

the Bulletin Board

VOLUME 16, NUMBER 38

Published by the BNL Personnel Office

JUNE 11, 1963

TWENTY-EIGHTH BROOKHAVEN LECTURE

By: DR. D.E. KOSHLAND
Biology Department

Title:

"Catalysis in Life and in the Test Tube"

Lecture Hall — Wed., June 19* — 8:00 p.m.

*Please note that the date of the Lecture has been changed to June 19. It had been previously announced as June 12.

DR. L.E. FARR RECEIVES AWARD

Dr. Lee E. Farr, employed at BNL as Chairman of the Medical Department from 1949 to 1962, and presently with the University of Texas, was awarded the Gold Cross (First Class) of the Order of Merit of the Republic of Germany on May 31, 1963. The Order of Merit was established in 1951 by the government of the Republic of Germany. It was awarded to Dr. Farr for his assistance in planning a nuclear medical training center and nuclear medical reactor at Julich while an advisor to the Atomic Energy Commission and the U.S. State Department. Dr. Farr has received similar awards from Greece and Belgium.

CAFETERIA COMMITTEE

The first meeting of the Cafeteria Committee was held on Tuesday, June 4. Mr. Head, who is Manager of the BNL Cafeteria for the Automatic Retailers of America, was present and gave the Committee members a brief outline of his methods of operation.

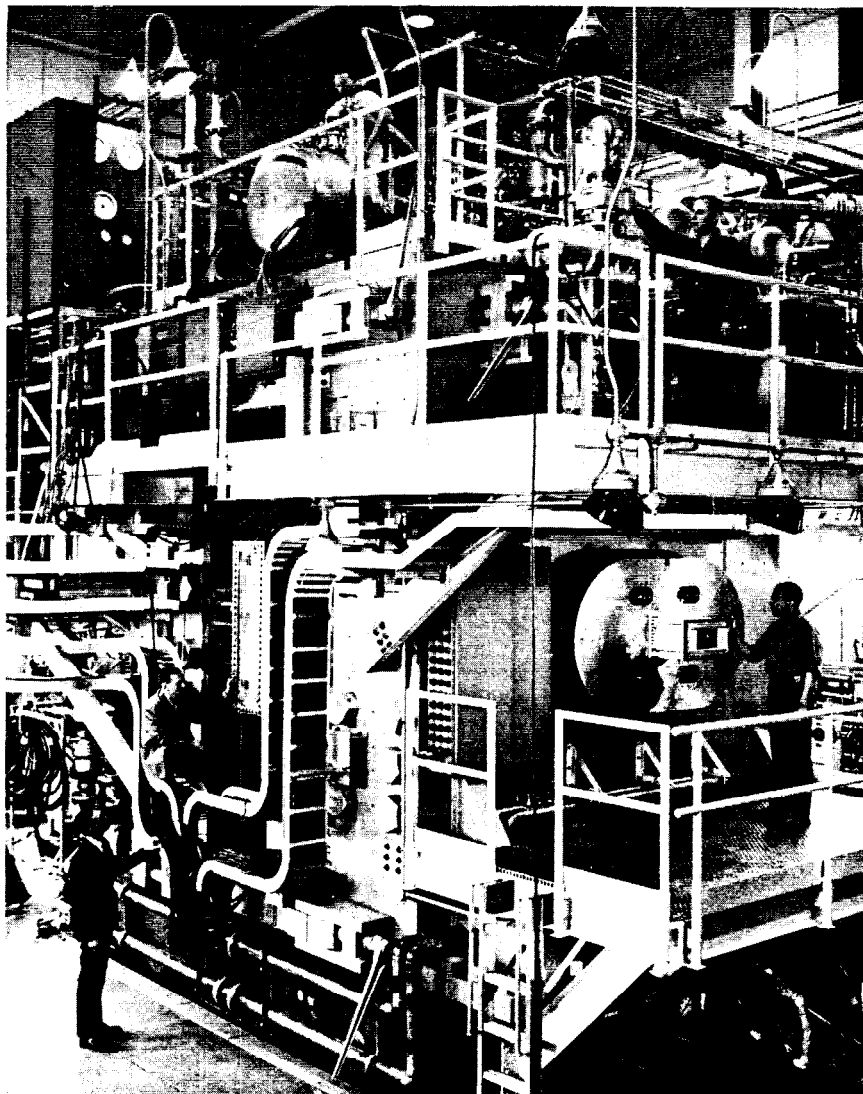
It was agreed that the main effort of the Committee should be to act as liaison between Mr. Head and his customers, and work with him to maintain the high standards of the Cafeteria.

The Cafeteria Committee members, therefore, invite you to contact us in person, by phone or by note, and give us your suggestions, criticism, and comments. To the best of our ability, we will answer all communications, indicating what action can or cannot be taken.

GAR HARBOTTLE Chemistry, Ext. 2267
ED HUNTER

Plant Maintenance, Ext. 2795
JOE WASHBURN,
Chairman, Personnel, Ext. 395

THE 80-INCH BUBBLE CHAMBER



The 80-Inch Bubble Chamber assembly.

Due to a publication deadline, it was only possible to carry in last week's BULLETIN BOARD a brief announcement on the first operation of the 80-inch Bubble Chamber. This historic event certainly warrants more notice than that, for it represents the culmination of years of intensive work on the part of a great many dedicated BNL employees, representing many different skills. The first photograph of a nuclear interaction in the Bubble Chamber was obtained at 12:30 p.m. on Sunday, June 2. Thus, the world's largest operating chamber is now available for high energy physics research with the AGS, the world's largest operating particle accelerator.

The Bubble Chamber is housed in a separate building, adjacent to the one-half-mile circumference tunnel in which is located the AGS magnet ring. Accelerated particles from a target in the AGS are guided electromagnetically out of the ring and into the Bubble Chamber, where the interactions between the bombarding particles and the nuclei of the hydrogen atoms in the chamber are photo-

(Continued on page two)

80-INCH BUBBLE CHAMBER (Continued)

graphed. Although the particles themselves are far too small to be observed, the tracks of minute bubbles they leave momentarily in the chamber can be illuminated against a dark background and photographed. The photographs are subsequently analyzed by scientists to determine the nature of the nuclear events that occurred. By these means it is hoped to learn more about the fundamental particles that comprise all forms of matter, and the forces within the atomic nucleus.

In addition to the chamber and its building, the \$6 million complex also includes a power station, gas storage area, cooling tower, and safety sphere for the emergency containment of hydrogen. The 1500-liter stainless steel chamber, weighing about ten tons, contains liquid hydrogen, which is cooled to a temperature of -414°F under a pressure of about 70 pounds per square inch. Under these conditions, hydrogen presents the characteristics of a superheated liquid, ready to "boil" when the pressure is reduced. When a stimulus, such as a charged subnuclear particle, is introduced into the liquid hydrogen, boiling takes place along the track of the particle. The particle thus makes a visible track of bubbles (over 20 to the inch) in the liquid hydrogen, which can be photographed by four special cameras located behind a 6½-inch-thick glass window on one side of the chamber. By the synchronization of these cameras with a high voltage fast-pulsed light source, together with the entering beam of bombarding particles and the motion of the 36-inch-diameter piston controlling the pressure in the chamber, photographs are taken for each pulse of particles from the synchrotron. Then, by increasing the pressure, the bubbles in the chamber are made to disappear, erasing the tracks and making the chamber ready for the results of another pulse.

In addition to bubble chambers, several other techniques are used with particle accelerators in the study of nuclear interactions. Specially prepared photographic emulsions, arranged in stacks to provide a third dimension, can record particle tracks; both scintillation and Cerenkov counters indicate the passage of ionizing particles by means of light flashes; and the spark chamber, a relatively new tool of nuclear physics, shows the path of a particle by a trail of sparks, which occurs where the neon gas in the chamber is disturbed between sets of electrically charged plates.

The advantage of bubble chambers over these other detection techniques lies in the excellent resolution in space. The application of a magnetic field in a bubble chamber results in better measurements of track curvatures and momenta. On the other hand, electronic counters and spark chambers give excellent time resolution, down to 10^{-9} seconds, whereas bubble chambers can only record to one millisecond. Photographic emulsions have excellent space resolution also, but they give no time resolution at all. This means that although fine tracks are obtained, it is not known at what juncture during an exposure they were made. Also, emulsions are so dense they do not lend themselves to the application of a magnetic field.

An additional reason for the use of a hydrogen bubble chamber is in the opportunity it presents to study interactions in the simplest of all nuclei, the proton, which is the nucleus of the hydrogen atom.

BUS SERVICE TO BEACH AND TO PATCHOGUE**Departing from Apartment Area School Bus Shelter**

To Patchogue – SATURDAYS, SUNDAYS, JULY 4, 5, and SEPTEMBER 2 – Leave BNL at 9:00 a.m. and 2:30 p.m.

To Smith Point Beach – TUESDAYS and THURSDAYS – Leave BNL 10:00 a.m.
SATURDAYS, SUNDAYS, JULY 4, 5, and SEPTEMBER 2 – Leave BNL 10:30 a.m. and 1:30 p.m.

Complete details and schedule will appear in next week's BULLETIN BOARD.

FISHING CONTEST

The winners for the April – May portion of the contest are:

JAMES KLEIN, Nucl. Eng., Largest entry.
JOSEPH CUCCIA, Design Gr., Av. entry.

Jim entered a 2 lb. 4 oz. Porgy worth 450 points. The next largest entry was a 3 lb. 7 oz. Flounder caught by Frank Remiszewski, Security, with a point score of 438 points.

Joe's fish was a 4 lb. 8 oz. Blackfish worth 215 points. The average of sixteen entries was 216 points.

The awards may be picked up at the Recreation Office. This year's prizes are barometers, outdoor thermometers and fishing lures.

There are only two entries so far for the June-July portion of the contest and plenty of time left to enter your fish.

POSTAL ZONE NO. FOR UPTON

The Post Office Department has established a new postal zone system to be effective **July 1, 1963**. This system replaces the old zone designation used in cities and greatly extends the system. The new system (Zone Improvement Program) indicator consists of 5 digits. The ZIP Code Number for Upton is 11973.

Future printing of BNL letterheads, envelopes, and other material bearing mailing address will have the ZIP Code Number for Upton one space to the right of the last line of the address.

For example:

Upton, L.I., N.Y. 11973

or

Upton, N.Y. 11973

Each Post Office in this area will probably have an individual code number. The Post Office Department asks that the code number when known be used in addressing mail and particularly that your Post Office Code Number be included in your address when subscribing for periodicals, and so forth.

BERA FILM SERIES**"DISORDER AND THE NIGHT"**

June 13, Thurs., – 8:30 p.m. – Lecture Hall

This film directed by Gilles Grangier is one of the greatest portrayals of Paris before dawn, and the many intrigues that unfold under the cover of night. Nadja Tiller, the German actress, known to American audiences through her sensational performance of "Rosemary," plays a rather languorous role, that of a dissolute woman, involved in the traffic of drugs, and her heavy-eyed, dreamy personality contrasts perfectly with Gabin's gritty power, and Darrieux's poise.

*Arrivals and Departures***WELCOME TO BNL**

AGS	
Gary Schlutz	Ext. 2410
APPLIED MATHEMATICS	
Barry S. Arbeit	2935
Esther S. Daw	2589
BIOLOGY	
Regina A. Butera	373
Elmer B. Hadley	2543
CHEMISTRY	
Mary R. Renn	695
MECHANICAL ENGINEERING	
Thomas J. Blair	2558
PLANT MAINTENANCE	
John E. Verschure	2382

RECENT DEPARTURES

FISCAL	
Renee Mone	
PHYSICS	
George E. Barr	

PERSONNEL SERVICES

At the Recreation Office, 3 Center Street
Daily 9:00 a.m. to 1:00 p.m.

METS TICKETS

Box seats are still available for the following Mets games: June 21 and 23, Philadelphia; June 25, Chicago; July 6 and 7, Pittsburgh; July 14, Houston; July 18, San Francisco; August 6, St. Louis; August 11, Chicago; August 13, Pittsburgh; September 1, Milwaukee; September 2, Cincinnati; September 10 and 12, San Francisco 13 and 15, Houston and September 17, Philadelphia.

DISCOUNT TICKETS

Tickets good through June 21, are now available for "Little Me," playing at the Lunt-Fontanne Theatre in New York.

Discount coupons for the summer schedule at Mineola Playhouse have arrived.

- June 11 - 22 **Tchin Tchin** - ARLENE FRANCIS
- June 24 - July 6 **100% Annie** - DARREN MCGAVIN
- July 9 - July 20 **Take Her She's Mine** - HANS CONREID
- July 22 - Aug. 3 **The Millionaire** - CAROL CHANNING
- Aug. 5 - Aug. 17 **Lord Pengo** - WALTER PIDGEON
- Aug. 19 - Aug. 31 **Irregular Verb** - CLAUDETTE COLBERT AND CYRIL RITCHARD
- Sept. 2 - 14 **Seidman & Son** - SAM LEVENE

AROUND THE BASE PADS

By **BOB CARCIELLO**

TEAM	Won	Last	Pct.
BROOKHAVEN LEAGUE			
Blue Jays	5	0	1.000
Cosmotron	3	2	.600
Untouchables	1	1	.500
Metta lurgy	1	2	.333
Electronics	1	3	.250
Phoubars	0	3	.000
NATIONAL LEAGUE			
Medical	4	0	1.000
Bubble Boys	2	0	1.000
Upton Downers	1	1	.500
Dirty Sox	1	2	.333
E.A.O.	1	4	.200
Old Timers	0	2	.000
LABORATORY LEAGUE			
Chamber Chaps	5	0	1.000
Odd Balls	4	1	.800
Potsareebies	2	2	.500
Chasers	2	2	.500
Mets	1	4	.200
Kludge	0	5	.000

Last weeks' results: Blue Jays 5 - Electronics 2, Cosmotron 13 - Metallurgy 8, Odd Balls 11 - Potsareebies 9, Chasers 17 - Mets 14, Chamber Chaps 11 - Kludge 9, Upton Downers 22 - E.A.O. 3.

CHILDREN'S SWIMMING INSTRUCTION

Once again classes in swimming will be conducted in our Pool for children of Laboratory employees. The course will begin the week of July 8 and continue for a seven-week period.



SWIM CLASS

2. Children must be eight years of age or four feet in height.
3. Each child will be scheduled for a specific day once a week.
4. A fee of \$2.50 per child must accompany application. (Make checks payable to BERA).
5. Children will report at the Swimming Pool not earlier than 12:50 p.m.
6. Classes will end at 2:30 p.m. Offsite children must remain in the Pool Area until picked up by parents. On-site children must remain in the Pool or proceed directly to the apartment area.
7. Children will pay daily admission fee (.35) or present season ticket to enter Swimming Pool.
8. To the best of your knowledge, select and write in on application the group your child qualifies for:
Non-swimmer - Unable to swim at all.
Beginner - Unable to swim 40 feet.
Intermediate - Can swim at least 40 feet.
Swimmer - Can swim 100 yards.

SCHEDULE: A schedule of the classes will be posted in the Swimming Pool and Gymnasium on Monday, July 1. Please stop by and see which day your child is scheduled for.

POOL OPENS FULL TILT

Beginning next Monday, June 17, the Swimming Pool will be open full-time on its summer schedule:

MONDAY THROUGH FRIDAY

2:30 p.m. to 9:30 p.m.

DAILY ADMISSION RATES

Employee.....	\$.35
Family member.....	.35
Guest.....	.60

SEASON TICKETS

Tickets will be sold at the Pool Office only, and can be purchased the first time you come for a swim.

(JUNE 17 to AUGUST 30)

Employee.....	\$ 5.00
Family.....	10.00

Locker and shower facilities are available for your convenience. Caps, ear plugs, nose clips, and combs are stocked for purchase. Towels and mens' trunks can be rented.

IMPORTANT: If there are days your child can NOT attend classes, indicate this on application. **No registration fees will be refunded.**

FOLK DANCING

Don't miss out! There is folk dancing every Monday evening from 8:00 p.m. to 11:00 p.m. at the Recreation Hall.

APPLICATION: Swimming Classes Date.....
Name Son/Daughter Age* Classification

1.
2.
3.
4.
5.

*If under eight years old, state height.

I wish to register the above children in the Swimming Classes. I understand that he or she is not permitted to leave the SWIMMING POOL AREA. I agree that he or she may be denied participation in the program for failure to observe the rules.

(Employee's Signature)

(Life No.) (Extension)

Forward this application with registration fee to the Recreation Office, 3 Center Street, on or before June 28.

Registration Deadline - June 28

Please register early! A program will be arranged based on the returned applications.

SWIMMING CLASSES: 1:00 - 2:30 P.M.

1. These classes are for all Laboratory employees' children.

PICNIC PLANS PROGRESSING PERFECTLY

This Year You Get More For Your Money

A real Merry-Go-Round, Ferris Wheel, more pony and kiddie rides, and ten real carnival booths. These are all part of the extended entertainment to be had this year at OPERATION GET-GETHER No. 6, to be held here on-site, July 27th.

This year your Picnic Committee has put the emphasis on more fun for all, with a minimum of volunteer workers. A Carnival Concessionaire has been given a contract to furnish the PICNIC with all the above and there will be more added attractions announced shortly.

Again the Miss B.N.L. 1963 Beauty Contest will be one of the outstanding events of the day. Miss Rheingold 1963 will be on hand to crown the winner of the contest. More information and entry forms will be forthcoming in the very near future.

Soft drinks, ice cream, cotton candy, beer, potato chips, pretzels and other refreshment goodies will be in ample supply to keep everyone happy.

Admission to the PICNIC will be by ticket. These tickets will be on sale very shortly. The cost will be \$1.50 for adults, and 25 cents for all children under 18. Needless to say, this couldn't possibly cover the cost of the entire operation, and as usual B.E.R.A. will cover that last big third of the expense. We've found out a way to avoid those long, long, lon-n-n-n-n-n-g lines for Hot Dogs and Hamburgers, and how to give you exactly what you would want for lunch. Whether you be gourmet, gourman, or glutton. How? Easy! **You Bring Your Own Box Lunch.** Bring your choice of food for the main course, and we will supply the liquid refreshment and all the desserts.

OPERATION GET-TOGETHER

Saturday, July 27th

1963 PEGRAM LECTURES

The George B. Pegram Lecturer for 1963 will be Dr. J. Robert Oppenheimer, Director of the Institute for Advanced Study. His lecture series is entitled "Niels Bohr and His Times." The first lecture in this series will be held on Monday, August 26, in the BNL Theatre.

BRIDGE

A full master point game will be held next Thursday, June 20, at 8:00 p.m. in the Recreation Hall. Everyone is invited.

Organize your team now for the July 11 Mid-Summer Team-Of-Four Championships. As soon as your team is picked, call Les Lawrence, Ext. 2354.

VISITORS

Three hundred and fifty health physicists visited the Laboratory on June 6 prior to their annual Health Physics Society meeting in New York City.

The Chemistry Visiting Committee will meet on June 13 and 14.

Members of the Nuclear Committee of the Connecticut State Bar Association will visit BNL on June 17.

SOFTBALL FIELDS

The softball diamonds on Brookhaven Avenue and Princeton Avenue are to be used for scheduled league games and scheduled practice games. A field reservation schedule is maintained at the Recreation Office, 3 Center Street.

CAFETERIA SPECIAL

Thursday, June 13

Celery & Olives

Tossed Green Salad

Small Juice

Veal Cutlet with Tomato Sauce

Mashed Potatoes & String Beans

Bread & Butter

Strawberry Shortcake

Beverage

\$.99

CLASSIFIED ADS

FOR SALE

1961 OLDSMOBILE 88 - 2 dr. hardtop, excell. cond., 37,000 miles, r&h, auto. trans., new brakes and ww tires. Asking \$2500. R. Wright, Ext. 397.

1958 CHEVROLET - Station Wagon, V8, auto., 4dr., power steering, good cond. Asking \$900. Also: Four 7:60x15 ww tires mounted on Old's rims. \$10. each, 4 for \$35. AT 9-0371.

1956 FORD - Std. trans., 6 cyl., black & white, very good cond. AT 9-0764 after 6:00 p.m.

1955 PONTIAC - 4 dr. sedan, excell. cond. Leaving country soon - must sell. Best offer. Naz, Ext. 2566 or Ext. 55 in the evening.

1954 MERCURY MONTEREY - Hard top, fully equipped, clean, original owner. Must be seen. Best offer. AT 9-1748.

1954 LINCOLN CAPRI - Good trans., full power. \$150. AT 1-7665.

17 FT. THOROBRED - 40 hp motor, elec. starter, full canvas, all equipped, used once. \$1350. AT 4-1728 between 6:00 and 9:00 p.m.

REFRIGERATOR-FREEZER - Kelvinator Food-orama. List \$700 - Price \$200. Dining room set, large table, 6 chairs, buffet, china cupboard, server, \$150. Rugs, rose taupe wool and pads, 13½'x23', 13'x16', 6'x10'. \$400. HR 3-0143.

SAW - Craftsman 8" tilting arbor bench saw with floor stand and ¼ hp motor. \$40. HR 3-0143.

CLAM TONGS - Professional type, double basket, 14 ft. handles. \$17. Water skis, J.C. Higgins, good cond. \$10. AT 6-0291 after 6:00 p.m.

TRAINS - Beat the Christmas rush. Complete O-gauge set with scenery mounted on 4'x8' plywood, includes switches, sidings, overpass. Excell. cond. Ext. 379 or LT 9-3269.

WANTED

DEHUMIDIFIER - Ext. 664.

FEMALE ROOM-MATE - To share 3 room furnished apartment in Mt. Sinai. HR 3-3876 after 5:30 p.m.

BABYSITTING JOBS - Days, evenings. AT 6-9477 between 5:00 p.m. and 7:30 p.m.

GOOD HOME - For 8 month old female dog, mostly beagle. Beautifully marked, spayed, inoculated. Also: a good dog house. Son not willing to take proper care of it. Carl Cantera, Ext. 2376.

REDWOOD PICNIC ABLE - And benches. Ann, Ext. 2367.

CAMERA - High quality 35 mm, preferably a single lens reflex-type. Tom Moran, Ext. 570.

STROLLER - Collapsible. Davies, Ext. 709.

LOST

PIPE LIGHTER - "Nimrod." Lost in the Cafeteria the evening of May 22. If found, please call John Elmore, Ext. 2924.

NECKERCHIEF - Green silk. Lost at the Center during the Newcomers Party on May 24. If found, please call Mrs. Micke, Apt. 41A, or Ext. 2777.

FOUND

GLASSES - Amber frames. Found in the Gym.

KEY - Made in England. Found at Medical.

Personnel Services, 3 Center St., Ext. 2808.

FOR RENT

HOUSE - Bellport, furnished, 2 or 3 bedrms. From September 1, 1963 to June 1, 1964. AT 6-1023.

CARPools

Interested in joining a carpool from Amityville area, Southern State Parkway, or Sunrise Highway. R. Wright, Ext. 397.

Summer student employee needs ride from Babylon, West Islip area. Has no car - will pay. Bill Rodgers, Ext. 782.

Existing carpool needs extra drivers from South Country Road, East Patchogue vicinity. Frank Mo, Ext. 2684.

Driver-rider desires to join carpool. Will meet any pool from Western Nassau. B. Schieber, Floral Park 4-0521.

Drivers needed for carpool from Wantagh Ave. and Southern State Parkway. Don, Ext. 543 or Bob, Ext. 2152.