

# NewsLetter

Week of December 3, 2007

Vol. 8, No. 25

## Four named 2007 Laboratory Fellows

by Steve Sandoval

Laboratory scientists Jas Mercer-Smith, Roman Movshovich, Harvey Rose, and Richard Sheffield are the 2007 Laboratory Fellows, as selected by Director Michael Anastasio.

The Fellows designation is the Lab's highest honor and is bestowed on selected technical staff members who have demonstrated excellence in programs important to the Laboratory's mission, made significant scientific discoveries that lead to widespread use, or have been recognized as leaders in their fields both inside and outside the Laboratory.

"I'm pleased to recognize these distinguished members of our technical staff," said Laboratory Director Michael Anastasio. "They are yet another example of the many dedicated men and women working at Los Alamos who serve our nation and the world with technical and scientific excellence. They bring honor to the Laboratory."

"The Fellows play an important role in demonstrating and maintaining scientific excellence at the Lab. And on occasion, I and the other senior leaders charge the Fellows to assess issues where their experience and advice is particularly useful."

A reception for the new Laboratory Fellows is scheduled for December 11.

Mercer-Smith of Navy-2 (X-2-N-2) is widely recognized for his scientific insight, deep technical understanding, and pivotal contributions to the field of nuclear weapons. His creativity and broad appreciation



Jas Mercer-Smith



Harvey Rose



Richard Sheffield



Roman Movshovich

of the physics underlying this technology have enabled him to make several critical contributions to the program, for which he received the Department of Energy Nuclear Weapons Recognition of Excellence Award three times.

Mercer-Smith was the designer for six Nevada Test Site events and has published 137 Nuclear Weapons Archiving Project listings that have been cited cumulatively more than 1,300 times.

A theoretical physicist, Rose has a sustained record of contributions in plasma physics, fluid dynamics, and statistical physics. His thesis work, known as the Martin-Stiggia-Rose formalism, pioneered the statistical field of fluid mechanics and initiated the field of non-equilibrium statistical physics. His work at the Laboratory has had seminal impact on the field of laser-plasma interactions and provides the theoretical framework for understanding the results from the National Ignition Facility.

Rose of Complex Systems (T-13) has published nearly 100 papers that have been cited cumulatively more than 3,250 times and is a Fellow of the American Physical Society.

Movshovich works in Condensed Matter and Thermal Physics (MPA-10) and is an internationally recognized leader in low temperature physics whose scientific acumen and innovative thinking have led to significant discoveries and critical insight in elucidating the properties of strongly correlated electron and heavy fermion systems.

He has published more than 100 papers that have been cited cumulatively more than 2,200 times. He is a Fellow of the

American Physical Society and a Los Alamos Fellows' Prize recipient.

Sheffield of the Los Alamos Neutron Science Center (LANSCE) is internationally recognized for his contributions to the development of ultra-high brightness beams and free electron lasers that have formed the basis for an entire generation of intense light sources with applications in fundamental research as well as national security programs. He invented the RF photo-injector and pioneered the concept of self-amplified spontaneous emission, two concepts that underpin modern free electron laser-performance.

Sheffield is a Fellow of the American Physical Society and received the United States Particle Accelerator Prize for Achievement in Accelerator Physics and Technology. He has published more than 150 papers that have been cited cumulatively more than 900 times; he holds three U.S. and international patents.

Photos by LeRoy N. Sanchez, Records Management/Media Services and Operations

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## SMS directorate focuses on behavior-based safety improvements

Safety is critical in every activity performed at Los Alamos, but nowhere is it more important than in the special nuclear materials operations performed at facilities within the Stockpile Manufacturing and Support (SMS) Directorate.

SMS has enhanced the behavior-based safety observation process called ATOMICS (an acronym for Allowing Timely Observations Measures Increased Commitment to Safety) and integrated it with Human Performance Improvement principles and Management Observation and Verification safety tools.

ATOMICS is an employee-driven program in which workers focus on behaviors by observing their peers, and managers focus on conditions by conducting safety walkarounds. The enhanced ATOMICS puts additional emphasis on data analysis, using data to identify root causes for injuries, and tracking safe work practices.

"ATOMICS is gearing up to collect and analyze data unlike anyone else's and a major reason for that is we have recently been established as a pilot observation process for the institution," said Jim Kleinsteuber of Deployed Training Services, ATOMICS facilitator.

The SMS directorate's goals are to reinforce safe behaviors and eliminate at-risk behaviors and conditions for all employees and operations at Technical Area 55 and other sites where SMS employees and operations are located. An additional goal is for all directorate employees to perform observations and self-report by the end of January 2008.

For more information on the ATOMICS program, go to <http://lanl.gov/orgs/adsms/atomics/> online or contact Kleinsteuber at [atomics@lanl.gov](mailto:atomics@lanl.gov) by e-mail.



*Editor's Note: The following is excerpted from a memo on work force restructuring issued to employees November 27 by Deputy Laboratory Director Jan Van Prooyen.*

## NNSA approves plan for work force restructuring

The National Nuclear Security Administration has formally approved our specific plan for work force restructuring. Accordingly, we [opened] the self-selection window Wednesday, November 28. Below is a table of key dates associated with the Phase I Self-Selection Program (SSP).

When the window opens, each Los Alamos National Security, LLC, employee will receive by interoffice mail a notice of his or her eligibility to apply for this program. Likewise, each employee in an excluded category will receive a notice by interoffice mail that he or she will not be allowed to participate in the Self-Selection Program. If you are a LANS employee and have not received one of these notices by close of business on November 28, please contact your line management. Additionally, the Human Resources Web site (<http://lanl.gov/orgs/hr/ssp/>) associated with Phase I will be activated. The Web site will have resources and information regarding Phase I.

[Manager briefings and employee pre-application information sessions for the Self-Selection Program were held from November 28 to December 4.]

The main difference between the plan that we submitted (as discussed by Director Michael Anastasio on November 19) and the plan that DOE-NNSA just approved is the timing of our assessment of our flexible work-force populations. Concurrent with the Phase 1 Self-Selection Program, we will be designing and implementing a process for assessing our flexible workforce.

Further, we have amended Policy 114 (Reduction-in-Force) of the Laboratory's Administrative Manual to remove a provision prohibiting a Self-Selection Program.

As noted in the Director's all-employee memo and [the November 19] all-employee meeting, the decision to reduce our work force is a very difficult one. It directly impacts people's lives—not only those of our employees, but also their families and the communities of Northern New Mexico. Given the impact on these communities, we also will hold two community information sessions on our specific work force restructuring plan. [Community information sessions were held in Pojoaque and Los Alamos.]

We will continue to post questions and answers and other relevant information on our Restructuring Web site at <http://int.lanl.gov/projects/workforceplan/> online. If you have questions, I encourage you to attend one of the pre-application information sessions regarding the Self-Selection Program and/or the community information sessions mentioned above. I also ask that you use our Workforce Restructuring Web site. Finally, I urge you to engage your leadership chain with your issues and questions. Laboratory managers realize that this is an extremely important decision for our employees and will help you get the answers you need. Managers will be receiving information that will prepare them to best support you as you make your final decision.



**Laboratory Director Michael Anastasio presents Los Alamos's work force restructuring proposal to members of the state's Laboratory Legislative Oversight Committee in Santa Fe.** Photo by LeRoy N. Sanchez, Records Management/Media Services and Operations

Table of Key Dates for Phase I	
Event	Dates
SSP application open	November 28 through December 6
Employee rescission period	December 7 through December 13
Employees receive notice of acceptance	December 20
Employee Departure meetings	January 2 through January 8, 2008
Accepted employees separate from Laboratory	January 10, 2008

## Los Alamos NewsLetter

The Los Alamos Newsletter, the Laboratory bi-weekly publication for employees and retirees, is published by the Communications Office in Communications and Government Affairs (CGA). The staff is located at 135 B Central Park Square and can be reached by e-mail at [newsbulletin@lanl.gov](mailto:newsbulletin@lanl.gov), by fax at 5-3910, by regular Lab mail at Mail Stop C177 or by calling the individual telephone numbers listed below. For change of address, call 7-3565. To adjust the number of copies received, call the mailroom at 7-4166.

**Editor:**  
Jacqueline Paris-Chitanvis, 5-7779

**Associate editor:**  
Steve Sandoval, 5-9206

**Production editor:**  
Denise Bjarke, 7-3565

**Graphic designer:**  
Edwin Vigil, 5-9205

Los Alamos National Laboratory is a multidisciplinary research institution engaged in strategic science on behalf of national security. The Laboratory is operated by a team composed of Bechtel National, the University of California, BWX Technologies and Washington Group International for the Department of Energy's National Nuclear Security Administration.

Los Alamos enhances national security by ensuring the safety and reliability of the U.S. nuclear stockpile, developing technologies to reduce threats from weapons of mass destruction, and solving problems related to energy, environment, infrastructure, health and global security concerns.



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# Homeland Security testing Laboratory baggage-screening technology

*Could be used to detect liquid explosives for airports*

by Nancy Ambrosiano

The Department of Homeland Security is testing a Los Alamos concept, a new airport baggage screening technology to differentiate between different types of liquids, gels, and lotions—everything you want to carry on the plane, but no longer can.

Based on Physics (P) Division research into ultra-low-field Magnetic Resonance Imaging (MRI), the new MRI-SCREEN technology (formerly referred to as “SENSIT”) can tell the difference between some 50 kinds of fluid-type products. Currently, U.S. travelers must pack toothpaste tubes, shampoo bottles, and cosmetics in a bag following the “3-1-1 rule,” with containers holding 3 ounces of fluid sealed in a single, one-quart, plastic zip-lock bag. Researchers are working on MRI-SCREEN to make the plastic-bag component of travel a distant memory.

While the “SQUID team” in Biological and Quantum Physics (P-21) initially conceived of the MRI-SCREEN concept, a close collaboration between the SQUID team and an engineering team from groups in Accelerator Operations and Technology (AOT) and International, Space and Response (ISR) divisions is bringing the first demonstration system to reality.

The effort thus far has involved nearly 50 people at Los Alamos. Team members successfully completed a proof of concept of an extremely sensitive screening technology that scans the magnetic changes of individual materials at the molecular level, determining which items are and aren’t “threat liquids.” The work currently is funded by a \$5 million grant from the Department of Homeland Security.

“The nice thing about this system is it’s not tuned to any specific threats,” said Michelle Espy of P-21, one of the project leaders. “As new materials of concern arise, MRI-SCREEN can be adapted to detect those.”

The DHS goal is to develop the capability to screen carry-on bags without requiring the “3-1-1” bag system. Another goal is to screen in the presence of or even through virtually any packaging materials including leather, cardboard, wood, clothing, and even in the presence of or through metallic containers. Homeland Security managers say they want to eventually accomplish screening without having to remove materials from baggage.

Screeners using the MRI-SCREEN system will be able to differentiate and identify



**James Sims of Applied Engineering Technology-1 loads a sample “3-1-1” baggie into the ultra-low-field magnetic resonance system. The system, created by the “SQUID” team in Applied Modern Physics for brain imaging applications, is now being developed for screening carry-on liquids at airports. The work is a collaboration between the “SQUID” team and engineers from the Applied Engineering and Technology; Accelerator Operations and Technology; Information Resource Management; and International, Space and Response divisions.** Photo by Sandra Valdez, Records Management/Media Services and Operations

many materials that may be packaged together or separately. The screening process is based on an ultra-low field version of the magnetic resonance imaging used for medical brain scans. (See P Division’s brain scanning Web site at <http://www.lanl.gov/p/p21/mrview.shtml> online.)

Magnetic resonance imaging systems typically work by detecting the response of hydrogen atoms to magnetic fields in order to create their images. The current hospital-type units require magnetic fields 10,000 to 100,000 times stronger than Earth’s magnetic field. The new approach, recently featured in a technical paper on the first ultra-low field image of a human brain, uses a 30-millitesla initial magnetic field (about 100 times weaker than a hospital-type MRI machine). A 46-microtesla magnetic field—about the same as Earth’s magnetic field—is then switched on to produce actual images

for analysis. Such a system could be a lower cost version of the traditional MRI used in many hospitals today. (See New Scientist Tech at <http://technology.newscientist.com/article.ns?id=dn12920>)

“The inexpensive portable hospital MRI also is coming along well,” Kraus said. “After prototypes are complete, both MRI technologies will have to go through commercial development before they get to the public. The hospital MRI could be ready for commercialization in the next few years.”

The airport version should be ready some time after the prototypes are tested later next year. “Of course, everybody wants it now,” Espy said.

The goal for the airport screening technology is reliable, high-throughput detection of liquids, in a form that is noncontact, noninvasive, requires no radiation, produces no residue, and uses the existing airport security portal.

MRI-SCREEN is one of Homeland Security’s Homeland Innovative Prototypical Solutions (HIPS)—research that has moderate to high risk but considerable promise for high payoff. “We’re working hard on getting the MRI-SCREEN technology to an airport near you very soon,” says DHS’s Innovation Director Roger McGinnis.

In addition to the liquid-differentiation project, the BioPhysics team in P Division is working in three main areas: A 150-sensor system for the human brain, a SQUID based systems for bio-assay and cancer detection and treatment, and sensor systems for non-biological applications: non-destructive evaluation, fundamental nuclear physics.

## The team ...

MRI-SCREEN physics team members currently include **Bob Kraus** of Laboratory Directed Research and Development (LDRD-PO), formerly in Applied Modern Physics (P-21), and **Michelle Espy, Andrei Matlashov, Petr Volegov, John Mosher, Vadim Zotev, Larry Schultz, Igor Savukov, Henrik Sandin, Al Urbaitis, Mark Peters, Shaun Newman, John Gomez, Chris Carr, Mark Flynn, Karlene Maskaly, and Sara Martin**, all of P-21. The engineering team is led by **Michael Borden** of Mechanical Design Engineering (AOT-MDE), and also includes **Catherine Chapman, Mark Taylor, and James Witt** of AOT-MDE; **Dave Barlow** of Accelerator and Beam Science (AOT-ABS); **Joe Bradley** of FR Engineering (AOT-RFE); **Michael Dolejsi** Threat Reduction (CS-PCS-4); **Robert Dye** of Dynamic and Energetic Materials (DE-DO); **Roy Goeller** of Space Instrumentation Systems (ISR-4), **Chris Horley, Ken Hurtle, Keith Kihara, Paul Polk Jr., and James Sims**, all of Applied Engineering Technology-1 (AET-1); **Matt Newell** of Safeguard Science and Technology (N-1); **Martin Pieck** and **John Power** of Instrumentation and Controls (AOT-IC); and **Josef Schillig** of the National High Magnetic Field Laboratory (MPA-NHMF).

# Before you leave for the winter closure

The Laboratory's annual winter closure begins at the end of the work day on December 21. While facility operations teams will inspect major facilities and address problems during the closure, all employees should take precautionary steps to help secure their workspace before leaving for the break.

To that end, the Facility Management and Operations (FMO) Division offers the following guidelines before departing for the holidays:

- Turn off and unplug all electrical equipment, including coffeepots, space heaters, humidifiers, office machines, and all experimental equipment that can be turned off.
- Turn off lights at the wall switch.
- Leave thermostats at their normal settings.
- Close all exterior doors, windows and blinds to conserve heat.
- Check with your Facility Operations Director staff for specific instructions on closing laboratories and/or other programmatic work areas during the holiday closure.
- Remove all private vehicles from Lab parking lots and park government vehicles where they will not interfere with snow removal operations. Remember that snow removal crews will be attempting to pile snow at or near the parking lot drains and/or away from locations where snow can melt and refreeze across large sections of parking areas, sidewalks, etc.

- Make sure plants have enough water to survive through the holidays.
- Secure or lock all exterior doors from the outside.

The procedural guidelines for closing up leased space during the winter break should

be the same as for Lab facilities, with regard to tenants unplugging their equipment and checking and securing doors and windows.

However, residents of Lab-leased space should communicate with their landlord about specific concerns, access, and procedures related to their facilities during the closure.

The Security (SEC) and Safeguards (SAFE) divisions also offer the following reminders to ensure that security controls work smoothly during the closure:

- On the last business day before the closure, authorized workers must properly secure all classified matter.
- Area-access custodians with travel plans or other holiday activities that will prevent them from performing duties on December 22, such as end-of-day checks, should designate an alternate, authorized worker ahead of time to ensure that a substitute is available.
- Ensure that one or more of the authorized workers on the area-access list is available during the closure to make contact with the fire

department and protective force personnel during emergency situations or in case a vault/vault-type room has to be re-entered.

Update the access list if necessary by completing Form 1088 and send it to Security Systems (SAFE-3) at Mail Stop G725 or by fax to 5-8477 no later than December 18. If the available workers are at the bottom of the list, consider posting a memo on the vault/vault-type room indicating which authorized workers to get in touch with during the closure to speed up the contact process.

Normal operations resume Wednesday, January 2, 2008.

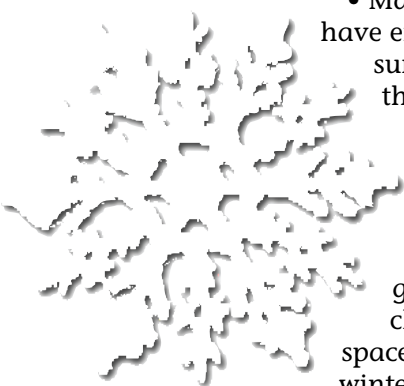


*Editor's note: The following reminder is from an all-employee memo from Doris Heim, associate director of business services, concerning the Laboratory's winter closure.*

## Winter closure changes

The Laboratory will close at the end of business on Friday, December 21, and will reopen on Wednesday, January 2, 2008. Because the Laboratory will be closed on December 24, the closure will be one day longer than usual. The Laboratory has implemented several changes with regard to the closure.

- The "vacation grant" time code used by eligible employees with less than 10 years of service credit will be replaced by a 24-hour vacation credit for eligible full-time employees. Eligible part-time employees will receive vacation credit hours in proportion to their schedules (for example, a 50-percent employee will receive 12 hours of vacation credit).
  - Looking ahead to future winter closures, employees hired before January 1, 2008, who have less than 10 years of service and customarily would accrue vacation at 10 hours a month will begin to accrue vacation at 12 hours a month beginning January 2008, so that they can have an additional 24 hours of vacation credit a year for future winter closures.
  - Because exempt employees now will be able to report non-productive time (such as vacation, sick leave, and jury duty) in one-hour increments as of December 17, exempt employees can use the one-hour increments of vacation time, where necessary, to maintain their workweek over the winter closure. Employees who do not have sufficient accrued vacation and prefer not to take leave without pay will be permitted to borrow vacation.
- Since the Laboratory will be closed an additional day during this year's closure, employees may wish to consider the following options to use less vacation time:
- Exempt employees on the 9/80 "A" schedule may wish to work on Friday, December 21, so they don't have to use vacation time on December 28. In effect, they would swap Fridays during that pay period, subject to manager approval (with a memo to the group office file).
  - Non-exempt employees on the 9/80 "A" schedule may wish to work on Friday, December 21, so they don't have to use vacation time on December 28. This will require a temporary change to the "B" schedule in the Time and Effort System for that pay period, subject to manager approval.



**For Laboratory closures, delays, or early dismissal information, call UPDATE at 667-6622 or 1-877-723-4101 (toll free).**

## Annual Holiday Drive

The Laboratory's 2007 Holiday Drive to collect new toys and nonperishable food items for Northern New Mexico continues through December 13.

For more information, contact the Community Programs Office (CPO) at 5-4400.



## Regional leaders hear update on Lab's work force restructuring plan

Deputy Laboratory Director Jan Van Prooyen and Jerry Ethridge, right, associate director for infrastructure and site services, talk with Cedric Page, executive director of the University of New Mexico, Los Alamos branch campus at a regional community leaders breakfast meeting November 28 in Pojoaque. Van Prooyen briefed attendees on Los Alamos's work force restructuring efforts, while staff from the Community Programs Office presented information on the Laboratory's education outreach initiatives. Photo by LeRoy N. Sanchez, Records Management/Media Services and Operations

## Changes to Los Alamos Research Park access and parking

New access and parking rules went into effect last week at the Los Alamos Research Park on West Jemez Road.

The research park driveway off Diamond Drive is now open and the security barricades have been moved to an area just east of the Americans with Disabilities Act parking area behind the Los Alamos Fire Department Fire Station 1 building.

The new configuration requires tenants and visitors to enter and exit the research park main parking lot from Diamond Drive (new access road). Vehicles requiring ADA parking are excluded; they will continue to access the parking area from West Jemez Road. All delivery and ADA vehicles will continue to pass through the Vehicle Access Portals (VAPs) and enter the Research Park from West Jemez Road via Casa Grande Drive (at traffic signal). There no longer will be access from West Jemez Road to the research park main parking lot.

Non-government-owned commercial delivery vehicles desiring access beyond the VAPs to Laboratory property, Jemez Springs, Pajarito Mountain Ski Area, etc. must present a Post 10 vehicle inspection pass. Inspection is required even if the driver possesses a standard Department of Energy/Laboratory security badge. Post 10 is located on East Jemez Road near NM 4. This process remains unchanged.

The changes are being implemented at the request of Los Alamos Commerce and Development Corporation, which manages the research park, as part of a court settlement with Los Alamos County.

For more information, go to [http://www.lanl.gov/news/newsbulletin/pdf/LARP\\_Parking%20Brochure.pdf](http://www.lanl.gov/news/newsbulletin/pdf/LARP_Parking%20Brochure.pdf) online.

## Lab employees raise record amount for local United Way programs

by Steve Sandoval

Laboratory employees once again demonstrated their concern for their communities and those in need by contributing a record dollar amount to United Way programs in Northern New Mexico and Santa Fe.

Laboratory employees pledged or donated more than \$825,000 to the United Way in this year's giving campaign. Los Alamos National Security, LLC, which operates the Laboratory, plans to match the amount dollar-for-dollar.

With the LANS match, overall, Los Alamos employees raised nearly \$1.7 million in pledges and donations in its most recent United Way giving campaign. It also is more than \$100,000 greater than the \$721,000 employees donated last year.

"Our Los Alamos employees can take pride in this accomplishment," said Johnnie Martinez, acting director of Los Alamos's Community Programs Office (CPO). "Once again, Laboratory personnel have shown through their generosity that their community is important to them and that they are eager to help those around them."

The Laboratory's roughly two-month giving campaign ended last week, but some employee pledges and donations continue to trickle in. The employee contributions fund a number of social service provider agency programs and services in Santa Fe and Northern New Mexico.

"The United Way of Northern New Mexico is thrilled with the success of the Laboratory's workplace campaign, and we're so appreciative of the generosity of Laboratory employees and look forward to a long and happy association with the Laboratory and Los Alamos National Security," said Donna Schroeder, executive director of United Way of Northern New Mexico. "We also look forward to the LANS match. We know that a great deal will be done in Northern New Mexico with these monies and we're very appreciative."



## Laboratory Foundation accepting scholarship applications

by Steve Sandoval

Applications are being accepted by the Los Alamos National Laboratory Foundation for 2008 scholarships through the Los Alamos Employees' Scholarship Fund.

Laboratory employees donate through payroll deduction or donations to a fund used to award scholarships. Applications are evaluated on academic performance (academic rigor, grade-point average, and standardized test scores), leadership potential (extracurricular and community service activities), critical thinking skills, and career goals relevant to Laboratory or local community needs. Financial need, diversity, and regional representation are integral components of the selection process, according to a news release from the foundation.

Student applicants with a desire to pursue a degree in a science-related field or other fields important to the future success of Northern New Mexico will be given priority consideration for the top awards.

Any permanent resident of Northern New Mexico who is enrolling in or currently attending an accredited post-secondary educational institution is eligible to apply. The deadline to submit an application is January 22, 2008. For the purpose of these scholarships, Northern New Mexico includes Los Alamos, Mora, Rio Arriba, San Miguel, Sandoval, Santa Fe, and Taos counties.

Since the scholarship fund was created, more than 400 students have received scholarships.

The LANL Foundation is a philanthropic grant-giving entity created in 1997. It supports a range of regional and community not-for-profit organizations.

For more information, contact Jeff Franken of the Laboratory Foundation at (505) 753-8890.

# So... what do you think?

**Q:** Tis the season for giving or is it? Do you like to make your charitable donations during the winter holiday season or prefer to spread out your giving during the year, and why?



**Leo Jaramillo of Chief Financial Officer (CFO-OAO)**

I spread it out throughout the year. Different organizations collect money at different times for equally important causes.



**John Deyloff of Assessment Management (CAO-AM)**

I usually spread it out. I do some at the church. I like to spread it out, because it's less painful that way.



**Kathy Govig of Strategic Alignment (CAO-SA)**

I prefer to spread it out during the year. I do seem to be a little bit more generous during the holiday season.



**Honglin Zhang of Nuclear Atomic and EOS Data (X-1-NAD)**

I routinely give to my church, as I am a regular churchgoer. That would include holiday giving as well. But given the current state of the Lab, I may not give any extra this holiday until I see how things work out.



**James Coy of Environment, Safety, Health and Quality (ADESHQ)**

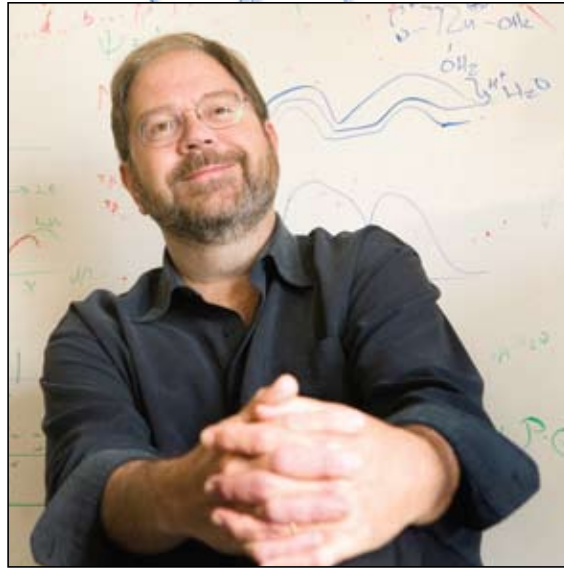
I prefer to spread it out throughout the year, because the finances tend to be a little tight during the holiday season.



**Carroll Thomson of Chief Financial Officer (CFO-SYS)**

In general, I prefer to spread out my giving, but the holiday season is a good time to do some [additional] giving.

## PEOPLE



**Richard Martin**



**Thomas Bowles**

### Lab scientists Bowles, Martin named AAAS Fellows

Laboratory researchers **Thomas Bowles** and **Richard Martin** are new 2007 Fellows of the American Association for the Advancement of Science. The AAAS is the world's largest general scientific society, and publisher of the journal, *Science*.

Currently serving as the science adviser to the Governor's Office, Bowles is former Laboratory chief science officer.

Martin works in Theoretical Chemistry and Molecular Physics (T-12).

Bowles was recognized for his major contributions to the field of neutrino physics and for leadership in promoting science and developing science initiatives with federal, state, and private organizations. His neutrino work at Los Alamos began in the 1980s with a tritium beta decay experiment that showed electron-type neutrinos did not have enough mass to explain the universe's "missing mass," and continued at the Sudbury Neutrino Observatory in Canada. More recently, Bowles was instrumental in a project to create and trap ultra-cold neutrons and measure their basic properties. He also is an affiliate professor at the University of Washington.

Martin was named a Fellow for his distinguished contributions to the electronic

structure theory of molecules and solids. His research focuses on areas related to energy security. These include computations addressing the mechanism of the catalytic production of hydrogen and oxygen from sunlight and water, the science of efficient next generation lighting sources such as organic light-emitting diodes, and theoretical studies of bonding and strong correlations in actinide molecules and solids.

"This recognition of two distinguished researchers evidences the scientific excellence and technical prowess of Los Alamos at a national level," said Laboratory Director Michael Anastasio. "It is another addition to a remarkable history of producing great science in the interest of national security."

The tradition of AAAS Fellows began in 1874. This year, AAAS named a total of 471 Fellows, who will be recognized for their contributions to science at the Fellows Forum scheduled for February 16, 2008, during the AAAS annual meeting in Boston.

AAAS members can be considered for the rank of Fellow if nominated by the Steering Group of their respective sections, by three

*continued on Page 7*

### In Memoriam

#### Laura Jean Peterson Shreffler

Laura Jean Peterson Shreffler died September 2. She was 89.

Shreffler joined the Laboratory in 1956 in former Field Testing (J) Division. She retired in 1981 from the former Meson Physics (MP) Division and continued working in MP Division as a Lab associate until 1987.

Shreffler received a bachelor's degree in sociology from Wooster College in Ohio.

She is survived by her children, Jane Shreffler of Santa Fe; Mark of Clearwater, Florida; and Sara Eyestone of San Antonio, Texas.

#### Thomas Eugene Larson

Laboratory retiree Thomas Eugene Larson died September 13. He was 81.

Larson joined the Laboratory in 1956 as a staff member in the former GMX Division. He retired from the Laboratory in 1991 from the former Dynamic Testing (M) Division and continued working as a Lab associate until 1995.

He received a bachelor's degree in chemistry from Lewis and Clark College in Portland, Oregon, and master's and doctorate degrees in physical chemistry from Johns Hopkins University. Larson served in the U.S. Army from 1945-1947.

He is survived by his wife, Erla Mae; daughters Caryn Womack, Kathy Jacobs, and Greta Hanson; brother Vernon Larson; and numerous other relatives.

#### John Eugene LaBerge

John Eugene LaBerge died September 15. He was 81.

LaBerge joined the Laboratory in 1947 in the former Experimental and Pit (M) Division. While at the Laboratory he also worked in the former GMX Division. LaBerge retired in 1983 and returned as a Lab associate in the former Chemical Science and Technology (CST) Division until 1995.

A U.S. Army veteran, he served in World War II from 1944 to 1946.

LaBerge is survived by his wife, Viola; son David of Rio Rancho; daughter Linda Maes of Los Alamos; and numerous grandchildren and great grandchildren.



## December service anniversaries

### 40 years

Susan Carpenter, B-9

### 35 years

Wanda Dunlop, CTN-5  
Fred Montoya, PMT-2

### 30 years

Robert Lopez, SEC-SIS2  
Jake Martinez, N-2  
Eugene Peterson, C-DO  
Nancy Tessmar, WCM-3  
David Villareal, WT-3  
Jeffrey Willis, MPA-STC

### 25 years

Randall Erickson, D-DO  
Roy Kierstead, SAFE-S3  
Paul Maudlin, T-DO

### 20 years

Deann Caspersen, CFO-3  
Kathryn Elsberry, WFO-WETF  
Nick Perry, ASM-PUR  
Carolynn Scherer, PMT-1

### 15 years

Kevin Buescher, X-3-PC  
Brandy Duran, C-IIAC  
Fawn Gore, CFO-2  
Michael McCormick, AOT-OPS  
John McDermon, CTN-1  
Gary Velasquez, CSO-CYSEC  
Karen Walterscheid, PADOPS

### 10 years

Rodney Borup, MPA-11  
Joseph Brophy, PP-WEP  
John Brown, PMT-5  
Brent Christman, HX-3  
Elizabeth Colyer, OM-OMO  
Diana Decker, C-CSE  
Rebecca Duran, STBPO-EPDO  
Thomas Eaton, IAT-1  
Yi Jiang, T-7  
Daniel Kelly, MPA-MC  
Rick Knight, HPC-1  
Stephen Lopez, ASM-SUB  
Helen Lovato, IRM-DCS  
Deborah Maez, SEC-SA5  
Tashia Martinez, HR-OPS  
Veronica Martinez, SAFE-S3  
Ellen McGehee, ENV-EAQ  
Timothy Mcpherson, D-3  
Michael Mikus, CTN-2  
Judith Miller, OM-OMO  
Kurt Nielsen, HX-6  
Patrick Padilla, ASM-SUB  
Robert Pelak, X-4-AFS  
Melissa Porter, EWMO-DO  
William Press, CCS-6  
Julie Rockwood, IST-APPS3  
Isabel Sandoval, IRM-RMMSO  
Donald Shaw, AET-1  
Gary Silver, PMT-5  
Timothy Stewart, X-DO  
Carroll Thomson, CFO-SYS  
Raymond Valicenti, W-4  
John Waterbury, SEC-DSS9  
Leslie Weaver, N-3

James Werner, MPA-CINT

### 5 years

Elizabeth Auchampaugh, HR-SVSCTR  
Donna Bailey, ADCLES  
Kelkenny Bileen, WS-WA  
Lawrence Brooks, IAT-3  
Kent Budge, CCS-2  
Lisa Carlson, STBPO-PO  
Angelina Chavez, MPA-MC  
Debra Cushner, HR-SVSCTR  
Patricia Duran, LANS-LLC  
Samuel Gallegos, ES-DE  
Gerald Garvey, P-25  
Andrea Gonzales, HR-OPS  
Cynthia Gray, HR-B  
Scott Hsu, P-24  
Gerd Kunde, P-25  
Luca Maciucescu, WT-1  
Jenny Martinez, SEC-PSS6  
Scott Matthews, HPC-1  
Rick Mertes, MQ-3  
Valerie Miller, ISR-DO  
Jeep Peterson, HR-WEAPONS  
Sharon Ruminer, LC-IP  
Danny Salazar, WCM-3  
Felix Sandoval, MSS-TA55FO  
Deborah Sorensen, CT-DTS  
Christine Starr, HR-SYS  
Richard Stead, EES-11  
Stephen Stout, WCM-1  
Robert Ward, CCS-2  
Wilbert Weijer, CCS-2  
Hong-Hong Zhu, STBPO-RL



## This month in history ...

### December

**1787**—In Dover, Delaware, the U.S. Constitution is unanimously ratified by all 30 delegates to the Delaware Constitutional Convention, making Delaware the first state of the modern United States.

**1799**—George Washington, the American revolutionary leader and the first president of the United States, dies of acute laryngitis at his estate in Mount Vernon, Virginia. He was 67 years old.

**1832**—Michael Faraday announces the first law of electrolysis.

**1865**—The 13th Amendment to the Constitution, officially ending the institution of slavery, is ratified.

**1933**—Enrico Fermi writes his weak-interaction and beta-decay theory for which he wins the 1938 Nobel Prize.

**1943**—KRS, a "closed circuit" radio station in Los Alamos, officially begins broadcasting.

**1947**—The transistor is invented by John Bardeen, Walter Brattain, and William Shockley at Bell Labs.

**1963**—J. Robert Oppenheimer is awarded the Enrico Fermi Prize.

**1966**—The nation's first research and development program in nuclear safeguards begins at the Laboratory.

**1967**—53-year-old Lewis Washkansky receives the first human heart transplant at Groote Schuur Hospital in Cape Town, South Africa.

**1979**—The Soviet Union invades Afghanistan.



**1982**—Construction is completed on the retaining wall on the southwest corner of Diamond Drive and Jemez Road. The wall has since changed to reflect the Laboratory's new management.

**1988**—A new fingerprint technique developed at the Lab makes it possible to take prints from a variety of different surfaces.

**1992**—President George H. Bush orders 28,000 U.S. troops to Somalia, a war-torn East African nation where rival warlords were preventing the distribution of humanitarian aid to thousands of starving Somalis.

**1993**—Energy Secretary Hazel O'Leary announces a new openness initiative for the Department of Energy.

**And this from the December 1948 Los Alamos Skyliner:** After a four and a half month interval, Los Alamos again has its own newspaper. The Skyliner is the first exclusive Hill publication since the suspension of the Los Alamos Times in July.

*The information in this column comes from several sources including the online History Channel, the Newsbulletin and its predecessors, the atomic archive.com, Echo Vitural Center, Science & Technology, Real History Archives, and Carey Sublette, "Chronology for the Origin of Atomic Weapons" from www.childrenofthemanhattanproject.org/MP\_Misc/atomic\_timeline\_1.htm.*

## Lab scientists Bowles, Martin ...

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Fellows or by the association's chief executive officer. Each Steering Group then reviews the nominations of individuals within its respective section and forwards a final list to the AAAS Council.

The AAAS Council votes on the final aggregate list. The Council is the policy-making body of the association, and is chaired by the President. The Council consists of members of the Board of Directors, the retiring section chairs, delegates from each electorate and each regional division and two delegates from the National Academy of Science.

## Heimbach named to state broadcasting post

**B**ill Heimbach was appointed to the New Mexico Commission on Public Broadcasting by Governor Bill Richardson.

Heimbach is a government liaison in the Government Affairs Office. He previously worked in the Laboratory's Public Affairs Office (now Communications Office) where he managed media relations and employee communications programs.

Before joining the Laboratory, Heimbach was a reporter and editor at the *Santa Fe New Mexican* newspaper. He holds a bachelor's



Bill Heimbach

degree in journalism from Bradley University in Illinois and has completed 12 graduate hours in communications from Boston University.

## Los Alamos wins two Wall Street Journal Technology Innovation Awards

**T**wo technologies developed at the Laboratory in the areas of energy and semiconductor research are among the winners of the 2007 *Wall Street Journal* Technology Innovation Awards.

In the energy category, the Los Alamos winner is a team led by **Gregory Swift** of Condensed Matter and Thermal Physics (MPA-10) that developed a method to liquefy natural gas through a thermoacoustic process that cools the gas with sound waves. The process differs from traditional methods because it produces smaller quantities but with much higher reliability and at lower cost. The technology has been licensed to Swift LNG Inc., of Houston.

In the semiconductor category, Los Alamos researcher **Kris Kwiatkowski** of Neutron Science and Technology (P-23) won for developing a superfast camera on a chip, able to capture images of very fast events, like an explosive shock wave. The camera, developed alongside researchers from Teledyne Technologies, combines a chip for capturing light and another for storage and processing of the resulting image.

The camera on a chip previously earned a 2007 R&D 100 Award, given annually by *R&D Magazine*.

The Technology Innovation Awards selection process begins with a screening of applicants by Wall Street Journal editors. Then a panel of distinguished international judges from business, research, and academia make the final selections.



# Luminaria or Farolito?

## You decide

Photo by LeRoy N. Sanchez, Records Management/Media Services and Operations

by Steve Sandoval

You say po-TAY-toe, I say po-TAH-toe. You say to-MAY-toe, I say to-MAH-toe... With the holiday season upon us, depending on where you are in New Mexico, those little sand-filled paper sacks with flickering candles that line walkways, roofs and adobe walls are either a *farolito* or a *luminaria*.

What's the difference? Most Northern New Mexicans call them farolitos. Santa Fe's Canyon Road Neighborhood Association annually sponsors a Christmas Eve farolito walk. But 60 miles to the south in Albuquerque, the city and the Old Town Neighborhood Association calls its annual event the Christmas Eve Luminaria Tour.

According to the late Fray Angelico Chavez, "There is no versus." In a December 1970 *New Mexico Magazine* article, Chavez wrote that several centuries ago during New Mexico's Spanish and Mexican period, there was such a dearth of beeswax that its use was confined to religious rituals. Thus, pitch pine and piñon wood "became the sole material for small bonfires to illuminate

the course of festive processions and spectacles, not only on the streets, but atop the flat earthen roofs. Hence, in New Mexico, *luminaria* was restricted to this type of bonfire."

It wasn't until circa 1920-1930, that cheap, longer-burning tallow candles became more readily available. When brown bags became available for groceries, "a nameless humble genius thought of combining a tallow candle, brown grocery bag, and a little sand, and New Mexico's distinctive Christmas light was born. To distinguish it from the bonfire *luminaria*, it got the name *farolito* since actually it is a 'little lantern,'" Chavez wrote.

Nambe historian and author Orlando Romero echoed Chavez saying farolitos' advent didn't occur until paper sacks became more readily available.

A 1965 book, *Colony on the Move*, by Dan Matson, quotes the journal of Gaspar Castro de Sosa circa 1590-91: "We went to sleep at the place of the negligence on the bank of the [Pecos] River in some [sands].

The negligence, according to a 1986 *Santa Fe New Mexican* article by Edmundo Delgado, was that Castro de Sosa had set out up the river thinking that he would

return before nightfall. But it was more than two hours after nightfall and Castro de Sosa hadn't returned.

"Many luminarias were lit in order that [Castro de Sosa] might come to them, and having his continued absence, the grief of all was doubled," Matson wrote in his book. "Of interest here is the lighting of luminarias to guide Castro de Sosa back to camp. These luminarias were small fires spaced some distance apart — a custom still employed on festive occasions, such as the annual fiesta in Santa Fe."

Delgado, in his 1986 *New Mexican* article, wrote: "Since the paper bags are largely a mid- and late-19th century invention, and their present profusion dates since World War II, evidently they are not a part of Spanish colonial tradition. However, their present usage as lighting devices justifies their peculiarly New Mexican name of *farolito*."

Former Palace of the Governors director, historian, and author Tom Chavez said a "faro" is a lantern.

"Thus, the bagolitos of New Mexico are correctly called little lanterns, or 'farolitos,'" he said.

Tom Chavez described luminarias as "small fires that are supposed to light or lumi-

nate the way. This all harkens back to pre-electricity, when real candles were lit on the Christmas tree and small fires lined the walkways during the holidays," said Chavez. "The light/fire, of course, represents life and God, or in a more vernacular sense, the candles and fires light the way for the Christ child.

"How different parts of New Mexico became mixed up with the farolito and luminaria debate is beyond me," Chavez continued. "One thing is for certain: you will not find one Hispanic-speaking person who knows that language who has any doubt," said Chavez. "The only other excuse for calling a farolito a luminaria is local pride, i.e. Albuquerque needs to be different from Santa Fe."

Added Romero, "Does it make a difference to distinguish between the two? Only a fool would attempt to put a luminaria atop his roof."

So this holiday season when family and friends come calling and the discussion turns to *farolitos* or *luminarias*, perhaps the appropriate response should be to just enjoy the flickering light of the small burning candle or the glow and warmth of the bonfire, and wish you and yours Happy Holidays.

***'A nameless humble genius thought of combining a tallow candle, brown grocery bag, and a little sand, and New Mexico's distinctive Christmas light was born.'***

