

Newsletter

Week of May 24, 2004

Vol. 5, No. 11

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Scientists announce cosmic ray theory breakthrough



Laboratory researchers (left to right) Hui Li of Plasma Physics (X-1), Philipp Kronberg of the Institute of Geophysics and Planetary Physics (EES-IGPP) and Stirling Colgate of Theoretical Astrophysics (T-6) stand near the Los Alamos radio antenna of the Very Long Baseline Array near Bandelier. Li, Kronberg and Colgate are the principal investigators of a new theory to explain the movement of vast energy fields in giant radio galaxies. Photo by LeRoy N. Sanchez

by Todd Hanson

Los Alamos scientists have proposed a new theory to explain the movement of vast energy fields in giant radio galaxies. The theory could be the basis for a whole new understanding of the ways in which cosmic rays — and their signature radio waves — propagate and travel through intergalactic space.

In a paper published last month in *The Astrophysical Journal Letters*, the scientists explain how magnetic field reconnection may be responsible for the acceleration of relativistic electrons within large intergalactic volumes. That is, the movement of charged particles in space that are originally energized by massive black holes.

"If our understanding of this process is correct," says astrophysicist Philipp Kronberg of the Institute of Geophysics and Planetary Physics (EES-IGPP), "it could be a paradigm shift in current thinking about the nature of GRGs and cosmic rays."

Researchers still do not fully understand why magnetic field reconnection occurs, but this much is known: a deeper understanding of the mechanism could have important applications here on Earth, such as the creation of a system of magnetic confinement for fusion energy reactors.

The theory could be the basis for a whole new understanding of the ways in which cosmic rays — and their signature radio waves — propagate and travel through intergalactic space.

If the Los Alamos scientists' theory is correct, the discovery also has wide-ranging astrophysical consequences. It implies that magnetic field reconnection or some other highly efficient field-to-particle energy conversion process could be a principal source of all extragalactic radio sources, and possibly also the mysterious "Ultra High Energy Cosmic Ray particles."

Giant radio galaxies are vast celestial objects that emit a continuum of radio wavelengths detectable with radio telescopes like those at the Very Large Array in Socorro, N.M. Using comprehensive data on seven of the largest radio galaxies in the universe gathered over the past two decades, the researchers were able to study cosmic ray energy fields that are expelled from the GRGs centers — which are almost certain to contain supermassive black holes — outward as much as a few millions of light years into intergalactic space (1 light year = 5,900,000,000,000 miles).

What the Los Alamos researchers concluded was that the high energy content of these giant radio galaxies, their large ordered magnetic field structures, the absence of strong large-scale shocks and very low internal gas densities point to a direct and efficient conversion of the magnetic field to particle energy in a process that astrophysicists call magnetic field reconnection. Magnetic field reconnection is a process where the lines of a magnetic field connect and vanish, converting the field's energy into particle energy.

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Los Alamos
Newsletter

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Use caution when disposing of rechargeable batteries

Recently, heavy equipment ruptured rechargeable batteries that became spontaneously combustible and started a small spot fire at the Material Recycling Facility at Technical Area 60.

Rechargeable batteries should not be thrown out with ordinary garbage. These batteries represent a serious safety concern for workers and a compliance issue for the Laboratory.

Employees should use discretion when preparing to dispose of any type of battery at the Laboratory, said Tony Stanford, Facilities and Waste Operations (FWO) Division leader. Alkaline batteries that have no radioactive or chemical contamination can be placed directly in the trash.

Any rechargeable batteries, such as nickel-cadmium, nickel-hydride, lithium-ion, lithium-hydride and mercury batteries, must be treated differently than normal office trash and should be considered universal waste. Universal waste is a special category for items that should not go to the landfill, such as fluorescent light bulbs, mercury switches and rechargeable batteries, said Stanford.

Employees who need to dispose of rechargeable batteries should contact their waste coordinators or send a request to wastenot@lanl.gov by e-mail.



FROM THE TOP

Welcome to the new students

by William Press, deputy director for science and technology programs

Every year, as our famous spring winds start to diminish, a different kind of fresh breeze blows into Los Alamos: the annual arrival of students for our summer student programs. This year, we are expecting more than 400 first-time student employees at all levels (high school, undergraduate and graduate students), and more than 1,300 returning students, who have worked at the Laboratory previously.

I hope that all Lab regular employees will join me in making our summer students feel welcome and in doing everything that we can to give every one of them a positive and rewarding summer experience. With more than 2,000 total students working at the Lab during the last year, we have far and away the largest student program of any national laboratory — and not just counting our sister national defense labs. This commitment to reinvigorating ourselves and to attracting the best and brightest at all educational levels goes all the way back to our Manhattan Project origins more than 60 years ago.

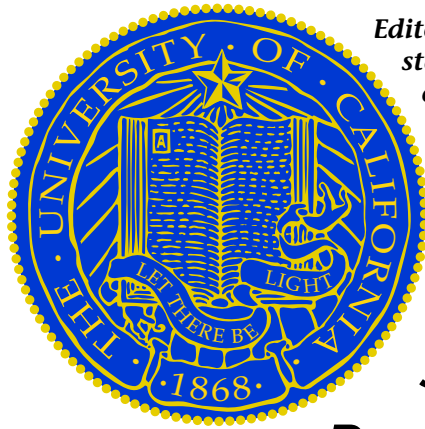
All of our student employees will, we hope, take away fond memories and a valuable educational or work-related experience. From a few we expect more. We expect them to fall in love with this place and to nurture an internal commitment to come back to the Lab at a later professional stage. For our students from Northern New Mexico, this is a commitment not to join the “brain drain,” but rather to help our region grow its high-tech enterprise. For students from other parts of the country, it is the recognition that we are situated in a uniquely beautiful and uniquely exciting place, a place that combines the opportunity for a career in cutting-edge science with unbelievable recreational and lifestyle opportunities.

I want to express a particular welcome to our students who are citizens of other countries. Many of our Lab's founders were “foreign nationals,” and we always have recognized that science is — and must be — an international enterprise. Success in our missions, and success in keeping our scientific edge, depends on our attracting the world's best talent.

Most of our summer students come back for multiple years, and many return for a lifetime. Welcome, and we hope that you feel as much at home here as we do.



William Press, deputy director for science and technology programs



Editor's note: The University of California released the following statement regarding the National Research Council's report on “Maintaining High Scientific Quality at Los Alamos and Lawrence Livermore national laboratories.” The statement is from Robert Foley, UC vice president for laboratory management.

University issues statement on National Research Council report

The University of California appreciates the National Research Council's thorough, thoughtful and professional response to the complex charge put forward to them by the Department of Energy's National Nuclear Security Administration. We appreciate the recognition by the NRC of the important scientific and technological work being performed at these national laboratories. The NRC report is also sensitive to the issues and challenges of managing the complex nuclear weapons laboratories.

The university agrees with the NRC report on a variety of its findings and recommendations, including the recommendations for the NNSA to seek contractors that have the capability to recruit and retain the laboratories' world-class scientific staffs, provide excellent management capabilities, implement best practices and take innovative approaches. The university also agrees with the NRC committee which “feels strongly that the continuing scientific excellence and productivity of [Los Alamos National Laboratory] and [Lawrence Livermore National Laboratory] are critical to the nation's nuclear deterrence capability ...” and that their “scientific quality ... is dependent on (their) continuing to attract and retain an excellent scientific staff.” We believe that continuing the “interplay” between [Los Alamos] and LLNL, including the “coordination and constructive competition,” is extremely important.

The University of California recognizes that the final decision as to what format these competitions will take is ultimately a decision to be made by DOE and NNSA. The university continues to aggressively prepare as if we will compete, but the UC Board of Regents will make that decision following a thorough review of the respective RFPs.

To read a National Research Council news release, go to <http://www4.nationalacademies.org/news.nsf/isbn/0309092442?OpenDocument> online.



Robert Foley, UC vice president for laboratory management

Los Alamos National Laboratory NewsLetter

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Editor:
Jacqueline Paris-Chitanvis, 5-7779

Associate editor:
Steve Sandoval, 5-9206

Production editor:
Denise Bjarke, 7-3565

Graphic designer:
Edwin Vigil, 5-9205

Staff photographer:
LeRoy N. Sanchez, 5-5009

Los Alamos National Laboratory is operated by the University of California for the National Nuclear Security Administration (NNSA) of the U.S. Department of Energy and works in partnership with NNSA's Sandia and Lawrence Livermore national laboratories to support NNSA in its mission.

Los Alamos enhances global security by ensuring safety and confidence in the U.S. nuclear stockpile, developing technologies to reduce threats from weapons of mass destruction and improving the environmental and nuclear materials legacy of the Cold War. Los Alamos' capabilities assist the nation in addressing energy, environment, infrastructure and biological security problems.



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Accord governors meet with Nanos

Cochiti Pueblo Gov. Sam Arquero, left, and Laboratory Director G. Peter Nanos jot down notes at the 16th cooperative agreement executive meeting at the National Nuclear Security Administration Los Alamos Site Office. Next to

Nanos is San Ildefonso Pueblo Gov. Dale Martinez, while far right is Jemez Pueblo Gov. Paul Chinana. The tribal governors gave opening remarks and also received update reports from Nanos and the NNSA/Los Alamos Site Office. Photo by Vanessa De La Cruz, Community Relations (CRO) Office

Beneficiary changes can now be completed online

by Kathryn Ostic

University of California Laboratory employees, retirees and former employees can now view and update their beneficiaries online.

University of California employees may also name or change their beneficiaries online for all UC-sponsored life insurance programs, including Basic and Supplemental Life, Accidental Death and Dismemberment, Senior Management Life, and Business Travel Insurance, said Ellen Castille of Laboratory Counsel (LC).

Previously, the Laboratory maintained its own insurance beneficiary designations, and Benefits and Employment Services (HR-B) maintained retirement plan designations. The new process of centralizing designations allows UC employees the opportunity to manage beneficiary designations and for expedition of beneficiary payments, said Castille.

Designations should be reviewed periodically and changed if major life events such as marriage, divorce, birth of a child or a death have occurred, Castille said.

To view if designations are current go to UC's "At Your Service" Web site at atyourservice.ucop.edu online. Select the "Your Benefits Online" button on the far right. Users must logon using a Social Security Number, username and pin number. Employees can access the link under "View Your Beneficiaries" in the main menu under both "Your Money and Your Health and Welfare." A link under the "Quick Links" list also is available.

Employees should periodically review retirement beneficiary designations for accuracy and designate new beneficiaries. By 2006, beneficiary designations not submitted using the new online application, or new hardcopy form will be obsolete and beneficiary payments will be based on whoever is currently designated as a beneficiary unless designations have been identified through the new process, said Ellen Fox of HR-B. For those employees who can't use the online application, forms are available from HR-B, or UC's Customer Service Center at 800-888-8267, Fox said.

For those UC employees who are required, as part of their job assignment, to

travel outside the United States to remote areas of the world, Worldwide Assistance Services Inc., provides employees with medical advice, emergency medical treatment and evacuation for medical emergencies to a "Western Standards" hospital/medical facility.

Laboratory foreign travelers will be given information on insurance coverage and instruction on accessing AT&T Direct Services needed in their travel packet and itinerary. For general information, Laboratory travelers can call Donna Vigil of Accounting (CFO-1) at 7-5810 or Donna Espinoza of LC at 5-9767.

In addition, Declaration of Domestic Partnership form UBEN 250 is required to establish a same-sex and opposite-sex partner's potential eligibility for monthly survivor benefits from the UC retirement plan life insurance and AD&D policies, said Fox.

The UBEN 250 form is available at atyourservice.ucop.edu/forms_pubs/forms_worksheets/uben250.pdf online.

A Benefits for Domestic Partners fact sheet can be accessed at atyourservice.ucop.edu/forms_pubs/misc/bdp.pdf online.

Survivor Benefits can also be accessed at atyourservice.ucop.edu/forms_pubs/misc/surv_dom_partner.pdf online (Adobe Acrobat Reader required).

Remember: No campaigning on Lab property

This year is an election year, and there are campaigns for office at the local, state and national levels. Employees and visitors are reminded that Laboratory policy, University of California policy and federal regulations place restrictions on use of government or Laboratory property for political activities, including campaigns at any level of government. Laboratory policy for employee responsibilities related to campaigning and election activities is contained in AM 709, Political Activities.

Employees are reminded that

- campaigning is not allowed on Lab property or Laboratory-occupied leased space;
- employees may not solicit or receive political contributions on Laboratory property or Laboratory-occupied leased space;
- employees may not use government-owned or -leased equipment or property, such as copy machines, computers or telephones, for prohibited political activities;
- the Lab remains politically neutral and cannot sponsor or fund political activities;
- employees may wear campaign buttons and discuss their political views with each other while at work, as long as this does not interfere with the conduct of work;
- employees must ensure that their personal points of view are not construed as being those of the Laboratory or the University of California; and
- employees may place bumper stickers supporting political candidates on their private vehicles but not on government-owned or -leased vehicles.

For more specific details, read AM 709. For questions regarding Laboratory policies, call the Policy Office at 7-5101.



Housing information is available on the Students Association Web site at <http://sa.lanl.gov>

Influx of students has begun

Lab welcomes new, returning students

The future of the Laboratory, in part, lies with the more than 1,500 undergraduate, graduate and high school students who began arriving in Los Alamos this month to spend the summer working at the Laboratory.

Of that total, about 400 are new to the Laboratory, said Carole Rutten, student-mentor liaison in the Education Programs Office (STB-EPO), which coordinates student programs Labwide.

"Working at a world-class national laboratory like Los Alamos is something that students can proudly display on their résumé and use to open doors to careers here or outside the Lab," said Rutten. "Additionally, it is in the Lab's best interest to develop its work force of tomorrow by providing a challenging, enriching experience for students at Los Alamos today."

Rutten said students new to Los Alamos have to take General Employee

Training, usually held on the second day of new-student orientation.

Training, usually held on the second day of new-student orientation. More information about the computer security briefing course is in students' information packets they receive when they come to the Lab.

Day two of new-student orientation is GET Training at the White Rock training center. Students can report to work after completing GET training and obtaining their Laboratory badge, said Rutten, adding that all new students receive a orientation packet chock full of information on Lab programs and services; a Los Alamos visitor's guide; map of the Laboratory; a summer calendar of events; a student discount card from the Los Alamos Chamber of Commerce; one ticket to the student picnic July 1 and a student toolkit.

Returning students don't have to take General Employee Training and can report to work after obtaining their official Lab badge. The Badge Office has relocated to the second floor of the Otowi Building at TA-3.

More information about student programs at the Lab is available at <http://int.lanl.gov/education/> online.

Rutten said part of a well-rounded educational experience for students is having a good mentor. She said STB-EPO works closely with Lab organizations to assist with the mentoring process.

"Mentors are such an integral part of a student's success at Los Alamos or anywhere," said Rutten. "Finding the right mentor is one of the keys to a successful work experience at Los Alamos."

Rutten said mentors have to complete the student-mentor work plan discussion guide within seven days of a student beginning employment at the Lab.

Additionally, students and their mentors must complete a work plan, which defines the students' roles and their expectations, as

well as the mentor's expectations from students.

Likewise, student liaisons Labwide help students navigate through paperwork and other issues. "These

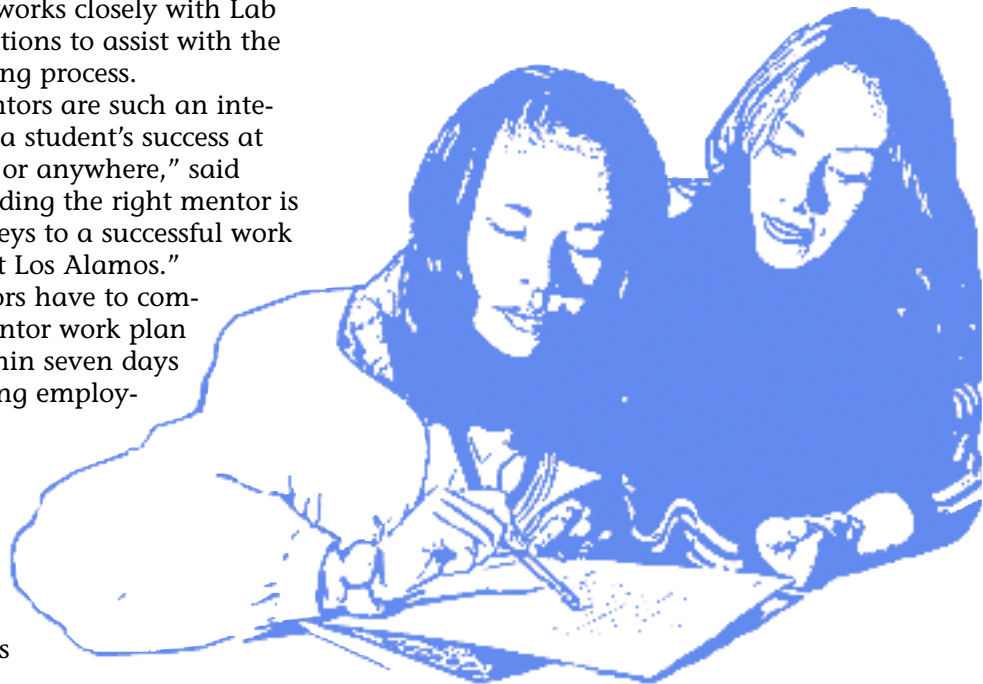
liaisons help make the Lab a more manageable place," said Rutten. "It shouldn't be the students' responsibility to figure out this place. It should be our responsibility to bring the Lab to the students."

Students will have an opportunity to meet with Laboratory Director G. Peter Nanos at an all-students meeting July 13 in the Administration Building Auditorium at Technical Area 3.

And before students leave Los Alamos to return to school, they have to complete an exit survey, Rutten said.



Day one of new-student orientation includes a welcome from the Students Association and presentations on the history of the Laboratory and how to access the Research Library (STB-RL) at Technical Area 3. There also are presentations from Benefits and Employment Services (HR-B) and the initial computer security briefing course from Computing, Communications and Networking (CCN) Division that all students must complete as a condition of employment. Rutten said the computer secu-



Los Alamos High grad Hyer keynote speaker at annual student symposium in August



Randall Hyer

Los Alamos High School graduate Dr. Randall Hyer is the keynote speaker at the Laboratory's annual student symposium Aug. 3-4 at the Best Western Hilltop House.

The symposium provides undergraduate, graduate and high school students an opportunity to present their research and projects with a poster presentation or technical talk.

This year's symposium is titled "Championing Scientific Careers" and is open not only to Laboratory students but to students from Sandia National Laboratories and other University of California national labs, said Carole Rutten of STB-EPO.

Hyer is a doctor with the World Health Organization in Geneva, Switzerland. He is currently a civilian-military liaison officer and medical officer for global alert and response in WHO's Department of Communicable Disease Surveillance and Response.

A 1981 graduate of Los Alamos High School, Hyer earned a bachelor's degree in chemistry from the U.S. Naval Academy, a doctoral degree from the University of Oxford in England and a medical degree from Duke University. Hyer also has a master's of public health degree from Harvard.

Before joining the World Health Organization, Hyer served in several medical capacities with the Navy, including at the Walter Reed Army Institute of Research; the Naval Medical Center in San Diego; as medical officer and assistant officer in charge at the McMurdo and South Pole stations in the Antarctica; and deputy surgeon in Atlas Response, the United Nation's flood relief response program in Mozambique in 2000.

To sign up for the student symposium and for more information, call Rutten at 5-5194 or go to stb.lanl.gov:8080/wosaserver/web?pg=/education/internships/symposium/index.xml online.

Students Association: a resource for new, returning students

The Laboratory's Students Association was created to help keep students informed and up-to-date about important information they need to know and to improve the Los Alamos experience.

The Students Association also works to represent students at the Lab, integrate student employment with the Lab's overall mission statement and improve the quality of life and the work experience of all students at the Lab.

The Students Association annually elects officers, publishes a monthly, electronic newsletter (twice a month during the summer), works closely with the Education Programs Office (STB-EPO) on issues of concern for students, plans and coordinates social activities for Lab students and helps students find housing. Recently, the Students Association created a Web page where available housing for students can be advertised. Listing housing available for students is free, and students who need housing are encouraged to use the site as a resource, according to Carole Rutten of STB-EPO. The Web page is at <http://sa.lanl.gov/housing.htm> online.

The Students Association also works with STB-EPO to plan and schedule events and activities for Lab students. One such event is a June 11 trip to Trinity Site in southern New Mexico, where the first atomic bomb was detonated in 1945.

The Students Association also has a FORUM, an on-line discussion board that anyone at the Lab (not just students) can use to do anything, from selling or buying items to finding other students interested in organizing a camping trip in the Jemez Mountains.

And the annual student picnic once again is scheduled for July 1 at Urban Park (see calendar of events).

Omar Wooten of Stockpile Complex Modeling and Analysis (D-2) is chair of the Students Association, while Kristina Lindquist of Laboratory Counsel (LC) is vice-chair.

"The Students Association is an integral and unique part of Los Alamos National Laboratory and therefore sets the Lab apart from any other internship," said Wooten. "Working at the Lab is not just an internship. It's an opportunity to explore and develop. The SA's goal is to support and

allow the student to do just that.

"The Students Association strives to guarantee that each student has the opportunity to participate in educational and professional development activities that supplement his or her research experience," Wooten continued. "Recognizing that the Lab can be a large and impersonal environment, the Students Association also aims to provide a base of activities during which students can network."

For more information about the Students Association, go to <http://sa.lanl.gov> online.



Student calendar of events, summer 2004

May

May 28, Bandelier National Monument tour, 8 a.m.

May 31, Memorial Day, Laboratory closed

June

June 2, New student orientation, 8 a.m., Canyon Complex, Room 164 (offered every Wednesday from June 2-23),

June 3, Student breakfast, 8:30 a.m., Research Library, Technical Area 3, Building 207

June 8, "How to Prepare an Abstract" workshop, 1 p.m., Canyon Complex, Room 167

June 10, All student meeting, 10 a.m., Student Programs Advisory Committee, Administration Building, TA-3

June 11, Trinity Site tour, 8 a.m.

June 17, All student information session with student advisors, 8 a.m.

Student breakfast, 8:30 a.m., Ombuds Office

June 22, "How to Prepare a Poster" workshop, 1 p.m., Canyon Complex, Room 172

June 24, Student breakfast, 8:30 a.m., Bradbury Science Museum

June 29, Tour of Los Alamos Neutron Science Center, TA-53, 8 a.m.

June 30, Presentation skills, 1 p.m., Canyon Complex, Room 165

July

July 1, Annual student picnic, 11 a.m. to 1p.m., Urban Park

July 5, Lab closed in observance of Independence Day

July 6, Students Association elections, 8 a.m.

July 13, All student meeting with Laboratory Director G. Peter Nanos, 1:30 p.m., Administration Building, TA-3

July 14, Graduate research assistant curriculum vita workshop, noon, (location TBA)

July 20, "How to Prepare a Poster" workshop, 1 p.m., Canyon Complex, Room 167

July 30, Mentor Day, All day, Labwide

August

Aug. 3, "Championing Scientific Careers" annual student symposium, 8:30 a.m., Best Western Hilltop House, Central Avenue

Aug. 4, Symposium 2004, banquet, 8 a.m.

Aug. 11, Graduate research assistants brown bag lunch, noon, (location TBA)

Text by Steve Sandoval

Important numbers for students

- Education Programs Office: 5-5194
- 4myhr: 4-6947, new hires, salary issues, questions
- Benefits and Employment Services: 5-1806
- Training for students, Training Services (PS-13): 5-8644
- Badge Office: 7-6901
- Bradbury Science Museum: 7-4444
- Ride service: 7-TAXI (7-8294)



Cynthia Mahan

Cynthia Mahan new president of the Society of Applied Spectroscopy

Cynthia Mahan of Analytical Chemistry Sciences (C-ACS) is the new president-elect of the Society of Applied Spectroscopy. The SAS is a nonprofit organization dedicated to the advancement and dissemination of knowledge and information involving the art and science of spectroscopy and other allied sciences. Mahan will serve a two-year term.

"It is an honor and privilege for me to represent the society. I look forward to strengthening the educational outreach, membership and the scientific stature of our national meeting," Mahan said.

Mahan joined the Lab in 1992 in the former Environmental Management (EM-9) as a research scientist. She also previously served as deputy group leader before becoming group leader of C-ACS in 2001.

Mahan has received numerous awards throughout her Lab career including a Los Alamos National Laboratory Achievement Award, 1997; Los Alamos National Laboratory Achievement Award, Very Large Team, 1997; Phoenix Award involving under-represented minorities on behalf of the ACS, Central New Mexico Section, 1997; and Los Alamos National Laboratory Distinguished Performance Award, 1995.

Mahan earned her bachelor's of science degree in chemistry from Texas Woman's University and her doctoral degree in analytical chemistry from the University of Texas.

Chuck Montañó appointed to Governor's Task Force for Higher Education

Chuck Montañó of Procurement (SUP-1) was recently appointed to the Governor's Task Force for Higher Education by Governor Bill Richardson.



Chuck Montañó



UC representatives meet with Laboratory committees

Merna Hurd, left, special assistant in the UCOP vice president for laboratory management office, Darrell Elliott, proposal manager in the vice president for laboratory management office and Jim Stout, right, a special adviser in UCOP's vice president for laboratory management office, listen to comments and take notes at a meeting with the Laboratory's Division Leaders Council in the J. Robert Oppenheimer Study Center. The three were at Los Alamos to meet with various Laboratory committees. The meetings provided a forum to update and answer questions or concerns that employees have regarding the upcoming contract competition, industrial partnerships and other issues. "We are here to foster an open dialog and two-way communication between the university and the Laboratory," said Hurd. "I want to emphasize to all of you that Admiral (Robert) Foley is 100 percent committed to competing and winning all three National Laboratory contracts." It was a point Hurd reiterated throughout the day of meetings. Hurd cautioned, however, that the final decision will be made by the UC Board of Regents following the dissemination of the DOE's request for proposal. Elliott provided insight to the DOE proposal process and current activities being undertaken at the Berkeley laboratory on their contract acquisition. Similar approaches will be used at Los Alamos and Lawrence Livermore National Laboratory. While the UC Board of Regents has not made a decision to compete for LBL, the university has responded to a Department of Energy request for interested parties to identify themselves. Stout reported that UC is evaluating the need to engage a partner to be part of the National Nuclear Security Administration proposal. He noted that there are many options under consideration and that a final arrangement has not been determined at this time. The results of the ongoing discussions and the details of any such arrangements will not be fully revealed until the university's proposal is submitted to NNSA. Photo by Edwin Vigil

The 30-member task force will examine factors relating to student success, effective higher education governance, higher education financing, increasing accountability, efficiency and excellence and work force development, Montañó said.

"As a long time Lab employee, I'm honored that Governor Richardson has appointed me to serve on his Task Force for Higher Education reform. I'm fortunate to have this opportunity to serve Governor Richardson, our beautiful state and my fellow citizens," said Montañó.

Montañó is a past-chair for the Hispano Round Table of New Mexico. In 2000, he was honored by the De Colores Foundation for community leadership. In 1998 he was recognized by the Santa Fe New Mexican for "making a difference" in the community. He also serves as a gubernatorial appointee to the National Hispanic Cultural Center Board of Directors.

Montañó came to the Laboratory in 1976. He works on internal assessments in SUP-1.

Montañó has a bachelor's degree in accounting from New Mexico Highlands University and a master's degree in business administration from the University of New Mexico.

Governor names Luce, Erickson to Solar Power Task Force

Gov. Bill Richardson named two Lab scientists to a newly created panel that will assess and promote using solar energy to produce electrical power in the state. At a news conference during the North

American Energy Summit in Albuquerque, Richardson announced that Dennis Erickson of the Associate Directorate for Weapons Physics (ADWP) and Ben Luce of Mathematical Modeling and Analysis (I-7) will serve on his 14-member Solar Task Force.

Richardson said the task force will be led by Joanna Prukop, secretary of the state Energy, Minerals and Natural Resources Department. The task force will develop a proposal for a large solar electric facility in New Mexico by the end of this year, he said.

Richardson also reiterated an earlier commitment by the State Legislature that New Mexico will produce at least 10 percent of its energy from renewable sources by 2010 and officially designated New Mexico the "Clean Energy State."

"I want our state to be one of the nation's leading suppliers of clean energy — wind, solar, biomass and zero-emission coal," Richardson said. "We are investing millions of dollars of state funds in energy efficiency and clean energy for public buildings. And we will continue to use tax incentives to encourage high-efficiency cars and biomass projects."

Luce is the president of the Coalition for Clean Affordable Energy and a leader in the New Mexico Solar Energy Association. Erickson, who recently completed an assignment as Gov. Richardson's science policy adviser, has worked at the Laboratory for more than 30 years and held a variety of senior management positions.

At the summit, staff from the Laboratory's Office of Energy and Environment Initiatives (OEEI) took part in panel discussions and presented poster displays about Los Alamos' renewable energy programs.



May service anniversaries

30 years

James Albright, EES-11
Robert Garcia, ESA-WDS
Gerald Langner, ESA-AET
Labriano Lucero, IM-9
Guthrie Miller, HSR-12
Michael Sorem, P-24

25 years

Juergen Eckert, LANSCE-12
Michael Gallegos, NMT-7
Barbara Garcia, SUP-3
Virginia Herrera, ISR-4
Andrew Maestas, HSR-1
Lauren McGavran, CCN-8
Yvonne Montoya, SUP-2
Richard Nebel, T-15
Myrna Romero, RRES-WDS
Johnny Roybal, IM-9
John Ullmann, LANSCE-3
Douglas Wilson, X-2

20 years

Nancy Arendt, SUP-EP
Donald Branch, CFO-3
Richard Bridge, FWO-MSE
Rendell Carver, X-4
John Cerutti, X-8
Gregory Cole, EES-6
David Dubois, CCN-5
Steven Eisenhower, D-5
Elizabeth Hogan, ESA-WMM
William Inkret, C-INC
William Johnson Jr., N-2
Richard Kieltyka, ESA-WSE
Diana Langner, N-1
Dennis Lujan, NMT-5
Roger Meade, IM-9
Michael Miller, N-1
David Montgomery, P-24
Debbie Montoya, ESA-WDS
Andrew Montoya, NMT-7
Henry Nunes, FWO-TA-55
Robin Reynolds, RRES-WQH
Phillip Romero, CCN-12
Lourdes Salazar, HR-ITDA
Fred Shelley Jr., LANSCE-6
Robert Tomlinson, CCN-DO
Carolyn Trujillo, N-4
Irene Vigil, IM-9
Martha Waters, UC-NNM

15 years

Debra Baca, N-2
Guy Baker, NMT-15

Kathryn Bennett, RRES-OEIM
Portia Blackman, HR-D-SR
Robert Cox, HSR-1
Scott Currie, P-25
Robert Currier, C-ADI
Timothy Darling, MST-10
Norman Doggett, B-5
Gordon Foreman, CCN-2
Darryl Gardner, ESA-ESA
Yolanda Giles, C-ACS
Victoria Graham, CFO-3
Joe Gutierrez, OEEI
Gary Holladay, LANSCE-6
Louis Jaramillo, HSR-1
Michael Keddy, ESA-AET
Aaron Lopez, ESA-AET
Emmanuel Lopez, ISR-5
Stuart Maloy, MST-8
Saundra Martinez, RRES-ECR
Ralph Martinez, SUP-3
Jerome Morzinski, D-1
Jacqueline Paris-Chitanvis, CER-20
Patrick Rodriguez, NMT-15
William Roybal, LANSCE-5
David Smith, ISR-2
Robert Travis, SUP-3
Chris Trujillo, NMT-16

10 years

Susan Baca, NMT-15
Alison Bailey, N-3
Richard Barrett, X-3
Leslie Chasteen, B-1
John Court, ADWEM
Eric Dick, S-6
Peter Jaegers, N-2
Julie Johnston, PS-13
John Josef, X-5
Kathleen Kelly, CCN-7
Brian MacDonald, B-DO
Mary Margaret Lujan, IM-1
Michael McKay Jr., CCN-8
Christine Nelson, DX-DO
James Owen, ESA-WSE
Paul Peterson, DX-2
Anthony Rendon, IM-1
James Rickman, CER-20
Ronald Smith, ESA-AET
James Stapleton, ESA-WOI
Matthew Stettler, ISR-3
Ellen Taylor, RRES-ECO
Timothy Tuttle, CFO-3
Chanda Vigil, ISEC

David Wannigman, HSR-1
Roger Wishau, HSR-1

5 years

Marvin Alme, X-3
Marcella Archuleta, LC-IP
James Bacon, ESA-WDS
Michael Baskes, MST-8
Andrew Bickley, ISR-4
William Brinkerhoff, FWO-CMR
Brady Burke, CCN-2
Robert Burnside, D-2
Marlon Castle, CCN-2
Chong Chang, X-7
Michael Chertkov, T-13
Cari Deschamp, CFO-1
Evan Dodd, X-1
Amy Ecclesine, RRES-NO
J. Mike Eckart, NMT-6
Eugene Flores, ESA-AET
Ernesto Gallegos, NMT-5
Ronnie Garcia, FWO-SWO
Daniel Hartman, NMT-10
Brian Jean, X-8
Dwain Keith, HSR-1
Jason Kemp, FWO-MSE
Jeff Kinzer, NMT-6
Frederick Kloer, PM-DS
Tracy Light, ISR-2
Christian Lopez, PM-4
Leonard Manzanares, HSR-1
Cleoves Martinez, EES-9
Amy Martinez, NMT-4
Michele Mirabal, STB-RL
Charlene Montague, NMT-7
Maura Mullaney, CFO-1
Carol Noones, NMT-14
Vickie Ortiz, CFO-2
Adrian Padilla, NMT-16
Robert Quinlan, NMT-DO
Scott Richardson, PM-1
Charles Riebe, FWO-CMR
Michelle Roybal, FWO-DO
Christine Salazar, NMT-DO
Peter Sandoval, FWO-CMR
Emily Schmidt, B-1
Sam Subbaswamy, FWO-CMPO
Audra Tucker, IM-2
Victor Turner, PM-DS
Sadie Vandebusch, X-7
Mark Vaneeckhout, PM-DS
Ronald Wells, FWO-TA-55
Sayuri West, CFO-2
Johnny Yates, FWO-DX-ESA



This month in history ...

May

1310 — Shoes were first designed for both the right and left foot.

1494 — Christopher Columbus discovers "St Iago." It is later renamed Jamaica.

1541 — Spanish conquistador Hernando de Soto reaches the Mississippi River.

1871 — Indians raid settlements near Fort Seldon, in southern New Mexico. According to army records, cavalry troops chase them for 280 miles, but they do not catch them.

1874 — Levi Strauss markets blue jeans with copper rivets; \$13.50 a dozen.

1916 — Einstein presents his Theory of General Relativity.

1931 — The Empire State Building, in New York, is completed

1940 — Germany launches its assault on Western Europe, attacking Holland, Belgium and France.*

1941 — Cereal food "Cheerios" hits store shelves.

1944 — Los Alamos staff exceeds 1,200 employees.*

1945 — Critical mass tests with plutonium begin at Los Alamos.*

1947 — Los Alamos gets a post office address of its own. In the past, mail for the project had been routed through the Santa Fe Post Office.

1951 — Slugger Mickey Mantle hits his first home run.

1963 — Martin Luther King Jr. makes his "I Have a Dream" speech.

1972 — President Nixon and former Soviet Union General Secretary Brezhnev sign the Anti-Ballistic Missile (ABM) Treaty, the Strategic Arms Limitation Treaty (SALT) and the Interim Agreement on Strategic Offensive Arms, in Moscow.

1979 — Margaret Thatcher becomes British prime minister.

1981 — Near the start of his weekly general audience in Rome's St. Peter's Square, Pope John Paul II is shot and seriously wounded while passing through the square in an open car.

1986 — Donald E. Pelotte is ordained in Gallup. He is the first Native American to be made a Roman Catholic bishop in the country.

1994 — Nelson Mandela becomes South Africa's first black president.

1998 — India conducts three underground nuclear tests, its first in 24 years. One of the tests is a thermonuclear weapon.

2002 — Strategic Offensive Reductions Treaty is signed between the U.S. and Russia.

And this from the May 11, 1984, Newsbulletin — Researchers at Los Alamos report a milestone in preliminary engineering of LAMPF II: successful testing of a new approach and a new material that together could cut normal power losses in accelerator cavities by as much as 90 percent.

*Carey Sublette, "Chronology for the Origin of Atomic Weapons" from www.childreofthemanhattanproject.org/MP_Misc/atomic_timeline_1.htm

The information in this column comes from several sources including the online History Channel, the Newsbulletin and its predecessors, the atomic archive.com, Echo Virtual Center, Science & Technology and Real History Archives.

Submissions are welcome. Please be sure to include your source.

Scientists announce ...

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Reconnection is considered a key process in the sun's corona for the production of solar flares and in fusion experiment devices called tokamaks. It also occurs in the interaction between the solar wind and Earth's magnetic field and is considered a principal cause of magnetospheric storms.

The research determined that the measurement of the total energy content of at least one of these giant radio galaxies — which is believed to have at its center a black hole with a mass equal to 100 million times that of the sun — was 10^{61} ergs. Ergs are a measure of energy where one erg is the amount of energy needed to lift one gram of weight a distance of one centimeter. This energy level of 10^{61} ergs is several times more than the thermonuclear energy that could be released by all the stars in a galaxy, offering substantial proof to the researchers that the source of the measured energy could not be typical solar fusion or even supernovae.

In addition to the high energy content, the large, orderly structure of the magnetic field and the absence of strong large-scale shocks — like those that might be present from a supernova explosion — led the scientists to believe that the process of magnetic field reconnection is at work.

In Memoriam

Wray Garn

Retired Laboratory engineer Wray Garn died March 23. He was 88.

Garn moved to Los Alamos in 1943. He began his career as a Manhattan Project scientist. Garn worked on numerous projects until his retirement in 1978. His wife Marjorie also worked at the Lab until her retirement in 1987.

Garn was a life and founding member of the Albuquerque Elks Club number 461. He also was a member of the Institute of Electrical and Electronic Engineers and numerous other technical societies.



Physicist dotes on flower photography

by Kathryn Ostic

What does flower photography have to do with a degree in physics? According to Ken Alvar of Safeguards Science and Technology (N-1), absolutely nothing. Originally from Minnesota, Alvar fondly remembers the magnificent color changes of autumn as a child. Alvar's family would stop their vehicle on the side of the road to admire the scenery and to take numerous photographs.

Alvar said these are the memories that are deeply etched forever in his mind and part of what he jokingly refers to as the family's curse, because photography dominates their lives. According to Alvar, his family can't drive anywhere without wanting to stop to take a picture.

Alvar's love of photography came about when his grandfather, a physician by training, dabbled in landscape photography. "My grandfather is the source of our family curse. He had boxes and boxes of landscape slides and now the curse extends to most of my family," Alvar said.

Alvar said that his creative edge might also stem from his mother and father's musical inclinations. His mother played the oboe and his father the violin. Alvar's own interest in photography began with taking photos of his wife Catherine's artwork while living in San Diego.

The Alvar's vacationed in Zion and in Bryce Canyon national parks and took what Alvar describes as great landscape photos. He had a couple of exposures left, which he used to photograph flowers. After enlarging the photos, his excitement turned into a hypothetical business proposition, he said.

Soon after, Alvar read the entire Kodak photographic series and became a self-taught entrepreneur. He opened a small photography business called Floral Fotos out of the family home. The lilies and irises that he photographed came from his wife's garden, he said.

"When I take photos of lilies and irises, the first take is always the best. The flowers talk to me, and it becomes intuitive as to how to frame them using the correct angles ... it's kind of scary," Alvar said.

The Alvars moved to Los Alamos in 1992. They brushed up on their gardening skills by taking a master gardeners class offered by the Los Alamos County Extension office. "We experimented with what types of flowers and plants would grow in Los Alamos; some of the plants transplanted from San Diego survived and others didn't," Alvar said.

Alvar's photos are of various types of lilies, such as Casablanca, Trumpets and Tiger, and irises, such as Splashacata, a variety of Bearded. He provides one-on-one showings and has a wide selection of frames from which to choose, he said.

"There is a 15-minute window of opportunity to photograph flowers in California and New Mexico. The best times are in the morning from 7:30 to 7:45 a.m. My goal in the near future is to photograph New Mexico wildflowers so I can include them in my portfolio," Alvar said.

According to the Web, lilies are technical members of the genus *Lilium* and have special characteristics that differentiate them from other "lily" plants, such as Calla Lilies, Magic Lily or Torch Lily. Lily flowers, though they vary in size, shape and color, always have six tepals and six anthers. Stems, leaves and roots also have distinguishing features. Iris means rainbow, which is an appropriate name for the flower because irises come in many colors: blues and purples, whites and yellows, pinks and oranges, browns and reds and even blacks. Irises can be either bulbous or rhizomatous, and each is further divided into three major parts.

Alvar began his career at the Lab in 1992, working in the former Health Physics Measurements (ESH-4) group where he helped to develop process radiation dosimeters and to provide more accurate whole body counts. He currently is group leader for N-1. Alvar earned his bachelor's degree from Carlton College and master's and doctoral degrees from Brown University in physics.



Lab retiree Ken Alvar holds a photo of a Goal Lily



Indian Blanket



King Tut Gold Iris