



Harwell Director A Brookhaven Lab Summer Visitor

Dr. Walter Marshall, Director of Harwell, the Atomic Energy Research Establishment in Berkshire, England, has been a summer visitor in the Physics Department at Brookhaven since the middle of July.

During his stay at Brookhaven, Dr. Marshall and his wife have been living in Miller Place, on the North Shore, and commuting to the Lab every day.

Dr. Marshall joined Harwell in 1954, becoming Head of Theoretical Physics Division in 1960, Deputy Director in 1966, Director of Harwell in 1968. In 1969 he became Director of the Research Group, and in 1972, a full-time member of the Atomic Energy Authority. He was awarded the Maxwell Medal for outstanding contributions to theoretical physics in 1964 and was elected a Fellow of the Royal Society in 1971.

Last week the editor of the *Brookhaven Bulletin* interviewed Dr. Marshall about his stay at Brookhaven and his experience at Harwell. The interview follows:

Editor: Dr. Marshall, what have you been doing here at Brookhaven during your stay this summer?

Marshall: I have been trying to do some theoretical physics. I've welcomed the opportunity to just get away from administration and just enjoy myself doing some basic research. I've been talking to the people here; particularly I've always been very interested in neutron scattering theory, so I'm just trying to do some calculations on critical scattering of neutrons.

This is my second visit to Brookhaven, and I would like to say that I am just as much impressed with it on this second visit as I was on my first visit. The quality of the people and the quality of the research program is outstanding. The environment of the Laboratory, the way it's laid out, and the way it's administered seems to me excellent. Of course I strongly approve of your summer visitors program and hope to come back again someday.

Editor: Do you have any program for summer visitors at Harwell?

Marshall: We sometimes organize groups of visitors for the summer, but that's generally done by each department individually when they think it proper. We don't really have a summer visitors program of the size and scope that Brookhaven has. But one thing we do have, is we do try to get visitors from overseas to Harwell for one or two or three years. That's a program of visitors that we've had to cut back on in recent years because of budget problems, but we are now strenuously trying to expand that part of our program so that we would now welcome visitors again.

Editor: Could you describe the present climate for basic research in England?

Marshall: I think in the universities it's excellent. The basic research in our country, at least in the physical sciences, is funded through the Science Research Council (that's the equivalent of your NSF), and the budget of the Science Research Council is increasing by a modest percentage each year.

The climate for basic research, certainly in the universities, is excellent, and I haven't heard any serious grumbles about it, for I can't remember how long. Within the Atomic Energy Authority we have had more of a difficult time because of the uncertainty about the way the nuclear power program is going in our country, and uncertainties about the future of the Atomic Energy Authority.

Our basic research effort at Harwell has come under pressure, and indeed we've had to reduce it, but we've now stabilized at the laboratory and I see no signs that anybody is going to quarrel with that in the future. So I would expect that level to continue indefinitely.

The other nice sign we have in a related area is that five years ago the minister in charge of technology decided to cut back on the fusion program at Culham and that was quite a hard cut. It was cut back by 50% over five years, but the new minister, following evidence which we presented to him last year, now reversed that, so the fusion program is actually expanded.

So I think, to sum up, the climate for basic research as a whole is very healthy. At Harwell and Culham I think we've gone through a difficult patch but now things look good. Culham is also part of the CERN group. My main job is to be director of Harwell, but I'm also a member of the Atomic Energy Authority (which is similar

to your AEC), and in that role it is also my job to be responsible for Culham.

Editor: The work that's carried on at Harwell, how does it compare to the type of research done at Brookhaven? For instance, do you have a medical research unit, biology, chemistry, high energy physics and so forth?

Marshall: There is a reasonable analogy, but there are several differences, some of which are advantageous and some of which are not. More than a decade ago it was decided in our country, by the government, that high energy physics was so different in content from the problems of establishing nuclear power, that high energy physics was transferred out of the Atomic Energy Authority and into a new organization which nowadays has the name of the Science Research Council. So that, although Harwell built the GeV machine at Rutherford Laboratory, it is not now part of Harwell, it is just adjacent to Harwell.

Now that's a pity, because it divorced a large area of basic science from the work of the Atomic Energy Authority, and I've always regretted that. But that happened many, many years ago, long before I had any chance to influence it. The second thing that's very different is that in our country the Medical Research Council has the responsibility for work on all things applying to medicine. Although we have a Medical Research Council unit at Harwell, again it is not part of the Atomic Energy Authority, and therefore is not formally a part of Harwell. But with those two statements apart, I would think the laboratories are broadly similar in the sense that we have physics, chemistry, chemical engineering, applied science, and electronics.

Editor: In the proposed reorganization over here, it seems that perhaps the applied sciences are going to emerge as the leaders in this new research part of the AEC. Is that what happened in Harwell?

Marshall: I think you've got to have a balanced view upon this. Some six or seven years ago Harwell was doing a great deal of basic research. It was doing so much basic research that it threw attention to itself and the politicians felt that they weren't getting value from money in the sense of practical results.

New Administrator



John H. Holder has been appointed Hospital Administrator of the Hospital of the Medical Research Center, Brookhaven National Laboratory. Mr. Holder, who comes to Brookhaven from Rutgers University where he was Administrator of the Institute of Mental Health Sciences, is a native of Brooklyn, N.Y. He received his bachelors degree from City College, and his masters in Hospital Administration from Cornell University. Before joining the staff at Rutgers, Mr. Holder was in administrative positions in several hospitals in the New York City area. Mr. Holder and his wife, Elvira, have two children, and hope to move out to Long Island as soon as possible.

As a result, during the past five years or so, we have gone through a very sizeable transformation where we have diverted a great deal of our effort towards applied research and that program has been quite successful.

I think it's certainly been more successful than I expected it to be. And indeed I think it would be best if I described now how, roughly speaking, the work divides into four quarters. One quarter is basic research, where the prime objective is to do work of international stature.

The second quarter is to do materials research and electronics research and the other types of research of direct and immediate relevance to the nuclear power program.

The third area of work is work which we do on contract to other government departments - the Department of Health, the Department of the Environment, etc.

And the fourth area of work is the area of work where we earn money from industry by inventing new products, new processes, or undertaking contract research in industry. That, therefore, roughly, is how the budget now divides up.

This fourth area of work is one which I don't think a government-funded laboratory would do in America. I think there would be too much political opposition to it because, in order to be successful in that work you are obliged to work with an individual company for each item to improve the profits of that company, which in turn acts against the interests of the company

(Continued on page 2)

Biomed Study Group Extended One Year

The Biomedical Engineering Study Group, appointed by Dr. M. Goldhaber on March 1, 1972, was reappointed, for one year, on May 1, 1973, by Dr. G. Vineyard. The principal duties of the Study Group remain, as originally specified, to "... identify specific areas of research in Biomedical Engineering that are particularly appropriate for Brookhaven ..." and to "... enlist staff interest and participation ..."

During its first year, the Study Group conducted a series of interviews with staff members in the various Departments of the Laboratory and visited, or invited to BNL, a number of persons associated with successful Biomedical Engineering programs at academic, hospital and government laboratories. Also, as early as May 1972, the Study Group established contact with, was visited by, and was encouraged to submit a proposal to the Camille and Henry Dreyfus Foundation, Inc. by its Executive Director, Dr. William L. Evers. Such a proposal was submitted in August 1972, and final action is awaited. If funded at the level requested, this proposal would provide \$1.7-million, over five years, for seed money with which to formalize a coherent and self-sustaining program at the Laboratory.

The Study Group expects to devote a major portion of its efforts over the next several months to developing additional contacts with funding groups, particularly with private foundations, and would welcome constructive comments from BNL staff members concerning this and its other activities. It would be especially helpful to the Study Group if staff members would bring to its attention research programs, contemplated or in progress, that might be considered Biomedical Engineering. Admittedly, the term Biomedical Engineering is poorly defined; the Study Group's assessment of programs that it considers germane to this field can best be illustrated by enumerating those programs that it included in its report to the Director last April. These are:

"Ceramic-Polymer Bone Substitute Materials," A. Auskern (DAS); "Proton Radiation Therapy Facility," G. Levine (Accelerator); "Computer-Assisted Surgical Techniques," G. Hohberger (Instrumentation); "Airway Closure Studies with Helium," H. Susskind (DAS); "Hemodynamics of A-V Shunt and Extracorporeal Circuits," H. Susskind (DAS); "Basic Physical and Thermodynamic Properties of Elastic Films and Interactions between Surface Agents and Membranes," D. Schweitzer (DAS); "Membranes and Monolayers," G. Adler (DAS); "Non-Thrombogenic Materials," D. Metz (DAS); "Computer Simulation of and Experiments on Artificial Bilayer Membranes," S. Feldberg (DAS); "Cellular Response to Chronic Irradiation - Modeling and Simulation Studies," G. Dienes (Physics); and "Analysis of Sex-Hormone Data in the Castrated Rat," L. Shotkin (DAS).

Further examples are several activities which staff members from Applied Mathematics have recently discussed with the Study Group. These are: "The Reconstruction of Three-Dimensional Figures from their Two-Dimensional Projections," R. Marr; "CRYSNET," H. Bernstein; and "Sequential Testing of Drugs," J. Denes.

The Study Group would appreciate hearing of any other programs of similar or related nature for a number of reasons. First, the discharge of its duty to identify areas of research in Biomedical Engineering at BNL will be facilitated. Second, the Study Group's ability to demonstrate to funding agencies the potential breadth of interests in this field at BNL will be augmented. Third, the Study Group may be in a position to suggest potential sources of funding for specific areas of research.

The Study Group may be contacted, with or for information, through any of its members, who are as follows: R.B. Aronson (Medical), S.H. Cohn (Medical), G. J. Dienes (Physics), F.B. Hill (DAS), M. Hillman (DAS), C.P. Hohberger (Instrumentation), G. Levine (Accelerator), D. J. Metz (DAS), A. Peskin (AM), J.S. Robertson (Medical), D.G. Schweitzer (DAS), H.H. Smith (Biology), L.G. Stang, Jr. (DAS), H. Susskind (DAS).



Brookhaven National Laboratory Director, Dr. George H. Vineyard, (left) confers with Dr. Walter Marshall, Director of Harwell, the Atomic Energy Research Establishment in Berkshire, England.

Harwell Director — (Continued)

you did not choose. That is a philosophy which is accepted in our country, but which I think would not be accepted in America. So that this fourth category of work draws all public attention to it, simply because it's grown so rapidly. It has been I think quite successful, and is very stimulating to the people. I don't think Brookhaven would do the equivalent of that, but it's very interesting to see that following the new announcements about an energy agency, Brookhaven is likely to develop a little bit along the lines of Harwell in respect to the third category of work I mentioned, which is the work of government agencies under contracts.

Editor: What are your comments on the proposed reorganization of the AEC in the United States?

Marshall: That seems to me a very good proposal, and if I were working at Brookhaven I would be quite pleased about it because it has seemed to me that it is inevitable that atomic energy as such must have diminishing emphasis in the future and that so long, therefore, as Brookhaven remained a laboratory reporting primarily to an atomic energy agency, then I would have thought that it was either going to decrease each year indefinitely, or with difficulties hold level. But the decision to form an energy agency seems to me a very far-sighted and wise decision that national laboratories like Brookhaven are a national asset and must be used for many purposes. I think therefore that the idea that national



Dr. Walter Marshall

laboratories should now do a more wide range of research seems to me not only right but important, I think, for the health of each of those laboratories. And I think it is a symbol of the fact that politicians in this country, and in my own, are becoming more sophisticated about what they expect from science nowadays.

Editor: While Harwell was changing from this former status to its present one, how did the scientists, the pure scientists, accept this? Are you now, for instance, heavy on the engineers rather than the theoreticians? How have these people adjusted to he change?

Marshall: I think quite well. Of course when you make any transition — everybody hates change, all the psychologists will tell you that — so that any time a laboratory changes, people get nervous and frightened for fear it will affect them adversely. And therefore, indeed, a lot of people at Harwell were nervous about this change. They were nervous partly because it just meant change; they were nervous partly because when we began it hardly seemed possible that we could build up an income from outside from government agencies and from industry to match 50% of our budget. That's where we had doubts whether we could accomplish it. But now we have accomplished it, roughly speaking, and I think people are more content.

Certainly, for example, when we started on this, I think the worry that most people had is that it would gradually lead to the total elimination of basic research and we have therefore stuck very firmly to our plan for not reducing it any further from the present level. And indeed, we've made a lot of studies to demonstrate to ourselves that if you reduce the basic research too much, then indeed the quality of the laboratory goes down, and then your ability to do the applied work goes down. We've actually built up some sophisticated models to satisfy ourselves that we have got our present balance about right.

So far as what kind of work it is that we do, there have been some changes of em-



The Isotope Stompers, BNL's Dixieland Band.

Jeannie C. Riley At BNL Sunday

BNL employees, families, and friends are invited to hear Jeannie C. Riley and The Homesteaders at Brookhaven National Laboratory on Sunday, August 26, at 2 p.m. The concert will be held on the Green at the rear of Berkner Hall and will also be open to the general public.

The Jeannie Riley Show is now touring upper New York State and will travel on a private bus to BNL. She has been on a schedule of 19 consecutive one-nighters throughout New York, Maryland, and Ohio. This special bus contains the show props, the wardrobe, and an emergency sleeping quarter for use when the shows are too far apart to arrange for hotel or motel accommodations.

The success of Jeannie C. Riley began with the popularity of her hit record "Harper Valley P.T.A." In the wake of hits that followed in the late 60's, such as "There Never Was a Time," "The Girl Most Likely," "Things Go Better with Love," and "Back Side of Dallas," Jeannie C. Riley grew up and matured as a performer, showing every indication of becoming an artist whose dimensions weren't to be limited to a single hit record.

One of Jeannie's feature selections at Brookhaven will be "Hush," which is mak-

ing it big all over the music scene. In addition to the Nashville show, pre-performance entertainment will be provided by the Dixieland band known as the Isotope Stompers. The outdoor show will start at 2 p.m. and last until 5 p.m.

phases in the disciplines which were involved, but not very many. They've all been of rather minor character, and the reason for that is rather interesting. At first we thought that if you're going to do applied research it would mean that it was engineers and more practically-oriented people who would be taking the key roles. It turns out that that isn't quite right because engineers and people of that kind are available elsewhere and the only thing that Harwell does for industry or for government departments is the kind of things they can't do for themselves. The kind of things they can't do for themselves is sophisticated physics, or electronics, or theory, or heat transfer calculations. Therefore, the people who have done best in the new program are in fact the nuclear physicists, theoreticians, and people who previously were working for example on health physics, irradiation physics. There isn't any quick, superficial answer to give, but certainly it did not change the balance and the effort in any great way.

Tickets may be purchased at the Laboratory gate on the day of the performance; prices are \$3.00 for adults, \$1.00 for children ages 5 thru 12, and free admission for children 1 thru 5. In case of rain, the event will be held indoors in the BNL Theatre.

I said earlier I thought setting up the new energy agency was a big opportunity for Brookhaven. Perhaps I could explain a little bit why I personally feel it's a good thing, and why I'm excited about it. At Harwell we've had a hard time. We reduced the size of the laboratory every year now for a decade, and when I became director I could see no end to that process within the atomic energy program which we were then conducting. Starting up new programs, as we have done at Harwell, is not easy, it's a lot of hard work, but it's now beginning to pay off because the new programs have now grown so that they're now covering approximately half of the laboratory, and as a result of that for the first time this year we are now starting hiring people again. And it's my personal view that Harwell has now stopped decreasing, and from now on we will slowly increase in size in time, and that's much healthier than actually decreasing. And therefore I think that all laboratories inevitably must adapt themselves to change so they can be healthy and so that they can either stay in balance or increase and so keep a young, lively staff. I hope the same will happen to Brookhaven.



Labor Day Food Service

At the Cafeteria the snack bar will be open from 9:00 a.m. to 2:00 p.m. daily on Saturday, Sunday and Monday, September 1st, 2nd and 3rd.

The Tap Room at Brookhaven Center will be closed over the three day week-end.

The Vended Food Service in Building 912 will be in operation throughout the Labor Day week-end.

CREF Unit Values

January	\$48.27	February	\$50.49
March	51.36	April	51.80
May	53.74	June	51.80
July	51.15	August	51.95
September	50.98	October	50.80
November	52.53	December	53.25
1973			
January	\$50.36	February	\$47.11
March	46.44	April	43.69
May	42.06	June	41.40
July	\$44.80		

Arrivals & Departures

Arrivals

Roger Pynn Physics

Departures

Charlotte D. Long Fiscal
 Marion A. Sanders, III H.P.S.
 Edna D. Sceviour Medical

BROOKHAVEN BULLETIN

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One More for the Pile



John Verschure (Carpenter Shop) tosses one more wooden ladder onto the pile which has been accumulated outside the AGS. The ladders were declared "unrepairable" by the BNL Safety Office during the course of routine inspections, and as such have to be disposed of. All the ladders shown were gathered from the AGS, cut up, and stacked in preparation for disposal. They will be transported by Plant Engineering to the landfill on site.

Recreation Program



The "peanut gallery."



Prizewinners all at the Summer Recreation Program.

University Games — Athletes Beware

As the Russian Track and Field team was building its gold medals at the World University Games, children of Brookhaven Lab employees were busily racing, jumping, slipping and sliding their way to trophies and ribbons at the Summer Recreation Program's Track and Field Day. Boys and girls of all ages attempted such events of dexterity and skill as would wow any coach looking for a fine prospect. They competed in the running broad jump, the three legged race, the standing broad jump, many dashes and even a long distance marathon.

When the days activities were finished many happy children were awarded silver and gold trophies and red, white and blue ribbons. No world records were set but that was due only to the absence of an official clock and a wind measuring device. Enjoy it while you can, Russia, the lab athletes are coming!

The BERA Summer Recreation Staff wishes to express its sincere thanks to all those who have participated in this year's Summer Recreation Program. The Staff and its supervisors hope everyone enjoyed himself and hope to see many children back next year.



A sack race in the field at the rear of the Recreation Building.

Cage Ball — Cup Races Held At The Pool

Last Friday, August 17, BERA sponsored two more special pool events; a game of Cage Ball in the deeper section of the pool and Cup Races for the smaller children.

The Cup Races had three successful winners as all those who participated in the event carefully attempted to race back and forth across the pool while balancing a colorful paper cup on their heads. It was not an easy task, but after many stops to replace their fallen cup, three winners successfully reached the side of the pool and the races were over.

Meanwhile, a Cage Ball game was in progress at the other end of the pool. Children anxiously awaited the start of the game, and were divided into two teams. Their cages for scoring were pointed out and everyone was told to jump into the pool and go to his appropriate side.

Once the large ball was thrown into the center, all those playing rushed toward it and the game began. Both teams battled for the ball as it was tossed from one side of the pool to the other, passing through many hands before a goal was scored. The opposition did not let the point scored bother them, they decided it was time for them to score.

The game continued on and everyone playing had his arms extended out beckoning the ball to come to him so he might score a point for his team. The game ended 3 to 2 and blue ribbons went to the victors.

Tennis News

Jim Brandon and Bob Bailey defeated Andy Kevey and Dave Goosman to win the Men's Doubles Tennis Championship in the Brookhaven Tennis Tournament. They were awarded the Walter Merkle Cup — the symbol of doubles supremacy and a memorial to one of Brookhaven's finest tennis players and sportsmen.

The scores were 8-6, 3-6, 6-2. The crucial first set best indicates the closeness of the match. There appeared to be big swings in momentum as each pair in turn would reel off a string of points and a string of games. There were surprisingly few deuce games. It was an exciting match to watch — there was a lot of what I like to call "pro" points — the kind of shots you see at Forest Hills. If I had to select a crucial factor (I don't, but I'll try anyway) it would be Bailey's surperb net play and consistency on overheads.

The Men's Singles Final, scheduled for 5 p.m., Tuesday, August 28, will match John Elmore against the winner of the Kevey-Koetzle semifinal contest. The Women's Singles Final, Stangby vs Eisenriegler, and the Mixed Doubles Final, Eisenriegler and Platner vs Saitta and Field will be scheduled for that week. Announcements of the dates of these matches and rain dates will be made in the cafeteria. The matches will be played on the southeast court. The center court on the south side will be marked "out of play" during the matches.

— S. Feldberg

Movie Tonight

The final offering in this season's BERA Summer Festival is *Shout Louder, Louder . . . I Don't Understand*. An Italian production with English dialogue, this film is based on the play "The Voices Within" by Eduardo De Filippo, and stars Racquel Welch and Marcello Mastroianni.

A daydreaming artist, the voluptuous girl of his dreams, and an eccentric misanthrope, who has refused to speak for fifty years, match wits against a notorious gangster in this hilarious comedy. Italy's top leading man teams with America's popular sex star for a series of wild misadventures, culminating in a most unexpected explosion. The memorable musical score is by Nino Rota, famous for his music in *The Godfather* and *Romeo and Juliet*.

Show time is 8:30 p.m. in Berkner Hall. Tickets are available at the door and are priced at \$1.00 for adults, and 50 cents for those under 18. Employees, families, friends, and the general public is invited.

YOC Tour



George Sabine, Youth On Campus Coordinator and Patricia Wilson, Office Practices Instructor, review the resumes prepared by Deborah Collins and Evelyn Jackson.



Paul Kelly of the Sign Shop, (right) shows YOC students how signs are silk-screened.

To Stretch Gas Mileage

The national situation concerning the availability of fuel for motor vehicles has reached such proportions that every citizen should try in every way to conserve fuel to ease the shortage.

The General Services Administration has recently issued guidelines to Government agencies including the AEC, which apply equally to all citizens using private cars.

According to GSA, the prime rule for conservation is to reduce speed. There seems to be a substantial savings possible when vehicle speed is limited to 60 miles per hour.

Sudden bursts of speed are also gas wasters, as are sudden stops and long periods of engine idling. Extra weight in the car should be eliminated, such as extra spare tires, chains, tools. Air conditioners should only be used when absolutely necessary. It is suggested that a window be opened to let the fresh air do the cooling in moderate weather.

If at all possible, avoid using the car for only one person, and by all means, avoid travelling during the rush hours when a lot of stop and go is involved!

If you are handy about your car, there are some minor adjustments that will help to assure the maximum mileage. Check and clean the air cleaner; adjust the automatic choke, and clean the PCV valve.

Soft tires make for a comfortable ride, but a tire that is inflated fully will save a lot of gas. While you are at the service station, it would be a good time to have a motor tune-up, and get the exhaust system checked.

The end result of a careful look at all these items will be both a savings of gas on the conservation side, and a saving of money in the operation of your car.

Recreation Building

The following schedule is now being observed at the Recreation Building in the Apartment Area:

Tuesday, Wednesday and Thursday
Open from 7:00 p.m. — 10:00 p.m.

Monday, Friday and Weekends
Closed except for specially arranged parties made by the Recreation Office.

Swimming Pool Schedule

The swimming pool will remain open on schedule through Sunday, September 2nd.

Starting on Monday, September 3rd it will be closed for a six-week period and will be reopened in mid-October.

Resumes Review

Each of the Youth On Campus students, at their bi-weekly official practices sessions, were given instruction and assistance in preparing their personal employment resumes. Some of the students who will be seeking employment after they leave BNL will hopefully find them immediately useful. Those who are returning to school have made them part of their personal file for use at a later time.

Yesterday's session was conducted by Bernard McAlary, Head of our Fiscal Division. The meeting included a question and answer period on many fiscal subjects. Some of the items discussed were bank accounts, check book balancing, personal budgets and tips on how to fill out certain forms that the government requires all employees to complete.

Touch Football Begins In September

Four teams have already registered for this year's touch football program which will begin in early September. Games will be played on Monday and/or Thursday evenings at 5:00 p.m. on the fields at the Recreation Park. A calendar of games will soon be established based on the final number of teams registered. Registration is still open and it is hoped that more teams will organize and sign up.

In order to do so, a group of seven players minimum is needed. The maximum number for a team roster is ten with twelve allowed for shift workers.

The last day for roster submission is Friday, September 7. The application fee is \$25.00 per team. Applications may be received by contacting any of the three co-chairmen, Ed Taylor - 4126, John Schmidt - 4255, or Jack Brennan - 4285.

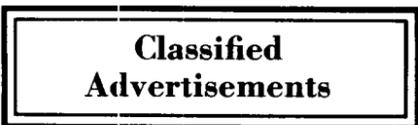
Selected Reading

- New Sci. 59, August 2, 1973
The sun from skylab. R. Lewis. 255
Science, religion, and a broken spoon. B. Dixon. 256
Euroscience: Dahrendorf's adagio. G. Segal. 267-8
New Sci. 59, August 9, 1973
The pervasive black hole. B. Carr. 316-18
From molecules to man. Professor M. Wilkins talks to D. Dickson. 329-31
Science 181, August 10, 1973
Fundamental and applied research in agriculture. R. Levins. 523-4
A conversation with Eugene Wigner. J. Walsh. 527-8

Reports Available

The following reports are now available to the Laboratory Staff and to affiliates of the AEC, AUI, and BNL. Others may purchase them from the National Technical Information Service, U.S. Department of Commerce, 3285 Port Royal Road, Springfield, Virginia 22151. Staff members should call Ext. 3434:

- BNL-50374 (ENDF-185) \$3.00
Evaluated Neutron Cross Sections for the Stable Isotopes of Xenon. February 1973
M.R. Bhat and S.F. Mughabghab
BNL-50379 (ENDF-186) \$3.00
Neutron and Gamma Ray Production Cross Sections for Silicon. March 1973
M.R. Bhat, M.D. Goldberg, R.R. Kinsey, A. Prince, H. Takahashi
BNL-50383 (ENDF-163) \$3.00
Evaluated Neutron Cross Sections for ¹⁰⁷Ag, ¹⁰⁹Ag, and ¹³³Cs. April 1973
M.R. Bhat and A. Prince



Placement Notices

Each week, the BROOKHAVEN BULLETIN lists personnel placement requisitions currently being processed. The purpose of these listings is, first, to give notice of all non-scientific staff positions being filled and, second, to give employees an opportunity to request consideration for themselves or others whom they wish to recommend to BNL. In filling vacancies, the Laboratory's objective is to give first consideration to present employees, as follows: employees within the immediate group having the vacancy, employees within the department or division, employees within the Laboratory as a whole.

For further information regarding a placement notice, please contact Employment Supervisor, extension 2874 or 2882.

- TOWER LINEMAN (1) - Plant Engineering. Application deadline: August 29, 1973.
CUSTODIAN - Plant Engineering.
TECHNICIAN - Temporary. Department of Applied Science.

Autos & Auto Supplies

- 64 DODGE POLARA - Compl gutted, 4 dr, Hooker headers, 15" Pacemasters slicks, Stewart gauges, 391 posi, Foremost wheels, race gas tank. \$600. Paul, 744-2083.
64 COMET - 2 dr, std trans, good cond, extra wheels w/snows. 286-8831.
65 CHEVY SUPER SPORT - Std trans, 6 cyl, very clean. \$400. 581-0932 after 6.
67 CADILLAC DE VILLE SEDAN - Air cond, full pwr, immaculate cond. \$1000 firm. Hugh, 286-8851.
71 TRIUMPH BONNEVILLE MOTORCYCLE - 650 cc, dual carbs, low mileage, immaculate cond. \$895. Bill, 981-2573.
67 VW SQUAREBACK - Rebuilt eng, new brakes & elec sys, r/h, tape deck. \$700. Mike, 473-7141.
63 CHEVY - 4 dr Bel Aire, ps/pb, auto trans, V8, runs. \$75. Ext. 2476, 751-2149.
283-V8 CHEVY ENG - In car, runs well. \$75. Paul, Ext. 2476, 751-2149.

66 MERCEDES BENZ 250S - 4 dr sedan, blk/tan leather int, auto 4 spd, ps, p/disc brakes, excel cond, Becker Europa am/fm radio. R. Francois, 363-6550 after 6.

14" WHEELS - Ford & lg Pontiac, \$5/pr; 12v gen, GM type, \$5 ea; 2 bbl carb for Rambler, \$3; all good cond. Bob, Ext. 4652, 289-0357.

66 BUICK SPECIAL - 4 dr, 6 cyl, std shift, good running cond, best offer. Ext. 4708, 744-9436.

67 PLYMOUTH FURY III - 318 V8, auto trans, air cond, hd shocks, trailer hitch, snows, A-1 cond. \$700. Buhl, 475-3149.

65 DODGE STATION WAGON - Ps/pb, auto trans, needs work but runs well. Asking \$150. John, Ext. 4143.

72 PINTO - Like new cond, many extras, am/fm radio, 10,000 mi. Frenchie, Ext. 3260/3261.

69 GMC PICKUP TRUCK - 6 cyl, w/removable alum camper, excel cond. \$2300. 732-8696 8 am-6 pm.

71 CHEVY PICKUP - W/camper cap, 6 cyl std shift, excel cond. \$2200. 842-3822.

67 CHEVY - 2 dr, auto trans, excel cond. \$650. Baum, Ext. 4214/4207, 475-5543.

69 TRIUMPH SPITFIRE - New paint, just tuned, good cond, orig owner. \$700. 924-3963.

70 VW SUPER BEETLE - 4 spd, excel running cond, extra good tires, needs paint job. \$600 firm. 924-3824.

72 FORD WAGON - Air cond, ps/pb, roof rack, trailer hitch & brake controller, excel cond, avail end of Aug. Remsberg, Ext. 4335, 286-9458.

65 MUSTANG - 289 V8, 3 spd manual trans, needs some work but still runs well, avail end of Aug. \$285. Remsberg, Ext. 4335, 286-9458.

TRAILER HITCH FOR CAMARO - New. \$15. 289-2420 after 6.

66 DODGE CORONET WAGON - V8, auto trans, ps, roof rack, good cond, many new extras. \$650. Claire, 732-6712.

TIRE - Goodyear polyglas belted G78-15 (8.25x15) w/w, very good cond. \$10. 732-5829.

71 PINTO - Excel cond, auto trans, vinyl top, new tires w/mags. \$1200. 281-8882.

63 FORD - Almost all rebuilt. \$40. George, Ext. 4281.

FIBERGLASS ROOF FOR MGB - Charlie, Ext. 3396.

68 VOLVO - 4 dr station wagon, good running cond, 70,000 mi. \$800. D. Slatkin, Ext. 3632.

69 DODGE POLARA - Excel cond, air cond, trailer pkg, Reese hitch, air shocks, Hayden cooler, steel radials, must sell. \$1250. 878-0079.

72 BSA MOTORCYCLE - 650, 1500 mi, garaged, 8" extension, triumph tank, custom paint job-exhaust pipes, 2 helmets. \$1400. 744-5148 after 5.

62 STUDEBAKER GRAN TURISMO - 4 spd, good cond, good tires, for Studebaker buffs. \$250. L. Kopp, Ext. 2265.

69 VW SQUAREBACK - 68,000 mi. \$900. Jones, Ext. 4581.

1972 1/2 HONDA - CB 350cc, luggage rack, metallic green, excel cond. \$700 firm. 698-4808.

66 MUSTANG - 289 V8. \$350. 289-2420 after 6.

Boats & Marine Supplies

21' SLOOP - Gaff rig, fg over wood, compl equipped, 1971 Evinrude (4 hp). Ben, Ext. 2902.

15' THOMPSON LAPSTRAKE RUNABOUT - W/35 hp Evinrude motor, in water, fiberglass bottom. \$250. Nauman, Ext. 3381, 286-3764.

14' RUNABOUT - W/trailer. \$125. 581-0932 after 6.

14' STARCRAFT 1967 - Fiberglass, elec start, navy top, 1967-33 hp Evinrude eng, tri hull, anchor, Tee-Nee trailer, 4 new life jackets. Sacrifice, \$800. 289-2420 after 6.

16' CHRYSLER ALUM BOAT - W/Tee Nee trailer, both excel cond. \$650. John, Ext. 3354.

Miscellaneous

PRESSURE COOKER - 5m "Presto," \$4; 10 gal, 2 1/2 gal aquariums & wrought iron stand, all \$7. Clive, Ext. 4237, 751-2697.

SHORT WAVE RCVR - Allied DX 150, \$50; SSB linear 1 KW w/pwr supply, meterec, rack mounted, \$50; prop pitch motor w/xmfr & reverse relay, \$25. Bill, Ext. 4641.

1971 COX TENT CAMPER - Perf cond, sleeps 6, table, storage, elec. Bill, Ext. 4641.

GUITAR - Steel strings in perf cond; blonde cascade fall, name your price; spring, winter coats, size 10, 12. Marlene, 744-5801.

THANK YOU - To the very nice person who found my watch outside the Bank last Friday, and returned it to personnel, a very big thank you. Elaine Rowland.

FRIGIDAIRE REFRIG - Older, in working cond; king size GE rotisserie-broiler; lg soft-bodied doll; GE hairsetter. 286-0376.

TUBE TESTER - Conar model 221 w/instructions & adapters for picture tubes, new cond. \$48. 744-2506.

1 HP DEEP WELL JET PUMP - W/tank, both perf cond. \$75 takes both. R. DiLello, Ext. 2333.

SIGNAL GENERATOR - Heathkit model IG-102, 6 bands, w/instructions, perf cond. \$28. 744-2506.

BELT MASSAGER - 3 spd, twin post construction, w/instructions, new cond. \$45. 744-2506.

WIG - Ash blonde fall, like new. Was \$40, now \$19.98. Joyce, 475-8406.

DIATOMACEOUS EARTH - Almost 100#, yours to pick up in Centereach. Claire, Ext. 3356.

OLD RECORD PLAYER - In working cond, cabinet style, hand crank, old records, bamboo needles, best offer. Ext. 3747, 363-6550.

BARKALOUNGER - Reclining chair upholstered in green fabric, new cond, \$75; smudge pot, like new, will keep your orchard warm for years to come, \$10. Carey, Ext. 4174 after 5.

DIN SET - 5 pc maple round table w/captains chairs, good cond. \$75. Carey, Ext. 4174 after 5.

90" SOFA - W/new custom made slipcovers. \$75. Carey, Ext. 4174 after 5.

UPHOLSTERED CHAIR - Good cond, \$35; elec iron, Kenmore, \$2; bedspread, white heirloom twin size. 286-2280.

FIESTA PORTABLE ORGAN - In maple cabinet, w/matching bench. \$75. Roger, 286-9751.

WAYNE WELL PUMP - 1/4 hp w/40 gal tank, good cond. \$30. Roger, Ext. 4281, 286-9751.

GE REFRIG - Copper, 2 dr, self defrost, excel cond. \$75. Ext. 3332.

COVERED WAGON TRUCK CAMPER - Self contained sleeps 6, gas & elec refrig, 3 burner stove & oven. \$1000. Andy, Ext. 4280, 744-9027 after 5.

8' CAB OVER CAMPER - Sleeps 4, stove, head, sink, jacks. Tony, Ext. 4278, 924-8225.

BACK-TO-SCHOOL DRESSES - Girl's size 5-6, excel cond, Aileen Girl, Polly Flinders, Cinderella, \$3. ea. 941-3609.

RETURNING TO EUROPE, MUST SELL - BSR record changer; iron; blender; fondue; misc pots, pans & household items. 286-1493 eves.

35 MM CAMERA - \$20; 8 mm movie camera, turret lens, \$20; 8 mm movie projector, zoom lens, \$25. Ext. 3121.

GE STEREO & AM/FM RADIO - In 48" colonial maple cab. \$100. 585-8322.

APT SIZE WASHER - Works A-OK. \$25. 585-8322.

1971 BRAVO HDTP CAMPING TRAILER - 12" tires, sleeps 6, single dinette, retractable step, locking s/s door. \$850. Walter, Ext. 3499.

17 CU FT REFRIG - Westinghouse frost-free, copper-tone; 24" range hood, white, w/fan & light. 757-0929.

SELL OR EXCHANGE - Pr 27" h table lamps, speckled eggshell porcelain base, white shades. Ext. 3655, 381-2002.

WET SUIT - To fit man approx 5'7"-160 lbs. \$30. A. Heylmann, Ext. 4313.

BICYCLE - Girl's or ladies' 26", wide tires, blue w/chrome fenders & wheels, excel cond. \$30. Ext. 3601.

ALUM DOOR - 2 screens, 36 1/4x80 3/4. \$20. 744-5871.

CHILD'S CHIFFEROBE - Good cond. \$15. Linda, Ext. 2896, 286-1201.

SPORT'S JACKET - 12-16, \$4-5. A. Munsterman. 744-5871.

SAW SHARPENING EQUIPMENT - Auto filer, auto retooter, auto setter, manual setter, sharp-all grinder, extra grinding wheels, files, spare parts. Ted, Ext. 4661, LT9-2470.

NEW SOFABED - Sloane's, lt wheat color flecked w/brown, must sell. \$250. 472-1735 after 6.

AQUARIUM - Good tank, pump, light, heater, like new, extras. \$10. Tim, 588-0154.

SKIS - 1 pr 185 cm w/alum poles, good cond. \$20. R. Meyer, Ext. 4615, LT9-5757.

BROWNING SWEET 16 SHOTGUN - \$150; shotgun shell reloading press, \$25. Ext. 3354.

19" PANASONIC COLOR TV - Table model, 5 yrs old, good picture. \$225. 581-8412.

8 TRACK TAPES - New, list avail. \$2.50 ea. C. Nielson, Ext. 4279/4280.

MOBILE HOME IN FLORIDA - 1972, 72x12, 3 bedrms, 2 full baths, lived in 6 mos, unfurn. Sal. 878-2486.

CHRISTMAS TREE - 7' artificial blue spruce, like new, \$10; 21" Craftsman reel type lawnmower, excel cond, w/grass catcher & gas can, \$60. Walt K., 286-0246.

PORTABLE RECORD PLAYER - RCA, 3 spd, good cond, \$10; girl's figure ice skates, size 9, 2 pr, used twice, \$5/pr; violin, over 50 yrs old, good cond, case worn, \$15. Walt K., 286-0246.

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

EAST PATCHOGUE - 5 bedrms, 3 baths, liv rm, din rm, fam rm w/stone fireplace, screen porch, 2-car garage, swimming pool, extras. Asking \$58,000. 286-9015.

MIDDLE ISLAND - Custom built 2-story colonial, 3 bedrms, 2 baths, fam rm w/fireplace, on 3 acres, prop on 2 rds adjoining golf course. Tony, Ext. 4278, 924-8225.

BELLPORT - 5 bedrm hi-ranch, eat-in kitchen, panelled fam rm, 2 baths, att garage, sundeck. Ext. 3986, 286-3406.

PT JEFF - School Dist 6, 6 bedrms, 3 baths, kitchen, din rm, liv rm, fam rm w/fireplace, util rm, all appliances, central air cond, 3-zone heat, 3-car garage. Priced in the 60's. 473-3987.

For Rent

3 BEDRM APT - Furn or unfurn. Mike, Ext. 4851.

SELDEN - 2 rm apt, priv entrance, appliances, util, avail immediately. 928-6538.

MUST BE SEEN TO APPRECIATE - Prop borders on lake, 2 bedrm ranch, fireplace, att breezeway & garage. Ext. 2881, 924-3919 after 5:30.

BELLPORT - Waterfront, beautiful landscaping, fully furn & equipped, liv rm, 4 bedrms, din rm, study, kitchen w/new washer, drier, dishwasher & 2-oven stove, avail Sept 15 - June 15. \$375/mo. 286-8744, 286-1017.

FURN RM - Kitchen privileges. W. Lundgren, Ext. 3800, 585-3794.

BELLPORT VILLAGE - Lg furn house on lg lot, 4-5 bedrms, 2 1/2 baths, all new kitchen, lg playrm, beach privileges, avail for 1 yr beginning 9/1. \$400/mo. Remsberg, Ext. 4335, 286-9458.

2 BEDRM CONDOMINIUM - 1 bath, w/w, all appliances, central air cond, 5 min from Lab. 924-3963 after 5.

Wanted

HOMES - For 2 yellow & white male kittens - free! Nauman, Ext. 3381, 286-3764.

LOAN - Of exterior house spray painter in exchange for home-baked bread; you judge rate of exchange. Ext. 3655, 281-2002.

TWO 6-HOLE TIRE RIME - 6.70x15, w/wo tires. O.E. Dwyer, Ext. 4491.

BICYCLES - We have had 4 bicycles "borrowed" from the back of the Biology bldg over 2 yrs. Could they be returned? Anyone, Ext. 3396.

COVER - For 24' round pool, good cond & reasonably priced. 581-8412.

BOY'S BICYCLE - Good cond, 24". Ext. 2942, 286-3742.

LADIES' BIKE - Used, 3 spd, in working cond; fishing gear for on shore (surf casting); used crib bumpers. Marlene, 744-5801.

GENTLEMAN FROM INDIA - To show me how to wrap a turban. Geo., Ext. 2043.

HOME - For founding Siamese cat, chocolate-Point, neutered male, about 2 yrs old, beautiful, affectionate, good w/children, box trained. Curtiss, Ext. 4608, 744-5803.

SM PR OLD-FASHIONED ICE TONGS - Helen, Ext. 3335, 878-0993.

BABYSITTER - Working mother needs babysitter for sm children, Riverhead area. Peggy, Ext. 3327.

Services

ELECTRONIC "GARAGE SALE" - Ham radio, test, microwave & misc parts, Sat & Sun, corner Main & Lake St, Setauket. C. Hohberger, 751-2697.

PIANO LESSONS - Private group instruction, also theory harmony & history of music. 924-3303.

GARAGE SALE - 8/25 & 8/26, 68 Head of Neck Rd, Bellport; antiques, bric-a-brac, other treasures. Ext. 2881.

FISHERMAN - Do you want your catch smoked? Gerd, 744-9411 after 5:30.

TREE REMOVAL & CHAIN SAW WORK - Also light hauling, free estimates. Ken, 289-8212 eves.

GARAGE SALE - Baby Items, toys, furn, extras; 263 Swan Lake Dr, Patchogue, Fri-Sat Aug 24-25, 10 am-4 pm.

DOG OWNERS - Is your pup a pet or a pest? Our basic obedience course begins Fri 9/7 at 7 pm. P. Warner, Ext. 3791, 727-1218 days.

FOR CHARTER TO EXPERIENCED SAILORS - 36' yawl, southern Maine, Aug-Sept. 286-0798, 207-363-4151.

Classified Ad Policy

Deadline is 12 noon Monday for publication Friday of the same week.

- The Brookhaven Bulletin's classified section may be used only by active and retired Laboratory employees.
- All items for sale or rent must be the advertiser's property.
- Ads for material acquired for resale in association with a full or part-time business cannot be accepted.
- Firearms offered for sale or trade may not be brought on site.
- Ads not carried because of space restrictions will be held for publication in the next issue.
- Ads are run only once and must be resubmitted if they are to be repeated.
- Ads should be restricted to 20 words or less and typed or printed on the form provided, and must bear the employees signature.

<input type="checkbox"/> For Sale: Auto & Auto Supplies	<input type="checkbox"/> Wanted	Check <input checked="" type="checkbox"/> the heading applying to your ad. Print or type your ad in 20 words or less.
<input type="checkbox"/> For Sale: Boats & Marine Supplies	<input type="checkbox"/> Carpools	
<input type="checkbox"/> For Sale: Miscellaneous	<input type="checkbox"/> Lost & Found <input type="checkbox"/> Services	

Ads concerning 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, Room 111, 40 Brookhaven Avenue.

(Name & Phone No. To Call)

Employee's Signature Life No. Ext.
Send to: Brookhaven Bulletin, 40 Brookhaven Avenue (Ext. 2345).

Ads left out of this issue because of lack of space need not be re-submitted in order to run in next week's issue