BROOKHAVEN BULLETIN
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BROOKHAVEN NATIONAL LABORATORY

RHIC Experiments Proposed

A set of experiments using four different measurement techniques was designed for BNL's proposed relativistic heavy ion collider (RHIC) during a five-day workshop held last week at the Lab. "We now have conceptual designs and cost estimates for these experiments, and a good feel for the technical capabilities and limitations involved," says Physicist Thomas Ludlam, head of the RHIC Task Force, which sponsored the Workshop on Experiments for RHIC. "As a result, we can discuss the physics in much more concrete terms."

The physics that would come out of RHIC has brought together nuclear and particle physicists, two sectors of the physics community that usually pursue their respective interests using different theories, machines and energies. The Workshop on Experiments for RHIC was attended by about 100 physicists from around the world and is the latest of several meetings to gather the two sectors to confer on quark matter.

"Nuclear physicists brought their understanding of complex systems involving many bodies, and the particle physicists brought their technology for doing these complicated, high energy experiments," says Ludlam, "and both brought a mutual desire to comprehend the strong force holding nuclei together."

RHIC was proposed to the U.S. Department of Energy (DOE) in August 1984; RHIC development work, such as this conference, is funded by the Lab's Exploratory Research Program. If RHIC is funded, it will be the only machine in the world to collide two beams of heavy ions at ultra-relativistic energies.

The aim of RHIC is to explore the properties of nuclear matter at temperatures and densities far more extreme than those presently existing in the universe. At a critical temperature and density, neutrons and protons will coalesce into a plasma of quarks and gluons, a state of matter resembling conditions of the universe moments after the big bang.

Four sets of experiments came out of four of the six working groups into which the physicists in attendance were divided. During the week, one of the groups designed a large aperture spectrometer to individually measure each of the thousands of particles produced in the heavy ion collisons. Another devised a calorimeter experiment that would average the particle fluxes and examine each collision as patterns of energy flow.

A third group planned an experiment and a detector to look at the radiation of muons, elementary particles that interact only electromagnetically and therefore pass undisturbed through the plasma of quarks and gluons.

The physicists in a fourth group outlined an experiment to examine the fragments from the collision of the two nuclear beams that fly off in the same direction as the beams. "At RHIC, we could look at two regions of particles," explains Ludlam. "When the heavy nuclear beams collide, they will have enough energy to fly through each other, heating each other up in the process and flying off in opposite directions. What will be left behind will be very hot matter consisting solely of thermally created particles. Most of the other experiments will concentrate on this region.

"However, some physicists are interested in the fragments of the collided nuclei that go off in the direction of the beams," continues Ludlam. "The conditions here are similar to those which will be explored soon with lower energy beams of heavy ions in the AGS. Studying these fragmentation regions will be technically different at RHIC because two beams are involved and the energy is higher."

A fifth group was concerned with two-photon experiments, which have little to do with quark matter, but examine the radiation of quarks in electromagnetic interactions. "If

(Continued on page 2)

Mort Rosen

The convenors of the Workshop on Experiments for RHIC (from left): Martin Faessler, CERN; Peter Haustein, BNL; Andris Skuja, University of Maryland; Thomas Ludlam, BNL; Asher Shor, BNL; Samuel Aronson, BNL; Craig Woody, BNL; Hans Gutbrod, GSI; Torsten Åkesson, CERN; Louis Remsberg, BNL; Peter Bond, BNL; Frank Paige, BNL; Hywel White, BNL; Seymour Lindenbaum, BNL/CCNY; Lee Schroeder, LBL; and Larry McLerran, FNAL. 11841

A Visitor's View

Torsten Åkesson, CERN

As is typical of most Europeans, Torsten Åkesson speaks several languages. Swedish is his native tongue, he uses English for scientific discussions, and French is common in exchanges with technicians and engineers at CERN, the European Laboratory for Particle Physics where he works.

Åkesson is a high energy physicist. He was at Brookhaven last week for the five-day workshop on experiments for a relativistic heavy ion collider.

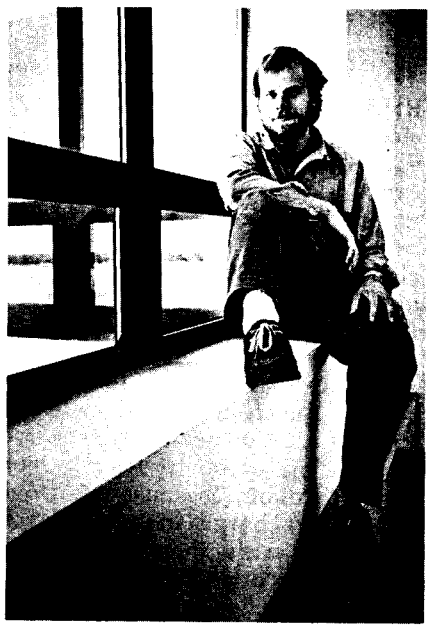
He received a Ph.D. in physics from the University of Lund, Sweden, in 1982 and joined the staff at CERN that same year. "It's an interesting laboratory to work in," he says. "CERN has more of a mixture of people from different countries than I think you have here at Brookhaven." The laboratory straddles Switzerland and France, and just going from his office to the cafeteria means crossing the border. "I cross the border four to six times a day, just traveling around the laboratory," he says.

At CERN, he is part of a team working on an experiment that, in one phase, is a forerunner of experiments that will be possible at a heavy ion collider. The team numbers about 90 scientists, among them, Thomas Ludlam, Venetios Polychronakos, Veljko Radeka, David Rahm, Iuliu Stumer and Craig Woody from Brookhaven Lab.

Brookhaven's Instrumentation Division is building the uranium liquid-argon detector and the silicon detectors for the experiment, which should start this summer. "It's a study of heavy ion collisions using a 3.2 TeV oxygen beam on a heavy target," says Åkesson.

The whole point of the experiment is to create a phase transition of matter to a state called quark-gluon plasma. "We may be able to see something in the experiment at CERN," says Åkesson, "but even if we do, it will never be as clear a picture as what you will be able to get with a relativistic heavy ion collider. That's the new gold mine in physics."

Quark-gluon plasma is a state of matter that physicists believe existed a few microseconds after the creation of the universe. They also believe that this matter can be recreated by colliding heavy nuclei at extremely high energies. That would be the main task undertaken at a relativistic heavy ion collider.



Alex Reben

Torsten Åkesson

"There are, of course, uncertainties in calculations, so you may perhaps design the collider to be more energetic," says Åkesson. "But this machine should make quark-gluon plasma."

He also adds that a collider is quite different from a conventional accelerator. "Those machines are built to look at a single point-like interaction. The harder you hit two point-like things, the closer they come. So you need bigger and bigger machines to see smaller and smaller distances," he says. "With a heavy ion collider, when you make a phase transition in a vacuum, you have it. There should be no need to build a bigger collider."

Åkesson says the workshop attracted a large number of people who work on a number of different experiments, bringing together wide experience to apply to discussions of possible experiments at a heavy ion collider. "Low energy nuclear physicists and high energy physicists have joined forces in this workshop," he remarks. "We are now working in a new domain of physics — phase transition or quark-gluon plasma physics."

He adds, "The state of quark-gluon plasma is the state this universe was in two microseconds after the big bang...and never again. Until this machine is built." — Mona S. Rowe

Alex Reben

A budding scientist. For details, see page 3.

Alex Reben

Commissioner Frederick Bernthal, Nuclear Regulatory Commission, (second from left) visited Brookhaven on April 19 to review NRC-sponsored programs in the Department of Nuclear Energy (DNE). With him are Walter Kato, deputy chairman of DNE; James Meyer, technical assistant to the Commissioner; and Robert Bari, DNE associate chairman.

Inside Info

Susan Agruso, a consultant at BNL and a physics teacher at East Islip High School, has been named one of five finalists in New York State in the competition to be the first teacher to fly in space. At Brookhaven, Agruso is working with Don Metz (DAS) on developing a lecture/demonstration program in science for junior high school students. The five New York finalists were selected from over 700 applicants and, now, the State Education Commissioner will pick two out of the five for the national competition. NASA will select the winner out of the final group of 120 teachers from the 50 states.

Michael Bender, Sr. Scientist in the Medical Department, has been appointed to the 15-member Veterans Advisory Committee on Environmental Hazards. The committee was established as a result of the Veterans Dioxin and Radiation Exposure Compensation Standards Act, signed into law October 24, 1984.

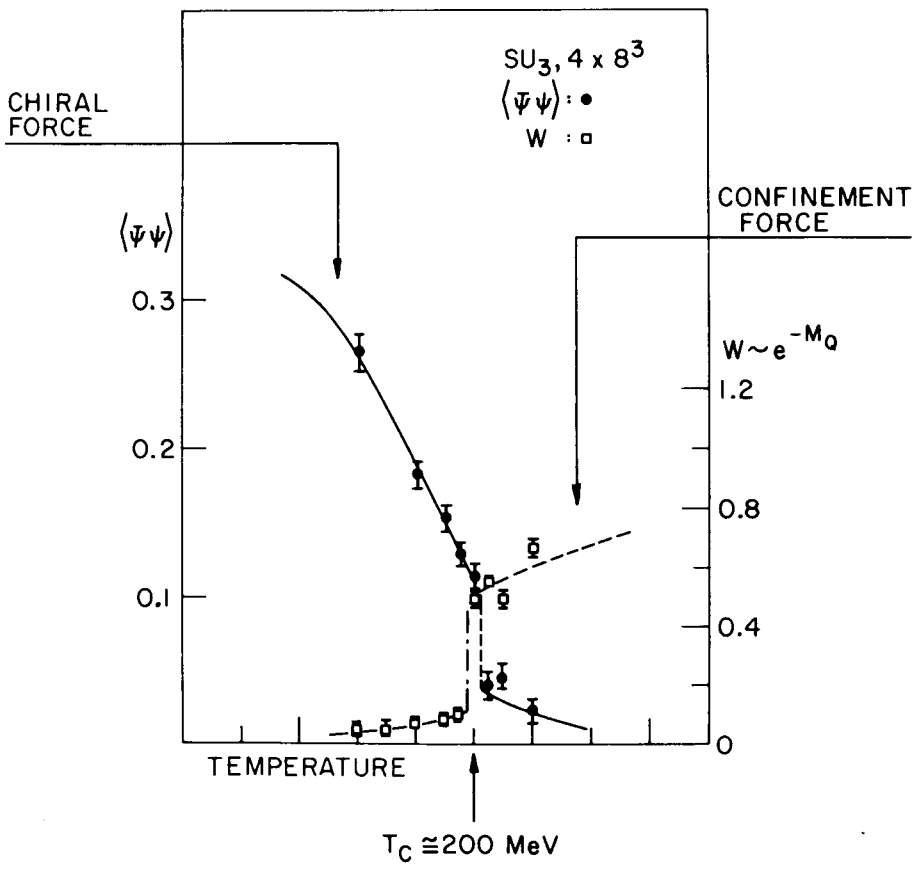
RHIC (Continued)

RHIC were built, particles with huge electric charges would collide into each other at very high energy," explains Ludlam. "There are certain experiments already being done with colliding beams of electrons in which charged particles rush by each other at very high energy, and the electric fields between them produce very high energy photons. Collisions of these photons are then examined.

"The question for this working group was, can one do that sort of experiment better at RHIC," continues Ludlam, "because one would have many charges in each collision. They decided that there are some such experiments one can do at RHIC as well as or better than in very high energy electron machines."

A sixth group of physicists discussed theoretical questions. By doing calculations, they were trying to understand the characteristics of new phenomena in heavy ion collisions, what the signatures of the particles resulting from these collisions would be, how to recognize the quark-gluon plasma and what kind of measurements the experimentalists should make. "The experimentalists are taking their cues from the theorists in trying to come up with a practical set of detectors to examine the new physics we think is going to result," says Ludlam.

Proceedings from the workshop will be published this summer, and an updated RHIC proposal, including the four experiments developed last week, along with a detailed research and development plan, will be submitted to DOE. — Marsha Belford



A theoretical calculation indicating a phase transition from ordinary nuclear matter to quark-gluon plasma. The critical temperature, T_c, at which the phase transition occurs is roughly a million times the temperature of the interior of the sun, but may be achieved in high energy collisions of heavy ions.

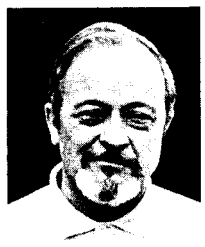
Speaking Out

Reporter: Marsha Belford
Photographer: Alex Reben

The Danish House construction is completed; only the interior decorating and landscaping must be done. Last Friday, employees were invited to an open house and were asked what they thought about the house.

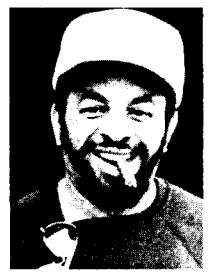
Noelwah Netusil (Medical) - I like the kitchen because everything is compact. The faucets are different and the kitchen sink is small, as is the bathtub. I could very definitely live in this house. I love it.

Jeffrey Taylor (Personnel) - I think it has a fabulous design, is energy efficient, and it is worth the value, without a doubt. The R-value of the house makes it very inviting for people on Long Island. It is a starter house —perfect for a couple with two small children. A bigger family, and I'd go to a bigger house or use the upstairs.



Robert Gallagher (NSLS) - It's a beautiful home and just the right size. The house is compact, yet still big enough to live in. It is a nice size, not too big like most of our homes. For the price, I would definitely consider moving into one.

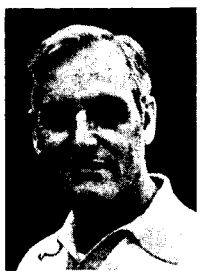
April Donegain (DNE) - I like that the shower is separate from the tub in the full bath. My favorite is the greenhouse because I love plants. I like the upstairs, its sloping roof and the skylights. And I liked the color of the carpeting.



Fred Ligon (Plant Engineering) - We brought in some of the materials for the Danish builder, and I liked what they did with the stuff. We watched the way they put it together — I had never seen that before.

Bob Stauber (Plant Engineering) - I have seen stick-built houses in this country that don't look as charming and quaint as the Danish House. The materials are a lot different from what you would see in an American prefab. I'd like more information on the technology behind the house and on its payback period. The European bathrooms hit me the most: you take a shower and everything gets wet.

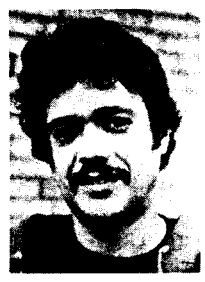
Nelson Tyler (Plant Engineering) - I like the looks of the house, and I think it is very interesting and different, but not anything I would want to live in. I like the size, but not the room size. The bedrooms are too small especially for American furniture, and there is not enough closet space.



Ralph Perry (Instrumentation) - It is very modern looking compared to our new homes, and the workmanship is marvelous, especially the woodwork. The overall square footage is a lot, but I think they have it in the wrong areas. I'd give up some of the living room space to have more room in the bedrooms, but I'd defintely keep the greenhouse.

Audrey Bangel (Reactor) - The interior is rather austere with everything white — I would prefer more color. I couldn't tell that it was prefabricated from the outside, but from the inside the walls look it. The Danish House looks more like a home from the outside, but the inside of American prefabs give me more of a warm feeling. I'm sure that is a difference in style and culture.

Bing Chan (DNE) - The house is very solid: there is no noise or vibration when you walk around. The Danes are very skilled builders, and they used the best materials, like mahogany. If the house had been built in the U.S., the cost would have doubled using the same materials. I know — I built my own house.



David Levesque (Reactor) - I like the whole house, except for the closets: I don't like the way they stick out into the rooms. The floor plan is a nice use of space, and the design is something I would pick for myself. The windows, ventilation and heating systems are different, but good ideas. The house doesn't look prefabricated — it looks like a custom house.

Roseann Callister (C&P) - I bought a lot of the electrical supplies for this house, so it is nice see what you are buying for a change. I'd love to finish the upstairs: I'd put a master bedroom, bath with a hot tub and an office. The kids would stay downstairs, or else I'd put the kids upstairs and use the downstairs as a nice living area. And I'd put the dog in the tool shed.

Arrivals & Departures

Arrivals

Wilson E. Buvinger ..... Biology
Lewis Morgenstern ..... Physics
Tracy T. North ..... Reactor
Joel G. Pounds ..... DAS
Thomas N. Tallerico ..... AGS
Willem K. VanAsselt ..... AGS

Departures

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

Bernd K.W. Hafemann ..... Biology
Vivian L. Jones ..... Medical

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BERNICE PETERSEN, Editor
MONA S. ROWE, Associate Editor
ANITA COHEN, Reporter
MARSHA BELFORD, Reporter

35 BROOKHAVEN AVE., UPTON, N.Y. 11973
Telephone (516)282-2345

BERA News

Soccer Club

The soccer club will meet Mondays after five and Wednesdays at noon at the BERA soccer field. All are invited. A friendly game is being organized against a local team on Sunday, May 19. Those interested should give their names to E.E. Abola at Ext. 4383.

Swim Club

The BNL Swim Club will meet informally at the Brookhaven Town/Mastic YMCA pool on Thursday, May 2, at 5:30 p.m. Swimmers who can offer rides and those who need one for this meeting or to swim after work should call Jim Lipka, Ext. 3372. For more information, call Marsha Belford, Ext 3327, or Mark Catan, Ext. 2504.

Radio Club

A meeting will be held at noon on Wednesday, May 1, at the club station, located on the second floor of the Recreation Building. The possible acquisition of a 220 MHz repeater to be installed on-site will be discussed.

Bowling

Purple League

High games were bowled by Ron Picinich 222, Dick Adams 220, Joe Ferrante 216, Tony Natoli 200, Elaine Zukowski 187, Nancy Erickson 183/173, Valerie Green 180, Ellie Adams 171.

Red/Green League

J. Morris rolled a 255, R. Larsen 242, J. Ferrante 222, R. Sick 213, J. Cochrane 212, E. Gill 200.

White League

Gene Hassell rolled a 234, Bob Barberich 233, Jim Griffin 213, Ken Asselta 208, Frank Gaetan 201, Sharon Smith 213, Karen Vogel 203, Lee Barberich 202/190, Sandy Asselta 201, Pat Oster 196/187, Caryl MacDougall 193, Kathy Griffin 191.

Basketball

Playoffs

First Game

Longshots — 70		Runaways — 56	
Pat Brown	4	Stan Gilbert	12
Jerry Gaeta	15	Tony James	14
Jeff Gaffney	2	Pete Johnson	12
Jim Garrison	14	Gerry Shepherd	4
Leroy James	12	Mal Tardd	12
Reggie Seymore	7	Stan Woodson	2
Ed Taylor	4		
Lee Walcott	12		

Second Game

Coasters — 59		Hollywood — 55	
Kevin D'Amico	5	Rich Domenech	8
Bob Doty	12	George Grigg	20
Mike Fulkerson	5	Greg Mack	7
Fred Malone	2	Ed Meier Jr.	10
Butch Allen	25	A. Richardson	10
Art Washington	6		
Mitch Williams	4		

The championship game will be played on April 25 between the Longshots and Coasters.

Spring Ahead!

Daylight saving time begins at 2 a.m., Sunday, April 28. Set your clocks ahead one hour.

The Winners!

Youngsters Go for Science

The emphasis was on "growing things" judging by the winning entries at the first BNL Elementary School Science Fair on April 20. Children from 50 Suffolk County schools, grades kindergarten through six, brought in entries, which included demonstrations, experiments, charts, diagrams and collections with a scientific objective. And over 700 children, parents and teachers came to the Lab on Saturday to view the 167 projects in competition.

Melissa Aleksak (K) Boyle Road Elementary School, Port Jefferson Sta., won for "What is the Best Temperature for Seeds to Grow?"; John Newman, (1st grade) Mark Country Day School, Bay Shore, for "Mr. Draw — The Color Machine;" Ilene Feldman, (2nd grade) Boyle Road Elementary School, Port Jefferson Sta., for "Growing Sunflowers;" Peter Hewlett, John Fiero, Roberto Magni (3rd grade) Mt. Sinai Elementary School, for "Conditions for Growing Grass;" Melissa Iskowitz (4th grade) Ridge School, for "My Family Tree;" Cathy Nikiel (5th grade) Waverly Avenue School, Holtsville, for "Proteins Whisper 'Bye Bye' in Your Freezer;" and Rena Fujii (6th grade) Norwood Avenue School, for "Effect of Small Amounts of Erythromycin on the Growth of Crayfish."

Judges said there were so many good projects, it was difficult to come up with only one winner in each grade. There were 14 judges; seven teachers from local schools and seven members of BNL's scientific staff. From BNL were Angela Boccio, Medical; Roger Klaffky, NSLS; Dan Benz, Medical; Betty Heldman, Medical; Graham Smith, Instrumentation; Prantika Som, Medical; and Marty Woodle, NSLS.

Each entrant received a participation ribbon, and each winner, a 1st place rosette and a 3′ x 6′ banner, reading "Brookhaven National Laboratory Science Fair 1985," to hang in their schools.

The fair was organized by the Tour Program group of Public Relations at the suggestion of Don Metz (DAS) after the idea was broached at a meeting of teachers and BNL staff. 15886

—photos by Reben

Family support

Looking into space.

Numbers Game

The last duo of life numbers has been artfully concealed in the Bulletin, but not so artfully that you can't find them, or so we hope. Three people have yet to claim their prizes. One person is at the Reactor, another in Applied Math, and the third at the Light Source. C'mon you guys.

CREF Values

March	65.37	April	65.34
May	60.81	June	61.71
July	60.35	August	66.91
September	66.75	October	66.70
November	65.69	December	67.04
January	72.01	February	72.38

March $72.35

Cafeteria Menu

Week Ending May 3

Monday, April 29

Chicken rice soup	(cup)	.65
	(bowl)	.85
Kielbasy & sauerkraut		2.10
Braised beef liver w/onions & 1 veg.		2.10
Hot Deli: Turkey breast	(bread)	2.10
	(roll)	2.30

Tuesday, April 30

Lentil soup	(cup)	.65
	(bowl)	.85
Stuffed cabbage rolls & 1 veg.		2.15
BBQ spare ribs & 1 veg.		2.15
Hot Deli: Pastrami	(bread)	2.10
	(roll)	2.30

Wednesday, May 1

Beef noodle soup	(cup)	.65
	(bowl)	.85
Swiss steak Jardinière & 1 veg.		2.30
Fresh ham & sweet potato		2.25
Hot Deli: BBQ chicken breast	(bread)	2.15
	(roll)	2.35

Thursday, May 2

Split pea soup	(cup)	.65
	(bowl)	.85
Spanish macaroni & 1 veg.		2.15
Seafood platter		2.35
Hot Deli: Top round of beef	(bread)	2.10
	(roll)	2.30

Friday, May 3

Seafood chowder	(cup)	.65
	(bowl)	.85
Pork 'n cabbage crisp & 1 veg.		2.10
Veal patty parmesan & 1 veg.		2.25
or w/spaghetti		2.45
Hot Deli: Chili dogs		2.20

Classified Advertisements

Placement Notices

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

Each week, the Personnel Office lists new personnel placement requisitions. The purpose of these listings is, first, to provide open placement information on all non-scientific staff positions; second, to give employees an opportunity to request consideration for themselves through Personnel; and, finally, for general recruiting purposes. Because of the priority preference policy stated above, each listing does not necessarily represent an opportunity for all candidates. As a guide to readers, the listings are grouped according to the anticipated area of recruitment.

Except when operational needs require otherwise, positions will remain open for one week following publication date.

For further information regarding a placement listing, contact the Employment Manager, Ext. 2882.

LABORATORY RECRUITMENT - Opportunities for Laboratory employees.

2229. RESIDENCE CUSTODIAN (3) - (temporary 5/20/85 - 10/11/85). Staff Services Division.

2230. CUSTODIAN, GROUP LEADER - (5/20/85 - 10/11/85) - Staff Services Division.

OPEN RECRUITMENT - Opportunities for Laboratory employees and outside applicants.

2231. TECHNICAL RECRUITER - Requires a BS degree preferably in a technical discipline and a minimum of three to five years' experience in the recruitment of scientific, engineering and technical personnel. Responsibilities will include recruiting for exempt and non-exempt positions and handling other employment related functions. Personnel Division.

2232. EXPERIMENTAL MACHINIST - Requires experience in job print interpretation, layout and machine set-up. Candidates must demonstrate ability and imagination in all phases of machine work. Will function as all-round machinist for non-production work in research and development shop. Project assignments range from raw material work in research to final assembly. Central Shops Division.

2233. PROJECT ENGINEER - Requires BS or MS in either chemical engineering or nuclear engineering or equivalent and ten years' experience. Will be involved in the day-to-day operations of the Laboratory's liquid radioactive waste facility. Must have significant experience and knowledge of radioactive waste management operations and pertinent regulatory requirements. Safeguards and Emergency Services Division.

2234. SCIENTIFIC ASSOCIATE (2 Positions) - Requires BS or MS in a physical science or equivalent relevant experience. Will work on specific and limited portions of research on the Light Source experimental beam line. Will be expected to interact with Laboratory and outside users of the facility. National Synchrotron Light Source Department.

2235. CLERICAL POSITION - Requires AAS degree or equivalent and excellent communications and clerical skills. Familiarity with library procedures and practices desirable. Previous experience in OCLC database searching very desirable. Technical Information Division.

2236. TECHNICAL POSITION - Requires AAS degree in electronics technology or equivalent and demonstrated systems troubleshooting abilities. Experience in high/low level rf systems, high power pulsed power supplies, digital electronics and/or computer operation is desirable. Rotating shift work required. Main Control Room. AGS Department.

Autos & Auto Supplies

82 KAWASAKI - 440, 6k mi., $800 or best offer; '75 Charger, excel. cond., $1,200. 924-0960.

79 KAWASAKI - KZ400, excel. cond., 5k mi., $650. 473-5289.

79 YAMAHA - XS-400, 5k mi., tandem seat, sissy bar, rack, 2 helmets, full cover, new points, condenser & batt., excel., $950. 472-0739 after 5 p.m.

78 HONDA CIVIC - 4 spd., am/fm, good mpg., $1,300. Sherie, Ext. 4478.

71 FORD F-100 - new tires, cap, trailer hitch, am/fm tape, good cond., $900. Dan, Ext. 4987.

77 VW RABBIT - 4 spd., many new parts,. just tuned, $1,600. Ext. 7130 or 929-8323.

8' PICKUP BED - fits '68-'72 Chevy, fair cond., $50. John, Ext. 2172 or 744-4386.

79 MAZDA GLC - 4 spd., orig. owner, excel. running cond. 924-3066.

75 VW BEETLE - rebuilt engine, snows, extra rims, new muffler & heater box, $975. Ext. 2906 or 929-6189.

71 PLYMOUTH DUSTER - many new parts, runs well, high mi., 318 c/d, $500. Jim, 665-7535.

77 CHEVY MALIBU WAGON - 350 ci, 8 cyl., terrific shape, $2,400. 331-2271, after 5 p.m.

72 GRAND TORINO - 4 dr., good cond., clean, $400. Patty, 543-4228.

83 DATSUN SENTRA - 4 spd., am/fm, $4,200. Ext. 4741.

RADIO - am/fm, 8 track, in-dash, new $35; floor mats, grey, rubber, for GM cars, new $20; tow bar, 5000 lbs., new, $175; trailer hitch, frame mount for large GM cars, $50; truck mirrors, stainless steel, new $35 pr. Tony, Ext. 2462.

TIRES - Goodyear, G78-14, w/rim $25; J78-15, $25; (2) snows, L78-15, $50; (1) reg. J78-15, $35; (2) rims, 14x6. Tony, Ext. 7772.

LUG NUTS - locking, ½" RH, new, $8. Paul, Ext. 4156.

SANDRAIL - San Fernando tubular frame, VW eng., oversized tires, $500. Bob, 924-5511.

76 CHEVY VEGA - hatchback, standard trans., mechanically maintained, good cond., $500. Ed, 924-5535 eves.

75 CHEVY CAMPER/VAN - excel. cond.; stove, heater, ice box, closet, bed/table, $3,800. Donna, Ext. 4923 or 283-3538.

TRANSMISSION - rebuilt for 304 eng.; 304 eng., needs minor work, George, 289-0687.

RIMS - chrome spoke, 15" - rocket like, new must try on, $150/set. Gary, Ext. 2848 or 473-5776.

68 MUSTANG - good body, low mi., 6 cyl., $750. Tom, 665-7535.

71 DODGE DART - 6 cyl., a/t, 4 dr., am/fm cassette, runs well, looks great, $750. 475-4005.

RIMS - Ford Mustang II, (2) for $10. Joe, Ext. 4439.

82 YAMAHA 650 - full fairing, luggage, extras, excel. cond., best offer. Tom, 744-6229.

70 DODGE SWINGER - V6, a/t, new radial tires, trans., strter, alternator, runs very well. Shive, Ext. 4391/4396/4563 or 751-8224.

71 CHEVY IMPALA - V8, a/c, a/t, p/s, p/b, 82k mi., good cond., $800. Ext. 2673 or 744-8632 after 6 p.m.

RIMS - (3) 15", 5 holes, w/tire , Ford. Artie, Ext. 2957.

79 PLYMOUTH VOLARE - slant 6, 3 spd., 4 dr. sedan, excel. cond. in/out, great gas mi., $2,400. Diana, 331-4162.

TRAILER HITCHES - and all sizes of balls, comp., bumper and frame hookup. Artie, Ext. 2957.

CAP - for 8 ft. pickup bed, Winnebago, 3 ft. high, insulated, sliding windows, 2 bunk inserts, very good, $450. Ext. 2462.

80 MUSTANG - 4 cyl., 4 spd., am/fm stereo, sunroof, excel. cond., 47k mi. $3,500. Geageanne, Ext. 3888.

UTILITY TRAILER - heavy duty suspension, extra tires, $200. Mike, Ext. 4605 or 281-5456 eves.

MOPED KREIDLER - W. Germany, like new, no ins. req., 26 mph, 100 mpg, many extras, $300. Walter, Ext. 4605 or 938-8353.

TRAVEL TRAILER - 17 ½ ft., sleeps 6, self contained, new tires and brakes, excel. cond., $2,800. Artie, Ext. 2697 or 325-0743.

78 HONDA MOTORCYCLE - 750k, plexifaring, case guards, travel trunk, cover, excel. cond., $995. Ext. 4758 or 360-3808.

76 MUSTANG - 4 cyl., 4 spd., excel. mpg, recently tuned up, white w/red roof, $1,200. Audrey, Ext. 3962.

79 PINTO - 4 spd., excel. cond., goop gas, mpg, new clutch and exhaust, asking $1,500. Ext. 4605 or 281-5456 eves.

10 DATSUN TRUCKS - one has cap, 5 spd. tranny, new clutch, excel. runner, $800, other, not running, $200, both for $900. Ext. 3057 or 878-0357.

80 CHEVY CITATION - 4 dr.; 4 cycl., am/fm, a/c, $2,800. Marek, Ext. 7673 or 2520.

83 DODGE ARIES - 4 dr., 2.2L, a/t, a/c, like new, p/s, p/b, $3,400. 821-9296.

69 MUSTANG 302 - V8, body needs minor work, $1,000 firm. 281-5321.

79 HONDA CX500 DELUXE - shaft drive, liquid cooled, 10k mi., mint, $1,250. Kevin, Ext. 2211 or 473-0961.

73 OLDS - dependable transportation, $700. Ext. 2058.

77 HONDA CIVIC - rebuilt trans., engine, new clutch, 38k mi., 35 mpg, am/fm, tape deck, $1,175. Ext. 3164.

71 FORD F-100 - 302 std. trans. cap, am/fm, excel. mech., body good, $1,000. Dan, Ext. 4987.

71 BMW 2002 - good mech. cond., bad body damage, needs restoring. 325-0609 after 7 p.m.

TIRES - P235/75 x 15, very good, $30/ea., (4) for $100. 654-8438 nights.

75 FIAT 128 - 4 spd., am/fm, good engine, (2) new tires, needs work, $300. Ext. 3714 or 3208 after 7 p.m.

81 DATSUN 210 - am/fm, cassette, excel. cond., must sell, $3,000. Lee Ann, 281-7799 or 727-7002.

CHEVY RIMS - 14" and 15", 4 ea., best offer or trade. Joe, Ext. 2556.

75 VW BUG - new muffler, re-built engine, snows, extra rims, runs well, $975. Ext. 2906 or 929-6189.

PICK-UP BED - 8', fits 68-72 Chevy, fair cond., $50. John, Ext. 2172 or 744-4386.

76 CHEVY MALIBU - a/t, p/b, a/c, excel., $1,300. Ext. 3124 day/eves.

77 GREMLIN AMC - 6 cyl., red, 68,900 miles, Cragars, am/fm stereo, good cond. 585-1656.

Boats & Marine Supplies

15' BOSTON WHALER - 70 HP Johnson, galvanized trailer, power tilt, full rails, mint cond., $5,500. 325-0930.

26' PACEMAKER - 1968, 318 cu, Chrysler f/w, cooled, sleeps 4, stand up head, stove, 110 v/12 ref, vhf, d.f. recorder, excel. cond. Don, Ext. 5329 or 878-2215 eves.

22' CATALINA SLOOP - 1982, immac., in water, pop-top, galley, other extras. Ext. 7518 or 589-5490.

31' RICHARSON TWIN GRAYS - planked cedar hull, solid teak decks, all in good cond., extras, $6,000. Kenneth, Ext. 3897.

8' SAILING DINGY - $325. Ext. 2018 or 928-3568.

19' O'DAY - 1982, 4.5 hp, outboard, trailer, excel. cond., asking $7,800. 744 9641.

EVINRUDE - 25 hp, outboard, elec. start, very low hours. Gene, Ext. 2023.

Miscellaneous

WOMEN'S BICYCLES - (2) Ross, 3 spd., good cond., $45/ea. Hans, Ext. 2624 or 286-3964.

BAUER SUPER 8 MOVIE CAMERA - 200mm lense and Super 8 projector, both for $80. Ext. 4680 or 286-1331.

GOLF CLUBS - ladies Titlest, #1, #3, & #5 woods, #3 thru p.w. irons, asking $95; golf bag, man's, used only two seasons, with #1, #3, & #5 woods, both good cond., $75. 289-1870.

MOVIE CAMERA - and projector, Bell & Howell, BAIA reviewer; secretary desk, 3-drawers, folding leaf. 281-7654.

ROTOTILLER - 5 HP, chain drive with snow plow, large wheels, chains excel., $450. Otto, 472-0339.

WATER INJECTION SYSTEM - Varajection by Edelbrock, new, never used, with extras. Ext. 4576 or 281-3093.

GIRL'S BICYCLE - 20", w/banana seat, $35. Ext. 2980 or 289-0532.

GOLF CART - Bag-Boy, fold-away, good cond., asking $35. Ext. 2040.

BED - all new, folding, steel frame, w/4" mattress and storage cover, $100. Al, Ext. 4615 or 751-8462.

GOLF CLUBS - (4) irons, (2) woods, putter, w/bag, excel. cond. Tak, Ext. 2823 or 3187.

DINING ROOM TABLE - hardwood, with (4) chairs, and leaf, $50. 744-5871.

DOOR KNOBS - new, assorted, $15; sliding door hardware, new, $15; floor polisher, Electrolux. Paul, Ext. 4156.

SOUND MOVIE EQUIPMENT - camera, microphones, zoom lens, lights, projector, screen, table, $400. Pete, Ext. 3328.

ULTRALIGHT - Weedhopper, Model C, w/trailer, excel. for beginner, $1,500. Bob, 924-5511.

COMPUTER - Aquarius plus 6 cartridges, games, almost new, $70. Elisabeth, Ext. 3419 or 3110 eves.

CLUB CHAIR - upholstered, pretty gold, Damask material, good cond., $50. Al, Ext. 2160 or 273-5574 after 4 pm.

EDGER - Toro Power, w/snowblower attachment, $200.; living room set, (5) pieces, $300; lawn roller, $20. Louise, 744-5867.

RETENTION HEAD BURNER - good cond., Stewart Warner M#HPR135, $35. Joe, Ext. 4439.

SADDLE BONNER - Allen Western, $125. 288-3104 eves.

STAINLESS STEEL KNIVES - 6 piece set, serrated blades, $12; double hibachis 899, new Detecto Scale, gold base, pink and gold flecked mat, $10; Pansonic blender, new, never used, 8 spd., stainless steel base, $25, vaporizer, $10. 654-3781.

EP20 ELECTRONIC PRINTER - Brother Personal, $85, almost new. 288-3104 eves.

FURNITURE - houseful for sale, leaving the area. Frank Kampas, Ext. 3695 or 286-4028.

POOL FILTER - 1 HP, used 2 mo., took pool down, vacuum system incl. 475-6938.

LINEN TABLECLOTHS - assorted sizes, $30-$80; bamboo portiere, 3' x 7', $30. Corliss, Ext. 4438 or 472-1585.

DINING ROOM - antique oak, oval pedestal table, five chairs, refinished, $550; bedroom set, dark pine, hutch, dresser, w/mirror, armoire, 2 night stands, double size cannonball bed, $850. 475-0002.

BED CANOPY - $125; trumpet, student model, $125. Jim, Ext. 3372.

PENTAX CAMERA - 35 mm, w/flash, skylight, carry case, etc., one month old. Mike, 331-5042.

CB CAR RADIO - w/aerial, $25. Walt, Ext. 298-8601.

TREES - locally grown, evergreens, maples, dogwood, you dig, reasonable. 924-6582.

SOFABED - queen size, w/adjustable head rest, neutral color, excel. cond., $469. Ext. 2160 or 273-5574 after 4 p.m.

FREEZER UPRIGHT - 17 cu. ft., Montgomery Ward, $100. Ext. 3401.

S&S CBL CARB SETUP - for Harley, air breather and manifold included. Mike, Ext. 2023 or 585-8809.

SEARS PAD SANDER - ½ HP, 9" x 4 ½" pad, $25, Scotts drop spreader, 20", like new. 589-3608.

FURNITURE - couch, fireside chairs, marble top cocktail table, excel. cond. 286-0355 after 4:30 p.m.

SC ELECTRIC PORTABLE CORRECTING TYPEWRITER - w/case, pica, new, $200 or best offer. 363-6121 after 6 p.m.

BEDROOM SET - twin size bed; dresser w/mirror; bureau; 2 side tables and lamps; baby crib; other baby items. 732-6776.

ROGERS & SLINGERLAND DRUMS - blue sparkle, many drums and accessories, $1,200 take all. 363-6417 after 6 p.m.

ADD A ROOM - for camping trlr, 12' x 8' x 8', attaches to side, $60. Ext. 4987 or 698-7322.

QUILTED BEDSPREAD - red, white and blue, for twin size bed, like new, $15. Les, Ext. 2920.

WASHING MACHINE - Sears, heavy duty, Series 80, 3 yrs. old, new $500, asking $225. 724-1096 after 6 p.m.

HOTPOINT DRYER - gas, heavy duty, automatic, never used, $200. 744-7606.

GE REFRIGERATOR/FREEZER - 13.5 cu. ft., white, works well, $110, or best offer. ext. 3222 or 3755.

POOL - 24' x 4', round, all accessories, full deck all around, you take down, asking $425. 744-7574.

VEGETABLES - 6-pack, 4-pack flowers, large selection, $.75/pack, delivery week of 5/13. Ray 727-6818.

Free

LAYING HENS - (7) 4-5 eggs per day. Ext. 4630 or 751-2117.

Yard Sales

WADING RIVER - multi family, furniture, clothes, books, glassware, pottery, toys, Zophar Mills Rd, April 27, 10 a.m. - 4 p.m. 929-6442.

Car Pool

BAYSHORE - join a car pool. Rod, Ext. 2281.

KINGS PARK - need one new member for existing car pool. Ext. 4024.

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 Rent

SHOREHAM - 4 bdrms., Colonial, l/r, d/r, den, f/p, carpeting, country kit., dishwasher, w/d, 2-½ baths, garage, excel. location, available immed., $1,250 pays all. 744-8659.

VERMONT CHALET - on pond, 4 bdrms., 2-½ baths, mod. kit., stove f/p, views, swim, boating, tennis, trails; near large lake w/canoes, fishing, summer festivals, antiqueing, Bromeley alpine slide, rent weekly. 757-5599.

MYRTLE BEACH - oceanfront condo, South Carolina, 2 bdrms., 2 full baths, sleeps 6, balcony view of ocean, pools, sauna, jacuzzi on premises, 36 golf courses in area, $550/week. 584-7258.

FARMINGVILLE - furnished bedroom, share kitchen & bath, $250/mo., incl. util., security, female only. 698-6259 after 5:15 p.m.

N. PATCHOGUE - 2 bdrm. apt., working persons, no pets, security, references, $600 incls. all. 289-5566 after 7 p.m.

POCONOS, SHAWNEE VILLA - vacation resort, full accomodations for 6-8 people, week starting 6/8/85 thru 6/15/85, $400. Charlette, 348-2856 days or 286-0913 after 6 p.m.

SELDEN - furn. apt., l/r, kitchen combo, separate bdrm., full bath, non-smoker, no pets, private entrance, immed. occupancy, $425. 732-9231 between 5-7 p.m.

For Sale

POCONOS, SHAWNEE VILLAGE - timeshare unit, first week of March, $89, maintenance per year, $4,500. 563-2847 after 5 pm.

RIDGE - townhouse, 3 bdrms., 1-½ baths, wood burning stove, central a/c, w/all appliances, $76,900. Ext. 3541 or 924-4070.

HAUPPAUGE - 9 rms., hi-ranch, M/D, separate ent., prime area, low taxes, 80x200, extras, 3 min. from LIE, $135,000. 724-4268 after 6 p.m.

SOUND BEACH - Miller Place Sd., 4 bdrm., 2 bath, ½ basement, OHW heat, alum. siding, 140' x 100' lot, low taxes, asking $117,500. Ext. 3296 or 744-8474.

ST. THOMAS, U.S. VIRGIN ISLANDS - timeshare unit, studio villa, Bluebeards Castle, $6,000. Steve, Ext. 5163 or 475-6964 for more info.

BELLPORT - south of Montauk Hwy., 2 bdrm. ranch, 1-½ bath, eik, l/r, d/r, den, $98,500. 286-2173.

PT. JEFF.-HARBOR HILLS - 3 bdrm., 2-½ bath, multilevel, gardens, treed ½ level acre, cor. lot, lg. den, l/r, d/r, eik, bsmt., 1-car gar., patio, pvt. beach rgts., $170,000 by owner. Ext. 4505, or 928-2803.

Wanted

WET SUIT - for 6' tall male. Bob, Ext. 4637.

CAMPBELLS SOUP LABELS - send to F. Chandler, Bldg. T-89; for St. Mary School, E. Islip.

GAINES DOG FOOD LABELS - to benefit League for Animal Protection, send starred price areas from bags or boxes to S. Pepper, Bldg. 129.

70 CHEVY STATION WAGON - good cond., no wood grain, reasonable. Bob, 928-1209 after 7 p.m.

HOUSE - Principals only. 736-2575 eves.

HOUSE TO RENT - 3-4 bdrms., rural area, east of Lab., August occupancy, 2 yr., lease. 473-3364.

FOLDING BICYCLE - any reasonable cond. Walter, Ext. 4605 or 938-8353.

PEOPLE - to share a summer beach house at Davis Park, 5/25-9/6. Caroline, 475-6174.

RIM - 13", 5 lug for Gremlin AMC. Janet, Ext. 2345, 929-8152.

CHILD CARE WANTED - for 7-month girl, part-time, your home or mine, non-smoker. 744-7133.

FLUTE - open hole, solid silver head, C foot. Penny, Ext. 3427 or 467-8297.

FORK LIFT OR CRANE - to remove log home kit from flat bed, 6,000 lb capacity. Ext. 4098.

HOUSE IN LAKE PANAMOKA - Otto Lazareth, Ext. 3448.

Classified Ad Policy

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

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

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

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

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

NAME (Please Print) .....

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

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