

## Chemistry's Harbottle Helps Carbon-Date 7,000-9,000-Year-Old Flutes Found in China

*Crane-Bone Flute May Be Oldest Playable Instrument*

This week, the news media has rung the phones off the hook at the Lab, as the BBC, CBS Evening News, CNN, *Time* magazine and others have been asking for interviews with BNL's Garman Harbottle.

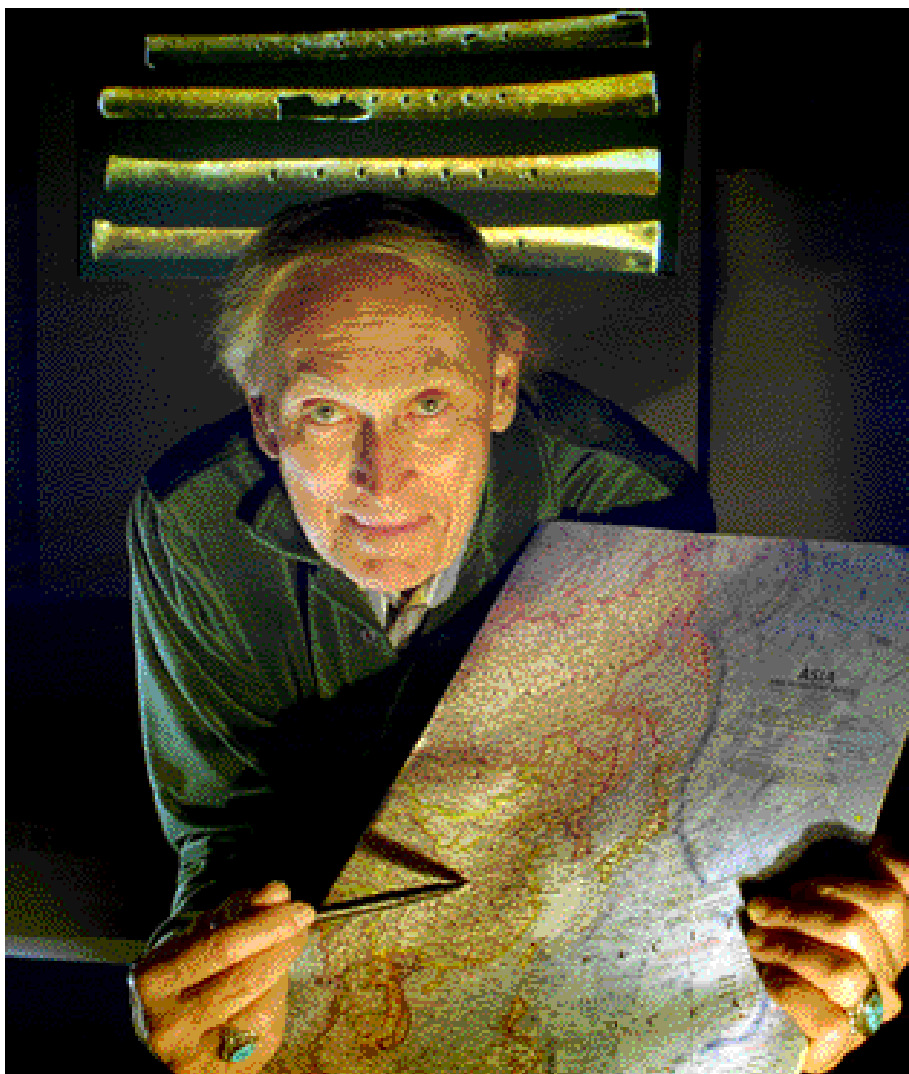
Harbottle, a senior chemist emeritus in the Chemistry Department, is also a member of the Jiahu research team in China that has uncovered what might be the oldest playable musical instrument.

As described in the September 23 issue of *Nature*, six complete bone flutes of between 7,000 and 9,000 years old have been excavated along with fragments of approximately 30 other flutes at the early Neolithic site of Jiahu, in Henan province, China.

Of the six flutes, one is playable, and may be the earliest playable instrument to be so tightly dated. All six flutes may also be the earliest instruments to be complete and multinoted.

The excavations and carbon-14 dating were carried out by researchers including: Juzhong Zhang from the Institute of Cultural Relics & Archaeology of Henan Province, Zhengzhou, China, and the Archaeometry Laboratory at the University of Science & Technology of China; Changsui Wang, also from the Archaeometry Laboratory; and Zhaochen Kong, from Beijing's Paleobotany Laboratory, Academia Sinica. Harbottle, a long-time expert in the carbon-14 and other

(continued on page 2)



Garman Harbottle

### RHIC Dedication: Monday, October 4

On Monday, October 4, the Relativistic Heavy Ion Collider (RHIC) will be dedicated by Energy Secretary Bill Richardson during a ceremony to which the Lab community is welcome.

To attend that ceremony, BNLeers are asked to park their cars at the Brookhaven Center and board buses bound for RHIC, or catch one of the buses that will stop at the intersection of Center Street and Brookhaven Avenue.

The buses will begin departing at 8 a.m., at which time tours of RHIC will be offered.

At the Collider Center, Bldg. 1005, at a time to be announced, BNL Director John Marburger will introduce Secretary Richardson and other speakers.

The day's events will include a performance by the Longwood High School Marching Band, and the Longwood Cheerleaders, who are the national cheerleading champions.

The *Brookhaven Bulletin* of next Friday, October 1, will carry the ceremony's time and more information.

All employees are invited to the event, but they must obtain their supervisors' approval before attending.

## Data-Intensive Computing Center Established at Lab by BNL, USB

BNL and the State University of New York at Stony Brook (USB) have established the Brookhaven Center for Data-Intensive Computing. Located in the east wing of the second floor of Bldg. 515, the center joins the computational and software expertise within USB's Departments of Computer Science and Applied Mathematics & Statistics with Brookhaven's capability for handling and storing large amounts of data.

To lead the center in addressing national data-intensive computational needs, as well as those of Brookhaven, James Glimm, who is USB Distinguished Professor of Applied Mathematics & Statistics, has been named the new Center's Director.

"The Center will contribute to data-intensive computing in numerous scientific endeavors, in the fields of physics, biology, combustion chemistry, meteorology and the like," Glimm commented. "The Center can also be useful to academic institutions or businesses that are doing large studies."

"This collaboration on data-intensive computing between BNL and USB builds on the strengths of both institutions and serves the needs of both," said Peter Paul, Brookhaven's Deputy Director for Science and Technology.

According to Paul, the Lab is expanding its large data-handling capability, as a result of having established the computing facility for the Relativistic Heavy Ion Collider and as a result of the Lab's serving as a national data center for ATLAS, a particle-physics detector being built for the Large Hadron Collider at CERN.



Looking at a component of the RIKEN-BNL supercomputer — which is the world's tenth fastest supercomputer and is dedicated to calculations for the physics of BNL's Relativistic Heavy Ion Collider — are some of those involved with establishing the Brookhaven Center for Data-Intensive Computing, which will employ a network of sophisticated computers in its work: (from left) Robert McGrath, USB Provost and Executive Vice President (VP) for Academic Affairs; Rollin Richmond, former USB Provost and Executive VP for Academic Affairs; Jim Davenport, who is Chairman of BNL's Department of Applied Science and who acted as the Center's Director from last October until this July; James Glimm, Director of the Brookhaven Center for Data-Intensive Computing and a USB Distinguished Professor of Applied Mathematics & Statistics; BNL's Arnold Peskin, the Center's Deputy Director; and Peter Paul, BNL's Deputy Director for Science. Absent from the picture: Ari Kaufman, Chair of the USB Computer Science Department; and David Warren, former Chair of the USB Computer Science Department.

Working closely with the National Institutes of Health, as Paul points out, Brookhaven is also fast becoming an international center for determining the structures of biological proteins as a result of work at BNL's National Synchrotron Light Source.

Said Paul, "The flood of data coming from all areas of science, together with requirements for medical imaging, will require a revolution in data handling and processing," with which the center will be involved.

To do this, Glimm explained, "The Center for Data-Intensive Computing also will work on expanding computational power for the Lab and the region through networked computing, using computers both on site and around the world."

Carrying out the Center's work will be postdoctoral students and other full time staff who will hold joint appointments in BNL's departments and divisions that have large computational needs. — Diane Greenberg

### Tonight at the Center: Motorcycle Talk

Tonight, at 8 p.m. in Brookhaven Center, physicist and motorcyclist Charles Falco, University of Arizona, who helped curate the Guggenheim's "The Art of the Motorcycle" exhibit, will talk on "The Art and Science of the Motorcycle." All are invited to this free lecture.

## Flutes From China (cont'd)

dating techniques, helped analyze data from carbon-14 dating done in China on materials taken from the site.

"Jiahu has the potential to be one of the most significant and exciting early Neolithic sites ever investigated," said Harbottle. "The carbon dating was of crucial importance to my Chinese colleagues in establishing the age of the site and the relics found within it."

Harbottle described the flutes as being made from the ulnae, or wing bones, of the red-crowned crane, *Grus japonensis* Millen, and having five to eight holes. "The flutes are exquisitely crafted," he said, "and the best preserved among them has been played and tonally analyzed in tests at the Music School of the Art Institute of China.

"The discovery of the flutes presents a remarkable and rare opportunity for anthropologists, musicians and the general public to hear musical sounds as they were produced nine millennia ago," Harbottle continued.

To hear a recording of the flute and view a video file of the flutes and the Jiahu site, go to <http://www.bnl.gov/bnlweb/flute> on the World Wide Web, and also, visit [www.nature.com](http://www.nature.com).

Tonal analysis of the flutes has revealed that the seven holes correspond to a tone scale remarkably similar to the Western eight-note scale which begins "do, re, mi." This carefully-selected tone scale suggested to the researchers that the Neolithic musician of the seventh millennium B.C. could play not only single notes, but also music.

Jiahu lies in the Central Yellow River Valley in mid-Henan Province and was inhabited from 7,000 B.C. to



**These six bone flutes, 7,000-9,000 years old, were dug from the early Neolithic site of Jiahu, Henan province, China. The flute second from bottom may be the oldest playable instrument in the world.**

5,700 B.C. In 1962, the site was discovered by Zhu Zhi, the late director of the Wuyang County Museum, but not until the past 15 years has significant excavation activity begun.

In addition to the musical instruments, the site has yielded important information on the early foundations of Chinese society. Music in China is traditionally associated with ritual observances and government affairs.

To date, only about 5 percent of Jiahu has been excavated, uncovering 45 house foundations, 370 cellars, nine pottery kilns, and thousands of artifacts of bone, pottery, stone and other materials. The Chinese research team, which authored the *Nature* article with Harbottle, plan additional excavation for the near future.

Harbottle's international reputation as an expert in dating and authenticating historically significant items was built up during his long career at BNL, with much of his work having been supported by U.S. DOE.

Examples of his detective work include his carbon-14 dating of a lump of 12th-century nonindigenous raw iron found in 1860 in the Canadian Arctic; using neutron-activation to trace pre-Columbian trade routes in turquoise used in Mesoamerican religious jewelry from where it had been mined in the American Southwest to Central Mexico; and identifying the geographical origins of celebrated sculptures created in France during the 9th through the 15th centuries.

— Pete Genzer with Liz Seubert

## In Memoriam

**Frank Rizzo**, who had joined the Lab on December 17, 1956, as a senior laboratory technician in what became the Instrumentation Division, died on March 28. He was 75. He had retired as technical associate 1 on June 30, 1984, with 27 years of service.

**J. Dennis Klein**, a senior technical supervisor in the National Synchrotron Light Source Department, who was on leave of absence due to illness, died on April 15, at the age of 56. Having joined the Alternating Gradient Synchrotron Department as an intermediate technician on December 3, 1962, he had worked for 36 years at the Lab.

**George Shuette**, who had joined the Lab as a refrigerator & air conditioner engineer on January 13, 1969, in what became the Plant Engineering (PE) Division, and had retired on March 31, 1978, died on April 23. He was 79 years old.

**Judith Ridgeway**, a Department of Applied Science senior executive secretary who had retired on January

24, 1980, after 21 years at the Lab, died on April 24, at the age of 74. She had joined BNL as a typist B in the then Photography Division on August 11, 1958.

**Robert Doering**, who had joined what is now the Department of Advanced Technology as a junior technical specialist on March 31, 1952, died on April 29, at the age of 74. He had spent 34 years at the Lab, retiring as an associate chemist from the Department of Applied Science on April 30, 1986.

**Donald Metz**, who had served the Lab for 38 years after joining what is now the Department of Advanced Technology as an associate chemist on September 1, 1954, died at the age of 75, on May 9. He had retired on April 30, 1993, having headed the Office of Educational Programs since its founding in 1985.

In 1996, Metz and his wife Dorothy Metz, another BNL retiree, established the Gorman-Metz Scholarship, which, given annually since 1997, is a single award of \$5,000 for a BNL employee or retiree's disabled child who is attending graduate school in science or engineering.

**Reginald "Duke" Ellington**, who had joined what is now the Plant Engineering Division as a janitor on December 19, 1960, died on May 23. He was 63. After 35 years of service to the Lab, he had retired as a rigger on April 7, 1996.

**Joseph Kenneally**, who had retired on January 31, 1989, as a senior buyer in the Contracts & Procurement Division, died on May 25 at the age of 65. He had served the division for 20 years, having arrived on July 8, 1968, as an assistant traffic administrator.

**Walter Chornoma**, who had joined what is now the Plant Engineering Division as a janitor on March 5, 1962, and, after 24 years, had retired as the cabinet shop supervisor on June 6, 1986, died on June 5. He was 74.

**Ronald Withnell**, who was a development engineer in the Chemistry Department when he retired after 16 years at the Lab on May 31, 1976, died on July 23, at the age of 75. He had joined Chemistry as a design engineer II on May 16, 1960.

## Y2K Microsoft Update

Beginning January 1, 2000, Windows 95, 98 and NT, and Microsoft Office products will no longer work perfectly — unless certain software patches are applied. These fixes must be installed by Ralph Wiedmann of the Information Technology Division (ITD), or another qualified person.

To avoid the rush anticipated at the end of the calendar year, ITD recommends that all Microsoft Windows and Office users call the Help Desk, Ext. 5444, to schedule patch installations or software upgrades. When calling, know the computer's bar code and whether the computer is considered

BNL essential, department essential, or nonessential. For more information on the impact of Y2K on Microsoft products, go to [www.microsoft.com/technet/year2k/product/product.asp](http://www.microsoft.com/technet/year2k/product/product.asp).

## IBEW Meeting

Local 2230, IBEW, will hold its regular monthly meeting on Monday, September 27, at 6 p.m. in the Knights of Columbus Hall, Railroad Avenue, Patchogue. There will be a meeting for shift workers at 3 p.m. at the union office. The agenda includes regular business, committee reports and the president's report.

## Benefits Notes

For more information on the following, contact Muriel Pfeiffer between 8:30 a.m. and 1 p.m., Monday through Thursday in the Benefits Office, Human Resources Division, Bldg. 185, Ext. 2877 or (800) 353-5321.

### CIGNA Foreign Medical Claims

Participants in the CIGNA PPO or Indemnity Plan are asked to note that CIGNA has a new mailing address to which all foreign medical claims are to be sent. The new mailing address is:

CIGNA  
P.O. Box 1002  
Bristol CT 06011

### BSA Cultural Program

## Wednesday Recitals Resume on Sept. 29, Featuring Piano, Violin

After the start of fall, the BSA Cultural Program will resume its offering of Wednesday recitals at noon in Berkner Hall on September 29.

On that date, Laurent Weibel will perform on the violin, accompanied by Xiao Hu on the piano.

A native of France, Weibel studies under Mitchell Stern and will participate in the Carl Nielsen international violin competition this October. In March 2000, Weibel is scheduled to perform the Sibelius concerto with the Stony Brook Symphony Orchestra.

Sponsored by the BSA Cultural Program, noon recitals are 45 minutes long, informal, and open to all. Audience members may bring a box lunch into the hall to enjoy with the music, and they may come and go as they please.

## Defensive Driving

The training group of the Safety & Health Services Division will offer a two-part defensive driving course on Monday and Wednesday, September 27 & 29, 6-9 p.m., in Berkner Hall, Room B.

The course will be taught by a Metropolitan Life instructor and is open to BNL, BSA and DOE employees, BNL facility-users, and their families, at a cost of \$23 per person.

Completing the course entitles participants to a 10-percent discount on vehicle collision and liability insurance for three years.

The class will be limited to 35 participants. To register, send a check made out to Empire Safety Council, in care of Scott Zambelli, P.O. Box 670, Mount Sinai, NY 11766. All checks must be received by tomorrow, Saturday, September 25.

So that your registration can be confirmed, include your phone number with your name. For more information, call Zambelli at 249-3000, Ext. 5877 (not the on-site Ext. 5877).

## Yoga Practice

The BNL Indo-American Society will continue its Yoga practice sessions on Wednesdays, beginning next week, on September 29, from 12:10 p.m. to 12:50 p.m., in the main room at the Recreation Bldg. in the apartment area.

A typical session will comprise breathing exercises, Sun salutation, Asanas 'postures', and relaxation. Wear a loose outfit, and bring a thick mat or blanket.

Those interested in participating may call organizer Smita Sathe, Ext. 3924. Due to space requirements, openings will be limited. No admission is charged for these sessions.

## Arrivals & Departures

### Arrivals

**Malcolm E. Alexander**, Waste Manag.  
**Ann Ferrar Dusek** ..... Media & Com.  
**Lisa L. Jansson** ..... Info. Services  
**Keith C. Klaus** ..... Env. Rest.  
**Brian M. McCaffrey** ..... Env. Rest.  
**Derrick N. Raptis** ..... AGS

### Departures

**Michael L. McCray** ..... RHIC  
**Kalpna K. Shah** ... Financial Services

# 1998-99 BERA Volleyball League Champions

For its 1999-2000 season, the BERA Volleyball League resumes play on Monday, October 18, with four leagues of competition.

In the meantime, players who are not yet on a team but who want to be are invited to attend practice in the gym after work on Mondays and/or Wednesdays, when each team works out for an hour between 5 and 9 p.m. In addition, unaffiliated players are invited to attend a volleyball skills clinic on Wednesday, October 6, at 6 p.m. in the gym.

The BERA Volleyball League offers teams for players of every skill and ability level, whether they want to play in an open or mixed-gender league. For more information, visit the league's Web page at [www.vb.bnl.gov](http://www.vb.bnl.gov), or contact: Frank Crescenzo, Ext. 3433 or [frackc@bnl.gov](mailto:frackc@bnl.gov); or Travis Shrey, Ext. 7451 or [shrey@bnl.gov](mailto:shrey@bnl.gov).

Those pictured below are members of the 1998-99 Volleyball League championship teams.



As the Spikers, they nailed the championship in the Open A League. Also known as the Bikers & Spikers, they overrode the competition in League 1. As pictured, they are: (from left) Bill Kropp, captain Travis Shrey, Jean Spears, and Dan Mullaly. Spikers missing from the picture are: Christian LaVoye, Dieter Lott, and Rui Mei Ma. Absent Bikers & Spikers are: Dieter Lott and Ali Lopez.



Safe Sets was last year's best bet for League 2. Team members pictured are: captain Beth Schwaner, Doug Paquette, George Morgan, and Payton King. Missing from the picture are: Nancy Meier, Dawn Mosoff, and Ed Taylor.

photos on this page  
by Roger Stoutenburgh



The individuals pictured make up Group Sets, the champions of League 3: (from left) Sue Wells, captain Ed Hoey, Allan Corby, Doug Gillette, Sandi Sullivan, and Antoinette Russo. Absent from the picture are: Tom Dilgen, Pat Giacalone, and Chris Ronick.



Late Entry made a better-late-than-never entrance, winning the Open B League championship. Members of the team include: (from left) Al Dellapenna, Tom Tsang, John Miller, Jessie Wilke, and captain John Addressi. Absent are: Michael Cowell and Jeff Wilke.

## Free Flu Shots

The Occupational Medicine Clinic (OMC) has begun offering free flu shots to employees, to precede the winter influenza season.

For more information about flu shots or to make an appointment to be vaccinated, call OMC, Ext. 3670.

## Equipment Demo

On Thursday, September 30, from 10 a.m. to 2 p.m., E&S Technologies, Inc., will display products by Busch Vacuum Group, Litmas, and AccuCon Vacuum Valves.

For more information, call Mark Retzlaff, (800) 529-7937 (pager) or (518) 573-0202 (cell).

## Halloween Madness

Let your broomstick carry you to BERA's Halloween Madness Party on Friday, October 29, at the Brookhaven Center, from 6 to 11 p.m. The party is for adults only, and everyone is requested to wear a costume.

Admission will be \$5, paid at the door, and it includes refreshments, games, prizes, and music by ET. A cash bar will be available. For more information, call Andrea Dehler, Ext. 3347, or M. Kay Dellimore, Ext. 2873.

## Walk for a Good Cause

### Walk for Healthier Hearts

Join the fight against heart disease and stroke by participating in the 1999 American Heart Walk on Sunday, October 3.

Walkers may choose from two locations, Suffolk County Community College in Riverhead, or the State University of New York at Farmingdale.

For more information, stop by the BERA Sales Office in Berkner Hall, Tuesday through Friday, 9 a.m.-1:30 p.m., or call Andrea Dehler, Ext. 3347, or M. Kay Dellimore, Ext. 2873.

### 'Walk for Beauty'

BNL's Deputy Director for Operations, Tom Sheridan, and the Lab's Women's Program Advisory Committee invite all BNL employees, retirees, facility-users, and their families and friends to join them as part of the Lab team participating in the sixth annual

### Walk for Beauty.

The 4-to-6 kilometer walk will take place on Sunday, October 3, starting at 9:30 a.m. at the Stony Brook Post Office. Proceeds from this event will benefit breast-cancer research funded through the Carol M. Baldwin Research Fund, Inc.

Advance registration requires \$50 in pledges or \$12 per walker; those registering on the day of the walk will pay a \$15 fee.

Each registered BNL walker will receive a free T-shirt from Friends of Brookhaven, Inc., plus several other complementary gifts from the walk's sponsors. To receive those shirts, members of the Lab team are asked to assemble before the walk at the Brook House in Stony Brook.

For registration forms, directions and assembly information, contact Stephanie LaMontagne, Ext. 7141 or [stephl@bnl.gov](mailto:stephl@bnl.gov); or Donna Grabowski, Ext. 2720 or [grabowsk@bnl.gov](mailto:grabowsk@bnl.gov).

## BROOKHAVEN BULLETIN

Published weekly by the  
Media & Communications Office  
for the employees of  
BROOKHAVEN NATIONAL LABORATORY

MARSHA BELFORD, Editor  
UZ SEUBERT, Assistant Editor

Bldg. 134, P.O. Box 5000  
Upton NY 11973-5000  
Tel. (516) 344-2345; Fax (516) 344-3358

## Cashier Closing 10/1

Due to year-end closing and the consequent unavailability of necessary systems, the Cashier's Office will be closed next Friday, October 1. It will reopen as usual on Monday, October 4. In case of an emergency need for cashier services on October 1, contact Anne Corr, Ext. 2427.

## Softball Party 10/15

The BERA Softball League will hold its annual party at the Brookhaven Center on Friday, October 15, starting at 5:30 p.m. Tickets are \$10 per person and include: a buffet dinner with two drink coupons for beer, wine, or soda; music by DJ Heart and Soul; and a cash bar. Everyone must have a ticket, and none will be sold at the door. To purchase tickets, bring cash to Andrea Epple, Bldg. 51M, Ext. 5943, by October 1. For more information, e-mail [softball@bnl.gov](mailto:softball@bnl.gov).

## Classified Advertisements

LABORATORY RECRUITMENT - Opportunities for Laboratory employees.

DD7795. OFFICE SERVICES POSITION - (term appointment) Requires an AAS degree in secretarial science or equivalent experience, excellent communication and interpersonal skills, and a thorough knowledge of Lab policies and procedures. Must have experience with IBM PCs, Windows 95 and IPAP, and the ability to make numerous travel arrangements. Knowledge of Excel and Access helpful. Duties will include staffing telephones, ordering supplies, distributing mail, copying/distributing paperwork, and filing. Additional duties include maintaining PC training and property-management database. Information Technology Division.

DD8332. OFFICE SERVICES POSITION - (term appointment) Requires an AAS or equivalent experience, and excellent communication skills. Will provide varied clerical/administrative support to the Personnel & Information Security Section of the Safeguards and Security Division. Duties will include extensive data entry of information pertaining to identification badges, vehicle stickers, and IA-473 forms (foreign national unclassified visit or assignment forms). Will coordinate daily badging activities and participate in DOE inspections pertaining to badging, encoding and foreign visits and assignments. Safeguards and Security Division.

OPEN RECRUITMENT - Opportunities for Laboratory employees and outside candidates.

MK7822. POSTDOCTORAL RESEARCH ASSOCIATE - Requires a Ph.D. in microbiology or biochemistry, with an interest in studying virus-receptor interaction at the molecular/structural level. Experience with recombinant DNA protein expression/purification, x-ray crystallographic protein-structure determination, or protein antigenic structure is highly desirable. Will participate in research to understand the basis for adenovirus recognition of its cellular receptor, using the combined approaches of x-ray crystallography, mutant analysis and receptor-binding assays, and to investigate the antigenic structure of receptor-attachment factors from different virus serotypes and learn how these changes impact the specificity and affinity of receptor bindings. Under the direction of P. Freimuth, Biology Department.

MK8730. POSTDOCTORAL RESEARCH ASSOCIATES - (two positions) Requires a Ph.D. in experimental high-energy particle physics, proven software and analytical skills, and abilities in designing and building high-energy physics experimental apparatus. Will work on the MINOS neutrino-oscillation experiment, which consists of a high-energy intense neutrino beam created at Fermilab and aimed towards a large underground detector 730 km away in the Soudan mine in Minnesota to search for the transformation of muon neutrinos into other types in the parameter range indicated by the atmospheric neutrino anomaly. Initially, work will involve detailed Monte Carlo simulations, as well as ongoing hardware R&D and beam tests of prototype modules. Under the direction of M. Diwan, Physics Department.

MK8730. POSTDOCTORAL RESEARCH ASSOCIATE - Requires a Ph.D. in physics, chemistry or materials science, with expertise with x-ray diffraction and familiarity with magnetism, oxides and phase transition highly desirable. Will be involved in x-ray scattering studies of complex oxides, including, among others, colossal magnetoresistance and high  $T_c$  materials, at the Department's three bending-magnet beam lines at the National Synchrotron Light Source and as part of a consortium which operates an undulator beam line at the Advanced Photon Source. Under the direction of D. Gibbs, Physics Department.

DD8150. RECORDS MANAGEMENT ASSISTANT POSITION - Requires a bachelor's degree in a related field, and knowledge of records management theory and practices. Experience with computer applications, excellent communication skills, the ability to work with all levels of personnel with tact and diplomacy, and the ability to analyze problems, develop alternatives and make recommendations are necessary. Working knowledge of records systems and their applications to include, but not be limited to, forms management, micrographics, archives, reprographics and word processing is also required. Information Services Division.



Yesterday, September 23, the BERA Racquetball Club began its 1999-2000 year of competition, which involves three leagues whose members play their matches at Racquet Time in Farmingdale. Pictured are the members of the club who emerged as the 1998-99 champions at the end of last year's competition in April: (from left) Anette Meier, first place, B league; Pete Eterno, second place, B

league; Ted Douglas, third place, C league; Izzy Garcia, first place, A league; Dave Gassneh, Rookie of the Year; Diana Votruba, second place, C league; Joe D'Ambra, 1998-99 Commendation Award winner; and Gloria DeBoer, first place, C league. For more information on the BERA Racquetball Club and its league play, call Bob Marascia, club chair, Ext. 7779, or visit [www.rball96.bnl.gov/](http://www.rball96.bnl.gov/).

## 'Take Our Sons to Work' Day, October 11

On Monday, October 11, BNLers are again invited to bring their sons of ages 11 to 15 to the Lab to participate in the on-site activities planned for Take Our Sons to Work Day.

An equal-opportunity response to the Lab's annual "Take Our Daughters to Work" Day held in April, the October day for Lab employees' sons is dedicated to helping boys focus on their future in the working world, to see what career and employment opportunities await them.

To discover what their parents do for a living and if their future livelihood will involve science, the sons of BNLers will spend their day as follows:

time	activity
8-8:30 a.m.	arrive with parents
8:30 a.m. - 1 p.m.	boys' morning in parents' or hosts' workplace*
1:30 p.m.	Whiz Bang Science Show in Berkner Hall
2:30 p.m.	tour of Lab site
4:45 p.m.	parents to pick up their boys at Berkner Hall.

\* Parents who work in potentially hazardous areas may not have their sons visit their place of work. If there is a question, consult your ESH Coordinator or Facility Representative. For those who work in potentially hazardous areas, arrangements must be made for other employees to play host in their workplaces to those boys for that morning.

To register boys for the day, complete and return the coupon found at the bottom of a flyer mailed to all employees to: Susan Foster, Human Resources Division, Bldg. 185.

Participation is limited to 200 boys, so register your son early. A waiting list will be established; if a registered son is unable to attend, then notify Foster, Ext. 2888, so another boy may go in his place. Parents who work in potentially hazardous areas who themselves are unable to arrange for hosts for their sons must indicate on the coupon that a host is needed.

For more information, contact Foster, Ext. 2888.