NewsLetter

Week of Feb. 28, 2005 Vol. 6, No. 5

Inside this issue ...

Q: Most people have things they especially like about their work and other things they could do without. What do you like most about your work at the Laboratory? What do you like least? Learn what your co-workers had to say on Page 6.

Los Alamos NewsLetter
P.O. Box 1663
Mail Stop C177
Los Alamos, NM 87545

Nonprofit Organization
U.S. Postage Paid
Albuquerque, NM
Permit No. 532

LALP-05-002

Laboratory studies offer insight into tsunamis

by Hildi T. Kelsey

Before the tsunami disaster in the Indian Ocean, Galen Gisler of Thermonuclear Applications (X-2) and his research team of Bob Weaver and Mike Gittings, also of X-2, and former Lab employee Charles Mader studied potential sources of destructive tsunamis. The team's initial studies focused on three causes of tsunamis: landslides, asteroid impacts and submarine volcanic eruptions.

Spawned by the extensive study by Mader of the Lituya Bay Alaska landslide of 1958, the team first evaluated the potential tsunami hazards caused by landslides. This event produced the highest run-up, or peak height of the wave on shore, of any measured tsunami and was successfully modeled in a laboratory by Hermann Fritz in Switzerland. Mader's work with the SAGE code, developed jointly by the Laboratory and Science Applications International, accurately reproduced both the laboratory results and the real event at Lituya Bay.

"This study gave insight into the dangers of landslide-generated tsunamis and can help inform communities as to how to specifically prepare for such events," said Gisler.

The team then conducted a comparative study of tsunamis generated by asteroids of different sizes, velocities and compositions. According to its asteroid impact paper published in the Science of Tsunami Hazards Journal, the team performed a series of two-dimensional and three-dimensional simulations of asteroid impacts into an ocean, using realistic equations of state for the atmosphere, seawater, the oceanic crust and the mantle. "These asteroid-caused tsunamis can have large amplitudes at the source, but will decline faster with distance than landslide-caused tsunamis," Gisler said.

The team also published a paper in Computers in Science and Engineering giving an overview of its asteroid impact work, including the application to the meteor impact that killed off the dinosaurs at the end of the Cretaceous Period 65 million years ago. In addition, it produced a paper for the Caribbean Tsunami Symposium in March 2003 in Puerto Rico, which studied the potential tsunami-generating ability of the Kick-em Jenny submarine volcano in the eastern Caribbean.

A conclusion of this work is that tsunamis generated by point events, such as asteroid impacts and explosive submarine volcanoes, propagate less effectively across great distances than do tsunamis generated by extended events, such as landslides and earthquakes. This was true with the Tsunami from the Indian Ocean event; the rupture was at least 500 kilometers long and it propagated effectively across the Indian Ocean and in to the other oceans of the world.

The team's research is part of Department of Energy's program in Advanced Simulation and Computing, and the code, SAGE, written by Gittings, is part of the Lab's Crestone Project and a joint development between the Lab and Science Applications International Corp.

Regarding his current research activities Gisler said, "We're undertaking two new studies now, one of the potential landslide threat off the side of the Cumbre Vieja

continued on Page 2

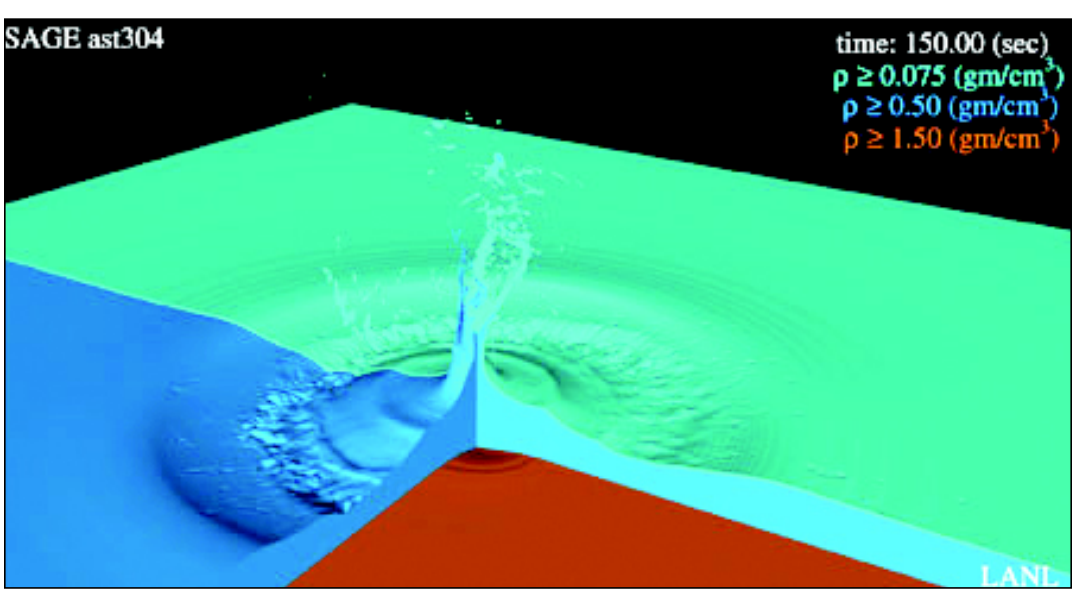

Image from a 3-D calculation of an asteroid impact model in 2002, in which the jet from the transient crater is collapsing and producing a wave of a couple kilometers initial amplitude.

For Your Safety

Ergonomics in the Laboratory

Many tasks performed in research laboratories place workers at risk for developing musculoskeletal disorders. Potentially hazardous activities include the use of pipettes, microscopes, microtomes, centrifuges, flow cytometers, cryostats and computers. Prolonged awkward postures, excessive reaching and lifting, and repetitive motions can cause discomfort and eventual injury. To reduce the risk of developing musculoskeletal disorders, consider the following suggestions:

General Laboratory Work

• Maximize neutral postures and minimize awkward postures. If you're not sure which postures are neutral and which postures are awkward, sign up for ergonomics training at Training Services (PS-13).

• Rotate tasks and take frequent short breaks.

• For work that requires extensive standing or walking

--install antifatigue matting,
--wear shoes with good support and cushioning,
--consider custom-fitted shoe inserts and
--shift your weight often by using a stool or shelf to raise one foot off of the floor.

• For work that requires extensive sitting, select adjustable chairs or stools (preferably those providing lumbar support, at least). Adjust the chair or stool to your body.

• Keep frequently used materials and equipment as close as possible to minimize reaching.

• Pad equipment to reduce the force applied by you and the force applied to you. For example, pad forceps with foam to create a larger surface area. Wear elbow pads to reduce force on the arms while working in a hood. Pad work surface edges to avoid leaning on hard edges.

• Vary the grasp of frequently used tools or objects. For example, alternate forceps between the thumb and the first finger, the first and second fingers, the thumb and the second finger, etc.

Los Alamos NATIONAL LABORATORY EST. 1943
NewsLetter

The *Los Alamos NewsLetter,* the Laboratory bi-weekly publication for employees and retirees, is published by the Public Affairs Office in the Communications and External Relations (CER) Division. The staff is located in the IT Corp. Building at 135 B Central Park Square and can be reached by e-mail at *newsbulletin@lanl.gov,* by fax at 5-5552, 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.

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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.

NNSA National Nuclear Security Administration

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FROM THE TOP

Building a strong safety culture

The goal of the Lab's Behavioral Excellence Initiative is to build a strong safety culture, but what does this mean and what does it entail?

A strong safety culture is one in which all Lab employees share a common understanding of and commitment to safety. A strong safety culture creates an environment in which positive safety behaviors continue throughout time and percolate across organizational levels. As a result, a strong safety culture depends on developing a comprehensive framework for observing and evaluating our daily activities, whether on the job or off.

Laboratory Director Pete Nanos

A strong safety culture rests on three underpinnings. First, managers must model a commitment to safety. Absent demonstrated leadership, any safety culture will flounder. That's why I personally am championing the Lab's Behavioral Excellence Initiative, and that's why I expect managers to personally train their subordinates in the Safety Training and Observation Program (STOP) principles. Time and effort is a precious commodity; allocating it to the STOP process tangibly reminds us of leadership's commitment to safety.

Second, managers and employees must have the resources necessary to build a strong safety culture. As the Lab's director, I want to create and sustain an environment that allows the Behavioral Excellence Initiative to succeed, and that enables you to make the right safety decisions. For instance, the health and safety professionals who are deployed throughout the Lab will assist managers, supervisors and employees with the STOP process. Additionally, we will work quickly to address any safety concerns or at-risk conditions, whether they are identified through the STOP process, management walk-arounds, nested safety and security meetings, or otherwise. In fact, the Lab has reduced the number of outstanding safety-related items by 50 percent over the last several months.

Finally, building a safety culture requires the active participation of all employees. As I stressed in my all-employee talk Jan. 19, none of us can succeed alone. Although the STOP process will proceed in two phases, the first for supervisors and the second for employees, it will ultimately empower everyone to be the Lab's "safety eyeballs." The STOP process reminds us that we each have the authority and responsibility to observe ourselves and our coworkers, and to act, in conjunction with management, to correct unsafe conditions while recognizing and reinforcing safe work practices. That top-to-bottom commitment to safety means that all of us return safely home every day. At heart, that's what building a strong safety culture is all about.

Laboratory studies offer insight …

continued from Page 1

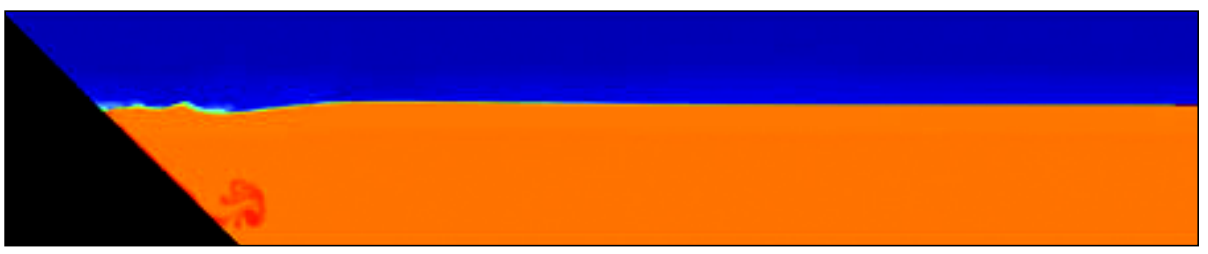
volcano in the Canary Islands that is perceived as a danger to the Atlantic, and the other of the Sunda Trench earthquake event that unfolded tragically [in the Indian Ocean in December]."

In a preliminary report given to the International Tsunami Information Center, which is part of the National Oceanic and Atmospheric Administration, the team found that potential landslides from Cumbre Vieja would produce waves that are considerably shorter in wavelength and period than the destructive tsunamis observed in the Indian Ocean and previously in the Pacific. As such, tsunamis from Cumbre Vieja would likely be very dangerous to the other islands in the Canaries as well as to the coasts of Africa and Spain.

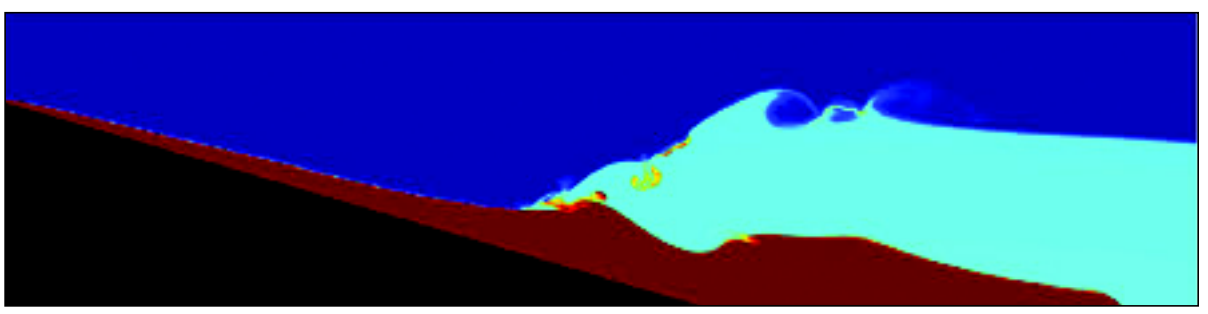
The analysis of the potential threat to more distant shores depends on completion of a high-resolution three-dimensional run to be completed when the team obtains high-resolution bathymetry of the Canary Islands region, which has been requested from the Spanish government.

"Naturally, the results of these calculations will be shared with the Spanish government and with all other regions that might be affected," said Gisler.

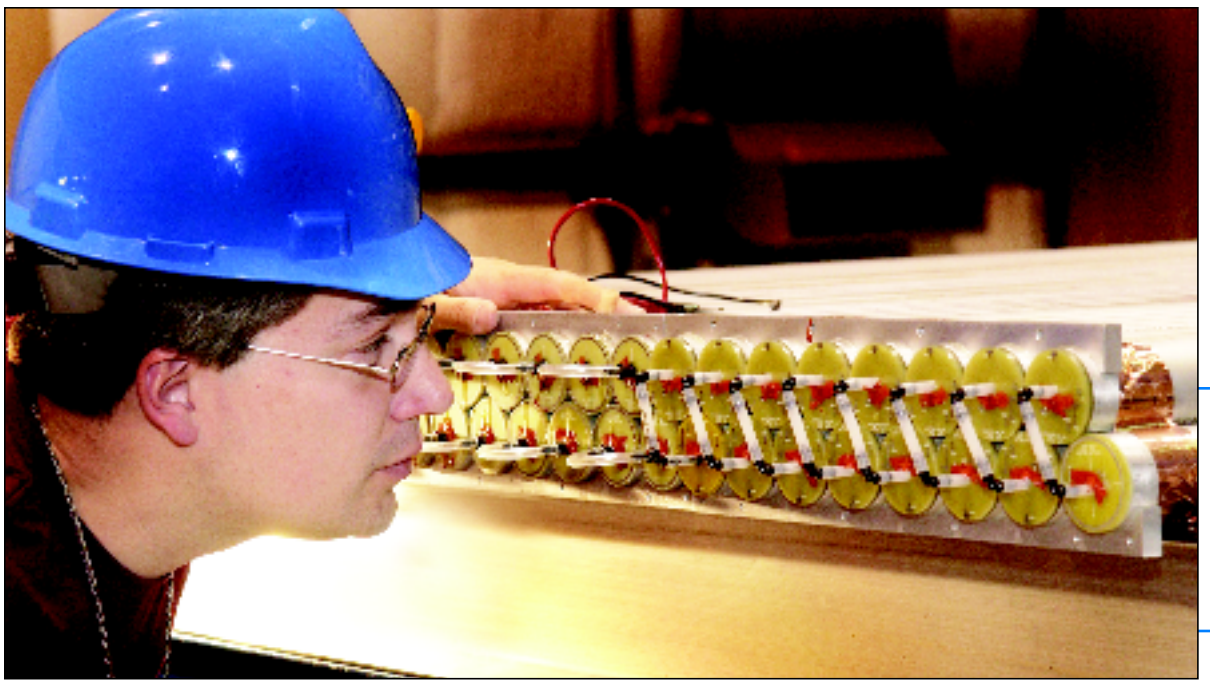
"The ultimate goal is to protect peoples' lives. The more we understand, the better off we are."



A two-dimensional tsunami calculation of a La Palma-type landslide event. Here the total wave amplitude is about 2 kilometers, however, the image also indicates a lot of wave-breaking and slide entrainment.



A 2-D calculation done in 2004 of a very large underwater landslide that produced a wave of 0.5 km amplitude. *Images courtesy of Galen Gisler, X-2*



Los Alamos muon detector could thwart nuclear smugglers

J. Andrew Green of Subatomic Physics (P-25) inspects the drift tubes that make up one pair of detectors for the muon radiography prototype at the Los Alamos Neutron Science Center. Green is checking for proper alignment of the modules, electrical resistance and integrity of the insulation. *Photo by LeRoy N. Sanchez*

by Jim Danneskiold

Trillions of cosmic rays that constantly bombard Earth could help catch smugglers trying to bring nuclear weapons or materials into the United States.

Laboratory scientists have developed a detector that can see through lead or other heavy shielding in truck trailers or cargo containers to detect uranium, plutonium or other dense materials. Their technique, muon radiography, is far more sensitive than X-rays, with none of the radiation hazards of X-ray or gamma-ray detectors now in use at U.S. borders.

Chris Morris of Subatomic Physics (P-25) and Rick Chartrand of Mathematical Modeling and Analysis (T-7) discussed recent improvements to the technique and their efforts to build a prototype detector at the Annual Meeting of the American Association for the Advancement of Science.

Both 2004 U.S. presidential candidates declared nuclear terrorism the greatest threat facing the United States. National security experts have speculated that detonation of a nuclear weapon or radiological dispersion device on U.S. soil could create global chaos by shutting down trade.

Existing radiographic methods are inefficient for detecting shielded nuclear materials and present radiation hazards to inspectors and vehicle passengers. Muon radiography uses the natural scattering of muons — produced by the decay of cosmic rays showering down on Earth — as a radiographic probe. In fact, efforts to shield nuclear materials with lead or similar heavy metals make a smuggled object easier to detect with muons.

"We believe we've worked through all of the major obstacles to building a prototype system for a range of security scenarios," Morris said.

Muon radiography works because muons are energetic enough to penetrate thick rock or heavy metals. Materials with large numbers of protons and tightly packed nuclei, such as plutonium and uranium or metals like lead and tungsten, produce stronger electromagnetic forces and therefore deflect muons more than less dense materials such as steel, aluminum or plastic.

A pair of detectors above and another pair beneath a truck, cargo container or other suspect object record each muon's path before and after it passes through the cargo. By analyzing changes in energy and trajectory, computer algorithms build a three-dimensional mathematical map of dense items in the cargo. In the 1960s, Luis Alvarez used muon counters to seek hidden chambers inside the Second Pyramid of Giza.

Muons strike Earth from every angle, so the key to a workable detection system is to keep improving the computer algorithms for tomographic reconstruction. "If we measure the muon's path and energy with two detectors going in and two coming out, we have a straight line on either side that tells us how much the target deflects the muon, and we can locate highly dense objects, as well as distinguish between materials," said Larry Schultz of P-25.

One advantage of muon radiographs is their ability to discriminate between shielding materials and less dense metals. With an average energy of 3 billion electron volts, most muons can penetrate about six feet of lead. Gamma-ray detectors are far less penetrating, produce only cluttered, two-dimensional views that need additional interpretation and require hazardous materials such as cobalt.

One drawback of detection systems such as airport screeners is the need for people to interpret images and data. The automation built into the Los Alamos computer algorithm makes inspectors' jobs easier because it doesn't convert data from nearly a million detector coordinates into images, Chartrand explained. Instead, using machine learning techniques, the algorithm is trained with known examples until it can decide directly whether a bomb, nuclear materials or shielding are present.

"We've shown we can put the data through a machine-learning algorithm and train the system to spot objects of interest with a rate of false positives and false negatives that is less than 3 percent," Chartrand said. "We think we can continue to improve that."

Working at the Los Alamos Neutron Science Center, the team is building a prototype set of detectors big enough to radiograph in 60 seconds large metal objects such as auto engines or transmissions. With refinement, inspectors could declare most vehicles harmless in a border setting with as little as 20 seconds of muon exposure.

Members of Los Alamos' muon radiography team at Los Alamos include Morris, Schultz, Charles Alexander, Camilo Espinoza, John Gomez, J. Andrew Green, Gary Hogan, John McGill, Jason Medina, Alexander "Andy" Saunders and Richard Schirato, all of P-25; Chartrand, Kevin Vixie and Brendt Wohlberg, all of T-7; Thomas Asaki of Continuum Dymnamics (CCS-2); Konstantin Borozdin and Alexei Klimenko, both of Space Science and Applications, (ISR-1); Bill Priedhorsky of the International, Space and Response Division (ISR-DO); Nicolas Hengartner of Statistical Sciences (D-1); Matthew Sottile of the Advanced Computing Laboratory (CCS-1); and Gary Blanpied of the University of South Carolina, Columbia, Jonathon Katz of Washington University in St. Louis and Margaret Teasdale, formerly of P-25 but now at the University of Rhode Island.

Communication

by Tom Bowles, chief science officer

We are dealing with many things at once right now: corrective actions, catching up with work, reworking processes, the contract rebid and planning for the future. With so much going on, it is critically important that we communicate effectively with all employees about issues and impacts. Unfortunately, it seems that our most efficient means of communication at the Lab is the rumor mill. And equally unfortunately, the rumor mill also is the least effective in communicating truth. I continuously hear all kinds of bizarre statements. When I track these down, most are due to miscommunication. The point is that you shouldn't believe everything you hear.

I am very concerned that the rumor mill is fueling unnecessary stress — I see this continuously as I visit different groups around the Lab. The solution is to get information out to everyone efficiently. I am setting up a CSO Web site that will provide a forum for science and issues that affect our ability to do science. I also am setting up a working group on science communication to provide input for the Web site and to develop additional ways to communicate more effectively. These two actions should help with communications.

However, there is another aspect that involves all of us — quashing the rumor mill. Now I know we can never fully do that. However, it is important that people stop to think before spreading rumors. If you hear something that you just can't believe, it may well be because it is not true. Spreading such rumors does no one any good and often can adversely impact morale. So if you hear something disturbing, stop and check it out before spreading it. You can make a difference — it is the sum of many small things adding up that determine overall morale. I ask that you think about your role in that and act appropriately.

Contract information available online

University of California
www.universityofcalifornia.edu/news/labcontract/welcome.html

National Nuclear Security Administration
www.doeal.gov/LANLContractRecompete/Default.htm

Employee Advisory Council marks anniversary

Group works to facilitate communications with management

by Brooke Kent

An 11th anniversary may seem trivial at a Laboratory known for its longevity, but for the Employee Advisory Council, it marks a major milestone.

"Since EAC's charter in February 1994, we have served as a grass-roots communications link between the Lab's management and its UC employees," explained council chair Teresa Salazar-Kerstiens of Security Integration (S-2). "Our eleventh birthday coincides with the competition for the Lab's management contract. Especially during this stressful period, we want to reiterate EAC's role as a two-way resource for extended communication and mutual discussion about critically important Labwide issues."

Modeled after the staff assemblies maintained at other UC campuses, EAC fulfills a four-fold mission:

- Foster respect, communication and collaboration between employees and management;
- Promote the interests and well-being of all employees;
- Provide a forum through which employees can furnish feedback, perspective and recommendations to management on existing and proposed Lab policies, practices, operations and procedures; and
- Identify issues of widespread employee concern and communicate those issues and possible solutions to Lab management.

According to Salazar-Kerstiens, EAC's scope is a broad one. "We focus on issues shared by the entire Lab work force, whether that's the contract competition, flexible scheduling, the salary management process, or something else," Salazar-Kerstiens said. "For instance, EAC was instrumental in establishing the Lab's Ombuds Office, and more recently, we provided input to UC's Office of the President on the employee impact of the upcoming contract negotiations. What we don't address are problems specific to a single individual, concerns that an employee union already is handling, or questions that pertain only to the subcontractors. Instead, our emphasis remains on issues of Labwide importance and how they affect the Lab's UC employees and its work force in general."

EAC historian Roger Byrd, of Space Science and Applications (ISR-1), supports that broad focus. "As a veteran of academic environments at Duke and Indiana universities, I've seen how vital it is to maintain a direct channel of communication between staff members and management. In universities, the staff assemblies or faculty senates moderate an interactive dialogue between employees and administrators on issues of common importance; that exchange ensures that neither party acts in a vacuum of information," he said. "EAC's function is similar. It lets the top and bottom of the Lab talk directly to each other and reap the benefits from that unhindered, two-way discussion."

Nancy Kurnath, EAC's vice chair and a Theoretical (T) Division Office employee, concurs. "Aside from the Science and Engineering Advisory Council, EAC is the Lab's only official venue in which employees can voice concerns, ask questions and make their opinions known directly to top management. The Lab faces several tough challenges this year, including the contract competition, and in order to meet those challenges, we must sustain an open dialogue between employees and management. That is why we subscribe to a simple philosophy — the more employees participate, the stronger the council will be, and the better off the Lab will be as a whole," Kurnath concluded.

Interested in participating? EAC will issue a call for new members in May. Until then, any employee holding an L or Q clearance may attend the council's meetings, which occur every two weeks on non-payday Thursdays in the Director's Conference Room in the Administration Building at Technical Area 3. Employees who want to attend an EAC meeting should contact Salazar-Kerstiens at 5-6367, or write to *teresa@lanl.gov* by e-mail.

Additional information, including minutes from past meetings and a council membership contact list, can be found on the group's Web site at *eac.lanl.gov* online.

NNSA information technology chief visits Laboratory

Linda Wilbanks, center, chief information officer for the National Nuclear Security Administration, was at Los Alamos to receive briefings on the Lab's Enterprise Project and other information technology issues. Wilbanks also toured several Lab facilities, including the Nicholas Metropolis Center for Modeling and Simulation at Technical Area 3. At right is Carolyn Zerkle, principal deputy associate director for the associate director for administration, while at left is Charlotte Lindsey, the Lab's chief information officer. *Photo by Kevin N. Roark*

UC researchers receive national medal of science

Three University of California researchers were among eight recipients of the 2003 National Medal of Science. J. Michael Bishop, chancellor of UC San Francisco; R. Duncan Luce, a behavioral scientist at UC Irvine; and John M. Prausnitz, a professor of chemical engineering at UC Berkeley, join a distinguished list of researchers who have garnered the nation's highest honor accorded to a scientist.

Established by Congress in 1959, the National Medal of Science recognizes scientists whose pioneering research in the areas of physical, biological, mathematical, engineering, behavioral or social sciences have led to a better understanding of the world.

Bishop, co-recipient of the Nobel Prize for medicine in 1989, is honored for his achievements in the biological sciences. Luce is recognized for his achievements in the behavioral/social sciences, and Prausnitz, is honored for his achievements in engineering.

"Our lives are enriched by these researchers' significant contributions to California, the nation and the world," said UC President Robert C. Dynes. "Through their innovative vision and outstanding achievement, these individuals have brought distinction to themselves, their students and our university."

Of the 409 National Medals of Science presented since the program's inception, 51 have been awarded to researchers affiliated with the University of California.

The medals will be presented at a White House ceremony March 14.

Patent awards

Editor's note: Some of the individuals listed below are no longer employed at the Laboratory but were at the time they applied for the patent.

Recently issued patent awards

Fuel cell anode configuration for carbon monoxide tolerance
Patent No. 6,818,341, issued Nov. 16, 2004
Francisco Uribe and **Thomas Zawodzinski Jr.** of Electronic and Electrochemical Materials and Devices (MST-11)

Optical amplifiers and lasers
Patent No. 6,819,692, issued Nov. 16, 2004
Victor Klimov, **Alexandre Mikhailovski** and **Jennifer Hollingsworth** of Physical Chemistry and Applied Spectroscopy (C-PCS); and **Moungi Bawendi** and **Catherine Leatherdale** of the Massachusetts Institute of Technology

Water purification using organic salts
Patent No. 6,821,439, issued Nov. 23, 2004
Robert Currier of C-PCS

Monitoring
Patent No. 6,822,238, issued Nov. 23, 2004
Duncan MacArthur of Safeguards Science and Technology (N-1); and **Christopher Orr**, **Craig Luff** and **Thomas Dockray** of BNFL Instruments

Use of prolines for improving growth and other properties of plants and algae
Patent No. 6,831,040, issued Dec. 14, 2004
Pat Unkefer and **Rodolfo Martinez** of Biotechnology, Spectroscopy and Isotope Chemistry (B-3), and **Thomas Knight** of Digital Equipment

Automated video-microscopic imaging and data acquisition system for colloid deposition measurements
Patent No. 6,836,559, issued Dec. 28, 2004
Amr Abdel-Fattah and **Paul Reimus** of Isotope and Nuclear Chemistry (C-INC)

Piperazine-based nucleic acid analogs
Patent No. 6,841,675, issued Jan. 11
Jurgen Schmidt, **Louis Silks III** and **Ryszard Michalczyk** of B-3

High temperature superconducting composite conductors
Patent No. 6,843,898, issued Jan. 18
Terry Holesinger of Materials Technology: Metallurgy (MST-6); and **Stephen Foltyn**, **Paul Arendt**, **James Groves**, **Quanxi Jia** and **Alicia Ayala** of the Superconductivity Technology Center (MST-STC)

Composition and method for removing photoresist materials from electronic components
Patent No. 6,846,789, issued Jan. 25
Leisa Davenhall and **Craig Taylor** of Applied Chemical Technologies (C-ACT) and **Jim Rubin** of the Nuclear Materials Technology (NMT) Division

Cheryl Stone, second from right, cuts the ribbon at a ceremony marking the completion of Phase I of the Nuclear Materials Safeguard and Security Upgrades Project. Stone is the National Nuclear Security Administration's deputy associate administrator for Defense Nuclear Security. Next to Stone is Scott Gibbs, acting associate director for the Security and Facility Operations (SFO). Also shown left are Jack Killeen, acting Security and Safeguards (S) Division leader, and Herman LeDoux of the Los Alamos Site Office. *Photo by LeRoy N. Sanchez*

Ceremony marks completion of nuclear materials upgrade project

by Kathy DeLucas

A ribbon cutting celebrated the completion of Phase I of the Nuclear Materials Safeguard and Security Upgrades Project. The project involved improving and expanding security at key Laboratory locations such as Technical Area 55, the Plutonium Facility.

The program finished almost a year ahead of schedule and under budget. The six-year, $74 million Phase I project involved updating three key components of the institutional physical security system: The automated central security control system, communications system and alarm station facilities. The project was accomplished without a reportable incident or lost workday with more than 500,000 hours worked, including construction.

"These improvements help protect the people and materials that in turn protect America," said Scott Gibbs, acting associate director for security and facility operations.

The centerpiece of the project was the replacement of the existing security control system with Argus. "The most important security assets at the Laboratory are now monitored and controlled by Argus, which provides more powerful capabilities that will be key to meeting the revised design basis threat," Gibbs said.

"We would like to extend our congratulations on a successful completion," Cheryl Stone, National Nuclear Security Administration deputy associate administrator for Defense Nuclear Security said. "We experienced good synergy between the University of California, the Laboratory and the site office and look forward to the same success in Phase II."

Added Jack Killeen, acting Security and Safeguards (S) Division leader, "We are involved in a much more subtle war on terrorism. The completion of Phase I is vital to protecting important assets and puts us a leg up on enhancing security. It was a real team effort with S Division, Protection Technology Los Alamos personnel, the Project Management (PM) Division and Los Alamos Site Office."

Los Alamos joins four other Department of Energy sites that have deployed Argus as the NNSA standard security system.

Additionally, the TA-55 communications center is now 100 percent operable on fiber optic lines, instead of using the old copper wire network. The work involved installing cables along Pajarito Road, Diamond Drive and Mercury Road, as well as new ducts and conduits within key facilities.

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

Q: Most people have things they especially like about their work and other things they could do without. What do you like most about your work at the Laboratory? What do you like least?

Delfido Serrano of Comforce, a contractor, in Property Management (SUP-2)

The thing I enjoy most about my work is the type of work that I do, which is property management. The thing that I like least is that my contract is coming to an end.

Mary Alei of Communication Arts and Services (IM-1)

I like the people that I work with. What I like least is how much time it takes to get things done at the Laboratory. It's just the nature of the whole big beast.

Rajesh Pawar of Hydrology, Geochemistry and Geology (EES-6)

The people I work with make it a fun experience. The least favorite part is the office space and parking problems.

Marti Hill of Enterprise Support and Computer Education (IM-2)

As an instructor for IM-2, I believe the people here at the Lab are its greatest strength. Employees are open, friendly and eager to learn. What I like the least — the bureaucratic paperwork.

Richard Robinson of Imaging Services (IM-9)

I mostly like the people and the staff I photograph. What I like the least is the amount of support that the technical side gets versus the support side at the Lab.

Donna Berg, Research Library (STB-RL)

What I like the best is the people that I work with. The variety of people that I get to work with makes it very interesting. And it is not just the technical staff but everyone at the Lab. When you work in the library you get to work with everyone. What I like the least is the loss of the 9/80 work schedule.

Lee Bernstein of Strategic Management Solutions Inc., a contractor in Project Controls (PM-4)

I like the highly intellectual people and the positive working environment. It is an exciting place to work. The challenges ahead are excellent. What I don't appreciate is having to demonstrate to a very small percentage of the population that we are doing a good job. We seem to get a tremendous amount of bad press. Everyone is going to make mistakes, but we do our best to minimize them.

Bruce takes project management helm in Microbial Program

David Bruce

David Bruce of Bioscience (B) Division has been named to lead project management for the Department of Energy's Joint Genome Institute Microbial Program. In this role, he will track progress of all microbe program projects and will report back to JGI management and multi-laboratory collaborators.

The job will entail a variety of tasks from designing the process model, contacting collaborators, receiving DNA and describing the scope of work in user agreements for each project. Among the goals for 2005 is to add an additional 40 to 60 projects.

A 1994 spinoff from the Human Genome Project, the Microbial Genome Program's goal has been to completely sequence the genomes of microbes, primarily prokaryotes. However, unlike the human genome, which took years to complete, many microbial genomes can be completely sequenced in weeks or months and, with recent advances in sequencing technologies, even days.

As of April 2003, DOE has sequenced the genomes of about 100 microbes, most of them by the Joint Genome Institute. These, in addition to many viruses and higher organisms such as yeast and the roundworm, are available in public databases and are being actively used by academic, medical and industrial scientists to make comparisons not possible previously.

Mousseau is new IM Division leader

Kim Mousseau

Kim Mousseau is the new Information Management (IM) Division leader. Before her selection, she served as the acting division leader.

"Kim brings extensive information technology experience and a broad understanding of the Laboratory from both a staff member and line management perspective," said Richard Marquez, associate director for administration.

Mousseau started her career at the Laboratory six years ago as a technical staff member. She has worked as a manager at the group and division level. While at the Laboratory, she has worked to improve information technology services.

Mousseau currently is managing a team to plan and implement transition of the Enterprise Project into production. She continues to develop and promote long-range information management goals for the Laboratory. Mousseau also is working collaboratively with personnel within ADA and the Chief Information Office (CIO) to develop an investment strategy for information technology services for the Laboratory and provide IM Division with the ability to apply modern technologies to information practices. Mousseau also participated in the 2003 Director's Development Program.

Before joining the Laboratory, Mousseau worked as a project manager for ICF Kaiser Consulting Group and an engineer for the Idaho National Laboratory. She has a bachelor's degree in mathematics with an emphasis in statistics from the University of Utah. Mousseau also holds a master's degree in computer science from the University of Idaho.

Lab communicators win 18 Society for Technical Communication awards

Communication Arts and Services (IM-1) staff members and their Lab colleagues won 18 awards in the 2004-2005 Southwest Regional Publications, Art and Online Competitions sponsored by the Phoenix chapter of the Society for Technical Communication. Judges from the Phoenix, southern Arizona, and New Mexico Kachina chapters evaluated the entries.

Within the three STC award categories listed in descending order, Lab communicators earned one Distinguished Technical Communication Award, eight Awards of Excellence and eight Awards of Merit. In addition, **Gail Flower**, an IM-1 graphic designer, won the Best of Show award in the Technical Art Competition for the cover and section dividers she designed for the 2003 Laboratory Directed Research and Development progress report.

Regarding her Best of Show win, Flower said, "I am very honored. It was a good project from beginning to end."

Laboratory winners received their awards at a luncheon sponsored by STC's New Mexico Kachina chapter. The luncheon recognized winning entries submitted by New Mexico technical communicators in the Southwest Regional competitions.

Winning an award in an STC competition represents peer recognition for developing effective technical communication products. Since the 2004-2005 Southwest Regional competition received 81 entries from four states — California, Arizona, New Mexico and Oklahoma — earning 18 awards is a notable accomplishment for Laboratory staff, according to Judy Prono of IM-1.

The entry that won a DTC award will compete in the STC's international competition in March. International competition winners will be announced at the society's annual conference in May.

The STC is the largest professional organization of technical communicators with more than 18,000 members worldwide. Twenty-eight STC competitions were sponsored last fall by chapters across the United States, Canada, Australia and Europe.

A detailed list of all Laboratory award-winning entries is on the IM-1 Web site at *int.lanl.gov/orgs/im/im1/group.shtml* online.

Lab organizations earn seven NNSA Pollution Prevention Awards

Laboratory organizations received seven out of the 13 2005 Pollution Prevention (P2) Environmental Stewardship Awards given nationally by the National Nuclear Security Administration. The awards are based on a Department of Energy complexwide competition that acknowledges pollution prevention, recycling and affirmative procurement accomplishments.

"These projects represent another example of the commitment of Lab staff to eliminate waste and invoke cost-effective process improvements," said Denny Hjeresen of Pollution Prevention/Sustainability (ENV-PP).

"In addition to the estimated savings of approximately $2.7 million this year, most of these projects will continue to generate savings well into the future," Hjeresen said. "For example, the Radioactive Liquid Waste Generator Set-aside Fund Program sets a small fee per unit of liquid radioactive waste to provide funds for future waste elimination projects that will prevent waste and save time and money."

Additionally, NNSA submitted four of the seven projects to the White House Closing the Circle P2 Awards Program, a national pollution prevention competition among all federal agencies.

Lab projects winning Pollution Prevention (P2) Environmental Stewardship Awards are

Reusable Containment Structures — Nuclear Materials Technology (NMT); Facilities Management (FM); Health, Safety and Radiation Protection (HSR) divisions and KSL Services

This project involved replacing custom-built wood and plastic sheet structures in the Plutonium Facility with reusable plastic tents with aluminum-pole frames. The tent structures prevent the generation of approximately 200 cubic meters of low-level waste annually, and they can be assembled and taken down in about 90 percent less time than the wood structures.

Radioactive Liquid Waste Generator Set-Aside Fund Program — Environmental Stewardship (ENV), Nuclear Waste and Infrastructure Services (NWIS) divisions and Shaw Environmental

By collecting a small tax on the quantity of liquid radioactive waste produced by generators, this program is expected to collect approximately $528,000 in funds during the first year that will be invested in upstream process improvements to reduce the amount of liquid radioactive waste that must be treated.

Los Alamos National Laboratory Integrated Work Management Process and Job Hazard Analysis Tool implementation — ENV and HSR divisions

The Lab is the first site in the weapons complex to integrate safety, security and environment at the work activity level. Tools developed to support the system will save approximately $500,000 per year in avoided subject matter expert review time. The system also ensures that environmental and pollution prevention measures are in place at the work planning stage.

Redesigning a Weapons Component to Eliminate Beryllium Use — Engineering Sciences and Applications (ESA) Division

Gas Transfers Systems (ESA-GTS) successfully redesigned a weapons component to eliminate beryllium. Estimated cost savings are $850,000 a year for a total project savings of $3.2 million through 2007.

This is the first time NNSA issued an award to a classified project where the nature of the work could not be fully described in the application but the safety, environmental benefits and cost savings could be illustrated.

Oil-Free Vacuum Pumps — Applied Theoretical and Computational Physics (X), Chemistry (C) divisions and Los Alamos Neutron Science Center (LANSCE)

The Lab has switched to oil-free vacuum pumps for many applications. Using oil-free vacuum pumps saves time because employees do not need to change the oil in the pumps, ship any waste, or complete any disposal paperwork. Each oil-free vacuum pump in use saves thousands of dollars annually on labor, sample analysis and waste disposal.

Radioactive Liquid Waste Treatment Facility Effluent Reuse/Recycle — NWIS Division

Personnel at the Radioactive Liquid Waste Treatment Facility recognized that some of the industrial water supplied by the Lab's potable water system could be replaced with recycled effluent. This project reduced industrial water use by approximately 550,000 gallons annually.

Oversized Transuranic (TRU) Waste Volume Reductions at DVRS — NWIS, HSR, ESA divisions and Shaw Environmental

The Lab reduced oversized legacy TRU waste in storage by 39 percent through sorting, segregation and volume reduction. Approximately 22 cubic meters of waste were removed from the TRU inventory, reducing the overall TRU waste management lifecycle cost by roughly $500,000.

2005 call for Pollution Prevention Awards nominations

The Pollution Prevention (P2) Office is soliciting nominations for the 2005 Pollution Prevention Awards. These cash awards will be presented to recognize the pollution prevention successes of individuals and teams that have minimized waste; conserved water, electricity or natural gas; reduced air or water pollution; procured products with recycled content; applied sustainable design elements or projects; used the Leadership Energy Environmental Design criteria to design a new facility; or helped in other ways to meet the Department of Energy pollution prevention goals for 2005.

P2 awards are open to all University of California employees and subcontractor employees who work at the Laboratory.

All P2 award winners will be notified by March 31, and the awards will be presented to the winners at the Earth Day Awards Ceremony on April 28. Nominations are due by close of business March 14.

The official nomination form for the 2005 Pollution Prevention Awards is available at *http://p2.lanl.gov/source/orgs/p/p2/P2Awards/pdf/05_p2nomform.pdf* online.

In Memoriam

Antonio "Tony" Andrade

Antonio "Tony" Andrade, acting leader of the Quality Assessment Office for the Weapons Engineering and Manufacturing directorate (ADWEM), died suddenly Feb. 10.

"Tony had a distinguished career at the Laboratory and was recognized nationally as an expert on worker safety and radiation issues," said Dave Beck, ADWEM associate director. "We will all miss his steady counsel and keen insights."

Andrade began work at the Laboratory as a graduate research assistant in 1979 and became a technical staff member in 1981 as a member of Thermonuclear Applications (X-2). He led the former Radiation Protection (ESH-12) and recently served as technical chief of staff for ADWEM.

A graduate in mechanical engineering from the University of Texas at Austin, Andrade earned a master's degree in nuclear engineering and a doctorate in plasma physics, both from the University of Michigan. Andrade also was a member of the President's Advisory Board on Radiation and Worker Health.

Andrade is survived by his wife, Rose Marie of the Nuclear Materials Technology (NMT) Division, and four sons.

Marianna Virginia Howenstine

Laboratory retiree Marianna Virginia Howenstine died on Nov. 11, 2004. She was 84.

Howenstine was born in Muskogee, Okla. She received a bachelor's degree in art from the University of Utah and a master's degree in psychology from Oklahoma State University. Howenstine served in the U.S. Navy from 1944 to 1946, where she was stationed at the Naval Hospital in San Diego.

In June 1951, Howenstine joined the Lab in the former Chemistry and Metallurgy Division (CMR). During the course of her career, she also worked in several groups in the former Personnel Division (PER-1, PER-2, PER-5). She retired from the Lab in 1978.

She is survived by a brother, Lawrence Howenstine, and his wife, Barbara; one niece and three nephews.

Jean King

Laboratory retiree Jean King died Dec. 17, 2004. She was 79.

King joined the Laboratory in April 1952 as a stenographer in the former Supply and Property Department (SP-1 and SP-DO). She also worked in the former Laser Research and Technology (L), Chemistry/Nuclear Chemistry (CNC-4), Experimental Physics (P) and the Isotope and Nuclear Chemistry (INC-4) divisions, which was formed from CNC. She retired in 1987.

King graduated from Okmulgee High School in Okmulgee, Okla., in 1943.

King is survived by sons Charles King and Michael King; daughter-in-law, Susan King; grandson, Noel King; other family and friends.

James Hague Hill

Laboratory retiree James Hague Hill died Jan. 5. He was 83.

Hill was born in Dayton, Ohio. In 1947, he received his bachelor's degree in mechanical engineering from Texas A&M University.

Hill was involved in Project Y and was hired at the Lab in 1947 to work in the former Experimental and Pit Division (M). During his career, he also worked for the former GMX, Field Testing (J), Energy (Q), Basic and Applied Geosciences (G) and Earth and Space Sciences (ESS) divisions. Hill retired from the Lab in April 1984.

He is survived by his wife, Emily; his son Jeffery Hill of Weapons Design Services (ESA-WDS); and his daughters Paloma Hill, Valerie Woodward and Amy Vierra.

Employee's photo wins second place

Captures the essence of Los Alamos

by Hildi T. Kelsey

Deer Trap Mesa

It is said that a picture is worth a thousand words. For Michelle Stump of Nuclear Materials Science (NMT-16), her picture of Deer Trap Mesa (post-fire) was worth second place in New Mexico Magazine's Fourth Annual Photo contest. The win not only yielded the honor of being recognized by a well-known, visual-based publication but also produced a correspondingly appropriate prize — a Nikon CoolPix 2200 digital camera.

According to New Mexico Magazine, photographers from all over the United States submitted 3,500 pictures of New Mexico for the contest. In each category — color and black and white — only three winners were chosen. Stump was thrilled when she learned that her picture took second place in the color photo contest.

Michelle Stump

"I am excited to win, especially with a photo of Los Alamos … because I love Los Alamos," she exclaimed with a hint of excitement and awe.

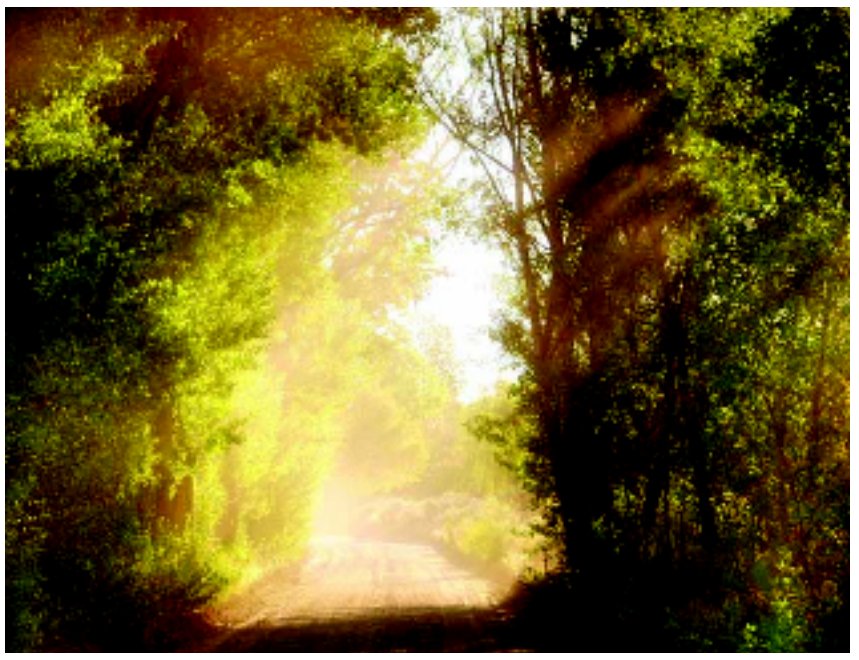
Stump's photo, along with other pictures from the contest, appeared in the January issue of New Mexico Magazine.

This is not the first "win" for Stump. In April 2004 during the Imaging Professionals of the Southwest photography competition, Stump won second place in both the landscape division and special division, as well as honorable mention in the portraiture division and two judges' choice awards. And in 2003, she took first place in the portraiture division in the same contest.

Further, her predisposition toward the arts is evidenced by her education — she has a double major in English and painting/sculpture from Queens University, Charlotte, N.C.

Additionally, Stump has created a line of greeting cards featuring her photos. Cards containing the winning picture of Deer Trap Mesa are available at Village Arts, 170 Central Park Square, Los Alamos. Her card work and prints also are showcased at Fuller Lodge Art Gallery in Los Alamos, as well as Frutchey Gallery and Schleu Gallery in Albuquerque. The Frutchey Gallery is holding a one-woman show from March 5 through April 6 featuring Stump's work; and from June 24 through 26, her work will be displayed at the 44th New Mexico Arts and Crafts Fair at the New Mexico State Fairgrounds in Albuquerque.

To visit her studio in Los Alamos, call 661-8760 for an appointment.



Sol y Sombra

Spanish Broom

Dancing Princess