

High Intensity, High Energy and High Temperature — New Frontiers in Physics Discussed at AGS-RHIC Users Meeting

BNL's Alternating Gradient Synchrotron (AGS) established another world's record for proton-beam intensity — 3.46×10^{13} protons per pulse — which was set and announced the first morning of the 1994 annual AGS-RHIC Users Meeting, June 14-15. By press time, this record had been exceeded and now stands at 3.76×10^{13} protons per pulse.

Philip Pile, Head of the AGS Experimental Planning & Support Division, also promised the approximately 200 attendees that, during the AGS gold-beam run in September and October, the peak gold-beam intensity is expected to be greater than 2×10^8 ions per pulse.

At the beginning of the meeting, AGS-RHIC users were informed by BNL Director Nicholas Samios that the Appropriations Committee of the U.S. House of Representatives had just added \$25 million to the 1995 fiscal year (FY) budget for high-energy physics. While this is good news, Samios pointed out that the Senate had yet to act and that the final FY95 budget for high-energy physics will have to survive the House-Senate reconciliation and a vote in the full Congress.

"The President's 1995 budget will restrict the AGS proton run to 12 weeks, but, if the \$25 million is added in, then we hope to have a more reasonable schedule of 18-20 weeks next year," commented Samios.

Future Plans for the AGS

During the meeting, users also learned that the Division of High Energy Physics in DOE's Office of Energy Research (OER) will continue through 1999 to fund the lion's share of the AGS, which is the AGS's high-intensity proton physics program, currently focusing on rare-kaon decay experiments.

Pictured during a break at the 1994 annual AGS-RHIC Users Meeting are: (from left) David Hendrie, Director, Division of Nuclear Physics, Office of Energy Research (OER), U.S. Department of Energy (DOE); Mel Schwartz, BNL Associate Director for High Energy & Nuclear Physics; Chairman of the AGS Users Group Executive Committee Hank Crawford, University of California, Berkeley; and John O'Fallon, Director, Division of High Energy Physics, OER, DOE.



At that time, the AGS will begin serving as the heavy-ion injector for BNL's Relativistic Heavy Ion Collider (RHIC). Though it will inject heavy ions into RHIC twice a day for over 37 weeks a year, the AGS would also be capable of an independent proton-physics program, since it takes only minutes to inject heavy ions and the switch-over time between heavy ions and protons will be less than 30 minutes. This program could include the next generation of rare-kaon experiments, as well as the completion of an approved muon g-2 experiment and a new neutrino oscillation search.

When RHIC is commissioned, however, OER's Division of Nuclear Physics will support the operation of the AGS as an injector, while the Division of High Energy Physics will only have to fund the incremental cost of continuing the proton physics program at the AGS. That ranges from an estimated \$5 million per year for operating the test beam alone to \$25 million for carrying out a full research program.

So, though meeting participants were informed by Mel Schwartz, BNL's Associate Director for High Energy and Nuclear Physics, that the "real

future of this Laboratory is in the heavy-ion business," they also learned that the AGS will have a future independent of RHIC.

"I think we have a bright future," stated Samios.

The construction of RHIC itself and its associated detectors, according to RHIC Project Head Satoshi Ozaki, are on schedule, which Samios credits to "extremely effective management." Due to DOE funding however, RHIC's completion date has been stretched one-and-a-half years beyond its original schedule, to 1999.

"We are making such good progress that, if funding improves, then we may be ready by 1998," said Ozaki.

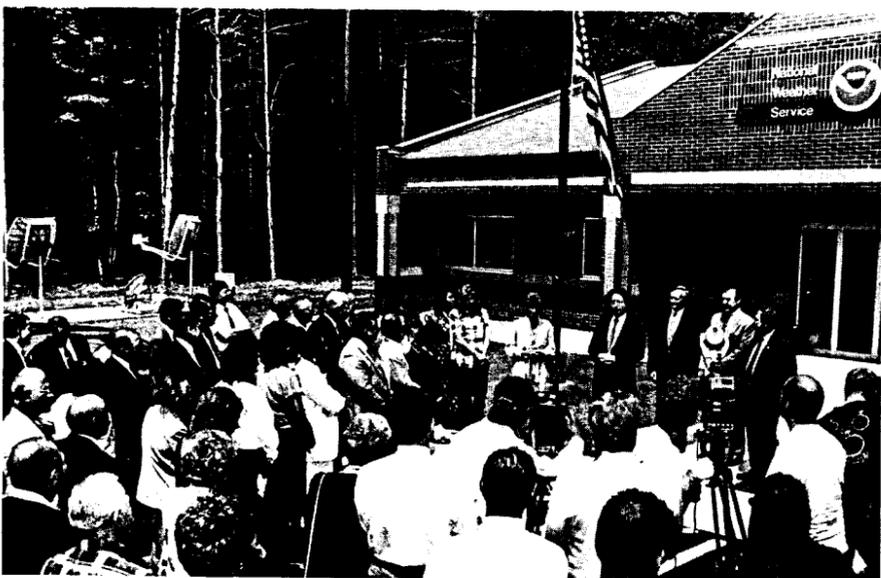
On Board With the LHC

As a complement to the high-intensity proton frontier and the high-temperature heavy-ion frontier here at Brookhaven, the high-energy future of proton physics will be at the Large Hadron Collider, which has been proposed to be commissioned at the European particle physics laboratory CERN in Switzerland in 2003.

To place U.S. physicists at that energy forefront, John O'Fallon, Director of the Division of High Energy Physics in DOE's Office of Energy Research (OER), reported that OER Director Martha Krebs now chairs an interagency working group to establish the framework for negotiating U.S. participation in the LHC. These negotiations will begin in July, when Krebs visits CERN.

However, O'Fallon stated, "The final agreement will depend on the outcome of the budget for fiscal year 1996, for there is no money set aside for that purpose in the 1995 budget and none approved for that purpose in the '94 budget; until then, it has to come out (continued on page 2)

Weather Watchers on Site



On June 7, a crowd gathered for an official ceremony marking the opening of the National Weather Service (NWS) Forecast Office at BNL. Among the speakers were: (from left at the flagpole) Susan Zevin, Director of the Eastern Region, NWS; BNL Director Nicholas Samios; U.S. Congressman George Hochbrueckner; Michael Wyllie, NWS Meteorologist; and Robert Landis, NWS Deputy Assistant Administrator for Operations. Roughly 100 people, including local, state and federal officials, community representatives, business people, politicians and members of the media, attended the ceremony and toured the facility. The highlight of the tour was a demonstration of the enhanced weather forecasting capabilities of the new Doppler radar, which BNLers can spot as a giant white ball peeking above the trees on the east end of the site. The devices visible in the picture (left) are communications-satellite dishes.

— photos in this issue by Roger Stoutenburgh

ANS Honors Walter Kato

Senior Nuclear Engineer Walter Kato, Department of Advanced Technology (DAT), received one of the American Nuclear Society's (ANS) 1994 leadership awards on June 21 during the society's annual meeting in New Orleans.

Only eight of the society's more than 16,000 members were singled out for this honor, according to Robert McNair of BNL's Reactor Division who is currently president of ANS's Long Island Section.

The award was established in 1989 to recognize ANS members for substantial contributions in leadership, governance, or direction of the national society over a prolonged period. Winners are presented with an engraved plaque.

"I am very pleased to receive the ANS leadership award," said Kato, who, from 1988 to 1991, served as chairman of the Department of Nuclear Energy, which was the predecessor to DAT. "It has been exceptionally rewarding professionally to have participated in the activities of this

dynamic, 16,000-member society over the past almost 40 years. The society has provided me the excellent opportunity to meet and cooperate with other nuclear scientists on a national and international basis."

The ANS's primary objectives are promoting understanding and advancement of nuclear science, technology, and the allied sciences and arts, and protecting the environment.

Kato is a charter member of the ANS, founded in the late 1950s, and has been an ANS Fellow since 1973.

He served on the ANS Board of Directors, 1974-1977, and is now serving a second consecutive three-year term. The 33-

member board helps manage the society's business, and formulates and implements its policies.

He has also served in the past as Chairman of the ANS Reactor Physics and Nuclear Safety Divisions, Technical Program Chairman of the 1976 annual meeting, and co-organizer and Chairman of the Long Island section. (continued on page 3)



Walter Kato

SEP Improves Inventory-Taking of Chemicals Used at BNL

At least 2,000 hazardous and toxic chemicals are used at the Lab, so keeping track of them is a formidable task.

At BNL, this task falls to the Safety and Environmental Protection Division (SEP), which, to meet U.S. Department of Energy (DOE) and other federal guidelines, annually conducts an inventory.

When SEP's Doan Hansen first organized and coordinated the required inventory three years ago, he focused on one goal: streamlining this effort to ensure the most economical and timely inventories in each succeeding year, to be used as the basis for annual reports to the U.S. Environmental Protection Agency (EPA).

Said Bob Casey, Head of SEP, "Failure to submit a correct report is subject to fines of up to \$25,000 per day per chemical. I commend Doan Hansen and the team members, both within SEP and in the other departments and divisions, who successfully accomplished the job within the time limit, and helped the Lab to avoid any fines."

Since hazardous or toxic chemicals are potentially harmful to Lab employees, the surrounding community and the environment, the Lab must submit inventories and plans for dealing with chemical emergencies to federal, state and local authorities. An inventory is the first step in forming a comprehensive emergency plan.

Initially, this was a tedious job: At least one person in each of the more than 300 buildings on site had to be contacted to determine if any listed



Reviewing BNL's 1,008-page annual chemical inventory are: (from left) the Safety and Environmental Protection Division's Doan Hansen, Keith Lally, Sheila Bubka and Jacqueline Yates.

hazardous chemical in a quantity exceeding one gallon or five pounds was stored or used at that location.

For each chemical reported, information on its quantity, emissions, uses, storage and disposal had to be recorded, submitted to SEP and entered in a database.

For example, one type of chemical reporting required that, for each listed chemical on site in excess of 10,000

pounds, a nine-page report had to be written for the EPA. The New York State Emergency Response Commission, the Suffolk County Emergency Planning Committee, the BNL Fire/Rescue Group and local community fire departments also received copies.

Keith Lally, SEP, created the database for the inventory. Assisting Hansen with the database entries were: Sheila Bubka, Jacqueline Yates

and Sharon Zambelli, all of SEP. Using the same data, SEP's George Goode, Barbara Royce and Jeffrey Williams prepared additional chemical reporting information on waste minimization and effluent releases.

"This is not just an SEP effort," said Hansen. "So many people are involved — essentially all the departments and divisions in the Lab. I would especially like to thank Carol Creutz in the Chemistry Department, Neal Tempel in the Biology Department, and Eric Kahn of Plant Engineering, for helping in the collection of data."

In the most recently completed inventory for calendar year 1993, of the approximately 2,000 chemicals that were reported as being stored or used on site, five were in excess of 10,000 pounds — acetone; 1,1,1 trichloroethane; sulfuric acid; methanol and chlorine.

"One problem is that DOE and the EPA only accept inventories in pounds," said Hansen. "So, taking the inventory is very labor-intensive because, for example, the contents of all gas cylinders on site have to be converted into pounds."

He added, "Currently, we are compiling information for the third inventory. In the past, we sent the survey forms out all at once. Now, we conduct an annual chemical inventory throughout the year. Different BNL departments are updated each month so it's not an overwhelming task. There's more time to plan ahead."

— Diane Greenberg

AGS-RHIC

(cont'd)

of existing funds."

Given the BNL high-energy physics community's interest in being at the energy frontier, Laboratory Director Nicholas Samios announced the appointment of BNL Senior Physicist and Columbia University physics professor William Willis as Assistant to the Director for the CERN Collaboration. In addition, Samios informed the audience that Robert Palmer, who is Head of BNL's Center for Accelerator Physics, is coordinating the U.S. involvement in building the LHC's accelerator systems.

Samios also let it be known that Schwartz has decided to leave his BNL position, after three years, to assume the I.I. Rabi Chair of Physics at Columbia University.

RHIC Physics & Funding

Other speakers at the annual meeting outlined the opportunities for a limited proton-physics program at RHIC — specifically an approved experiment to measure proton-proton elastic and total cross section, and an approved spin-physics program. The possibility of using RHIC for a high statistics investigation of B particles, that is, particles containing at least one bottom quark, was also discussed.

Given the intermingling of proton physics with the heavy-ion physics at RHIC, O'Fallon and David Hendrie, Director of the Division of Nuclear Physics, OER, addressed the funding boundaries between the fields, agreeing to continue operations funding of physicists who venture short-term from one field into another. But, "if this becomes a career change, then operating support should be sought from another DOE office," said O'Fallon.

The two DOE Division Heads also reviewed funding scenarios in light of the reports on the future of their respective fields recently released by the High Energy Physics Advisory Panel (HEPAP) and the Nuclear Science Advisory Committee (NSAC),

which were also presented at the users meeting.

Walter Henning of Argonne National Laboratory presented the NSAC subcommittee's specific recommendations for getting the most for the declining nuclear physics dollar in the immediate future, which included the running of high energy gold beams at the AGS and advancing the RHIC project.

"I am dismayed that the federal budget doesn't allow us to take better advantage of the gold beams at the AGS," commented Hendrie.

While the AGS could accommodate those who had planned experiments for KAON, a canceled Canadian accelerator that would have produced beams of kaons similar to those already produced at the AGS, users were informed that any new funding for KAON-type accelerator upgrades or experiments at the AGS or elsewhere would have to be deferred until NSAC reassesses its long-range planning.

As presented by Jack Ritchie of the University of Texas, the Drell subpanel of HEPAP took a more general approach to high-energy budget woes. Its biggest conclusion is that the field needs a \$50-million budget supplement for three years beginning in fiscal year 1996 to restore U.S. ability to do research in the field in the post-Superconducting Super Collider era.

The subpanel added as a corollary that, when the upgrade to the main injector of the Tevatron at Fermi National Accelerator Laboratory and the new B-factory at the Stanford Linear Accelerator Center are completed and when the supplement runs out in three years, the funds formerly earmarked for those construction projects should be kept in the high-energy budget, to maintain the existing research program and begin new initiatives.

"The report is realistic and reasonable, and it was unanimously adopted by HEPAP and has been well-received by DOE," commented Ritchie. "But, if we want the \$50 million, then we need active support from the community."

— Marsha Belford

BNL in the Press — The View From Science

Science magazine reporter Christopher Anderson takes a look at BNL's recent press coverage in the following article, which is reprinted here, with permission, as it appeared in *Science*, Vol. 264, 20 May 1994, page 1079 (copyright 1994 by the AAAS).

DOE Lab Lives PR Nightmare

During the Cold War, government research labs such as Livermore and Los Alamos had to live with somewhat sinister reputations because of their weapons work. Now it's Brookhaven National Laboratory's turn. The mild-mannered research outfit on Long Island is fully open to the public and does no defense research or other secret work. But that hasn't stopped the press, activists, and even a couple of scientists from accusing it of everything from contributing to Long Island's high breast cancer rate to keeping aliens in captivity.

This year's blitz of bad press started in February, when the Fox TV network broadcast a documentary publicizing allegations by a group known as the Long Island UFO Network. Seems that Brookhaven has a history of maltreating aliens. In 1990, the UFO Network claimed that Brookhaven scientists used a Star Wars laser to "scramble the propulsion drive" of a UFO, crashing it and killing its 18-member alien crew. The UFO Network didn't blame the lab for the crash of a second UFO 2 years later, but it claims that the lab's fire trucks quickly arrived and spirited aliens and wreckage away for study.

Things have degenerated, if possible, since then. On 31 March, a fire at a Brookhaven research reactor released 10 microcuries of radioactive gas into the building it's housed in. The lab insists the amount was barely detectable and caused no apparent harm, but that didn't stop the *New York Times* and other papers from linking the radiation release to an unpublished study from retired University of Pittsburgh professor Ernest Sternglass, who calculated that the Brookhaven area has the highest breast-cancer rate in the country.

The *Times* article finally roused Brookhaven officials to fight back. On 21 April, deputy director Martin Blume fired a letter to the *Times* deploring the "irresponsible" allegation. Blume noted that, among other flaws in the study, Sternglass had placed Brookhaven in the wrong part of the county: The lab, Blume wrote, is actually in the region with the lowest cancer incidence.

In any case, the *Times* missed the real story. A Long Island newspaper — *The Tide* — reported last month that anonymous tipsters have revealed that the fire broke out when Brookhaven researchers tried to analyze the most recent UFO debris.

Added Addresses

- Brode Haven Nt. Lab
- Luke Haven Laborator

- Brooks International Lab
Uptown New York
- Broke Heaven
- Brocktauen National Lab

Volunteers Needed For Two Studies

Two research efforts are seeking volunteers from the BNL community.

Brain-Imaging

Men and women 20 years and older, and pairs of identical twins 18 years and older are needed for participation in brain-imaging studies. A fee will be paid. Supervisory approval is required. Contact Naomi Pappas, Ext. 2694.

Fallout Baseline

Employees who are scheduled for Lab physicals over the next few weeks may be asked if they are willing to provide a second urine sample to provide a baseline for research being done by Ed Kaplan and his group in BNL's Department of Advanced Technology (DAT), for the Defense Nuclear Agency in the U.S. Department of Defense.

This agency needs to determine whether veterans exposed to radioactive fallout from nuclear testing in the 1950s and '60s show any greater internal dose of plutonium-239 (²³⁹Pu) than people who were not similarly exposed.

In looking for a suitable urine bioassay for ²³⁹Pu, the agency found that the one method with adequate sensitivity is a BNL-developed procedure involving the fission-track analysis of neutron-bombarded samples, which requires exacting chemical separation of the plutonium from environmental uranium contamination. The ²³⁹Pu bioassay was developed for BNL's ongoing study of exposed Marshall Islands natives.

Without a baseline against which to compare the results of bioassays of veterans, however, no conclusions can be drawn. Thus, the agency wishes to establish a baseline from a population of geographically diverse, non-exposed Americans of an age range corresponding to nuclear-test veterans. Towards this end, the DAT team will be collecting and analyzing urine samples from volunteers at several national laboratories and elsewhere.

BNLers who agree to help will simply provide two urine samples instead of one at their physicals. The samples will be analyzed with the ²³⁹Pu bioassay, and the data will be provided to the agency for comparison with data from the veterans.

For more information, call Ed Kaplan, Ext. 2007.

Walter Kato

(cont'd)

Kato came to BNL in 1952 as a student from Pennsylvania State University to work on his graduate thesis. He received his Ph.D. in physics in 1954. From 1953 to 1975, Kato worked in reactor physics and safety at Argonne National Laboratory. He returned to BNL in 1975 as Associate Chairman of the Department of Applied Science and advanced steadily in his career at BNL.

Kato is currently working to deter-

Get in the Swimathon '94 For the American Cancer Society

On Saturday, July 23, see how far you can swim in the Lab pool and how much money you can raise for the Long Island Division of the American Cancer Society (ACS), during the fifth annual BNL Swimathon sponsored by the Brookhaven Employees Recreation Association (BERA).

From 8 a.m. to 9 p.m. that day, swimmers may put in as many laps as they can — and take breaks between sets of laps. Since Swimathon '94 is not a race or an endurance test, all participants may go a good distance to raise money for a worthy cause by swimming discontinuously as much as they wish over those 13 hours.

The BNL Swimathon is open to all BERA members. If enough swimmers from one department, division, group or club wish to sign up as a team, they are encouraged to do so. Swimmers may participate on more than one team.

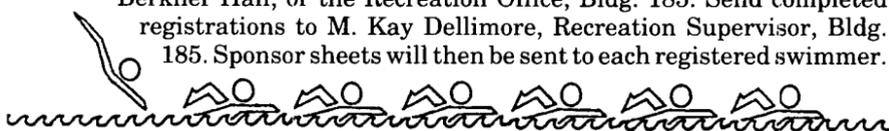
In turn, each swimmer or team will be asked to sign up sponsors who pledge money per lap or make a flat pledge. The total donation that each sponsor makes will be a tax-deductible contribution to the ACS.

In addition to swimmers and sponsors, Swimathon '94 needs volunteers to check in swimmers, count laps, serve the free food and refreshments, and keep the music playing.

For their in-the-water or on-land efforts, each participant will be awarded a 1994 commemorative T-shirt, donated by the ACS.

As the largest private funding organization for cancer research in the U.S., the ACS has distributed more than \$1.5 billion in research grants since 1943. Last year on Long Island, research grants totaled some \$2.9 million, which went to cancer investigators at the State University of New York at Stony Brook, Cold Spring Harbor Laboratory and North Shore University Hospital.

To sign up to swim or to help during the BNL Swimathon, use the coupon below or the forms available at the pool, Bldg. 478; the BERA Sales Office, Berkner Hall; or the Recreation Office, Bldg. 185. Send completed registrations to M. Kay Dellimore, Recreation Supervisor, Bldg. 185. Sponsor sheets will then be sent to each registered swimmer.



BNL Swimathon '94

Sponsored by the Brookhaven Employees Recreation Association to benefit the American Cancer Society

Name _____ Life No. _____

Department/Division _____ Bldg. _____

Ext. _____ Fax _____ Home tel. (optional) _____

Swimmers — I am signing up to swim laps as a(n)

individual team member _____
name of team

Helpers — I volunteer to help during the

morning afternoon evening

Return form to: M. Kay Dellimore, Recreation Supervisor, Bldg. 185.

mine the age of highly enriched uranium in connection with weapons material disposition and is addressing nonproliferation issues.

He has developed a cooperative nuclear energy research program between the Nuclear Power Engineering Center of Japan and BNL. In 1993, he received a medal from the Japanese government for his contributions to nuclear safety and nuclear engineering education in Japan.

He is also a member of the Long Island Power Authority's independent review panel on the decommissioning of the Shoreham nuclear power station. — Georgia Moore
Georgia Moore is a summer student in the Public Affairs Office.

Arrivals & Departures

Arrivals

Sudipta Chatterjee App. Science
Patricia Cotton Dir. Office

Departures

This list includes all employees who have terminated from the Lab, including retirees:
Eugene D. Hassell Physics
Arthur R. Keller Jr. Sfgs. & Sec.
Lee J. Kerkhof App. Science

Pool Schedule

The summer schedule at the swimming pool will run from Friday, July 1, to Friday, September 30. For the July 4th holiday, the pool will be closed from Saturday, July 2, through Tuesday, July 5. When it reopens on Wednesday, July 6, the pool will have the following summer hours:

Open Hours

Monday through Friday

11 a.m. - 1:30 p.m. employees only
1:30 p.m. - 2 p.m. reserved for speed swimming and training
2:15 p.m. - 3:15 p.m. children's lessons
3:45 p.m. - 9 p.m. employees, families, guests*

Saturday & Sunday

1 p.m. - 5 p.m. employees, families, guests*

Fee Schedule

• Daily Admissions
employee or family member \$2.00
guest \$3.00
• Season Tickets (fees not prorated)
Individual \$40.00
Family \$50.00

*Guest ruling: One guest per employee is permitted. Advance arrangements for more guests, up to five at one time, must be made at the Recreation Office, Personnel Division, Bldg. 185. Guests must be accompanied by the sponsoring employee.

Dowling Day

On Tuesday, June 28, from 10 a.m. to 2 p.m. in Berkner Hall, Dowling College will hold an enrollment services day for BNL employees who are interested in continuing their education.

High Five From Blood Drive

Thanks and congratulations to the following five employees: Not only did they, along with 497 others, give the gift of life during last week's BNL Blood Drive, but, because they pledged before June 3 to give blood and were therefore entered in a drawing, they also each won a \$50 dinner certificate.

The winning blood donors are:

- Debbie Botts, Division of Contracts & Procurement
- Tom VanderPatten, Plant Engineering Division
- Raymond Archbold, Safety & Environmental Protection Division
- Jack Guthy, Physics Department
- John McCaffrey, RHIC Project

Service Awards

The following employees celebrated BNL service anniversaries during the month of June:

40 Years

Edward Caruso Biology
Charles W. Flood Jr. SEP
William J. Ruppert Plant Eng.

35 Years

Arland L. Carsten Adv. Tech.
B. Bryan Culwick AGS
Marion D. Janes Photo. & G. Arts
Ottmar Kistner Physics
Thaddeus F. Kycia Physics
James E. Rutherford Physics

30 Years

Mulki R. Bhat Adv. Tech.
Susan S. Lamm Biology
Elizabeth A. Pergan App. Science
Benjamin W. Rosen ... Mgmt. Info. Sys.
Susan M. Sevian Comp. & Comm.
Stephen T. Waski Jr. Plant Eng.

25 Years

Richard A. Holroyd Chemistry
Bette A. Morgan Comp. & Comm.

20 Years

Thomas R. Brown AGS
Edward Harmer Cent. Shops
Margaret J. Matkovich OMC
Morgan May Physics
Richard S. Rozensky Cent. Shops
Arthur G. Tingle Adv. Tech.
Randi B. Vogt Reactor
Wolfgang Wulff Adv. Tech.

10 Years

Robert N. Best NSLS
Yusuf Celebi App. Science
Mary Durham Plant Eng.
Joseph Kats AGS
George Kontovrakis Plant Eng.
Sheila E. Land Sup. & Mat'l.
Linda M. McCarthy SEP

Cafeteria Menu

Monday, June 27

Soup: Chicken noodle .80/1.10
A la Carte: London broil w/mushrooms 3.65
Fitness: Tomato & scallion pizza 3.35
Deli: Pastrami sandwich 2.95
Grill: Reuben platter 2.95

Tuesday, June 28

Soup: Cream of mushroom .80/1.10
A la Carte: Vincenza cod 3.45
Fitness: Pasta with marinara sauce 3.35
Deli: Virginia ham sandwich 2.95
Grill: Western omelet w/fries 2.35

Wednesday, June 29

Soup: Bavarian lentil .80/1.10
A la Carte: Pork chops 3.85
Fitness: Vegetable lasagna 3.35
Deli: Roast beef sandwich 2.95
Grill: Italian cheesesteak 2.95

Thursday, June 30

Soup: Cream of spinach .80/1.10
A la Carte: Deviled hen 4.00
Fitness: Spinach feta quiche 3.45
Deli: Corned beef sandwich 2.95
Grill: Ham & cheese 2.75

Friday, July 1

Soup: Seafood chowder .80/1.10
Display Cooking: Oriental entree 4.25
Fitness: Flounder d'Uxelles 3.75
Deli: Roast turkey sandwich w/gravy 2.95
Grill: Shrimp boat 3.25

BROOKHAVEN BULLETIN

Published weekly by the Public Affairs Office for the employees of BROOKHAVEN NATIONAL LABORATORY

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Classified Advertisements

Placement Notices

The Laboratory's placement policy is to select the best-qualified candidate for an available position. Consideration is given to candidates in the following order: (1) present employees within the department/division and/or appropriate bargaining unit, with preference for those within the immediate work group; (2) present employees within the Laboratory; and (3) outside applicants. In keeping with the Affirmative Action plan, selections are made without regard to age, race, color, religion, national origin, sex, handicap or veteran status.

Each week, the Personnel Division lists new placement notices. The purpose of these listings is, first, to give employees an opportunity to request consideration for themselves through Personnel, and second, for general recruiting under open recruitment. Because of the priority policy stated above, each listing does not necessarily represent an opportunity for all people.

Except when operational needs require otherwise, positions will be open for one week after publication.

For more information, contact the Employment Manager, Ext. 2882, or call the JOBSITE, Ext. 7744 (282-7744), for a complete listing of all openings.

OPEN RECRUITMENT - Opportunities for Laboratory employees and outside candidates.

NS 2559. TRAINING POSITION - Requires a BS or equivalent experience, and substantial appropriate training background. Proven ability to apply the systems approach to training methodology towards mandated radiological protection courses, i.e. GERT, Rad Worker 1 & 2, is necessary, as is previous experience as an industrial safety/industrial hygiene instructor. Safety & Environmental Protection Division.

DD 3287. SCIENTIFIC ASSOCIATE POSITION - Requires an MS in the physical or environmental sciences with strong computer skills, or an MS in computer science with a minor in the physical or environmental sciences. Will work on projects involved with compiling and analyzing inventories of emissions of pollutants into the atmosphere and modeling transport, transformation and removal of pollutants in the atmosphere. Department of Applied Science.

DD 0787. TECHNICAL POSITION - Requires an AAS in a technical field or equivalent experience, and a thorough knowledge of DOE, DOT, NRC and international hazardous material packaging and transportation regulations. Experience in the handling and storage of radioactive materials and an understanding of nuclear criticality is also required. Will provide support for on-site radioactive materials transfer. Must be able to obtain and maintain security clearance. Safeguards and Security Division.

Motor Vehicles & Supplies

91 TOYOTA SR5 COROLLA - 2-dr., 4-cyl., mint cond., loaded, alarm, sunroof, 43k mi. Chris, Ext. 7365.

90 ESCORT - 1.9, head, intake manifold, fuel injection, 24k mi., \$300; 78 Ford Granada, p/s, runs well, \$600. Harvey, 281-7568.

89 DODGE RAIDER - 4WD, 2-dr., 6-cyl., am/fm cass., Benzi, 58k mi., 5-sp., a/c, black Deflecta shield, excel. in/out. Lloyd, Ext. 5225.

89 JEEP WRANGLER - blue, 5-sp., 6-cyl., 4.2L, 71k hwy. mi., hardtop, am/fm cass., excel. cond., Ext. 3305 or 277-3824.

88 PONTIAC GRAND AM - charcoal gray, lt. gray int., 4-cyl., 110k mi., immaculate cond., must see, \$3,500. George, Ext. 2296.

87 DODGE ARIES - 63k mi., blue, many new parts, dependable. \$2,600. Marcia, Ext. 7129.

87 GRAND AM - 2-dr., 4-cyl., gray, a/c, a/t, p/s, p/b, 109k mi., new tires, brakes, exhaust, battery, \$2,500. Gary, Ext. 2031.

87 MAZDA 4x4 B2600 - black, 31" tires, custom rims, push-bar, T-tops, sunroof, tinted windows, Blaupunkt, new eng., 11k mi., \$5,000. Alex, 878-2577.

87 FORD MUSTANG - 5.0, worked motor, 5-sp., slowmaster exhaust, MDS ignition, many extras, excel. cond., must sell, \$5,500. Angel, 281-3440.

86 MITSUBISHI MIRAGE LE - a/t, 3-sp., v.g. cond., 95k mi., new trans., 4 tires, head gasket, exhaust, clean, \$1,500. Ed, Ext. 5914.

86 OLDSMOBILE - custom cruiser wagon, 4-cyl., 7 passenger, extras, good cond., light blue, dark blue velour int., 90k mi., \$2,200. George, 2296.

86 CORVETTE - red/red, a/t, Bose stereo, glass top, 48k mi., adult-driven, excel., \$12,000. Tara, 422-7759.

86 SUBARU TURBO XT - white, 5-sp., sunroof, stereo, a/c, good cond., ask. \$14,000. 758-8123.

84 CAMARO - needs engine, good tires, trans., make offer. John, 924-4262.

82 SUZUKI GS 650G MOTORCYCLE - garaged, covered, orig. owner, mint cond., royal red, shaft drive, 2 helmets, \$1,300. Hugo, 369-0971.

82 CADILLAC - runs well, \$2,000. Bert, Ext. 5156 or 581-4436.

81 CHEVY PICKUP - bedliner, am/fm cass., 32k mi., reblt. eng., no rust, \$1,950. Jim, Ext. 5400 or 878-6098.

81 TOYOTA COROLLA WAGON - a/t, 120k+ mi., runs well, dependable, \$600 or best offer. Terri, Ext. 2112.

76 DATSUN F-10 - needs carb., front brake lines, or good for parts, \$50. Ed, 929-4522.

TIRE & WHEEL - new, fit Ford Tempo, \$25. 924-6751.

CAR STEREO - removable face, CD, 8 speakers, 2 amps, gold co-ax cable, like new, \$500. Ext. 4424.

CUSTOM CAR COVER - for Mitsubishi 3000 GT/SL, like new, asking \$90; 2 oil filters, new, \$3.50/ea. Linda, Ext. 7187.

NOSE - complete for '75 Chevy Monte Carlo, asking \$175. Bill, Ext. 2214.

Boats & Marine Supplies

26' CHRIS CRAFT - dinette, galley, head, full canvas, sleeps 4, many extras, family boat. 475-3533.

19' CHAPARRAL 198XL - '88, 165-h.p. i/o Mercruiser, '93 EZ Loadrite trailer, w/power winch, am/fm stereo, mint cond. Ext. 3376.

PRactical SAILOR ISSUES - Consumers' Report for: sailors, 84-now, \$65. Ext. 4747 or 765-1075.

18' MANATEE - '76, 70-h.p., Evinrude, runs well, walk-through windshield, tapered V-hull, new Teleflex cables, new steering wheel, \$2,000. Alex, 878-2577.

ENGINE - 25-h.p. Evinrude, pull start, runs well, asking \$500. 924-6751.

SAILS - windsurfing, Gaastr sp. slalom, 6.4m², 5.7m², \$110/ea. Joe, Ext. 4139.

Furnishings & Appliances

AIR CONDITIONER - Kenmore, used only once, brand-new, 6,000 Btu, energy efficient, fits in 25"-38" window, orig. \$450, now \$300. Lisa, 467-8185.

AIR CONDITIONER - Friedrich Quietmaster 8,000 Btu, ER10, excel., \$225. Ken or Ellie, 325-1537.

BEDROOM SET - adult, light wood, 2 dressers, 1 nightstand, \$900. 395-0584 leave message.

BEDROOM SET - full-size bed, dark wood, Col., 6 pieces, good cond., \$400. John, Ext. 7411.

BEDROOM SET - 3 pieces, maple, twin bed, dresser, desk, new mattress, \$50. 325-8116 eves.

BREAKFRONT - china closet, walnut, Formica, 2 glass sliding door top, 2 solid door bottom, \$100; 2 step walnut end tables, \$25/ea. 924-3553.

DINING ROOM - custom pine, 6' china closet, buffet, 4' round, w/2 leaves, 2 captain's, 4 mate's chairs, table pads, \$790. Bob, Ext. 4628.

GAS RANGE - 30", bottled gas, works well, pilot lights, old, \$20. 924-6751.

KITCHEN TABLE - 36"x48", w/2 12" leaves, chairs, \$95. Jack, 744-3919.

LIVING ROOM - Col., pine, tan upholstery, couch, chair, rocker, coffee table, end table, good cond., \$120. Bob, 737-9726.

MICROWAVE OVEN - Little Litton, 0.5 cu. ft., \$20. Tom, Ext. 7196 or 286-2505.

PLAYPEN - hardly used, like new, \$40. Israel Yael, Ext. 4830 or 1037.

RANGE - 30", Whirlpool, \$50; refrigerator, 16 cu. ft., \$25. Ralph, Ext. 2591.

RANGE/OVEN - GE, 30", elec., harvest gold, 15 yrs. old, excel., \$100; Nutone range, exhaust hood, 2-speed, light, \$10. Mike, Ext. 7941.

SOFA BED - full-size bed, 2 recliners, phone compartment, lifetime Scotchguard, gray, \$2,000, brand-new. Sandy, Ext. 3541.

STOVE - GE, wall unit, v.g. cond., reasonable price. Dave, 732-6313.

TABLE - 42"x72", solid pine, w/6 chairs, 2 leaves, \$125; Fisher Price swing, \$25; portable crib, \$25. Ken, Ext. 2011 or 878-1420.

WATER BED - twin w/drawers, \$175; maple corner cabinet, 30"H, \$25; 5-piece girl's bedroom set, wood, \$100; 2 sets wood room dividers. 289-8212.

Tools, House & Garden

CABINETS - kitchen, 20 yrs. old, \$50. Ralph, Ext. 2591.

CEMENT BLOCKS - 100+, 8"x8"x16", you pick up, \$50. 924-3553.

LAWN MOWER - Snapper, ride-on, spreader, 26" cut, \$350. Ext. 3354 or 732-1913 after 5 p.m.

POOL - a/g, 32'L x 4'D, oval, 3 yrs. old, w/filter, cover, access, you take away, \$500 neg. Joseph, 467-8185.

TOOL CASE - new, attache-type, Xcelite, TC-100, orig. \$170, now \$60. 727-3608 any time.

Sports, Hobbies & Pets

AVON BOTTLES - from the 70s, no reasonable offer refused. Sue, Ext. 7235.

BIKE - Bottechia racing, touring bars, Campagnolo parts, excel. cond., computer & many extras, neon colors, \$500. 286-1330.

BICYCLE - women's 10-sp., 26", open frame, like new, \$95. Ralph, Ext. 4171.

BODY CONDITIONER - Columbia rowing-lifting machine, excel. cond., cost \$150, now \$50. 924-3553.

DALMATIANS - 4-wk.-old pups, 5 males, 4 females, champion lineage. 924-8558 after 5 p.m.

DARKROOM EQUIPMENT - Omega C760 enlarger w/Minolta lens, timer, paper sa'e, more, \$150 neg. Pete, Ext. 7955 or 929-3847.

ROWING MACHINE - Welso, various exercising positions, mint, \$55 w/handbook. Hugh, 929-8642.

LPs - Franklin Mint collection, favorite waltzes & overtures, classic violin performance, great romantic concert, hardly used. Janet, Ext. 2345 or 929-3910.

NORDICTRACK PRO - new \$400. 345-3170, leave message.

TELESCOPE - Celestron C-8 w/heavy-duty tripod, motorized polar mount, Televue eyepieces, Barlow lens filters, extras, \$650. Tom, Ext. 4563.

VIOLIN - 3/4 Stradivarius great cond., \$1,500. Alex, Ext. 3369 or 924-1866.

VIOLIN - full-size, good for student taking bus to school, \$165. Tim, 727-7741.

WEIGHTS - Joe Weider Olympic weights, 300 lbs., weight collars, heavy duty-bench w/leg extension, \$125 neg., like new. Bill, 281-4726.

Audio, Video & Computers

BATTERY - JVC camcorder BN-V12U, new, 6V, 1200mAh, \$10. Greg, Ext. 2575.

COMPUTER - Atari 1040 ST, 1 meg RAM, DSDD disk drive, Hires monochrome monitor, lots of software, excel. \$190. Henry, Ext. 3413.

COMPUTER - Macintosh Power Book 170, 4/40 memory w/FPU, case, manuals, \$1,100. John, 874-4902.

SPEAKER CABINET - Eastern Acoustic Works w/2 15" JBL speakers, 4 ducted ports, wheels, handles and kickplates, \$175. Steve, Ext. 2897.

STEREO RECORD PLAYER - walnut, 61"; Panasonic vacuum, upright, new \$50; patio umbrella, \$20; coffee table, \$30; rocker, \$150. Kathy, 744-2203.

VCR - Fisher, new, still in box, on-screen program, \$225. 289-8212.

VIDEOTAPES - Rocky & Bullwinkle, "Canadian Gothic" and "Blue Moose" episodes, \$18 new, now \$5 ea. Ron, Ext. 4553.

WORD PROCESSOR - Smith Corona w/CRT, like new cond. Ralph, Ext. 4171.

The Brookhaven Bulletin is printed on paper containing at least 50 percent recycled materials, with 10 percent post-consumer waste.



Letter Prompts New Ad Category

A letter to the editor from Anne Flood, RHIC Project, brought to our attention the fact that, when people are about to retire from the Lab, "Very often we do not get to see the various retirement party flyers and so miss the party or miss the chance to give the retiring employee a farewell phone call." We agree that it is unfortunate to miss a chance to bid adieu to someone who has been an important part of BNL, so we've decided to institute a new classified ad category to announce such after-work gatherings. The ad category will be called **Farewell Gatherings**. These ads should be submitted on the standard Sales & Notices form, and, like other ads submitted on that form, should not exceed 20 words. We will publish each ad a maximum of two times, but the ad must be resubmitted to run a second time.

Miscellaneous

BABY ITEMS - Evenflo crib, white, \$70; Cosco high chair, \$25; Century Royale stroller, \$50, all excel. cond. John, Ext. 3422 or 929-4101.

BOOTS - men's western, leather, black 7 1/2 D, black 10 1/2 D, brown 10 1/2 D, almost new. Pat, Ext. 5406.

COCKTAIL RING - women's 2 ct. tw diamond, size 10, \$3,195 appraisal, now \$700. Ruth, Ext. 3305.

JACKET - men's spring jacket, leather and wool, \$30. Pete, Ext. 2800.

Free

DOG - 3 yrs. old, male, German shepherd, needs good home, good temperament. Brian, 821-4234.

NATIONAL GEOGRAPHIC - 1979-85. Jack, 744-3919.

Yard & Garage Sales

EAST MORICHES - Sat. 6/25, 8 a.m.-5 p.m., 50 Montauk Ave.

FARMINGVILLE - multifamily, Sat. 6/25, rain date 6/26, books, old records, household items, etc., 4 Melissa Dr. 732-2472 for directions.

Lost & Found

FOUND - hearing aid on Brookhaven Ave. opposite Firehouse. Ken, Ext. 2563.

Car Pools

CUTCHOGUE AREA - need ride, will pay expenses, 8 a.m.-4:30 p.m. work hours. Rich, Ext. 3351 or 734-5066.

LIE EXIT 36 - need 4th for carpool. John, Ext. 5181.

Real Estate

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

For Rent

BAITING HOLLOW - beach cottage, sleeps 4, l/r, eik, full bath, deck, priv. beach, laundry, rec. hall, near farms, SplishSplash, wineries, \$400/wk., multiweek discount. Mike, Ext. 7861 or 331-7812 eves.

E. MORICHES - 3 bdrm., 2 baths, w/d, lg. yard, near bay, school, \$850/mo. + util., 1 yr. lease. Mona, Ext. 5056 or 878-9384 eves.

MANORVILLE - luxury 2-bdrm. townhome, 1 1/2 baths w/garden tub, gar., fp, w/d, skylights, cathedral ceiling, cac, pond view, \$950/mo. + util. Eric, Ext. 5875.

MIDDLE ISLAND - 1-bdrm. apt. w/sep. d/r, avail. 7/15, tennis court, swimming pool, \$665/mo. Shan, Ext. 4393 or 345-6923.

MIDDLE ISLAND - Artist Lake condo, 1-bdrm., work-in kit., l/r, d/r, full bath, cac, w/d, 5-min. to Lab, \$700/mo. + elec., 1 mo. sec. 744-8002.

NORTH SHIRLEY - studio, 14'x32' bdrm./l/r, bath, w/w, phone, cable, share kit., 1/2 acre fenced, pool, parking, single, nonsmoker pref., \$450/mo. incl. all, refs. & sec., avail. 7/1. Ext. 3413 or 399-6947.

PORT JEFF STATION - new, bright 1 bdrm., l/r, eik, patio, full bath, baseb. heat, \$750/mo. incl all + 1 mo. sec., avail. 7/1. Victor, Ext. 2271 or 474-4829.

PORT JEFF VILLAGE - 4-5 bdrm. Colonial, cac, 2-car gar., beach, country club, walk to village, harbor, avail. 7/1, also sell for \$225,000. Ext. 2085 or 331-3846.

ROCKY POINT - master bdrm., guest bdrm., office space, l/r-d/r, gar., w/d hookup, deck, walk to beach, ideal for 2, no pets, \$850/mo. + util., Milan, 718-721-4271 weekdays or 821-6698 wknds.

ROCKY POINT - 1-bdrm. bsmt. apt., \$250/all, working single only. John, 744-7898.

SELDEN - new, 1-bdrm. apt., eik, l/r, to-the-door parking, cable, priv. ent., no smoking, no pets, near SUNY Stony Brook, quiet, \$600/all. 696-1927.

SHIRLEY - room, share bath, mature, quiet, neat person wanted, walk to beach, \$75/week. 395-4553.

SHOREHAM VILLAGE - summer rental, swimming, tennis, boating, 4 bdrm., avail. July & August by week or month. 744-3480.

SOUND BEACH - 1-bdrm. apt., full bath, eik, cable, priv. ent. & parking, close to beaches, avail. 8/1, single, nonsmoker pref., \$500/all. 744-7007.

SOUND BEACH - 3 bdrm., 2 baths, eik, w/d, all appl., wood stove, lg. yard, quiet street, near beach, \$950/mo. 1 mo. sec., avail. 9/5. Susan, 821-5836.

ARROWHEAD LAKE - 2-bdrm. chalet w/loft, sleeps 8, fully furn., priv. area, near lakes, pool, tennis, \$300/wk., avail. late July, August. Ext. 4551 or 475-3612.

CATSKILLS - 3-bdrm. chalet w/sleeping loft, fully furn., near Hunter Mt. Music Festivals, fishing, golfing, hiking, game farm, etc. Bea, Ext. 3642 or Kay, Ext. 4501.

LAKE GEORGE - lakefront cottage, swimming 1' from your door, fishing, boat docking, fully equipped kit., sleeps 4-5. 518-747-7821 or 518-499-2581.

MT. DESERT ISLAND, MAINE - lakefront, full furn. 1 rm. cottage w/sleeping loft, kitchenette, bath, fp, deck on Echo Lake, Acadia Nat. Park, 6/25-10/15, \$450/wk. Bob, Ext. 2514.

HILTON HEAD ISLAND, SC - 2-bdrm. condo, sleeps 6, fully furn., 2 baths, pool, beach, golf nearby, April-Sept., \$450/wk. Guy, Ext. 3147 or 689-5378.

For Sale

BELLPORT VILLAGE - S. Howell's Pt. Rd., 2 bdrm., 2 full baths, decks, French doors, very secluded, steps to golf & tennis, outside Jacuzzi, \$199,000. Sue, Ext. 2888 or 286-1474 after 6 p.m.

CALVERTON - 2-bdrm. condo, 5 appliances, patio, upper deck, ac. Ext. 7595.

CUTCHOGUE - Nassau Point, 3-bdrm. ranch, 2 full baths, full bsmt., 16 yrs. old, 2-car gar., eik, screened patio, terrace brick & cedar, Thermopane windows, 1+ acre, taxes \$4,100, \$255,000. 734-7933.

E. PATCHOGUE - 3-bdrm. ranch, s. of S. Country Rd., mint, quiet, \$130,000. Ext. 3291 or 589-3020.

MASTIC - 120'x100' cleared bldg. lot, all variances & permits, asking \$30,000. Patti, Ext. 3145.

MEDFORD - Blue Ridge Country Club, 2-bdrm. condo, 1 1/2 baths, incl. golf, tennis, billiards, in/out pools, whirlpool, sauna, clubhouse, restaurant, 15 min. to Lab, \$79,990. 736-8742.

MIDDLE ISLAND - Artist Lake, 1-bdrm. condo, upper, new w/w, paint, blinds, cac, gas heat & cooking incl. in maint. fee, pool, tennis, \$45,000. 698-5046.

NORTH SHIRLEY - 3-bdrm. ranch, l/r, d/r, new kit. & appl., 1.5 car gar., full bsmt., fire & burglar alarm, dead-end street, fenced yard, est. neighborhood, assum. mortg., \$115,000. Jim C., Ext. 4150.

NORTH SHIRLEY - custom-built 2-story Colonial, 9 rooms, on 1/2 acre, \$129,000 neg. 924-0960.

PATCHOGUE - mint, 3-bdrm. Cape, bsmt., gar., decks, detached spa room, 1/2 acre, prof. landscaped, new heat, lgs, extra, \$115,000. 654-8648.

PORT JEFFERSON VILLAGE - custom-built, quiet, wooded, 3 1/2 baths, 2-car gar., fin. bsmt. w/sep. ent., bath & full windows, beach, golf, tennis. 331-4768.

RIDGE - 5-yr.-old, 3-bdrm. Colonial in Park Ridge Estates, 2 1/2 baths, deck, lgs, cac, 3/4 acre, landscaped, fenced, 1.5 mi. to Lab, ask. \$152,900. Ext. 2498 or 924-1837.

RIDGE - 5-yr.-old, high ranch; upstairs: 4 bdrm., 2 baths, l/r, d/r, kit., downstairs: large 1-bdrm. apt., Euro kit., full bath, priv. ent., 1-car gar., \$125,000. Ext. 5076 or 744-4615.

SETAUKET - N25A, hilltop setting, 4-bdrm. farm ranch, l/r, fam. rm., d/r, updated eik, 2 baths, fp, bsmt., extras, cul-de-sac, \$249,000. Ext. 2344 or 751-4254.

SHOREHAM - north of 25A, 4-bdrm. Colonial, 2 1/2 baths, l/r, d/r, lg. kit., fr/fp, w/w, fin. bsmt., lgs, 2-car gar., a/c, 1/2+ acre \$194,900. Ext. 5076 or 744-4615.

SHOREHAM N. - 4-bdrm. Cape, wooded setting, cul-de-sac, 2 new baths, oak floors, 2-car gar., priv. beach access, fin. bsmt., d/r, fp, ask. \$170,000. Harvey, 821-1726.

SOUND BEACH - shy 1/2 acre, unobstructed, year-round, waterfront of Long Island Sound, \$79,000. Tara, 422-7759.

TERRYVILLE - 4-bdrm. tri-level, 1 1/2