

Two AUI Trustees Receive National Medal of Science

Two Trustees of Associated Universities, Inc., (AUI) are among an elite group of eight scientists awarded the nation's highest scientific honor by President Bill Clinton in a White House ceremony on September 30.

The two — Val Fitch of Princeton University and Vera Rubin of the Carnegie Institution of Washington, D.C. — were honored with the National Medal of Science, which is awarded for achievements in the physical, biological, mathematical, behavioral and social sciences. At the same ceremony, nine engineers were also honored with the National Medal of Technology.

In presenting the medals, Clinton lauded the accomplishments of the recipients, whom he called "the dreamers, the pioneers, the risk-takers." Vice President Al Gore said the winners' outstanding contributions to national competitiveness also made the country a winner.

At the Frontiers of Physics

Fitch shared the 1980 Nobel Prize in Physics with James Cronin, University of Chicago, for their 1964 discovery of CP violation, a fundamental advance in particle physics made at BNL's Alternating Gradient Synchrotron. The President cited Fitch for "pioneering experiments at the fron-



AUI Trustees Val Fitch (photo at left) and Vera Rubin (photo at right) receive their National Medals of Science and praise for breaking new scientific

tiers of physics, from his measurement of the properties of mu-mesons in nuclei to his co-discovery that nature violates a fundamental spacetime symmetry property [CP violation]; and for his leadership on national science policy."

The McDonnell Distinguished University Professor of Physics emeritus at Princeton, Fitch served on the President's Science Advisory Committee in the early 1970s, and is a member of the National Academy of Sciences and a past president of the American Physical Society.

"I am especially pleased that the citation accompanying the medal mentions the muonic atom work, which I had always thought to be a pretty nifty piece of work but which had never before been recognized," Fitch

said. "It is, of course, a very special pleasure to have one's work honored by one's own country."

Fitch was an AUI Trustee from 1961 to 1967 and rejoined the Board in 1988. Earlier this month, he completed a two-year term as Chairman of the Board.

Dark Matter Pioneer

Rubin, an astronomer widely recognized as the individual whose work convinced scientists of the existence of dark matter, received the award from Clinton "for her pioneering research programs in observational cosmology which demonstrated that much of the matter in the universe is dark and for significant contributions to the realization that the universe is more complex and more mysterious than had

been imagined." Rubin has been a member of the AUI Board of Trustees since October 1992.

At the Carnegie Institution's Department of Terrestrial Magnetism in the 1970s, Rubin and coworker Kent Ford determined that matter that is visible at optical and radio wavelengths makes up only a fraction of the universe's total mass. The other approximately 90 percent, Rubin concluded from her spectral observations of spiral galaxies, must be nonluminous, or "dark" matter.

"It's always nice to get honors, but that's not why I do science. I do it out of an intense curiosity to attempt to understand the universe," Rubin explained. "But when something like this happens it's very nice; it is a great surprise." (continued on page 2)



ground from President Bill Clinton and Vice President Al Gore in a White House ceremony held on September 30.

— Official White House photos

Streamlining The Three Ps



Members of the 3P Committee meet in the Payroll Office, where the first module of the computer system that will link many human-resources databases will come on line. Members are: (front, from left) Sharon Wang, Management Information Systems (MIS) Division; Edward Gallagher, MIS; Tony Romano, Director's Office; (back, from left) committee chairman John Hauser, RHIC Project; Peter Maier, Personnel Division; Vincent Bilms, Fiscal Division; Mark Israel, Fiscal Officer; Edward Byrne, Budget Office; Richard Melucci, Department of Applied Science. Missing: Maurice DuBois, Fiscal; Bruce Penn, Department of Advanced Technology; and Gary Utz, MIS.

(See story on page 2.)

BNI Lecture: FACE in the Forest

Atmospheric carbon dioxide (CO₂) has risen dramatically since the beginning of the industrial revolution. CO₂ traps infrared radiation that would otherwise escape, thereby causing an increase in the energy content of the atmosphere. This phenomenon, known as the greenhouse effect, may already have begun. Potential consequences may include more extreme weather events, rising sea levels, changing precipitation patterns, and the shifting of ecosystems and of agriculturally productive regions.

How will plants and forests react in a CO₂-enriched world? How will their productivity and function change? And, on a global scale, how will changes in the global plant community alter feedback processes regulating the concentration of atmospheric CO₂ in the future?

These are some of the questions being addressed by FACE, the free-air carbon dioxide enrichment system developed at BNL by George Hendrey and a team of Department of Applied Science (DAS) researchers.

Hendrey, who heads DAS's Biosystems and Process Sciences Division, will bring the Lab audience face to FACE when he delivers the 291st Brookhaven Lecture. Entitled "FACE in the Forest: Manipulating Intact Ecosystems," the talk will be given at 4 p.m. on Wednesday, November 17, in Berkner Hall. The speaker will be introduced by DAS Chairman Leon Petrakis.

Developed as a component of the U.S. Global Change Research Program and of the International Geosphere-Biosphere Program, FACE is a novel approach to doing field experiments, in which plants growing naturally are exposed to elevated levels of CO₂. In his talk, Hendrey will describe how FACE controls intact ecosystem plots, such as a pasture or forest, by surrounding them with circular arrays of vertical pipes from which CO₂ is released. The rate of release is adjusted on a second-to-second basis using measurements of wind direction and speed, as well as the CO₂ concentration in the center of the circle.

This equipment, Hendrey will explain, allows researchers to perform experiments in which CO₂ is the only variable disturbed, to examine ecosystems at levels ranging all the way from the forest canopy down to genetic



George Hendrey

mechanisms regulating photosynthesis.

Hendrey will comment on the significance of BNL's field studies on cotton plants in Arizona, which have shown an accelerated rate of carbon accumulation in the soil. The FACE team, which includes DAS's Keith Lewin and John Nagy, is also collaborating with the Swiss Federal Institute of Technology in a facility for field experiments on grasslands near Zurich. In addition, with other collaborators, the team is developing new FACE facilities to study tall forests in North Carolina and grasslands in New Zealand.

These FACE stations, Hendrey will explain, can be considered environmental analogues to the accelerators used for particle-physics research — user facilities for experimenters studying plant biology instead of particle collisions. The result will be an international FACE network assessing global terrestrial carbon flux in a CO₂-enriched world. (continued on page 2)

The Message You've Waited For: New Voice Mail Coming Soon

A new, user-friendly voice-mail system with double the present capacity, excellent sound quality and a slew of new applications is on its way to BNL's telephone users.

"Anyone who wants voice mail will be able to get it," said Ralph Trondle, head of the Telecommunication Services Section of the Computing & Communications Division (CCD). "This is a system rich in voice-processing applications."

The long-awaited system will arrive November 9, and will be up and running around November 15. The current VMX system will continue to be available for use while the 1,000 employees already using voice mail become familiar with the new system's commands, Trondle explained. This can be done by dialing an access number, 7500.

Then, on December 29, the new Maxum system, built by Octel Communications Corp., will replace the old VMX 1000 system entirely. The new system will be able to accommodate 2,000 users and is expandable if demand rises still higher, Trondle said. Old messages may be retrieved from the VMX system until it is shut down at 5 p.m. on January 7, 1994, by dialing 7567.

In the meantime, CCD will provide training courses in late November and early December to teach current and prospective voice-mail subscribers how to use the system on a department-by-department basis. BNL organizations will be notified of the training day assigned to them, and employees will be given user guides at the session they attend.

Refresher courses will be offered in February and on future dates to be determined.

The cost to users of the new system will be higher than the present rate, Trondle said. But, he continued, as the number of users increases, the cost to each individual will decrease from the initial rate. Over three years, he said, most of the monthly cost will be eliminated.

— Kara Villamil

Slow Down for Security At BNL Main Gate

Since BNL is not a public site, all drivers are asked to please slow down for access-control checks when entering the Laboratory. You may encounter slight delays while security police officers check for vehicle registration and/or driver identification.

"Try not to be impatient, and remember — the Lab is not open to the public," said Police Group Manager Al Berretta, adding, "It is important that you slow down and be ready to stop when approaching the gatehouse, no matter what time of the day or night."

Slowing down, Berretta said, permits the security patrol officer to see the registration sticker or check the driver's ID card. Remember, vehicle registration stickers are especially hard to see through tinted windshields. Keep your BNL ID card and driver's license with you at all times and be prepared to show them if asked. Without either a vehicle registration or ID card, you may be required to show your driver's license.

Berretta offered ways to minimize delays for everyone. For example, if you are an employee and don't have a green car registration sticker on the

back of your rearview mirror, get one through the Personnel Security Office in the Brookhaven Center, Bldg. 30. If your sticker is red, replace it with the currently authorized green sticker.

Those without car stickers or employee ID cards, such as contractors, need other means of showing that they should be allowed on site. Contractors should apply for a white and green ID card after satisfying safety requirements.

To help visitors entering the Lab, let gate personnel know in advance when they are expected. Notify Police Group Inspector Leonard Butera, Ext. 4691, or Berretta, Ext. 2355, so that gate personnel can be informed.



Stoutenburg

Security Police Officer Sgt. Sharol Busby motions morning commuters through the Main Gate while checking for proper ID.

Streamlining the Three Ps to Start With Payroll

Coming soon to a Lab near you: A new computer system that will modernize BNL employees' pay stubs for the first time in 20 years and allow paychecks to be deposited electronically into any outside bank. And that's just the start.

Most employees will notice only a few changes resulting from the new system, called 3P for its consolidation of payroll, personnel and personnel budgeting information.

But, those who routinely deal with human-resources information will witness the automation and centralization of previously fragmented facts. And, the Lab will be able to meet new U.S. Department of Energy (DOE) requirements for labor-cost distribution and cost accounting.

Specially modified computer software, called Stargarden, will debut in January as the new payroll system, generating the redesigned pay stub.

From there, new modules will be added over the next two years until the system embraces everything from

tracking job applicants and reviewing salaries to labor-cost distribution and personnel budgeting.

The new system is the result of three years of meetings by the 3P Committee, whose 11 members were drawn from the fiscal, personnel, management information, administrative and scientific areas of the Lab. Committee chairman John Hauser stressed the teamwork involved in formulating the program through the combination of diverse expertise.

The 3P system had its roots in the need to automate certain personnel records that were still being handled manually. Then, the design was expanded to include modernizing the payroll system and updating the personnel budgeting system, since all three areas of records are linked by their nature.

In 1990, the Management Information Systems (MIS) Division, under the direction of Associate Director for Administration Hank Grahn and the MIS Steering Committee, chartered the 3P Committee to find the best software system to meet the Lab's needs. In late 1991, after examining bids from five companies, the commit-

tee settled on the powerful Stargarden program and began guiding its custom modification.

"This is an idea that's been kicking around for a while," Hauser said. "It really is designed to meet the needs of the Lab by making an existing system more efficient and enabling the Lab to meet new requirements."

— Kara Villamil

Save Your Last Pay Statement

A reminder from the Payroll Office for those who are paid monthly: Save the October Leave and Earnings statement you received with last Friday's paycheck of October 31. The reason? In this introductory phase of the new 3P system (see accompanying story), you will soon receive another, sample statement generated by the new payroll computer system, along with a memo explaining the differences in appearance and information content between the two. The Payroll Office suggests comparing the two to locate information in the new format.

Employees who are paid weekly can expect their sample statement in the near future. The new-style pay statements will begin arriving regularly with all employees' January paychecks.

In Memoriam

Bernadette Christian, a senior office services assistant in the Department of Applied Science (DAS), died on October 21 after a long, courageous struggle with cancer. She was 47.



Christian, who joined DAS as an office services assistant in April 1979, was promoted to her last position in 1984. Reflecting on Christian's strength, her supervisor John Andrews, Head of DAS's Division of Energy Efficiency and Conservation, said, "Bernadette Christian, in the face of a challenge that would devastate most of us, maintained a cheerful yet fighting spirit through it all. Those of us who were influenced by that spirit received a priceless gift."

Christian, who was a resident of North Shirley, is survived by her husband, Russell, and her sons Russell and Sean.

Sign Up Today For Direct Deposit

For employees who currently have their paychecks directly deposited by mail into outside banks (not the Teachers Federal Credit Union [TFCU]), time is running out to sign up for the change to speedier, more secure electronic deposit. If you have not yet filled out and returned the appropriate form to Payroll, do so by November 15 and your January check will go straight to your account electronically. Otherwise, it will end up at your BNL address.

Employees not currently having their checks deposited directly who are interested in having electronic off-site deposit should also complete the form, available at Payroll.

Employees whose checks are directly deposited to the TFCU will automatically be transferred to the electronic deposit system.

BNL Lecture

(cont'd)

George Hendrey earned his Ph.D. in limnology in 1973, at the University of Washington, Seattle, where he had also received his M.S. and B.A. in 1970 and 1966, respectively. He then spent a year at Cornell University as a visiting lecturer on limnology. After three years as a research scientist at the Norwegian Institute for Water Research, he joined Brookhaven's DAS in July 1977 as an ecologist. He was granted a BNL continuing appointment in 1980.

Among other affiliations, Hendrey is a member of the American Society of

Science Medal

(cont'd)

Rubin said that she is especially pleased to receive the national honor in this time when science is taking a beating in some quarters. "The main thing is that the President does consider science important," she said, adding that the ceremony's recognition of achievements in basic science alongside those in technology was also significant.

"Vera and Val have earned the respect of all for their contributions as scientists and as trusted spokespersons on the important issues that face the scientific community," said AUI President Robert Hughes. "This award is a reflection of that respect."

Fitch and Rubin join two other current AUI Trustees who also hold the prestigious award. In 1986, a medal was given to Herman Feshbach, Massachusetts Institute of Technology Institute Professor of Physics emeritus. Feshbach, a trustee from June 1974 to October 1987, and then again from October 1990 to the present, is a past Chair of the Board of Trustees. In 1990, Robert Pound, Mallinckrodt Professor of Physics emeritus at Harvard, who has been a trustee since June 1976, received the honor.

— Kara Villamil

Limnology and Oceanography, the American Chemical Society and the International Limnology Association. He is a peer reviewer for the United Nations Environmental Programme's Project Environmental Changes and Productivity of Tropical Grasslands and a director of the Black Rock Forest.

After the lecture, all are invited to join Hendrey for discussion and refreshments. To accompany him to a dinner at a restaurant off site, call Sharon Zuhoski, Ext. 3359.

Let's Dance

The samba and the peabody will be the featured dances of the next series of eight lessons offered to beginners by the BNL Ballroom, Latin & Swing Dance Club.



From Rio de Janeiro, Brazil, and the dance around Carnival time, the samba was popularized in the U.S. by Fred Astaire in the 1933 movie *Flying Down to Rio*, and, a few years later, by Carmen Miranda dancing it in *That Night in Rio*. The peabody is a U.S.-born fast variation of the fox trot, and, in fact, is named after a Brooklyn police lieutenant who was popular in the New York dance world in the 1910s and 20s.

The series starts at 5:15 p.m. on Wednesday, November 10, in the Physics lounge, Bldg. 510, and costs \$15 per person. No partners are required, as the club signs up equal numbers of women and men. While the class is limited to 60, only 16 places remain — and men are especially needed. To reserve your place, first-come, first-served, call Marsha Belford, club president, Ext. 5053.

WordPerfect Group

The WordPerfect Users' Group will meet on Tuesday, November 9, from 10 to 11 a.m., in the Computing & Communications Division seminar room, Bldg. 515. The topic will be "WordPerfect 6.0 — Should You Upgrade?"

Seating is limited, so call group moderator Pat O'Connor, Ext. 7341, by November 8 to confirm attendance

Volleyball

Standings as of October 27

Open League		League 1	
GTEAM	5-1	Rude Dogs	7-2
The Roofing Co.	5-4	Network News	3-3
Far Side	4-5	Upfagrabs	3-3
Penetrating Veggies	2-4	Underdogs	4-5
Me and the Boys	2-4	Fornossing	1-5
League 2		League 3	
Nuts & Bolts	5-1	Silver Bullets	6-0
Night Court	5-1	Jolly Veggies	4-2
Safe Sets	4-2	High Volley'em	4-2
Mon. Night Live	4-2	Take Five	3-3
Spiked Punch	3-3	Slow Hands	1-5
Net Wits	2-4	Upton Ups	0-6
Fossils	1-5		
NTTP	0-6		

Bowling

Red/Green League

R. MacKinnon bowled a 248/211/657 scratch series, K. Asselta 224, E. Larsen 214, W. Powell 210, A. Warkentien 206/204/203/613 scratch, R. Raynis 202, J. Goode 201.

Purple League

Andy Warkentien bowled a 257/213/666 scratch series, Ed Sperry IV 216, Ray Raynis 214, Maryann Reynolds 198/187, Jim Garrison 221, Fred Schaefer 203/226, Renee Flack 186, Debbie Keating 175/175, Kim Moylan 173, Suzanne Agnetti 172, Denise Monteleone 171. Fred Schaefer bowled a 238/220/191/649 scratch series the week of 10/21.

White League

Jim Goode 227, Andy Warkentien 257/213, Bob Geib 222, Sharon Smith 181, Mary Grace Meier 170, Pete Wynkoop 203, John McCarthy 233, Lorraine Roecklein 173, Pat Manzella 185. Lorraine Petro converted the 4/5/7 split.

Five Years and Counting Of Feeding Those in Need

Almost 2,500 pounds a month. Twelve months a year. Five whole years.

Can by can and box by box, BNLers have given 140,486 pounds of basic foodstuffs in five years to hundreds of needy Brookhaven Town residents through the BNL Food Drive and the Brookhaven INTERFACE consortium.

Plus, each month, several BNL employees volunteer their time to deliver the food where it's needed. Carole Kerr, Director's Office, has coordinated the drive for all five years. Local businesses, including the Cafeteria's Service America Corporation employees, have done their part, too. And, those who run the food pantries that receive BNL-donated food have expressed amazement at the longevity of the program and the generosity of Lab employees.

But now the program, which turned five years old last month, faces new challenges. The King Kullen and Finast supermarket chains have discontinued their receipts-for-cash exchange program, which means less money with which Kerr can buy needed items for the town's food pantries.

And, while the upcoming holiday season should mean increased donations, Kerr said, months without major holidays usually result in fewer donations. "These people are hungry the other nine months," she said, speaking of 300,000 Long Islanders who need food assistance annually.

In the face of these difficulties, Kerr encourages all Lab employees to give the Food Drive a few more items than they have been and to give all year round. One item from each employee



Clarence Wilkins, Supply & Material Division, helps deliver some of the 2,500 pounds of food donated by BNLers each month to Brookhaven Town's food pantries. The November Food Drive will take place all next week.

would mean over 3,000 pounds of food each month for the hungry, she said.

All next week, the Food Drive will take items to be delivered for Thanksgiving baskets. Anyone wanting to give a turkey should call Kerr at Ext. 7100, before next Friday.

Those who would rather leave the shopping to her may send a check payable to "BNL Food Drive - Carole Kerr" at Bldg. 460; she'll send a receipt back. Also, small cash donations may be dropped in the Food Drive cup at the Cashier's window in Bldg. 134. Finally, anyone who knows of a farm or small business that could donate food or resources should call Kerr.

— Kara Villamil

Wanted: Artwork! For Upcoming BNL Art Festival

The BERA Art Society invites all BNL employees, guests, retirees and their family members over age 15 to submit fine artwork in all media for the 13th biennial fine art show, this year entitled "BNL Art Festival."

The show will be held in Berkner Hall, Rooms B and C, Monday through Thursday, December 6 to 9, from 11:30 to 1:30 daily, with a reception from 5 to 7:30 on Monday.

Pictures should be framed and ready to hang. More than one piece may be entered, though exhibitors may

be asked to limit their contributions if space becomes a problem. The judgment of the BERA Art Committee on acceptable works is final.

For catalog purposes, a completed form for each work to be entered must be returned to Robert Chrien, Ext. 3903, Bldg. 510A, by November 22. Obtain forms at the BERA Sales Office in Berkner Hall, or watch the Bulletin next week. Deliver works to Berkner Hall on Friday, December 3 from 2-4 p.m. and pick them up there on December 9, 2-4 p.m.

Outreach: Psychology at Work Difficult People at Work

Do you enjoy work — except for the people you work with? Then the next Outreach workshop is for you.

Sponsored by the Employee Assistance Program (EAP) of the Occupational Medicine Clinic, "Dealing With Difficult People at the Lab — Bosses, Coworkers, Auditors and Program Managers," will be presented on Tuesday, November 9, by clinical psychologist Diana Richman. Her talk will be held from noon to 1 p.m. in Berkner Hall. All are invited.

As Richman will explain, difficult people at work can interfere with scientific creativity, office productivity and personal job satisfaction. Since you cannot change these people, Richman will recommend ways to change how you regard them and how you can deal with them.

This will be done with exercises and with on-the-job examples of interactions with difficult people brought by the audience.

Diana Richman, Ph.D., is senior supervisor at the Institute for Rational-Emotive Therapy, New York City, and Director of clinical supervision for the Queens branch of APPLE, Inc. A consultant to industry on applying cognitive-behavioral techniques to problems in the workplace, Richman also has a private practice in Manhattan and Queens.

To register, return the bottom portion of the Outreach flyer recently mailed to all employees to EAP Staff Psychologist Dianne Polowczyk, Bldg. 490, by Monday, November 8. For more information about the Psychology at Work series of Outreach workshops or EAP, call Ext. 4567.

Canceled: Mystery Atlantic City Trip

Due to slow ticket sales, two BERA events have been canceled: The Dinner-Mystery Theater scheduled for November 12, and the Atlantic City bus trip planned for November 13. No further trips to Atlantic City will be scheduled until the spring.

For refunds for these events, contact Andrea Dehler at the BERA Sales Office, Ext. 3347.

BWIS Invites All To Wine & Cheese

All are invited to the Brookhaven Women in Science (BWIS) Wine & Cheese Party — on Tuesday, November 9, from 4:30 to 6:30 p.m. in the Recreation Building.

This free, informal get-together is held annually to acquaint prospective BWIS members — women and men — with BWIS members and officers, and with the group's accomplishments, which have benefited the entire Lab community. So come to enjoy a social afternoon and explore what BWIS has to offer.

Elected last month, the new BWIS officers are: Veronica Evans and Mary Wood, Group Coordinators; Lisa Tranquada, Secretary; Harriet Castro, Treasurer; Eva Bozoki, Seminar-Lecture Chair; Anita Cohen, Publicity Chair; Eena-Mai Franz, Program Chair; Ruth Kempf, Scholarship Chair; Pam Mansfield and Dorry Tooker, Membership Chairs; Terri Lacker and Harriet Martin, Newsletter Editors.

Tennis Anyone?

The 1993 Tennis Ladder ended October 30, so the Tennis Committee would like to give special thanks to Peter Vanier for keeping the ladder updated and to Ken Perkins for assisting in court reservations.

All together, 35 people participated during the season, and over 240 matches were played. Joe Carbonaro and Om Singh battled all year for first place, with Singh winning the last match on October 30. Congratulations to the following players who also finished in the top ten: Ed Gill, Mikhail Agamalian, Frank Kito, Donald DiMassimo, John Morris, Ken Perkins, Ady Hershcovitch and Peter DeToll.

Cooking Exchange

The next meeting of the Cooking Exchange will be on Wednesday, November 10, at noon, in the Recreation Building in the apartment area. All are invited, especially newcomers and others living and working at BNL.

A charge of \$2 per adult will help defray the cost of ingredients, and baby-sitting will be provided at \$1 per child. For more information, call Megumi Akiba, Ext. 1061.

Arrivals & Departures

Arrivals

Patricia E. Carollo Staff Serv.
Bor-Chen Chang Chemistry
Pingyun Chen Chemistry
Ludwig E. Feinendegen Medical
Douglas G. Van Campen Chemistry

Departures

This list includes all employees who have terminated from the Laboratory including retirees.
Cordell J. Anderson Staff Serv.
Patrick J. Glynn Staff Serv.
Annette M. Gremme Medical
Frederick B. Heilemann AGS
Peter V. Lane App. Science
Kaumudi I. Pandya App. Science
Ondrej Prasil App. Science
James D. Rush Chemistry
Richard B. Schonberg Personnel
Yaodong Xu Chemistry
Xiaohao Zhang NSLS

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ANITA COHEN, Editor
MARSHA BELFORD, Assistant Editor

Bldg. 134, P.O. Box 5000
Upton NY 11973-5000
Tel. (516) 282-2345; Fax (516) 282-3368

