

## 322nd Brookhaven Lecture

# Ice Skating, Burning Candles And the Role of Surfaces In Freezing and Melting

What do ice skating and candle burning have in common? Both involve surfaces that melt and freeze — water and wax, respectively.

BNL Physicist Benjamin Ocko is interested in the structure and behavior of surfaces. Surfaces often behave differently than the underlying bulk of the material since each atom or molecule interacts with fewer neighbors. For instance, phase transitions at surfaces usually occur at lower temperatures than for the corresponding bulk material.

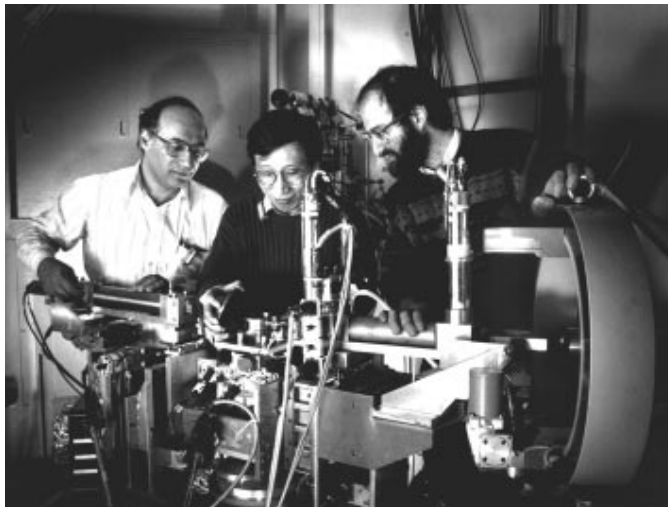
One example of this phenomena is surface melting, where a thin liquid layer coats the surface of the underlying solid prior to melting. Though ice can exhibit this behavior, waxy materials — such as alkanes — do not. Rather, Ocko and his colleagues have discovered that alkanes, which are formed from straight-chain hydrocarbons, exhibit molecular-scale surface freezing.

Ocko, a member of the Physics Department who performs his surface studies at BNL's National Synchrotron Light Source (NSLS), will discuss "Ice Skating, Burning Candles, and the Role of Surfaces in Freezing and Melting," when he delivers the 322nd

Brookhaven Lecture, on Wednesday, December 18. Slated to begin at 4 p.m., in Berkner Hall, Ocko's talk will be introduced by Senior Physicist Myron Strongin, Physics.

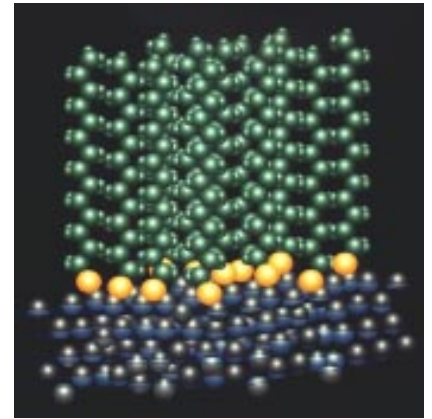
The alkanes that Ocko studies are among the most basic building blocks of organic matter. They form part of organic and biological molecules and determine their properties to a large extent. As major constituents of oils, fuels, polymers and lubricants they also have immense industrial impor-  
(continued on page 2)

**At beam line X22B of the National Synchrotron Light Source, (from right) Ben Ocko, BNL Physics Department, and colleagues Xia-Zhong Wu, Exxon Corporation, and Moshe Deutsch, Bar-Ilan University, Israel, inspect the surface of an alkane sample.**



## Alkylthiols Acting Up

They look like blades of grass sticking up from the ground. But the vertical structures in this image are actually soap-like molecules called alkylthiols, which are acting in a surprising way: Instead of lining up like orderly soldiers on a parade ground, as expected, they are scattered about like restless children on a playground. The reason seems to be the "ground" on which they're standing, a pool of liquid mercury (horizontal layers) whose own lack of organization has thrown off the alkylthiols' usual orderly tendencies. BNL Physicist Benjamin Ocko (see lecture story at left) and his colleagues published this result, which was obtained at the National Synchrotron Light Source, in the November 21 issue of *Nature*. — Kara Villamil



## Laboratory Caps Second Landfill

As part of BNL's ongoing effort to remediate contaminated areas on the Lab's 5,300-acre site, the Office of Environmental Restoration (OER) has overseen the capping of an eight-acre landfill in the Lab's southeast portion.

When the site was Camp Upton, the U.S. Army operated the landfill from the beginning of World War II to 1947, and, after BNL was created in 1947, Brookhaven used it for general waste disposal until 1966.

IEM Sealand, a Virginia-based construction company, completed the six-month project for \$1.2 million. The cap is made of impermeable polyethylene and covered with two-and-a-half feet of soil.

Last year, another six-acre landfill, used for general waste disposal by the Lab from 1967 to 1990, was also capped using the same method. Plans are under way to cap one remaining landfill on site, which the Lab had used from 1966 to 1967.

William Gunther, Manager of OER, said, "Groundwater monitoring and cap-maintenance systems will ensure that both caps are functioning properly, to prevent precipitation from leaching landfill contaminants into the groundwater."

The Laboratory was placed on the federal Superfund list for environmental cleanup in 1989. All remediation work is approved by New York State, the U.S. Environmental Protection Agency and the U.S. Department of Energy. — Diane Greenberg

## Wolf Honored by Institute for Clinical PET

Alfred Wolf, a senior chemist in the Chemistry Department, has won the Third Annual Institute for Clinical PET Distinguished Scientist Award.

PET, or positron emission tomography, is a medical-imaging method used to measure the rate of various biochemical processes in the brain and other organs.

Wolf was given the award at the Institute's annual conference, held in Orlando, Florida, October 24-27.

After joining BNL in 1951, Wolf was involved in PET research from its earliest stages, and he distinguished himself in the field of nuclear medicine by developing methods for producing short-lived radioisotopes, or radiotracers, used in PET.

One such radiotracer — now used at all PET centers throughout the world to diagnose and study neurological and psychiatric disorders — is FDG, for fluorine-18-labeled fluorodeoxyglucose, which was first synthesized in 1976 by Wolf and his collaborators.

Wolf commented, "The discovery of FDG is a classic example of how basic research can lead to a practical application. In clinical medical applications, PET is an excellent modality used to diagnose heart disease and certain types of cancer."



**Alfred Wolf**

Since the PET facility was founded at Brookhaven in 1968, BNL researchers and their collaborators have made major contributions to the understanding of schizophrenia, Alzheimer's and Parkinson's diseases, and addictions to alcohol, cocaine and tobacco.

Upon accepting his award, Wolf spoke of the future of PET, emphasizing promising research being done at BNL by Joanna Fowler, Stephen Dewey and Yu-Shin Ding in the Chemistry Department, and by Nora Volkow, Medical Department.

For instance, Fowler and Volkow recently discovered that cigarette smokers have a higher concentration of a crucial brain enzyme, monoamine oxidase B, than nonsmokers, which provides some insight  
(continued on page 2)

## BNLer's Letter Proves You Can Make a Difference!

It's been over a year since local activists began making inflammatory and incorrect allegations against BNL on environmental issues.

And even though the Lab has mustered its environmental and public affairs staffs to confront those claims, the battle has not yet been won. Articles and columns containing misinformation on BNL are still appearing in local newspapers.

That's why John Skinner, a programmer analyst in the Biology Department and an avid fisherman, decided to take matters into his own hands.

A subscriber to the local weekly *The Fisherman*, Skinner was fed up with reading anti-BNL articles — written by Bill Smith of Fish Unlimited — in that publication. He knew from reading the Brookhaven Bulletin that Smith's allegations are often based on misinformation.

So, Skinner called the Lab's Public Affairs Office and asked for information that he could use to write a letter to *The Fisherman's* editor to dispute Smith's claims about radioactive elements in the Peconic River. He wrote as a private citizen, a fisherman and a subscriber to *The Fisherman*.

When completed, Skinner's letter contrasted a Fish Unlimited press release that *The Fisherman* had published in its entirety with the facts

contained in the New York State Department of Health's report on environmental radiation. Skinner's letter also challenged the reasoning behind Smith's "divestiture" campaign against the nine universities that originally founded Associated Universities, Inc.

Skinner drove his letter to the magazine's Shirley office and soon after received a call from *The Fisherman's* editor Tom Melton. Following that, Melton decided not to run Fish Unlimited press releases or letters on BNL in *The Fisherman* anymore. He will soon print Skinner's letter.

John Skinner's experience is the most recent example of how BNLers have gotten personally involved in the fight against misinformation on BNL. Many of them have found that editors and the public just don't have all the facts on the Lab's environmental record. Smith has even been verbally abusive to those who have called him to verify his claims.

If you want to write a letter to a publication to which you subscribe, remember these tips:

- Write as a concerned private citizen, who also happens to be a BNLer.
- Since you're writing as a private citizen, you must write on your own letterhead, not BNL's.

(continued on page 2)

# BNL Hosts Safeguards Workshop

Inspectors from the International Atomic Energy Agency (IAEA) travel to research reactors in many different countries to verify that the reactors are operating according to specifications — a task that requires considerable specialized knowledge. To gain extra expertise in this field, ten nuclear safeguards inspectors from the IAEA visited BNL September 16-20 to attend a workshop on verifying design information provided by the operators of research reactors in various stages, from operational to permanently shut down. In addition, two more IAEA representatives, Thomas Killeen (fourth from left) and Aleksandre Touzov (eighth from left), helped design and organize the courses, together with (center, from left) BNL program staff Sonia Haber, Department of Advanced Technology (DAT); Robert McNair, Reactor Division, who led the instruction for the workshop; Ann Reisman, DAT; and Deborah Shurberg, DAT. All three of BNL's research reactors — the decommissioned Brookhaven Graphical Research Reactor (BGRR), and the currently operating High Flux Beam Reactor and Brookhaven Medical Research Reactor — provided "eyes-on" examples of many of the issues addressed at the workshop. In this photograph, participants stand in front of the fuel-rod assembly of the historic BGRR. — Liz Seubert



Roger Stoutenburgh

## Equipment Demos

Silicon Graphics, Inc., will present its latest desktop computer systems, including the SGI 02, on Tuesday, December 17, at 10 a.m. in the second-floor seminar room, CCD, Bldg. 515. For more information, call John Spiletic, Ext. 4112.

From 9:30 a.m. to 2:30 p.m. on Wednesday, December 18, in Berkner Hall, Exphil Calibration Labs will feature analog scopes and other products of Tektronix, Fluke and Iwatsu, including the new THS700 series handheld oscilloscope with 200-MHz bandwidth and an external trigger, and Iwatsu 400-MHz analog oscilloscope.

## BNLer's Letter

(cont'd.)

- If you need facts or background material, call the Public Affairs Office, Ext. 2345. Past issues of the Bulletin are also good sources for information on many issues.
  - If you are contacted by the publication's editors or reporters, you can decide whether or not to speak to them. If you do, then do so as a private citizen and not as a representative of BNL.
  - Let the Public Affairs Office know if your letter appears, so it can be added to the clipping files.
- Also, if you belong to a club or group, and your fellow members are concerned about BNL, then the Public Affairs Office can arrange for a Lab speaker to address a meeting.

— Kara Villamil

## Wolf Honored

(cont'd.)

into why smoking is addictive and may lead to the development of an effective method for quitting smoking.

Another example is Dewey's studies of neurotransmitters, chemicals through which nerve cells transmit their signals. This research may lead to new insights into mental illness and its treatments.

Ding is examining an enzyme called COMT, for catechol-o-methyltransferase, which may be useful for diagnosing breast cancer.

Wolf received tenure in 1957 and became a senior chemist in 1964. He also served as Chemistry Department Chairman, 1982-88, and headed Brookhaven's PET program, 1970-1995. He has published over 325 papers on basic and applied research in chemistry and nuclear medicine.

Wolf's many other awards have included the American Chemical Society's 1970 Nuclear Chemistry Award, and the Society of Nuclear Medicine's Georg Charles de Hevesy Nuclear Medicine Pioneer Award, in 1991. He is a member of the National Academy of Sciences. — Diane Greenberg

## In Memoriam

**John Bennett**, who was a storeskeeper in the Supply & Materiel (S&M) Group of the Administrative Support Division, died on November 26. He was 56 years old.



John Bennett

Bennett began his 31-year association with the Laboratory on September 13, 1965, as a janitor in the then Plant Maintenance Division. He transferred to S&M in April 1967, to become a warehouseman. Before assuming his final position in March 1984, Bennett was promoted three times: to a stockman in 1967, a stores clerk in 1968 and an assistant storeskeeper in 1982.

In the mid-80s and until his untimely death, Bennett was assigned to the then Department of Nuclear Energy, now the Department of Advanced Technology (DAT), to provide materiel-handling support. In addition to packing, shipping, receiving, unpacking and delivering the department's equipment and supplies, he provided this and other support to DNE's Radiation Effects Facility during its construction and operation, 1985-89.

"There are not enough good and kind words to describe John to strangers," says Walt Becker, DAT, with whom Bennett worked. "And words cannot express all that he meant to those of us who knew him, for he was a truly great guy."

"John was a good person, someone who took a demonstrated interest in his work, his friends, and, especially, his family," says S&M Group Manager Michael Guacci. "Because he helped to make working at BNL a little easier and less complicated, John is missed by all the people with whom he worked, as well as his co-workers in the group."

A resident of Shirley, John Bennett is survived by: his wife Mildred, who has been with the Lab since 1979 and was an S&M administrator until leaving on long-term disability in January; daughter Carolyn Bennett of Virginia; daughter Barbara Calle, who is a custodian in the Plant Engineering Division; and stepson William Schaming of Pennsylvania.

— Marsha Belford

## MIX Meeting

The new allocation-and-charging method for the services provided by the Computing & Communications Division (CCD) will be discussed at CCD's next Monthly Information eXchange (MIX) meeting, at 11 a.m. on Wednesday, December 18, in Room B, Berkner Hall. All are invited.

## Fiscal Facts

### \$100-Drawings' Winners

Two employees each won a \$100 American Express gift certificate — during the November direct-deposit drive organized by the Fiscal Group in the Financial Services Division.

New direct-depositor Paul Kesster of the Computing & Communications Division, and existing direct-depositor Animesh Jain of the Relativistic Heavy Ion Collider Project were selected as a result of two separate, random drawings, which were conducted by Deputy Chief Internal Auditor Deborah Johnson, Associated Universities, Inc. (AUI), and AUI Senior Auditor Steven Gill, as witnessed by Deputy Fiscal Officer Susan Perino.

Kesster was one of 85 employees — out of some 900 who had been receiving all or part of their pay in checks — who enrolled in direct deposit during the month-long drive.

While these drawings were once-in-a-lifetime opportunities for BNL's new and existing direct-depositors, those 800-plus employees who still receive their paychecks — and have to wait in line at the bank to deposit them — may sign up anytime. For more information, contact Payroll, Ext. 2470.

## BNL Lecture

(cont'd.)

tance. Understanding how these materials respond to changes in temperature is critical to understanding their fundamental interactions.

In his talk, Ocko will first describe the behavior that is commonly observed at the surfaces of most materials. He will then contrast that with his team's surprising finding for the waxes: The top molecular layer of alkanes freezes, or crystallizes, at a higher temperature than the bulk — although the entire sample is at the same temperature. Conversely, the melting temperature is lower at the sample's surface.

This important discovery, Ocko will report, took place in 1992, at beam line X22B at the NSLS. He'll explain how this ongoing research is done using a technique known as x-ray reflectivity and a unique spectrometer designed so that the x-ray beam, rather than the sample, can be tilted — an essential feature for studying liquids.

Ben Ocko earned his B.A. in physics from Swarthmore College in 1978, and his Ph.D. in physics from the Massachusetts Institute of Technology, in 1984. After his postdoctoral studies at Harvard University, Ocko joined BNL in 1987, as an assistant physicist in Physics' X-Ray Scattering Group. Named an associate physicist in 1988 and a physicist in 1991, he received tenure in 1993.

A Varon Professor at the Weizmann

## Early Cash on Thursday

Only on Thursday, December 19, the Fiscal Group's cashier, Bldg. 134, will have hours from 2 to 4 p.m., instead of 2:30-4:30 p.m. The usual schedule will resume on Friday, December 20.

*Thanksgiving was great*

*But now it's Holiday time, so don't rein in yet! Please give a load to the*

**BNL FOOD DRIVE**

*Pickup all next week. Or, send personal checks to: BNL Food Drive, % R. Kito, Bldg. 460; D. Wadman, Bldg. 599.*

Institute in Israel during the summer of 1995, Ocko is a member of the American Physical Society.

After the lecture, all are invited to join Ocko for discussion and refreshments. To have dinner with the speaker at a restaurant off site, call William Morse, Ext. 3859.

— Anita Cohen

### Note to Employees:

Attendance at lectures, meetings and other special programs held during normal working hours is subject to supervisory concurrence.

## Arrivals & Departures

### Arrivals

- Daniel P. Haughey**.....Plant Eng.
- Tomas A. Iglesias**.....Physics
- Galathara L.M.K.S. Kahanda**...Info. Serv.
- William J. Licciardi**.....Physics
- Dorian P. Mergen**.....Safety & Env. Prot.
- Christopher J. Salat**.....RHIC
- Patrick M. Woodward**.....Physics

### Departures

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

- Hugh N. Brown**.....AGS
- Hsiang-Shou Cheng**.....Advanced Tech.
- Dong-Ping Deng**.....RHIC
- Kirk F. Dreimann**.....Admin. Support
- Craig D. Fisher**.....Medical
- Bandana Khandelwal**.....Medical
- Geraldine M. Lamble**.....NSLS
- Richard W. Leigh**.....Applied Science
- King P. Leung**.....Advanced Tech.
- Thomas Martin**.....Medical
- Philip F. Stattel**.....Reactor
- Kelli R. Stauning**.....Environ. Restoration
- Thomas E. Stephenson**.....Reactor

# Be a Winner: Give the United Way

With \$70,232 pledged, there's \$19,768 to go for BNL's United Way Fund Drive to reach its goal of \$90,000 by December 20. Though all this year's prizes have been awarded

— to the lucky BNLers highlighted at right — a rich reward still waits for anyone who hasn't yet given: The knowledge that your donation will be helping to ease the way for fellow Long Islanders.

You can make a onetime donation or spread your giving throughout the year with payroll deduction. You can let the United Way decide how to divide your donation among its various agencies or specify how you want your pledge used.

One beneficiary of United Way monies is a scholarship fund created by the Upton Post Office's Ralph Persson and his wife Jane in memory of their son Greg, the victim of a 1983 automobile accident. The Perssons wrote to the Bulletin this week, "On

- Ed Sperry**  
New York City dinner-theater trip
- Mark Israel**  
Inflatable raft
- Paul Moskowitz**  
Dinner for two at Phil's Restaurant
- Tony Baltz**  
**George Misson**  
**Bob Priest**  
**John Usher**  
**Donna Wadman**  
\$50 American Express gift certificates
- Szu-Cherng Kuo**  
**Mark Sweet**  
\$25 American Express gift certificates
- Mary Daum**  
**William Hempfling**  
**Lynn Kalbach**  
**Sue Perino**  
\$100 American Express gift certificates
- Maria Apelskog**  
\$50 dinner at Carmans River Inn
- Craig Diaz**  
\$10 dinner certificate at Dek's Restaurant
- Mike Brooks**  
Autographed Jets football
- Thomas Clifford**  
\$5 Cafeteria lunch certificate

behalf of the Greg Persson Memorial Scholarship Fund and its past, present and future recipients at Shoreham-Wading River High School, we would like to give our heartfelt

thank-you to the employees and guests of Brookhaven National Laboratory for their donations and pledges through the Long Island United Way and the Combined Federal Campaigns. Your generosity will enable us to continue awards and scholarship programs for deserving students and will never be forgotten. God bless you all."

For pledge cards or other information about BNL's campaign, call chairman Pete Esposito, Ext. 2879, or coordinator Ann Emrick, Ext. 5756.



## Here Comes Santa Claus!

For the 14th consecutive year, Santa Claus (Lieutenant Chuck LaSalla) and his Elf (Firefighter Frank Palmeri Jr.) will be coming to Upton town, to wish everyone happy holidays and distribute candy canes along with good cheer, compliments of the Fire/Rescue Group of the Safety & Environmental Protection Division.

With Fire Engine #2 as their sleigh, Santa and his Elf will begin to make their rounds of the offices and labs on site at 9:30 a.m. on Tuesday, December 24. While they will try to visit every building, if they missed yours in the past (perhaps because you were naughty instead of nice) or if you want Santa and company to make a specially timed appearance in your workplace, call the North Pole, Ext. 2351, to make a reservation.

## Toastmasters Club

### Monthly Meeting

Enjoy speeches, fun and refreshments at the next meeting of the BNL Toastmasters Club, on Tuesday, December 17, at 5:20 p.m. in room 160, Biology, Bldg. 463. For more information on the club's meetings, which are held on the first and third Tuesdays of each month, call Mike Butler, Ext. 3430; Beth Lin, Ext. 3372; or Margaret Foster, 473-9129, eves.

### Speechcraft Workshop

If spontaneous or prepared oral

presentations give you a headache, then the BNL Toastmasters Club offers two alternatives: take an aspirin or take part in the upcoming Speechcraft Workshop.

To be held from 5:20 to 7 p.m. on Tuesday, January 21 & 28, February 4, 11 & 18, and March 4, the workshop is geared toward those wishing to develop their speaking and presentation skills, and their ability to think on their feet. The cost is \$10 per person. For more information, call Ronnie Evans, Ext. 2851; Kate Feng, 345-5294 eves; or Margaret Foster, 473-9129 eves.

## Do your holiday shopping at the Winter Holiday Sales at the BNL Science Store



Two more Fridays: December 13 & 20  
10 a.m. to 3 p.m. in Bldg. 701

"There are lots of good things left — including the BNL 50th Anniversary Calendar!"

— Eloise Gmur, Science Store Coordinator

Each BNL employee will receive one free calendar via interoffice mail next week (printing problems prevented delivery this week). For retirees, visitors and guests — and employees who want more than one — a limited supply of calendars is on sale in the Science Store today, for \$5 each. They will also go on sale in the BERA Sales Office in Berkner Hall.

## Amateur Radio

For its annual holiday party and election of officers, the BERA Amateur Radio Club will next meet at noon on Thursday, December 19, in the lounge of the Recreation Building. All BERA members and licensed amateur-radio operators are invited to attend. For more information, call Chris Neuberger, Ext. 4160, or Nick Franco, Ext. 5467.

## Ski BERA

BERA is organizing a three-day, two-night ski trip to Vermont for Friday, February 28, through Sunday, March 2. For \$230 per person, double occupancy and including all taxes and gratuities, the trip includes:

- round-trip transportation, via a deluxe motorcoach with lavatory, departing from the Brookhaven Center parking lot
- an on-board tour guide
- two-night stay at the Ascutney Mountain Resort, with slope-side accommodations
- discounted lift tickets for skiing Killington on Saturday
- free skiing of Mt. Ascutney on Sunday
- breakfast Saturday and Sunday
- Saturday dinner buffet

To reserve your spot, a \$50 down payment, in the form of a check payable to BERA, is due immediately at the BERA Sales Office, Berkner Hall, weekdays, 9:30 a.m.-1:30 p.m. For a flier or other information, call Augie Hoffman, Ext. 3884, or Andrea Dehler, Ext. 3347.

## 50 YEARS AGO THIS WEEK

This series, which recounts the earliest days of Associated Universities, Inc. (AUI), and BNL, will run as appropriate throughout 1996 and 1997, the 50th anniversary years of AUI and BNL, respectively.

• **December 15, 1946** — AUI prepares a detailed Initial Program Report for submission to the new Atomic Energy Commission (AEC), specifying the general aims of the research program planned for BNL:

"[BNL] will endeavor to learn more about the nature of the atomic nucleus, its internal constitution and its reactions to neutrons, electrons, and protons, and to discover the nature and properties of mesons and other products of nuclear disintegration. . . . to improve the chemical production and utilization of many materials, especially of tracer elements, [BNL] will seek to extend our knowledge about the nature and mechanism of chemical reactions and will study the methods of radioactive isotope production and separation.

" . . . [T]here will be a broad program to determine ways in which nuclear energy may be used to prolong human life and to control animal and vegetable life more effectively. This will involve such studies as the effects of radiations on the behavior of living organisms and investigations of the chemical and physical mechanisms of heredity.

" . . . Investigations may also be undertaken to learn more about the nature of cancer and other abnormalities of living cells. From such research will come inevitably a firmer basis for the more positive control, perhaps even the cure, of many diseases.

" . . . [T]here will be opportunities for the scientists and engineers . . . to improve the techniques of producing atomic power and preparing the radioactive isotopes that have already proved their usefulness in saving lives and in speeding the march of

science."

Of specific projects, the report says:

• **Nuclear Reactor Project** — "The first reactor will be an air-cooled graphite-uranium pile . . . Although it is considered to be a low intensity instrument, its neutron flux will, nevertheless, exceed that of other existing experimental piles. Experimental facilities sufficient to accommodate an extensive research program will be incorporated in the original design."

• **Accelerator Project** — "The most promising means of learning more about the nature of matter and of energy is the study of high energy particles and their interaction with atomic nuclei. . . . [A] major part of the [BNL] program should be devoted to the design, construction, and use of gigantic electronuclear machines that can produce such very high energy 'bullets' . . . One can hardly specify now the exact design of the supervoltage machine . . . But it is vital that Brookhaven take a position of leadership in this field. . . ."

The report also specifies research plans for the Physics, Chemistry, Biology, Medical and Engineering Departments.

• **December 17, 1946** — At a meeting of AUI's Executive Committee, Columbia University's I.I. Rabi is appointed to the committee to replace Robert Bacher, who had resigned to join the AEC.

The Committee also approves the proposed contract with the Manhattan District as then drafted, subject to one change being made, and the contract is signed on behalf of AUI later the same day. A few days later, AUI agrees to a number of changes requested by General Leslie Groves. (To be continued on January 3.)

## Eat Soft Sectors

On Thursday, December 19 from noon to 1 p.m., indulge yourself in soft sectors of differently formatted disks (slices of pizza with different toppings!) with the Microcomputer Club, at its annual holiday party. It will be held in the second-floor conference room, Bldg. 130, where election of new club officers will also take place.

Members and potential new members are welcome. To ensure that there are enough disks to go around, reserve your place by contacting Steve Stein, club president, Ext. 5694 or e-mail stein1@bnl.gov. For more information about the club, visit its website at: <http://sun20.ccd.bnl.gov/~bnlmcc/>.

## Bowling

### Red and Green League

K. Asselta 248/223/205/676 scratch series, K. Koebel 246/243/653 scratch, R. Raynis 226/222/610 scratch, R. Larsen 236/208/610 scratch, R. Mulderig 233/602 scratch, R. Eggert 230, K. Riker 227, E. Sperry III 221, D. Fisher 215, R. Prwivo 205/203, E. Larsen 205, J. Mayeski 202/202, A. Pinelli 202, W. Powell 202, J. Goode 202, J. Cuccia Sr. 201.

### Purple and White League

A. Almasy 228/218/201/647 scratch, Don King 225/208/186/619 scratch, E. Sperry III 220/219/211/650 scratch, Doug Fisher 223/194, Diana Fisher 200/176, I. Sperry 191/172, J. Zebuda 235, R. Raynis 230, B. Mullany 218, Debbie Reynolds 215, S. DiMaiuta 209, E. Sperry IV 204, M. Meier 204, S. Logan 201, N. Bessemer 197, P. Baker 195, P. Buonaiuto 190, Donna King 175/170.

### Desperately Seeking Substitutes

The Bowling League is desperately seeking substitute bowlers. If you like to bowl and want to fill in occasionally for an absent league bowler, then call Debbie Botts, Ext. 3888.

## Volleyball

### Standings as of December 5

Open League		League I	
Shank Carry & Throw	20-4	Bikers 'n Spikers	20-4
Far Side	15-12	Rude Dogs	20-4
Death Volley	13-11	Scared Hitless	10-14
Pass, Set & Crush	12-12	Set to Kill	7-20
Spikers	3-24	Net(e)scapers	6-21
League II		League III	
Safe Sets	16-2	Silver Bullets	21-0
Spiked Jello	16-2	Just 4 Fun	15-6
Jao-About-That	14-7	Upton Ups	15-6
Monday Nite Live!	10-8	Group Sets	13-8
Nuts & Bolts	8-10	New Comers	9-12
Fossils	7-11	Court Hogs	8-13
Jolly Volleys	5-13	OER	3-18
Lift, Carry, Throw	5-13	Over-in-Three	0-21
Night Court	3-18		

# BROOKHAVEN BULLETIN

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## Classified Advertisements

### Placement Notices

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

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

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

For more information, contact the Employment Manager, Ext. 2882, or call the JOBLINE, Ext. 7744 (344-7744), for a complete listing of all openings.

Current job openings can also be accessed via the BNL Home Page on the World Wide Web. Outside users should open "<http://www.bnl.gov/bnl.html>", then, under "Information," select "Jobs." For scientific staff openings, select "Scientific Personnel Openings"; for all other vacancies, select "General Personnel Openings."

**SCIENTIFIC RECRUITMENT** - Doctorate usually required. Candidates may apply directly to the department representative named.

**SCIENTIST** - Trained in nuclear or high-energy physics, with extensive experience in the design and construction of silicon detector systems. Will lead the development and construction of silicon detectors for the PHOBOS project at the Relativistic Heavy Ion Collider. Contact: Thomas Ludlam, RHIC Project.

**POSTDOCTORAL RESEARCH ASSOCIATE** - Trained in physics or medical physics, with experience in one of the following fields: imaging in general, medical imaging, x-ray optics, synchrotron instrumentation. The project at the National Synchrotron Light Source involves scatter-enhanced imaging with monochromatic x-rays in the tomography mode. Contact: F. Avraham Dilmanian, Medical Department.

**OPEN RECRUITMENT** - Opportunities for Laboratory employees and outside candidates.

**DD 4025. TOWER LINE PERSON** - Under minimum supervision installs, repairs, and maintains overhead and underground electrical distribution lines, systems, equipment, controls and related devices, ordinarily of 2300 volts and over. Duties include rigging, electrical and mechanical work incidental to the installation, maintenance, and repair of equipment, wires, lines, instruments, and fabricated metal on structures such as meteorology towers, pole stack and water tower. Will otherwise perform duties of Electrician A. Plant Engineering Division.