



"We have had a tradition at Brookhaven of very good relations with the user community; we provide them with protons and they provide us with T-shirts." —Mark Barton, during first day of ISABELLE Summer Study.

Isabelle Study Gets Underway

On Monday over 100 representatives from nearly every high energy physics facility in the world and many universities gathered in Berkner Hall for the start of the ISABELLE Summer Study. They were welcomed to the Laboratory by Director George Vineyard, and heard remarks by various speakers on the past, present and future status of the giant accelerator.

Aihud Pevsner, of Johns Hopkins and Chairman of the Summer Study Organizing Committee, introduced the participants to the summer study. He stressed the importance of presenting the status of the machine to both those who might use it, and to the rest of the physics community that must support the proposal if ISABELLE is to be built at BNL. "We must educate ourselves and the outside community also from what we learn here in the next two weeks," said Pevsner. For this purpose he said proceedings will be published after the summer study and he urged all participants to write reports to this purpose.

Associate Director Ronald Rau outlined key developments in the ISABELLE project since its inception four years ago, when a committee formed by the Lab and the AUI Trustees agreed that an accelerator with storage rings and superconducting magnets should be built. The proposed machine was christened ISABELLE by John Blewett. Probably the most significant developments were the two recommendations on ISABELLE made by a subpanel of the High Energy Physics Advisory Panel. Rau described these recommendations as a "good shot in the arm" for high energy physics.

In 1974, the subpanel, headed by Professor Victor Weisskopf of MIT, recommended to the AEC that Brookhaven continue research and development work on ISABELLE with the hope that the machine would be funded by ERDA for construction in the near future. The subpanel, now chaired by Professor Francis Low of MIT, met again last month. Although their report is not yet published, Professor Low informally notified Dr. Vineyard that funding for ISABELLE in fiscal year 1977 is recommended.

One of the main purposes of the summer study, said Rau, is to take a critical look at



Members of the Summer Study Organizing Committee: (left to right) Harald Hahn and George Kalbfleisch of BNL, Larry Sulak, Harvard, and Aihud Pevsner, Committee Chairman, Johns Hopkins.

the current ISABELLE proposal outlined in the "yellow book," and working with the "total physics community" is the best way of going about this. He also suggested that the summer study take a close look at ways of reducing the cost of the machine as recommended by the Low Subpanel.

When considering priorities on construction proposals at the Laboratory, the ISABELLE project is number one, said Rau. A new ISABELLE Division has been set up in the Accelerator Department to work intensely on ISABELLE research and development. The Division, headed by Harald Hahn, with Julie Spiro as Deputy Head, will be headquartered in the old Cosmotron Building.

Accelerator Department Chairman Mark Barton gave the summer study participants a run down on how the machine has developed into its current state. He mentioned several of the problems that have come up since the 1972 summer study, that might be answered at this one. Barton also described the superconducting magnet development program at the Laboratory that has been intensified over the last two years.

"A valuable function of the summer study is to find problems. It is then up to

the BNL staff to tackle them and come up with solutions and in doing so to call upon the user community for help when needed," said Barton.

The podium was then given to Nick Samios, who addressed specific physics questions that might be answered by ISABELLE. He stressed the importance of designing experiments to answer these questions. "Previously, in any new project you relied on historical precedent to justify the desirability of a new facility, I think ISABELLE is a case where we can point to a host of arguments which tell us of the high probability of dramatic and fundamental findings to be uncovered by this accelerator," said Samios.

A majority of the summer study will be devoted to parallel working sessions of the participants, covering specific topics. Results of these sessions will be reported to the conferees on Friday, July 25. These reports will be included in the published proceedings of the summer study.

A banquet will be held on Wednesday, July 23, featuring Dr. Steven Weinberg, Professor of Physics at MIT, as the guest speaker.

An Ancient Art In Modern Forms

If a magician waved a wand and all the glass vanished from the face of the earth, mankind would have a tremendous readjustment to make. Glass has played an important role in daily living since natural glass called obsidian, formed in volcanos, was first made into arrow and spear heads.

Little is known about the origins of glass-making, but man knew how to make glass at least 3500 years ago. Glass beads were made in Egypt as far back as 2500 B.C. The first glass vessels, made by building layers of glass on a clay core, were manufactured in Egypt around the 15th or 14th centuries B.C.

Since these primordial times, glass has developed into an extremely versatile material. Thousands of different kinds of glass have been produced, each characterized by its inorganic ingredients or physical properties.

In Brookhaven's glass shop approximately 30 different types of glass are fashioned into a large array of scientific glassware, ranging in size and complexity from tiny glass tubes to large glass dewars containing intricate masses of tubing. Located in the basement of the Chemistry Building, the shop is staffed by three glassblowers: Karl Walther, Paul Roman and Irving Meyer. Because most of Meyer's work is done for the Department of Applied Science, he operates out of Building 318, the Radiation Division of DAS.

This month, the American Scientific Glassblowers Society presented Karl Walther with one of its highest awards, the Achievement Award, given each year to one member. Walther was one of the founding members of the Society, created in 1952 as a means of gathering and disseminating knowledge concerning scientific glassblowing, apparatus, equipment and materials. It has grown from a membership of 31 from its inception to 800 at present.

Glassblower is not an entirely accurate description of the three men who work in the Lab's glass shop. Although they do blow air to help mold and shape glass objects, much of their work is done with machines such as glass lathes, grinders and polishers. Walther would like to see the title of glassblower changed to glass technician, especially in the scientific glass industry.

The major type of glass used in the glass shop is borosilicate glass, known for its resistance to heat and chemical deterioration. Pyrex is the most widely known brand of this type of glass. It is used extensively in the home, industry and science. Thirty special glasses are used to seal metal or other materials to the borosilicate glass.

"Glass working is a constant battle of expansion and contraction," said Walther. When sealing a glass to a metal, the expansions of the two must match closely or they will not stay together when cooled. Borosilicate glasses do not match the expansion

(Continued on page 2)

Inflation Hits Everyone

If a human being were to sell his organic bodily constituents on today's inflated market, he would get a maximum of \$5.60 for them, says Donald T. Forman, a biochemist at Northwestern University.

This might be a pitiful price to pay for a human body, but it sure beats its worth 40 years ago. Forman estimates that the organic components of a person weighing 150 pounds were worth 98 cents in 1963 and \$3.50 in 1969.

More than 60 percent of body weight is water. Close to a third is fat and protein and the rest is made up of ash and minerals in the skeleton and body fluids.

Official & Special Events

- Sunday, July 20
Pulmonary Project Site Review
(July 20-22)
- Tuesday, July 22
Seaton Hall Tour
- Thursday, July 24
ERDA Construction Team

Selected Reading

- Sci. Amer. 233, July 1975
Why mosquito repellents repel. R.H. Wright. 104-11
- Smithsonian 6, July 1975
New particles jolt established theories of ultimate matter in laboratory results a continent apart. J.S. Trefil. 96-102

CREF Values Up Again

1974			
January	\$40.75	February	\$40.83
March	39.32	April	37.58
May	35.11	June	34.29
July	31.71	August	29.09
September	25.39	October	30.27
November	29.23	December	28.35
1975			
January	\$30.67	February	\$32.80
March	33.77	April	36.12
May	38.07		
June	\$39.88		



Award winning glassblower Karl Walther.



Irvin Meyer demonstrates glassblowing.



Paul Roman (left) and Karl Walther shape a piece of quartz glass using a lathe.

GLASSBLOWERS (Cont'd)

of any metals so when combining the two, a special glass, which matches the expansion of the metal, must be used. For instance, uranium glass is used to seal tungsten wire to borosilicate glass.

When working with glass, eye protection is very important. When different glasses are heated the flame produced varies in color and intensity with the constituents of the glass. Quartz glass radiates such intense light when heated, that it is harmful to gaze at without the protection of dark welding goggles. Glass containing sodium creates a brilliant orange flame which tires the eyes after prolonged viewing. Eye glasses made of didymium filter out the sodium part of the flame.

Practically everything made in the glass shop is unique. When a scientist needs a

piece of glassware that is not obtainable commercially he will bring a sketch to the glassblowers, and they create it. Walther sees the relationship between a scientist and glassblower as similar to that of an architect and a builder. "When making a piece of glassware I interpret the needs of the scientist," said Walther.

Walther has been involved in glassblowing since 1936, when he was taken in as an apprentice, while still in high school, by a group of German glassblowers in New York for six dollars a week. He was born in Germany and came to the United States when he was nine. After his apprenticeship, Walther worked as a glassblower at Columbia University at the time of the Manhattan Project.

The working relationship of Brookhaven's three glassblowers goes back a long

time. Paul Roman worked with Walther at Columbia University before being employed by Oak Ridge (now Holifield National Laboratory). Irvin Meyer learned his skills from the same German glassblowers that taught Walther. Walther and Roman began working at BNL a few weeks after its formation on the site of Camp Upton in 1947. Meyer came to the Lab a year later.

Originally, the glass shop was part of Instrumentation. In order to be closer to their clients, the glassblowers were moved into the Chemistry Building. Besides meeting the needs for a variety of glassware, the glassblowers are always ready to help the constant stream of experimenters who visit the shop each day with such problems as a rough edge that requires polishing or a long glass tube that needs cutting.

Off-Site

Long Island – A Beachcomber Paradise

The spine-tingling movie "Jaws" may be scaring vacationers away from many beaches, but it does not seem to be having much effect on the Long Island beaches, where the fictitious story takes place. Over the long Fourth of July holiday, record crowds were reported on all of the Island's beaches.

Suffolk County's 1000 miles of beaches is its greatest attraction. The shoreline varies from long white sandy beaches with pounding surf on the south shore to the rocky north shore, harboring the quiet waters of the Long Island Sound.

Although "Jaws" portrays the eastern Long Island waters as life-threatening, according to records of the Smithsonian Institution in Washington, D.C., there has not been a shark attack reported here since 1865. The resulting wounds were not fatal.

The most sought after seascapes on Long Island are found on Fire Island and in "the Hamptons" which extend to Montauk Point. The beaches on Long Island Sound are preferred by many people liking calmer waters.

Unfortunately, Long Island does not have many publicly owned beaches that are open to the entire public. Many of the

beaches are private, open to residents of a particular town or village or members of a club or association. But some town beaches are accessible to outside residents for a fee. An example is Tiana Beach, located at Hampton Bays.

Tiana Beach is operated for Southampton Town residents, but for a parking fee non-residents can go there. The beach is never as crowded as the state and county beaches further west and is well worth the drive on a hot weekend when everyone flocks to the beach.

The two public beaches nearest to the Lab are Smith Point County Park, at the southern end of William Floyd Parkway, and Wildwood State Park located on the Long Island Sound off of Sound Avenue. Except during the early morning hours and the late afternoons, both these beaches are pretty crowded during a nice weekend. Most of the state, county and town beaches do have snack bars and changing facilities.

For those who are willing to spend more time getting to the beach, ferries leave at regular intervals from Patchogue and Sayville for the Fire Island National Seashore. For schedules call 475-1665 for Patchogue ferries and 589-0810 for Sayville ferries.

Fire Island National Seashore is 25 miles of relatively wild, roadless beach, interspersed with small communities that can be reached only by ferries or private boat.

Watch Hill, reached from Patchogue; and Sailor's Haven, from Sayville, are the two protected beaches on the National Seashore. Both are equipped with a marina, ranger station, snack bar, picnic area and grocery store. For the hearty, Watch Hill has a 20-site campground. The Sailor's Haven ranger station sponsors daily programs on the ecology and wildlife of the beaches.

A short walk from Sailor's Haven is one of Fire Island's natural wonders, the Sunken Forest. A path from Sailor's Haven winds through the dunes, covered with high bush blueberries and beach plum bushes, eventually taking the visitor out of the bright sunlight into the cool tangled shadows of a beach forest. When visiting the Sunken Forest, it is not a bad idea to take some bug spray along.

For further information about the National Seashore call 289-4810, or write Superintendent, Fire Island National Seashore, Box 229, Patchogue, New York 11772.



The beach ...



The dunes ...



The Sunken Forest

Trip To NYC

Another group railroad trip to New York City has been arranged for Wednesday, August 6.

Departure will be 8:59 a.m. from the Patchogue LIRR station; any train may be used for the return trip.

Cost of round trip fare is between \$2 and \$3, depending on the number of people who take the trip. Children under six ride free of charge.

Please sign up no later than August 1, by calling Rosemary Jewett, Ext. 3089, or Ruth Dimmler, 751-6342.

Tennis Tournament News

We got off to a bad start last weekend. Let's hope the weather cooperates and we can get in a solid weekend of tennis.

The original schedules as posted last week will be used for tomorrow and Sunday. However, if it rains on Saturday, Saturday's schedule will be played Sunday.

Upton Nursery School

Upton Nursery School is a cooperative pre-school for the three and four year old children of Brookhaven National Laboratory employees.

The children attend school two or three mornings a week and participate in a varied program including art, music, outdoor activities and field trips.

Applications are now being accepted for the next school year starting September 8. For further information please call Linda Lynn 924-8329.

IBEW Notice

The July and August meetings of Local 2230 have been cancelled. The next meeting will be on September 25, 1975.

Letters To The Editor

Dear Sir,

On Friday, July 11, I attended the performance of Tasher Desh at Berkner Hall.

The production was an integration of many attractive elements. Among these were the costumes, which were very colorful. Also, the dancing was quite different with its many gestures and facial expressions. It was unfortunate that the musicians and singers were not visible to the audience, however, they beautifully accompanied the dancing. Altogether it was an excellent production.

In view of the fact that we at Brookhaven are an international community, I think this type of program would be of interest to all and I hope to see more of them in the future.

Sincerely,
Frances Caruso

Dear Sir,

I would like to thank all those at Brookhaven who helped in making the Indian dance program last Friday a success. The members of the BERA board and the concert committee are particularly to be thanked. Bruce Martin and Dan Galvin deserve special thanks for lighting arrangements. In addition I would like to thank all the Brookhaven ladies who cooked a delicious dinner for the performers; Jack Craig for setting up the microphone system; Roy Johannesen for help with cafeteria arrangements; and Ed Popenoe, Salil Bose, Steve Amoretty, Usha Mallik, Indira Srikantha and Jayasrel Bose for emergency help, and last but not least, Catherine Majumdar for her constant assistance.

The other co-sponsors of the program, Cultural Affairs Committee of Dowling College, World Yoga Society, Inc. and India Association of SUNY at Stony Brook also worked hard for this program and deserve our sincere thanks.

It is gratifying to note that the performance was widely appreciated by people at Brookhaven. The artists were also very impressed with the reception they received.

Thanking you all again,
Debu Majumdar

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Lots of Luck



Ann Tebbens receives an award plaque for her 28 years service at the U.S. Post Office on site from Steve Garrett, Postmaster.

A Chance to Prepare For The "Real World"

The annual Youth on Campus Program got off to a start on Monday, July 7, when 32 students began eight weeks of work at the Laboratory.

The program, under the direction of George Sabine, Personnel, is designed to provide meaningful on-the-job training, basic skills development and vocational guidance.

Ann Flood, Accelerator, and Helen Kalbach, Biology, have begun a semi-weekly series of office practice sessions designed to improve typing and basic clerical skills. Many other related subjects of interest will be included such as paging techniques, key-punch operations, résumé preparations and job applications.

The students, who have been assigned to almost all departments throughout the Lab, are working in a variety of technical and clerical positions.

Most of the students were recruited through local high schools counsellors or BNL employees. Six have returned from last year and 10 have come from BNL's High School Co-op Program.

Several of the recent graduates are planning to enter college this fall. Suffolk County Community College, Howard University, Morgan State College and several branches of SUNY are some of the schools under their consideration.

Area high schools represented include Longwood, Center Moriches, Islip, Bellport, Hauppauge, Hempstead, Riverhead, Rocky Point, Mattituck, Central Islip, Sachem and Westhampton.

The students' schedule also includes a series of tours and talks given by members of the Laboratory staff and the community. Some of the subjects to be discussed are: civil service careers, energy research, job counselling, computer careers, personal financing and technical opportunities.

Jobs, Jobs, Jobs



Theresa Keyes (left), Director of Suffolk County Civil Service, met with the Youth On Campus (YOC) students on Monday, July 14. She discussed the ins and outs of the procedure for obtaining a county civil service position.

Softball

Dick Ruffing

Brookhaven League

Behind the hitting of Harold Marshall, George Oldham and Bob Meier, the Blue Jays continued where they left off in the first half of the season by defeating the Ravens 13 to 3.

L. Musso supplied the pitching and hitting as the Old Timers, making their move for the second half championship, defeated the Metallurgy team 15 to 1.

National League

The Dirty Sox scored a run in the bottom of the 8th inning to squeak out a 5 to 4 win over the Circuits.

The Six Pax defeated the Medical Department team 13 to 6.

The Hawks beat the Bubble Boys.

Laboratory League

John Bennett, Richard Chester and Mel Bonanno each hit home runs, and Fred Hohmann and Tom Jesaitis supplied the rest of the hitting as the Charlie Browns defeated the Phoubars 15 to 7.

University League

The Oh Kays defeated the Diamonds 24 to 6. LeRoy James and rookie Sydel Lamb led the Oh Kays to this lopsided win as they had 9 hits and 11 RBI's between them. Helen Caisey regained her form of past years as she reached base 4 straight times and scored each time. She also made some very alert plays at third base.

In the second game of the evening, in a very close game, the RBI's defeated Our Gang 8 to 7.

First Half Standings

	Won	Lost
Brookhaven League		
*Blue Jays	7	0
Old Timers	4	3
Metallurgy	2	5
Ravens	1	6
National League		
*Hawks	6	1
*Six Pax	6	1
Dirty Sox	5	2
Bubble Boys	2	5
Circuits	2	5
Medical	0	7
Laboratory League		
*Phoubars	5	1
Charlie Browns	3	3
Streakers	2	3
The Dags	1	4
University League		
*Oh Kays	7	0
Diamonds	4	3
RBI's	3	4
Our Gang	0	7

Basketball Clinic

Wayne Treadwell, YOC of the BERA Summer Recreation Program will be conducting a basketball clinic every Tuesday and Thursday from 3 to 4 p.m. at the gymnasium for boys (ages 8-15). The fundamentals of shooting, dribbling, rebounding and the like will be stressed.

This is a repeat of last year's successful program. All interested boys should sign up in the swimming pool or come directly to the gym on Tuesday at 3 p.m.

AGS Service Awards



At a party in the courtyard of the AGS Building on Wednesday, June 25, Accelerator Department Chairman Mark Barton presented 10, 20 and 25 year Service Awards. The following received 20 and 25 year awards: (top row) John Dioguardo, Howard Vetter, Robert Gottschalk, Richard Hildenbrand, Thomas Morris, David Kassner, Kurt Minardi, Ralph Giallorenzo, Patricia Wilson and Donald David. (Bottom row): Kurt Jellett, James Cottingham, Charles Pukit, and John Langfeldt. Robert Schmidt was not present for his 25 year award.



Ten year awards were presented to: (top row) Robert Kowalski, Raymond Zaharatos, Charles Bohnenblusch, Ralph Sanders, Richard Murgatroyd, Edward McKenna, Alonzo Werner and Conrad Dabrowski. (Middle row) Raven McKenzie-Wilson, Eugene Jablonski, John Brown, Anna Sell, Patricia Oster, John Frasher, Andrew McNerney, Gary Smith and David Blackmur. (Bottom row) George Martin, John Herrera, Ching Wang, Charles Neuls and Horst Foelsche. William Anderson, John Bieling and Richard Witcover were not present for the picture.

Arrivals & Departures

Arrivals

Robert M. Doty App. Science
Joseph J. Vetter Central Shops

Departures

None

Dunk For Money

Last Friday's BERA pool special was the annual Penny Fetch. Children of all sizes and ages anxiously waited at the pools edge for the lifeguards to toss pennies, nickels and quarters into the water.

At the sound of the whistle they jumped in and submerged in search of the sunken treasure. Under the watchful eyes of guards Rich Parsons, Barbara Smalle, Dave Parsons, Mary Grace Lazzaro, and Julie Bergin, the children came out of the water richer than they had gone in.

Winners were: Carol Dawson, Peter Tanake, Karen Fox, Vlataka Oritanovic, David Fox, Kathy Fox, Lawrence Emmerly, Sageet Bar-Yam and Jimmy Fox.

This week's pool special is kickboard races.

Bowling Notice

Bowlers interested in joining a BNL league may do so by submitting their names to the bowlers pool. New teams may also be formed from the pool. Send your name, life number, lab address and extension to: Cathy Van Noy Bldg. 134B.

Anyone interested in bowling in Shirley should also forward their names, etc. to Cathy and put "Shirley" on your note. If there is sufficient response, the board will take further steps to establish a Shirley league.

Team Captains from last year will be receiving their applications within the next few weeks. Do you have your team formed?

Crazy Hats Abound

The BERA summer recreation program ended its first full week of fun last Friday with the annual Crazy Hat Contest! Chicken feathers, flowers, paper bags, pots and pans, racoon tails, egg cartons and assorted odds and ends graced the heads of the participants in the beautiful display.

Most creative were the designs and most beautiful were the children as they paraded back and forth before a panel of distinguished judges and admiring parents. Flash bulbs snapped and "oohs" and "aahs" echoed throughout the Recreation Hall as anxious candidates waited for the decision as to who wore the craziest, smallest, most unusual, most original, nicest, prettiest, tallest, most creative and most-most hats of the day.

This week's special is the "Treasure Hunt." Best of luck to all.

**Cafeteria Menu
Week Ending July 25, 1975**

Monday, July 21	
Corn Chowder	
Beef Liver & 1 veg.	1.05
Scrambled Eggs, Sausage & Fries	1.05
Tuesday, July 22	
Beef Noodle Soup	
Knockwurst & Sauerkraut	1.05
Sauerbraten & Potato Pancakes	1.25
Wednesday, July 23	
Cream of Potato Soup	
Beef Chop Suey on Rice	1.00
Chuck Wagon Special	
Cup of Soup or Juice	
1/2 lb. Beef Burger	
Baked Beans, French Fries, Cup of Cole Slaw	
Roll & Butter	
Plain Jello or Ice Cream	
Small Beverage	\$1.87 plus tax
Thursday, July 24	
Chicken Vegetable Soup	
Cheese Ravioli & 1 veg.	1.00
Roast Chicken, Stuffing & 1 veg.	1.10
Friday, July 25	
Clam & Celery Soup	
Spaghetti w/Clam Sauce	1.00
Breaded Pork Chops & 1 veg.	1.25

