Los Alamos NATIONAL LABORATORY EST.1943

NewsLetter

Week of Sept. 13, 2004 Vol. 5, No. 19

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Students from Jemez Pueblo recently participated in the Valles Caldera Education Pilot Project conducted by Los Alamos scientists in partnership with the Valles Caldera National Preserve Trust. . . . . .**Page 7**

Hollander feels the need for speed
Imagine driving at 185 mph, covering a quarter mile in 7.4 seconds, with the car moving so fast that twice the force of your weight is pushing you into your seat. This amount of speed is not only a reality for Mark Hollander of Structure/Property Relations (MST-8), but racing vintage frontal engine dragsters, or rails, is his favorite pastime. . . . . .**Page 8**

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Lab advances the art and science of aerogels

by Todd Hanson

Scientists working at the Laboratory have recently demonstrated a novel method for chemically modifying and enhancing silica-based aerogels without sacrificing the aerogels' unique properties. Aerogels are low-density, transparent materials used in a wide range of applications, including thermal insulation, porous separation media, inertial confinement fusion experiments and cometary dust capture agents.

Made of silica, one of Earth's most abundant materials, aerogels are as much as 99 percent air, giving them not only the highest thermal insulation value and highest surface area, but also the lowest acoustic conductivity and density of all known solid materials. The aerogels' extraordinary thermal insulation ability makes them capable of withstanding temperatures in excess of a thousand degrees Fahrenheit. Because they are composed mostly of air, there is little solid content available for maintaining the structural integrity of the aerogel, making them brittle.

In research reported at the 228th national meeting of the American Chemical Society, Laboratory scientist Kimberly DeFriend of Polymers and Coatings (MST-7) described a process for modifying silica aerogels with silicon and transition metal compounds using chemical vapor techniques to create a silicon multilayer or a mixed-metal oxide that enhance the current physical properties of aerogels for more demanding applications. With the addition of a silicon monolayer, an aerogel's strength can be increased four-fold.

Aerogels are synthesized at Los Alamos using sol-gel processing and super-critically dried with either carbon dioxide or a solvent. This sol-gel processing method allows the gel to be formed in the shape of its mold, making it possible to create a variety of shapes. The introduction of silicon multilayers or transition metal compounds allows the aerogels to retain their most valuable porosity and density characteristics while enhancing weaker characteristics like mechanical strength.

Los Alamos recently has begun to expand and advance its ability to synthesize and manufacture the aerogels. This improved capability will allow Laboratory scientists to not only more closely study and improve on the quality of the aerogels, but also help to better meet the Laboratory's inertial confinement fusion and high-energy-density physics aerogel target needs.

In addition to DeFriend, the Los Alamos aerogel team includes Douglas Loy, Arthur Nobile Jr., Kenneth Salazar, James Small, Jonathan Stoddard and Kennard Wilson Jr., all of MST-7.

For Your Security

Personal electronic devices

Not sure about using a Palm Pilot or government-owned cell phone in a secured area? The following are a few reminders about electronic devices — cell phones, two-way pagers and personal digital assistants, such as Palm Pilots — from the Lab's Annual Security Refresher Briefing:

- A government-owned cell phone may be brought into a secured area if the phone's battery is removed before entering the area and left out of the device while in the secured area. However, government-owned cell phones and two-way pagers are *not* to be used in security areas or within 50 feet of a security-area perimeter.
- Privately owned cell phones are never allowed in secured areas at the Lab, even with the battery removed.
- Privately owned cell phones may be used in property-protection areas and on Laboratory roads, parking lots or other land that is routinely open to public access.
- Privately owned personal digital assistants, or PDAs, are not allowed in any secured areas.
- A government-owned PDA may be taken into a secured area as long as it does not have radio frequency, cellular transmission or audio/video recording capabilities.
- Palm pilots with infrared and/or serial ports, with or without expansion capabilities, must be addressed in an approved cyber-security plan that lists applicable usage conditions and restrictions.
- Government-owned Palm pilots and other PDA's are *never* allowed for classified processing.

Still have questions? Contact the Security Help Desk in the Security and Safeguards (S) Division at 5-2002 or by e-mail at *security@lanl.gov.* The Security Help Desk will assist Laboratory employees in getting answers to any and all security-related questions.

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NewsLetter

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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

Editor's note: The following is from an Aug. 31 all-employee memo from Laboratory Director G. Peter Nanos. The data has been updated as of Sept. 7.

Resumption-of-work update

Laboratory Director G. Peter Nanos

As we resume work, it is important to remind ourselves about why we had to suspend operations at the Laboratory. I want to reiterate that we suspended operations because I had little confidence that we had sufficiently identified and addressed our risks and potential vulnerabilities. We had two significant incidents that led to the suspension of operations in July — one a security incident, the other a safety incident. It was my belief that these incidents were not merely the cause of human error; my concern was that they evidenced, in part, a significant disregard of the rules by a small group of employees. Once the investigations have been completed, we will hold briefings on both incidents so that we can make you aware of the details and root causes. I will take actions based only on the facts; there have been no pre-judged decisions made regarding any personnel.

We are continuing to resume operations in a systematic way. On Aug. 27, I approved the first organization, Earth and Environmental Sciences (EES) Division, for resumption of level 2 activities. EES Division is now fully operational … As of [Sept. 7], the Resumption Review Board has approved [37 out of 44 level-2 and -3 Startup Notification Reports]. An approved Startup Notification Report initiates the Management Self Assessment. The MSAs for most level 2 and level 3 activities are well underway. In addition, [29 out of 36] construction projects have resumed operations. The COMPASS Web site at *int.lanl.gov/restart/* includes a status of all level 2 and level 3 resumption schedules.

We have completed internal validations of CREM inventory for approximately 57 percent of Laboratory organizations. We are finalizing our plan-of-action to comply with new Department of Energy requirements to establish centralized CREM libraries. We estimate there will be approximately 26 CREM library locations throughout the Laboratory.

As part of the Laboratory's commitment to providing the best and most useful tools to ensure safety and security, we have asked a committee of scientists to provide feedback for improving our Integrated Work Management process. We are now in the process of incorporating their input and finalizing the Integrated Work Management guidance.

The resumption of operations is allowing us to determine preparedness for performing work safely and securely. We have the opportunity to identify and fix our problems, including those that involve insufficient training, lack of staffing, problems with span of control and aging infrastructure. We must assure ourselves that we will not have future incidents that result from failure to adhere to Laboratory policies and procedures. However, my assumption is that this will be a development opportunity for us as an institution, and for us as individual employees. I expect managers to approach the resumption with a positive "find and fix" attitude.

I [recently] had a very productive meeting with National Nuclear Security Administration and DOE officials in Washington, D.C. I left with the feeling that they are supportive of the

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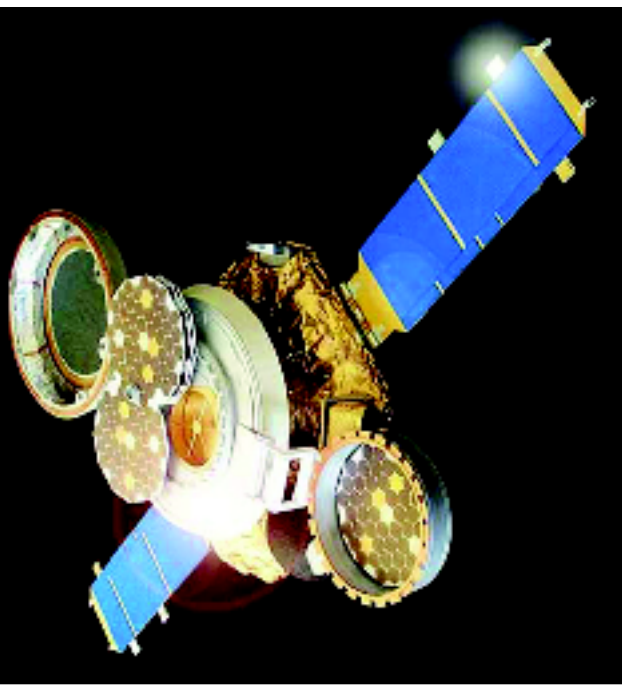
UC Project Management panel hears update on Laboratory projects

Paul Gilbert, right, chairman of the University of California Project Management Panel, talks with Mike Burns of the Director's Office earlier this month at La Fonda Hotel in Santa Fe. The panel heard numerous presentations from Laboratory staff members, as well as presentations from representatives of Lawrence Livermore and Lawrence Berkeley national labs. The panel heard reports on construction projects underway at Los Alamos, including the National Security Sciences Building at Technical Area 3. The panel also was briefed by John Bretzke, COMPASS acting project director, on the status of project management resumption activities. *Photo by LeRoy N. Sanchez, Public Affairs*

Los Alamos instruments return to Earth on Genesis spacecraft



Roger Wiens of Space and Atmospheric Sciences (ISR-1) is interviewed by the New York Times' Ken Chang while awaiting the space capsule's descent. Wiens also provided a live radio interview to the British Broadcasting Corporation's World Service, describing why he thinks there still is an important science package to be analyzed, despite the capsule's less-than-pristine condition. The Genesis spacecraft, shown above right, tumbled to Earth, crashing into the desert floor near the U.S. Army Dugway Proving Ground in Utah. *Wiens photo by Nancy Ambrosiano, Genesis photo and graphic courtesy of NASA*

by Nancy Ambrosiano

Carrying unique samples of the sun, NASA's Genesis spacecraft tumbled to Earth, crashing into the desert floor near the U.S. Army Dugway Proving Ground in Utah. The condition of the equipment inside the container was unknown immediately after landing.

When the parachutes on Genesis failed to deploy, watching closely was Roger Wiens of Space and Atmospheric Sciences (ISR-1), head of the science team from the Laboratory, members of which had created three of the craft's key science tools.

The plan had been that a helicopter would pluck the capsule from the air, preserving a precious smidgeon of solar wind particles from a bumpy landing on the sand below. Instead, half buried in the desert's dry lakebed, the capsule was being approached gingerly by Army helicopter crews, in case the mortar shell that would have deployed the parachute was still a hazard.

"I've been waiting for this day for 14 years," said Wiens, science payload project leader. "We planned for possibilities like this … but I have a pit in my stomach." Wiens remained optimistic about the possibility of retrieving science data from the damaged capsule, but noted that it would be more complex than if all had gone as planned.

For the first time since Apollo 17, nearly 32 years ago, samples from beyond Earth's atmosphere were coming home, thanks in part to collection and measurement instrumentation developed at Los Alamos.

The Los Alamos equipment aboard the craft originally included two ion monitors, GIM and GEM, whose job was to tell the satellite when to position its mobile particle collection panels. Each monitor is about the size of a toaster and weighs 5 pounds. Thanks to these monitors, Genesis is the first spacecraft to have determined these wind types and acted upon the data without any input from the ground. These monitors remained in space aboard the main body of the satellite when it jettisoned the return capsule.

"These samples should give us tremendous insight into the composition of the sun," said Wiens before the crash, "and having the context, if you will, of the type of wind we sampled is critical to understanding the results."

"Studying the compositional differences between primitive bodies is one of the few ways we have of understanding the processes that formed our solar system," Wiens said. Using solar wind, GENESIS sought to provide a database of the average composition of the solar nebula from which all solar system bodies developed.

Three types of solar wind were of interest in this mission: slow, fast and coronal mass ejection wind. With the ion and electron monitors having directed the deployment of the sampling trays, scientists would in theory examine their prizes much the same way that an archaeologist uses the site information around an ancient discovery to understand it.

A third Los Alamos instrument, the solar wind collector, used a mirror-like device to focus solar wind onto a small target. The collector and its precious cargo were among the items that returned to Earth but their condition is unknown. They were carried to a clean room near the landing site, and will be analyzed and stabilized before being sent to the Johnson Space Center in Houston. From there, samples of the target, along with the collector arrays of silicon, sapphire, gold and carbon, will eventually be distributed to teams of analysts around the country who have partnered with NASA on the project.

Measuring the isotopic composition of the less abundant elements was the goal of this mission. "Genesis was designed to tell us something about the average composition of our solar system so we can compare the solar system composition with individual planets," said Wiens, who for most of his career has been researching the isotopic composition of solar wind, which is primarily hydrogen with much smaller percentages of helium, carbon, nitrogen and oxygen.

Additional scientific data will come, acoustically, from the return of the spacecraft itself. A team from Atmospheric, Climate and Environmental Dynamics (EES-2), led by scientist Doug Revelle, made infrasound measurements of the capsule as it re-entered Earth's atmosphere over Nevada.

The Genesis spacecraft was placed into orbit in February 2001 around L1, the Lagrange 1 point between Earth and the sun where the gravity of both bodies is balanced. Once in orbit, Genesis unfurled its collector arrays and began collecting particles of the solar wind that embedded themselves in wafers of extremely pure silicon, germanium, sapphire, gold and diamond.

Capturing the wind is complicated not only by the severe conditions in space, but by the tenuous nature of the solar wind. For comparison, the solar wind is a factor of 10^{22} less dense than air. Put another way, to collect as many particles as are in a cubic centimeter of air, one would need to collect the solar wind into a cube that is 100 kilometers (more than 62 miles) on a side.

Small-scale science

by Tom Bowles, chief science officer

Tom Bowles

Providing a healthy and sustainable basis for small-scale science at Los Alamos is one of my primary priorities. This type of science provides not only an important contribution to our understanding of the world around us, but substantially benefits our efforts to recruit and retain staff and provides much of the "seed corn" on which our future efforts will be built.

Having said that, I am concerned that we have not presented the best business case to our sponsors for supporting small-scale science and we certainly have not done enough to get it on a sound and sustainable operational basis. I am working to remedy both of those problems.

I have charged the Fellows to look at the business case for small-scale science and to make recommendations on how we can improve our ability to carry out small-scale science. I also am working with the University of California, which is one of the strongest supporters we have for science, to see how they can help us strengthen our small-scale science. I also will ask for help from the Science and Engineering Advisory Committee and others in this effort.

My goal is to get the business case in hand in the by the end of the calendar year so that we can use it effectively to convince our sponsors of the merits of investing in small-scale science as part of their strategic thinking. I expect we will be able to make some limited progress in fiscal year 2005 toward resolving the problems that small-scale science faces, and I intend to extend those efforts in fiscal year 2006.

I am not alone in this effort — many people are helping. In particular, Laboratory Director G. Peter Nanos has continuously stated his strong support to make Los Alamos a user-friendly place for the "mom and pop businesses" that serve as the basis for small-scale science at the Lab. In the short term, we are working to assure our sponsors and staff that we are aware of the issues and are working them. We ask for both their and your patience while this effort gets underway.

Jones: Safety is about common sense

UK safety expert talks at Laboratory

by Brooke Kent

"Safety, at heart, is about common sense," said Malcolm Jones, a 36-year veteran physicist and safety expert for the United Kingdom's Atomic Weapons Establishment, during a mandatory all-hands meeting in the Administration Building Auditorium.

Laboratory Director G. Peter Nanos introduced Jones, praising him for providing "the best brief I've ever heard on what drives a safety culture and the whole idea of an accident cycle."

During his all-hands talk, Jones criticized those who make safety boring. On the contrary, he argued, it is management's responsibility to engage employees by helping them understand, develop and provide feedback on the safety process. When this happens, not only can safety be seen as being " as exciting as any other aspect of life," said Jones, it will be recognized that "some of the greatest safety challenges we still face are at the cutting edge of science."

Jones discussed four accident and failure theories. The first, the normal accident theory, assumes that failures are inevitable due to the complexity of systems and their interactions. By contrast, the second, the high-reliability accident theory, posits that redundancy, intelligent management and good organizational design can significantly reduce accidents, if not eliminate them completely.

Perhaps more realistic, Jones argued, are the third and fourth theories — the normal accident cycle, as well as the matrix of accident precursors, and corresponding positive corollaries.

Malcolm Jones

The normal accident cycle pinpoints seven organizational stages that transpire after a "detrimental event." First, the institution identifies the accident-triggering safety shortfalls. Then, with the external and internal spotlight fixed firmly on safety, the organization strongly supports safety and accumulates a growing history of safety success. Over time, however, a false confidence in safety emerges. As a result, the spotlight shifts elsewhere, safety loses its preeminence in organizational priorities, and the institution transitions from a culture of "prove it is safe" to "prove it is unsafe." The result? Another accident occurs.

Positive actions, according to Jones, can mitigate accident precursors and thereby short-circuit the normal accident cycle. The best defense is a proactive offense: a strong safety culture supported by the "best brains" and resources, a proactive peer-review process, an open-minded willingness to learn from internal and external mistakes and near misses and a real-time, responsive channel to access top management.

Safety is serious, Jones underscored. "This is a complex industry with high consequences … We are in the sort of business where we cannot afford to have things go wrong, especially in a bad way." The risks and costs entailed with "getting safety wrong" are incalculable; more than anything else, this should drive organizations to "get safety right."

The true safety culture, Jones said, involves wise persons making judgments combined with processes that produce rigorous risk assessments. One without the other is not enough; both are required, said Jones.

Laboratory personnel who missed the mandatory all-hands meeting can view the talk on LABNET Channel 10. Go to *http://www.hr.lanl.gov/TIO/labnet10.htm* online for rebroadcast times.

News from UC

UC finishes as seventh leading 'country' in the medals race at Athens olympics

The University of California sent 110 athletes — winning 36 medals including 13 gold — to the recently concluded 2004 Olympic Games in Athens, Greece.

Historically, participants with UC connections have performed well in international competitions and the Summer Games proved to be no exception. In fact, if UC were a country, its 2004 medal total would have been exceeded by only six other nations (United States, Russia, China, Australia, Germany and Japan).

UC students and alumni won a total of 13 gold, 10 silver and 13 bronze medals.

Among Olympic athletes winning multiple medals were swimmers and UC alums Natalie Coughlin, 22, [UC Berkeley], who led the UC participants with five medals including two gold and two silver; and Jason Lezak, 28, [UC Santa Barbara], who won two gold medals and a bronze.

Five members of the gold-medal U.S. softball team honed their athletic prowess at UC Los Angeles. Lisa Fernandez, 33, described by Sports Illustrated as the country's best softball player, who won her third consecutive Olympic gold medal; Tairia Flowers, 23; Amanda Freed, 24; Stacey Nuveman, 26; and Natasha Watley, 22, also won a gold medal.

Joy Fawcett, 36, [UC Berkeley/UCLA] who has been a mainstay of the U.S. women's soccer team for years, helped the squad win the gold medal in Athens.

The U.S. duo of Holly McPeak, 35, [UC Berkeley/UCLA] and Elaine Youngs, 34, [UCLA] brought home the bronze in beach volleyball.

Other gold medal winners with UC connections included Pete Cipollone, 33, [UC Berkeley] in men's eight rowing; Joanna Hayes, 27, [UCLA] in the 100-meter hurdles; and Monique Henderson, 21, [UCLA] in the women's 1,600-meter relay.

This success in Athens topped by two the number of UC medals (34) from the 2000 Summer Olympics in Sydney. UC also would have finished seventh among the world's nations at the Sydney games (beaten out by the United States, Russia, China, Australia, Germany and France).

More background on UC's 2004 Olympians can be found at *www.universityofcalifornia.edu/news/summerolympics2004.html* online.

A list of UC medal winners in Athens can be found at *www.universityofcalifornia.edu/news/2004olympicsmedalists.html* online.

Oppenheimer photo exhibition opens in Santa Fe

by Steve Sandoval

In commemoration of the centennial year of the birth of Los Alamos' first director, J. Robert Oppenheimer, an exhibit of photographs of Oppenheimer titled "J. Robert Oppenheimer, 1904-1967: Photographs From His Life" opened earlier this month in Santa Fe.

The J. Robert Oppenheimer Memorial Committee sponsors the traveling photographic exhibit. It has previously been on display in the Laboratory's Bradbury Science Museum, the Mesa Public Library in Los Alamos and the Oñate Center in Española. The display at Santa Fe Community College runs through Oct. 14.

As part of the exhibit, the college is hosting a reception and talk beginning at 5 p.m., Sept. 23. Authors Kai Bird and Gregg Herken will talk about Oppenheimer's life, including his post-Manhattan efforts to control the use of the atomic bomb. The talk follows the reception at 7 p.m., in the Jemez Rooms at the college. The talk is free and moderated by Ellen Bradbury of Recursos de Santa Fe.

Curated by members of the Oppenheimer Committee, the display includes more than 50 photos gathered from the collections of the Robert and Frank Oppenheimer families, the archives of the University of California Berkeley's Bancroft library, Harvard University, Princeton University, the Institute for Advanced Study and the Laboratory.

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

Oriented conductive oxide electrodes on SiO2/Si and glass
Patent No. 6,743,292, issued June 1
Quanxi Jia of the Superconductivity Technology Center (MST-STC)

Method for the detection of specific nucleic acid sequences by polymerase nucleotide incorporation
Patent No. 6,743,578, issued June 1
Alonso Castro of Biological and Quantum Physics (P-21)

Method and apparatus for free-space quantum key distribution in daylight
Patent No. 6,748,083, issued June 8
Richard Hughes, **Jane Nordholt** and **Charles Peterson** of P-21; and **William Buttler**, **Paul Kwiat**, **Steve Lamoreaux** and **George Morgan** of Neutron Science and Technology (P-23)

Transmission of digital images within the NTSC analog format
Patent No. 6,751,256, issued June 15
George Nickel of Hydrodynamic and X-ray Physics (P-22)

Synthesis of labeled oxalic acid derivatives
Patent No. 6,753,446, issued June 22
Rodolfo Martinez, **Clifford Unkefer** and **Marc Alvarez** of Biotechnology, Spectroscopy and Isotope Chemistry (B-3)

Dynamic time expansion and compression using nonlinear waveguides
Patent No. 6,753,741, issued June 22
Alp Findikoglu and **Quanxi Jia** of MST-STC and **Sangkoo Hahn** of Space Instrumentation and System Engineering (ISR-4)

Pulse width modulated push-pull driven parallel resonant converter with active free wheel
Patent No. 6,754,091, issued June 22
William Reass of RF Accelerator Technology (LANSCE-5) and **Louis Schrank** of Plasma Physics (P-24)

Method for producing metallic particles
Patent No. 6,755,886, issued June 29
Jonathan Phillips of Material Explosives and Engineering (ESA-MEE), **William Perry** of Materials Dynamics (DX-2) and **William Kroenke** of the University of New Mexico

Buffer layers on metal alloy substrates for superconducting tapes
Patent No. 6,756,139, issued June 29
Quanxi Jia, **Stephen Foltyn**, **Paul Arendt** and **James Groves** of MST-STC

Bulk superhard B-C-N nano-composite compact and method for preparing thereof
Patent No. 6,759,128, issued July 6
Yusheng Zhao and **Duanwei He** of the Lujan Neutron Scattering Center (LANSCE-12)

Lab continues legacy clean-up near Knights of Columbus hall

by Ed Kellum

Beginning in November of 2002, Remediation Services (RRES-RS) began reconditioning the soil underneath the Knights of Columbus parking lot located near DP Road and the intersection with Trinity Drive. The clean-up effort was required because of a legacy fuel spill. Through a process known as soil vapor extraction, which removes contaminates from the existing soil, the group has removed more than 17,000 pounds of organic material known as Benzene, Toluene, Ethylbenzene and Xylene, or BTEX. According to Terry Rust of Environmental Characterization and Remediation (RRES-ECR), "BTEX makes up the primary constituents for gasoline and other fuels lighter than diesel fuel. This particular site, during the Manhattan Project, was used as a fuel-tank farm and drum-storage yard where a combination of fuel and oil was spilled."

Drilling several wells around the site, soil vapor extraction creates a ventilation effect that draws the toxic fumes out. "We pull uncontaminated air through the contaminated area drawing the fumes into the wells and into a vacuum. They are then sent through an activated charcoal that scrubs out the BTEX," Rust said.

"The benefit of the soil vapor extraction process is the relative low cost to operate and the diminutive intrusive effect on the surrounding public," he continued.

Finishing the cleanup several months from now, largely dependent on the amount of material remaining, the group has found contaminates 43 feet deep. "The important point to remember is that there is no danger to the public because there is no viable pathway for the material to come to the surface," emphasized Rust. "We decided to remediate the area to reduce the potential of risk during future site development and to reduce the possibility of contaminant migration," Rust said, adding that RRES-RS has done numerous site clean-ups as well as investigations of possible contaminated sites to ensure public and workplace safety.

The Laboratory is reconditioning the soil underneath the Knights of Columbus parking lot using a process known as soil vapor extraction, which removes contaminates from the existing soil. In the photo, Joe Sena of Los Alamos Technical Associates, a remediation subcontractor, directs the bedding and back-filling of a soil vapor extraction well piping trench. During the Manhattan Project, the site was used as a fuel tank farm and drum storage yard where a combination of fuel and oil was spilled.
Photo by Randy Wilson, Phillip Services

Resumption …

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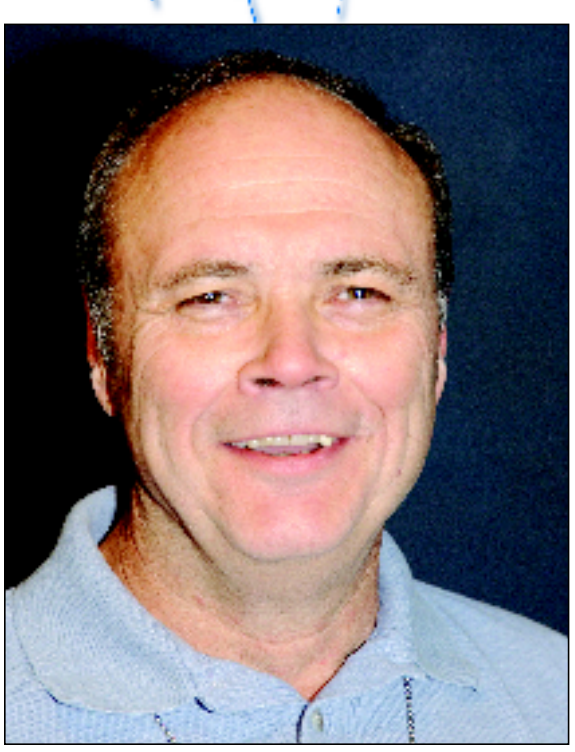
Laboratory and committed to supporting our science. I also believe they are well aware of the importance of our work in fundamental science to the national security mission of the Laboratory.

Finally, as we resume operations, we need to focus on what must be accomplished in this next year. In preparation for providing goals to managers and employees for the next fiscal year, the Senior Executive Team will meet [Sept. 30] to establish our priorities for the year. These one-year goals will be used as organizational goals for the performance management process and will be the basis for the development of individual performance objectives.

I will continue to keep you up-to-date as we continue our resumption efforts. Again, I appreciate your hard work and dedication throughout this process.



Karl Pommer

Pommer receives NNSA recognition

Karl Pommer of Telecommunications (CCN-4) received a 2003 NNSA Defense Programs Award of Excellence for his work in helping to deploy a secure video conferencing capability for the weapons complex.

Working with a team from Sandia National Laboratories, Pommer collaborated with experts from Sandia, Lawrence Livermore National Laboratory, Pantex, Y-12, Savannah River and the Kansas City Plant to develop a single security plan that could be adopted by all the NNSA sites, as well as a single communication and connectivity infrastructure definition.

The secure video conferencing infrastructure is used routinely, with as many as 24 different locations connected at the same time, and is capable of full digital collaboration, including data sharing, visualization and model manipulation.

The assistance of fellow Los Alamos team members was key to the project's success. Participants included Carlos Cabildo and Sam Garcia both of (CCN-4) and Garry Webb of Information Security (S-11). Lab retiree Daris Milligan provided practical advice to improve operational efficiency. Pommer, Cabildo and Webb were instrumental in developing a classified, production video-conference bridging capability for Los Alamos.

Keller-McNulty elected president of the American Statistical Association

Sallie Keller-McNulty of Statistical Sciences (D-1) has been elected president of the American Statistical Association.

Keller-McNulty will serve a three-year term, including president-elect in 2005, president in 2006 and past president in 2007. Keller-McNulty noted that "This is an exciting and challenging time to be a statistician."

"Statistics is the quintessential interdisciplinary science that lives at the heart of many integrative scientific efforts, and the ASA lives at the heart of statistics," said Keller-McNulty.

One of Keller-McNulty's main efforts as president will be to foster an infrastructure within the ASA that strongly links the statistical sciences' industrial and research laboratory communities with the academic sector and the national institutes.

Sallie Keller-McNulty

Keller-McNulty is the group leader for D-1. Before joining the Laboratory in 1998, Keller-McNulty was a professor and director of graduate studies in the department of statistics at Kansas State University, where she had been on the faculty since 1985.

Her ongoing areas of research focus on computational and graphical statistics applied to statistical databases, including

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In Memoriam

Patricia Sander Barylski

Laboratory retiree Patricia Sander Barylski died on May 21. She was 85.

Barylski moved to Los Alamos to be part of the Manhattan Project in 1944. She began her career at the Lab in the former Accounting Office (AO-5) Division in 1952, working until her retirement in 1972.

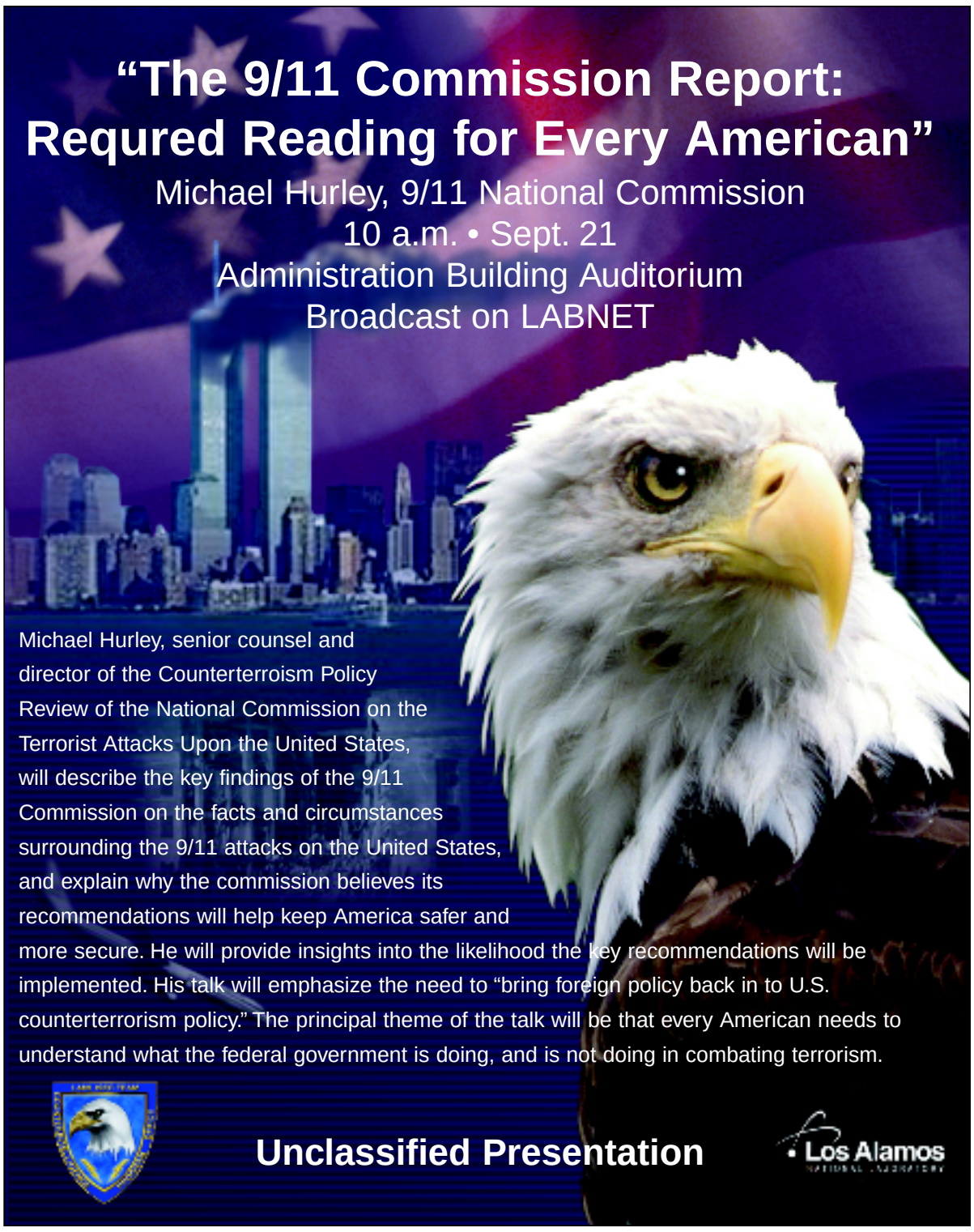
Barylski is preceded in death by her husband, Frank Barylski. She is survived by her daughter DiAnn Boice.

Margo Ledrowski Lang

Laboratory retiree, Margo Ledrowski Lang died on July 1. She was 86.

Lang attended Texas Christian University majoring in chemistry. Lang's career at Los Alamos began in 1951 in the former Personnel Department (PER-2) where she worked as a stenographer. She later worked in the former GMX Division as a group secretary and data analyst and in the Theoretical (T) Division as a senior secretary before her retirement in l977.

Lang is survived by her husband, Harold Joseph "Bud" Lang.



Students participate in Valles Caldera Education Pilot Project

Students from Jemez Pueblo recently participated in the Valles Caldera Education Pilot Project conducted by Los Alamos geologist Juliann Fessenden of Hydrology, Geochemistry and Geology (EES-6) and several other Laboratory scientists in partnership with the Valles Caldera National Preserve Trust. In the photo from left to right, Danielle Sando and Sherwin Sando, Jemez Pueblo Education Department interns; and Byron Yepa, an intern in the Government Relations Office (GRO), look on while Fessenden, right, explains the different layers in a soil sample that was extracted during a hands-on exercise in the Vallas Caldera National Preserve.

Inset photo: Vincent Toya, a Jemez Pueblo resident and Santa Fe Indian School ninth grader, uses equipment to extract a soil sample. *Photos by Mike Kolb, Community Relations Office (CRO)*

September employee service anniversaries

35 years
Lois Dauelsberg, ESA-TSE
C. Michael Montoya, DX-4
Joseph Tafoya, MSM-6

30 years
Dolores Archuleta, ISR-4
Steven Archuletta, LANSCE-5
Judith Binstock, DX-3
Robert Day, MST-7
Edward Fenimore, ISR-1
Margaret Gautier, C-AAC
Jose Gutierrez, HSR-12
Jerry Halladay, IM-9
Philip Hay, T-12
John Haynie, S-10
Emil Homuth, EES-7
John Immele, DIR
Charles Johnson, ESA-WOI
Stephen Kemic, X-2
Jerry Longmire, ISR-4
Barbara Lopez, SUP-1
Horacio Martinez, ESA-AET
Joyce Martinez, IM-1
Edward Perez, LANSCE-2
Jesse Salazar, HSR-1
David Smith, N-3
Janice Taylor, S-2
Eppie Trujillo, SUP-1
Jan Wouters, IM-8

25 years
James Arellano, ISR-5
Mark Byers, DX-2
Stephen Hidalgo, MSM-2
Robert Hixson, DX-2
Lorraine Medina, N-4
Mark Montoya, DX-5
George Papcun, CCS-3
Lawrence Quintana, LANSCE-7
David Vaniman, EES-6

20 years
Richard Anderson, HSR-6
Emma Barefield, CCN-2
Miles Brittelle Jr., PM-DS
Eugene Christensen, DX-DO
Virginia Duran, CFO-SYSTEM
Cynthia Eaton, CCN-5
John Fellers, HSR-5
Jerrell Fleming, CCN-4
Virginia Grant, LANSCE-DO
Thomas Gravlin, DX-5
Gloria Johnson, C-ADI
Debora Kerstiens, LANSCE-8
Tino Lopez, CCS-5
Brady Means, FWO-SWO
David Morris, C-SIC
William Murray, N-2
Bobby Quintana, LANSCE-8
Melva Quintana, SUP-1
Yolanda Sanchez, HR-S
Gerald Sondreal, IM-8
Lisa Woodrow, DX-DO

15 years
Thomas Archuleta, P-24
Jon Bridgewater, NMT-16
L. Jonathan Dowell, N-3
Robert Dye, DX-2
Kenneth Espinosa, FWO-CMR
Marcia Fraser, NMT-3
David Goggin, CFO-SYSTEM
Timothy Hammock, CCN-4
Marvin Hasenack, N-3
George Heindel, PS-4
Donald Hickmott, EES-6
Margaret Hubbard, X-3
Gene Jacquez, NMT-10
Janet Langone, ADA
Bruce Letellier, D-5
Kimberly Martin, MSM-4
Ernest Martinez, NMT-5
Charles Peterson, P-21
Wayne Smyth, NMT-2
Mary Stevens, OMBUDS
Angelina Trujillo, NMT-5

10 years
Rachel Arguello, HSR-5
Rae Bennett, STB-RL
Tara Chavez, CFO-1
Yixiang Duan, C-ACS
John Erickson, ESA-ESA
Jeanette Gray, P-21
John Hogden, CCS-3
Daniel James, T-4
Max Light, ISR-6
Annalisa Maestas, MSM-1
Madhav Marathe, CCS-5
Patrick McClure, D-5
Ellen McGehee, RRES-ECO
Judson Morhart, PS-DO
Linda Nelson, RRES-MAQ
Margaret Powers, RRES-ECO
Ira Pray, STB-RL
Jay Schecker, C-INC
Billy Vigil, P-22

5 years
Debra Gallegos, LC
Loretta Garcia, N-3
Sandra Gogol, ADTR-TRO
Carol Gomez, CCN-2
Celestino Gonzales, ISR-4
Blaine Hadden, D-2
Gary Hagermann, FWO-WFM
Wendy Hahn, NMT-15
Sandra Haire, HR-DO
Patricia Hansen, LANSCE-8
Michael Harris, FWO-DO
Kyo Kim, D-5
Nicholas Lanier, P-24
Deborah Lucero, ADWEM
Anthony Lupinetti, NMT-2
Susan Maestas, FWO-LANSCE
Adam Montoya, NMT-11
James Nuttall, FWO-DX-ESA
Kristin Omberg, D-3
Danielle Pacheco, P-24
Paula Padilla, SUP-2
Stephen Paglieri, ESA-TSE
Anita Quintana, IM-3
Christopher Reese, D-1
Ted Rockenhaus, MSM-2
Terry Roth, ISEC
John Sisneros, FWO-MSE
Nina Thayer, B-5
Stewart Voit, NMT-11
Curtis Weyerman, EES-12
Lin Yin, X-1

Keller-McNulty ...

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complex data/model integration, and related software and modeling techniques. Keller-McNulty has served on numerous National Academy of Science committees and panels. She is currently chair of the National Academy of Sciences panel, Modeling and Simulation for Defense Transformation. She also serves on the Computer Science and Technology Board Committee studying Information Technology and Federal Services, and the Committee on National Statistics panel for Research on Future Census Methods (for Census 2010). She also chairs the National Academy of Sciences' Committee on Applied and Theoretical Statistics.

Keller-McNulty received her doctoral degree in statistics from Iowa State University. She became an ASA Fellow in 1997 and has held several positions within the association, including winning the Founders Award in 2002. She is an associate editor of Statistical Science and has served as associate editor of the Journal of Computational and Graphical Statistics and the Journal of the American Statistical Association. She serves on the executive committee of the National Institute of Statistical Sciences, on the executive committee of AAAS Statistical Section, and chairs the Committee of Presidents of Statistical Societies.

With more than 17,000 members, ASA is the largest professional statistical association in the world.

Hollander feels the need for speed

by Ed Kellum

Imagine driving at 185 mph, covering a quarter mile in 7.4 seconds, with the car moving so fast that twice the force of your weight is pushing you into your seat. This amount of speed is not only a reality for Mark Hollander of Structure/Property Relations (MST-8), racing vintage frontal engine dragsters or rails, is his favorite pastime.

Hollander and sons Brian of Hydrodynamic and X-ray Physics (P-22) and Sean, and wife, Missy, race across the country in a Nostalgia Racing league that is a part of the National Hot Rod Association. Their current car, The Old Trail Garage Special, DeJaVu II, is sponsored by Mike Civelli of Santa Fe.

Working together as a team to build the car, many people contributed to its design, including James Archer of Space Instrumentation and System Engineering (ISR-4), who worked on the fuel calibration.

"I like the technology aspect of racing. We build our own engines, chassis and bodies using space-age materials. The dynamics of these materials and the stresses they undergo, the fuel flow dynamics, and how all this affects the performance characteristics, it is just great," said Hollander.

Noting the intense speed and gravitational forces involved during each run, Hollander said, "It's a ride. We have been very fortunate and have never had any accidents. There are not many accidents these days because of the strong safety standards that regulate each race."

Hollander wears a carbon fiber, flame-retardant suit that is five layers thick, giving him 35 seconds to escape from a wreck and extinguish a fire. "That is pretty good considering each run only lasts about 7 seconds," he said.

In Tulsa, Okla., last fall Hollander and his pit crew won the Top Fuel race against cars with twice the horsepower. Recently, they raced to the semifinals at the Second Holley NHRA National Hot Rod Reunion in Bowling Green, Ky. "It takes a lot of communication to be successful. We have been working together for such a long time, we have a regimented routine. The boys have grown up with it," said Hollander.

Mark Hollander

"It is important to have a great crew. We have a regimen and a sequence for what we do. We work as a team to get the job done."

Competing on the race circuit also means Hollander and his sons get to meet many new people. "There is a friendly racing community that shares a real camaraderie with one another. We are looking forward to racing again."

Hollander and his crew are scheduled to compete in Great Bend, Kan., this month (September) and at the California Hotrod Reunion in Bakersfield, Calif., in October.