,450. Ext. 2926 or 281-0268.

79 CAPRI GHIA - 4 spd, 2 new tires, am/fm, excel cond. \$5,200. LI 1-9582.

73 MERCURY - Montego, 4 dr. Sedan. Blue. \$200. Ext. 2831.

79 KAWASAKI - KX80 motorcycle, runs mint, orig. owner. \$500. 588-5221.

74 HONDA - CB125 motorcycle, 85 MPG +, windshield & luggage rack. \$500. Ext. 4411 or 929-8287.

VW ENGINE - transmission; starter; electric fuel pump & regulator. Best offer. 981-4419.

PARTS CAR - 1962 Chevy, 6 cyl, buy parts or complete car. Your choice. Joe, Ext. 2556.

72 HARLEY DAVIDSON - FLH Police Special stock. \$3,600. Timing light Sears. \$20. John, Ext. 4973 or 798-3766.

CAMPER - Invader, sleeps 4, sink, stove, bathroom, etc. 727-4109.

80 VESPA - 125, like new. Best offer over \$1,100. Paul, 928-8060 after 6 p.m.

SSP BRUSH GUARD - and cab step (new, unused) for Blazer Chevy GMC (Stroppe Product) Ext. 5288.

79 VW RABBIT - am/fm radio, automatic, fuel injection, reg. gas, 33 MPG. Call 929-8433 eves. for a good buy.

69 DART - running cond. but needs some work. \$150. Doug, Ext. 3388 or 331-3329.

73 AMC GREMLIN - 6 cyl, a/t, good cond, high mi. \$950. 369-2504.

72 CHEVY VAN - clean, hi-mi., no rust, paneled, carpet. \$1,500; 1967 VW or parts, many new. \$100. Jack, Ext. 4100.

66 BSA MOTORCYCLE - 441cc, good rubber, runs great, looks good. \$400. Call 475-2657 before 2 p.m.

1981 POP UP CAMPER - light weight, sleeps 6, sink, stove, heater, cooler, excel cond. Reasonable. John, 727-7741.

HONDA XR80 - excel cond. John, 929-8287.

75 CADILLAC - Coup de Ville, \$1,750; also 1973 Toyota, 2 dr., 4 spd, 28 MPG. \$1,350. Ext. 7957.

75 FORD GRANADA - 2 dr. sedan, landau roof, a/c, p/s, p/b, stereo 8 trk, small V8, \$1,800. Lloyd, Ext. 3381 or 286-1024.

76 HONDA 360T - Fairing, luggage rack w/truck, garaged, excel cond. \$850. 732-5696.

70 H.D. POLICE SPECIAL - rebuilt heads, custom seat, many other new parts. \$3,395. Ext. 3533 or 654-2076.

72 CHEVELLE - Gleaming black, 402 c.i., turbo trans, mags, super clean show car. \$1,900. Fred, 924-3556.

75 FIAT - 128 Coupe, excel running, am/fm, good MPG. \$1,500. Helen, Ext. 4912 or 3673.

74 CHEVY - Nova hatchback, p/s, p/b, a/c, good cond. Asking \$1,295. Ext. 4664.

74 MUSTANG GHIA - V6, a/c, stereo, 25 MPG, 70,000 MI, new radials, no rust. Asking \$2,200. Debi, Ext. 2210.

TIRES - (2) General, dual steel radial, white-wall P195/75R14. Ron, Ext. 4449 or 751-8403.

TIRES - (2) LR70-15, 7 ply, rad. on Chevy rims. \$40; (1) 10-15LT Goodyear on 5 lug jeep rim (new) \$85; F&R bumpers, \$90; Tailgate C-10, \$45. Jim, Ext. 4040 or 289-0876.

4 WHEEL DRIVE - Free wheeling kit for full time 4-wheel. Call for info. Paul, Ext. 4665 or 727-4859.

52 WILLYS JEEP - all orig. including new engine. \$1,500. 928-1020.

73 VW SQUARE BACK - mechanically sound, reliable transp., all new radial tires. \$1,900. 288-3118.

CUSTOM PARTS - and accessories for your auto, truck, van. Huge savings. Quality items. Hans, 281-5563.

TRUCK CAP - fiberglass for 6' small pickup truck, excel cond., reasonable. Ralph, Ext. 2368 or 928-6654.

GOODRICH RADIALS - FR78-15, 4/100; Chevy van highback seats, blue. \$30/pr; Jeep seats; winch, 3000 lb. capacity. 286-0745.

70 TORINO - Sta. wgn, \$400. or best offer. Joe, 475-8440.

70 RENAULT - \$300; '65 VW dune buggy, \$300; '60 Conair dune buggy, \$300. Augie, Ext. 2419.

74 CHEVY - C10, 350 V8, std. dual exhaust, excel mech. cond., body good. 654-0863.

69 VW BUG - 36K mi. on rebuilt engine, good MPG, mechanically excel. Asking \$375. Call Mani before 10 p.m. Ext. 3773/4857 or 246-9165.

FRONT SEAT - for Chevy Van, brand new. \$20. 981-4419.

RIMS - (2) 14" for Pontiac Firebird, w/Goodyear F70-14 wide-tread tires. Ron, Ext. 4449 or 751-8403.

ENGINES - (2) Chevy 6 cyl, need work and parts. Make offer. Ext. 4612.

## Boats & Marine Supplies

16' ALUM. FISHING OPEN CRAFT - w/40 HP Evinrude outboard, mfg. trailer to fit. \$1,100. 585-7094 eves.

8' BOAT - w/2 1/2 HP Evinrude, excel. \$225. 727-7741 after 6 p.m.

14' LARSEN - 45 HP Mercury outboard, tank, controls, trailer, good cond. \$700. Bill, Ext. 2422 or 724-6661 after 6 p.m.

18' THUNDERBIRD - full covers, cox four wheel tilt bed trailer, 115 Johnson. 286-9659.

12' FIBERGLASS BOAT - good cond. \$150. Ext. 4976 or 744-4386.

1971 MERCURY - 4 HP outboard motor, long shaft, excel cond. \$250. Ext. 4098 or 281-8318.

WINDSURFER - 12'6" new. \$695. Dinos, Ext. 4666.

16' LARSEN - 65 HP, trailer, new top, steering, fuel tank, prop. mainly lake used. Asking \$1,900. 475-3648.

## Yard Sales

MOVING SALE - Misc. household items; plus 32" Franklin stove w/chimney, new. \$150. 698-7953.

MOVING SALE - Crafts from Mexico, clothing, books, more. Maria, Ext. 3077.

YARD SALE - 8/14-8/16, rain date - 8/21-8/23. Many families, sporting/fishing equip., stereos, records/tapes, furniture, toys, games, books, clothes, bric-a-brac, many valuable items. Hermitage development, 39 Nottingham Dr., Middle Island. 924-5331.

## Free

FREE - dishwasher, GE, works well, old, some rust. Yako, Ext. 2592.

FREE - Color TV, RCA 19", picture tube needs replacement, some new tubes. Ralph, Ext. 2368.

## Miscellaneous

68 COX POP UP - needs work but ready for camping, \$400. Firm; alum. boat, John-Boy 12' w/oars. \$125. Ext. 2964.

GIRLS SNOWSUIT - size 6x-7, almost new, \$25.00, 475-5150.

TV - Zenith Chromacolor TV 25" Colonial console. like new. \$350. 744-9822 after 6 p.m.

TYPEWRITER - Royal standard office desk type, new ribbon, appearance like new. \$45. 475-8658.

BICYCLE - for newspaper route, front & rear baskets, 20" balloon tires. Arthur, Ext. 4049 or 289-2866 eves.

GAS GRILL - "Gas Chef", brand new, still in packing box, 20# 2 pos. \$80. 732-3951.

BACKPACK - canvas, good shape; also cooking kit & canteen, \$10. Takes all. Bill, 289-0687.

SCHNAUZER - 2 yr. old, registered female, good natured. 286-8893 after 6 p.m.

CAMERA - Polaroid Instamatic & case. \$25. John, Ext. 4973 or 798-3766.

CURTAINS - beautiful lavender curtains w/ruffles, brand new, ea. panel is 42" wide x 36" long w/tiebacks. \$5. Linda, Ext. 3632.

POOL - complete 24'x48" round above ground, ladder, D.E. filter, bottom vac. lines, etc. \$275. Jake, Ext. 4532.

C.B. BASE - w/base antenna, Sears, excel cond. \$100. Firm. Jeff. 473-4034 after 6 p.m.

COOKWARE - new waterless s/s lifetime guarantee, retails for \$450. Your cost \$235. 732-6647.

DISHWASHER - never used, 6 yrs. old, needs front door panel, \$50; Boiler cast iron, American standard. \$200. 581-7656.

GOLDEN FLAME - coal stove w/window, 55k BTU, 20 hr w/slip cover, ea. sleeps 2, \$100. ea; Old butter-press table converted to coffee/cocktail height, stained dark. \$100. Claire, Ext. 3356.

PRESSURE COOKER - 4 qt. brand new, used once. \$20. Ext. 3431 or 744-9677.

KING SIZE - head board; (2) Liv. rm. chairs, \$25. ea; telephone bench; (2) pole lamps, \$15. ea; has-sock; smoke stand, \$15. ea. 929-6148 eves.

POTTERS WHEEL - kick type, oak frame, extras. \$150. Takes it. Carol, 698-5555 or 289-3917 eves.

ANTIQUA FURNITURE - 2 bdrm sets; 8 pc. dining room set; radio cabinet. Best offer. 281-0715.

LIVING ROOM SET - Contemporary, sofa & 2 chairs, Mediter. coffee table, (2) end tables, top cond. 289-1085 after 5 p.m.

GITAR - Spanish Classic, handcrafted in Mexico, good resonance, perfect cond. Maria, Ext. 3077.

TYPEWRITER - Smith Corona, manual, excel; maple chest of drawers; oak server; assorted tables. 929-4716.

RIDGEWAY - Grandfather clock Westminster chimes, all wood contemporary, excel. \$600. firm. 924-6354.

RECEIVER - am/fm 8 trk tape, phone jacks, \$40; Heathkit tuner preamp & amplifier. Best offer. George, Ext. 4612.

HAIR DRYER - 1200 watts, \$10; Remington electric shaver, \$10; shaving cream heater, \$3. David, Ext. 3145.

BEDSTEADS - (2) solid maple twin bedsteads, \$15. ea. 286-0517.

BOILER - 109 thousand BTU w/circulator & hot water coil, 4 yrs. old; Edelblock tunnel ram manifold, dual 4 BBL. Pete D., Ext. 4857.

TV - Sony Trinitron color, 15", excel cond; Plywood, 4'x8' sheet. 3/4", \$10. David, Ext. 3145.

PORTABLE TV's - (2) identical, neither works. \$15. takes both. Ext. 4475.

FILE CABINET - 6 drawer (letter size & 1/2 letter size) \$25. Ext. 3145.

FRESH CLAMS - any size by order only. \$1.75/doz. Ken, Ext. 5042.

POOL LADDER - stainless tubular type, 3 white steps for in ground pool or deck mounting, like new. \$45. Jim, Ext. 4040 or 289-0876.

QUEEN SLEEPER - couch/bed, cost \$800. Sell for \$200; Kupola weather vane, cost \$259. Sell for \$100. 698-7953.

DRYER - G.E. electric, white, \$100. You pick up. Bellport, Claire, Ext. 3356.

VENDING MACHINES - for 11" x 21" x 5" size items; still in crate. Sacrifice, will consider any offer. 924-3066.

## 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

BLUE POINT - Sunny room, private bath, kit, privileges, no smokers. \$225/mo. 363-2736.

SHOREHAM VILLAGE - custom ranch, 3 bdrms, 2 baths, fam. rm w/tp, d/r, l/r, gourmet kitchen, 2 car o/s garage, 0.8 acre, w/w throughout, new oil burner, good financing, walk to priv. beach, tennis, club. Ext. 3064 or 821-0890 after 5:30 p.m.

HOLBROOK - 2 bdrm house, lg. fenced property, garage, low taxes. \$26,500. 588-4741.

MANORVILLE - 3 bdrm ranch, 1 acre, country kit., full bsmt., 1 1/2 baths, garage, all appliances, s/s, w/w, \$41,000. Pete, Ext. 3868 or 4574 or 878-1225.

BRENTWOOD E. - ranch, like new, 5-3/4% assumable, 1/3 down. Negotiable. 924-0960.

## For Rent

N. SHIRLEY - 5 min. to BNL, rent single room. \$35/wk. no cooking. 924-0960.

N. PATCHOGUE - air cond. 2 1/2 room apt. priv. entr., 11 miles from Lab., furnished & cablevision TV. \$290/mo. pays all. Single only, no pets. Carol, 289-3917 eves.

POCONO'S CHALET - in priv. community, outdoor & indoor pools, lake beaches, tennis courts, game room. \$175/wk. Bob, Ext. 4551 or 289-2159 eves.

MASTIC - Room w/use of kitchen & washing machine. Female preferred. \$40/wk. 399-2131 or Ext. 2456.

SHIRLEY - Private entrance, 2 bdrm, kitchen, l/r, bath. \$325, all utilities included. 281-7190.

## Wanted

RIDE TO FLA. WEST COAST - by mature woman with a few possessions, inc. small dog. Around 9/1. Share expenses. Ext. 4210 or 821-1759 eves.

1975 AMC HORNET - 6 cyl, shop owner manual. Phil, Ext. 4758.

COMICS - Super hero, Marvel & D.C. Check attics, barns, garages, basement. Reasonable. Mike, 929-6341 after 6 p.m.

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

CLEANING WOMAN - reliable, experienced, thorough worker. 475-8658 after 6:30 p.m.

BOX SPRING - single bed size, reasonable. Paul, Ext. 4665 or 727-4859.

DEHUMIDIFIER - used. Ext. 4049 or 289-2866 eves Arthur.

APT./HOUSE - to share starting Sept. 1. Dean, Ext. 4407 or 654-2076.

ROLL AROUND TOOL CHEST - reasonable. Joe, Ext. 2556.

APT./HOUSE - to rent. Brookhaven/Bellport area. JoAnn, Ext. 7203 or 286-0745 eves.

COMPRESSOR - working cond. Joe, Ext. 2556.

BASEBALL CARDS. - 369-2151.

MAGS - (2) 69 GTO orig. mags, excel cond. 281-8306.

APT. - 1 or 2 bdrms. Rent to include all util. need by Sept. or soon after. Ext. 2484.

DANFORTH ANCHOR - for 18' boat. Joe, 475-8440.

MODELERS - Want to start a local plastic Modelers club? Call Darryl Ext. 4375 or 399-3882.

OX, ACETYLENE TORCH SET - hose, tips & tanks. Bill S. Ext. 4434.

AEROBIC DANCE INSTRUCTOR - for once a week group located in Center Moriches. Susan, Ext. 4267.

MINERALS - mineral collections, old mineral books, any language. Plotkin, Ext. 4717.

GOLF CLUBS - men's/womens. Jay Adams, Ext. 4994 or 732-5641.

CLOCKS - watches, pocket watches, lathe jewelers, for student watchmaker. George, Ext. 3536.

RIDER(S) - to Cleveland, Detroit, Ann Arbor - leave Aug. 21. share gas/driving. Call Eli, Ext. 4360.

PIANO LESSONS - for beginner adult. Ghosh, Ext. 4372 or 582-6826 eves.

## Car Pools

MASSAPEQUA/FARMINGDALE - Points West, meet near Exit 32, Southern State Pkwy, Plotkin, Ext. 4717.

MILLER PLACE/ROCKY POINT - vacancy on Van run. Call Don, Ext. 3284.

QUEENS/ROSLYN - 1 driver needed to complete long established 5 person pool. LIE Exit 25 or 36. R. Horwitz, Ext. 4134.

FROM PATCHOGUE VIA BELLPORT - 9 yr. old car pool, on-time, has vacancy for paying rider starting 8/17. Alyce, Ext. 2901.

## Lost & Found

LOST - Baseball glove, field 4, July 23rd. Call Bud, Ext. 4867.

FOUND - Gold ring w/emerald cut green stone, July 31st., Bldg. 515. 744-0722 eves.

LOST - keys in ballfield #2 w/black leather 6 or more, give to Ricky. Ext. 4113.

## Services

Services are listed as a courtesy to BNL employees. They are neither screened nor recommended by the Bulletin.

LIMO SERVICE - chauffeured luxury limo for Proms, weddings, all occasions. Call Roy, Ext. 4664 or 744-8779.

SAILING - Moonlight sails, day sails, cruising catboat, leaving Bayshore or Fire Island. 666-1477.

HOUSE PAINTING - Interior/exterior, professional, quality materials, insured. Bob, 289-7657 after 6 p.m.

ASPHALT PAVING - and sealing. Bob, 475-4382.

POOL SERVICE - reliable, repairs, cleaning, maintenance, emergencies. 727-4186.

BABYSITTING - reliable mother w/playmate, wkdays, my home, any age, Coram area. Joan, 732-1610.

SIGHT SEEING FLIGHTS - aerial photogr., L.I., Conn., N.Y., modern all weather aircraft. 929-6148 day or eves.

FIRESIDE CHIMNEY SWEEPS - all types of flues. Only \$30. through Aug. 31. Dustless removal. Insured. Bill, 584-6425.

HOUSE SITTING - reliable, available after Aug. 24. Any period. J. Allentuck, Ext. 2412.

ABOVE/IN GROUND POOL INSTALLATIONS - and repairs, insured, licensed. Work Guaranteed. Pat, 363-2497.