

NewsLetter

Week of May 21, 2007

Vol. 8, No. 11

A mighty microbe takes center stage

by Todd Hanson

This month, a tiny, somewhat nondescript, microbe has been the center of attention in the Bioscience (B) Division. The reason? Bioscience scientists and technicians on the Sequencing Technology Team working as part of the Department of Energy's Joint Genome Institute recently finished the genetic code of *Shewanella baltica* OS185 as its 100th genomic sequence. Finishing a genome is the process of finding and eliminating any gaps in sections of genetic code that were not initially sequenced correctly by automated sequencing methods.

"We are celebrating the finishing of *S. baltica* as a milestone for a couple reasons," said Chris Detter, leader of the JGI Sequencing Technology Team. "Not only is it our 100th completed genomic sequence, but it's also an appropriate genome to have because of the potential it shows for use in confining and cleaning up uranium-contaminated areas, such as at the Laboratory's legacy waste sites. *Shewanella* might someday be put to work right here at Los Alamos for the bioremediation of uranium contamination at nuclear waste sites because of its unique abilities."

Shewanella baltica OS185 is a tiny, ocean-dwelling microbe that can replicate and grow almost anywhere. Taken from the depths of the Baltic Sea, the *S. baltica* microbe has a unique ability, among other things, to convert uranium dissolved in groundwater into an insoluble form called uranium dioxide, or uraninite, which prevents the uranium from mixing with water and from migrating into and with groundwater flows. Under anaerobic conditions it has the ability to "digest" certain kinds of radioactive materials. While solid in most forms, uranium can break down over time in the natural environment leading to the possible contamination of groundwater.

"I could not be more proud of the outstanding work that the finishing team has done over the years," said Gary Resnick, B Division leader. "They have worked tirelessly in supporting the Department of Energy JGI mission and brought a

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Americium-241 sources in a "bird feeder" style container that holds the sources.

NNSA/Lab team recovers 15,000th radioactive source

by Nancy Ambrosiano

With the arrival of a shipment to Los Alamos, a landmark 15,000th radioactive item was recovered from an urban area, logged in, and secured safely away from potential misuse. The source was recovered by a Laboratory Off-site Source Recovery Project team representing the National Nuclear Security Administration. For eight years, OSRP staff have traveled the country, collecting thousands of radioactive sources from warehouses, tool sheds, schools, and offices where they are no longer needed for industry or research.

OSRP was initiated by the Department of Energy in 1999 as an environmental management project to recover and dispose of excess and unwanted sealed radioactive sources. The project was transferred in 2003 to the Office of Global Threat Reduction (known as NA-21) of DOE's National Nuclear Security Administration.

The 15,000th source came from an industrial-gauge manufacturer near Los Angeles that had used the measurement device to measure plastic and paper thickness during production, one of 306 unwanted sealed sources containing Americium at this one location. The sources, small tungsten-shielded, teardrop-shaped items, each contain about 150 millicuries of Americium-241. The OSRP team verified and packaged the sources, then loaded them into a special drum for shipment to Los Alamos, where they are stored prior to approval of the drum for disposition at DOE's Waste Isolation Pilot Plant southeast of Carlsbad, New Mexico.

Radioactive sealed sources packaged by NNSA's OSRP include more than 15,000 curies of Americium-241, 10,000 curies of Plutonium-238, and 10,000 grams of Plutonium-239, collected from more than 600 sites. The sealed sources were once used in applications ranging from nuclear-powered cardiac pacemakers to gauges used in the manufacture of paper.

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Critters on Lab lands call for caution

With the onset of spring and warmer weather, the propensity to take part in outdoor activities such as hiking, walking, and jogging increases. The likelihood of encounters with potentially dangerous animals also increases.

The area in and around the Laboratory always has been home to mountain lions and a host of other large wildlife species, such as bears. Because animals and humans cross paths, people are urged to be cautious—for their own safety and for the safety of the animals.

Ecology and Air Quality (ENV-EAQ) has a number of tips for an encounter with a bear or mountain lion. They are on the ENV-EAQ Web site at int.lanl.gov/environment/eco/lanl_only/wildlife_encounters.shtml online.

Generally, if Lab workers encounter mountain lions or black bears they shouldn't run or turn their backs on the animal. They should back away slowly and remain calm, returning to a safe place, such as a vehicle or building.

Lab workers should call 911 if attacked and in need of medical attention.

All encounters with black bears and mountain lions should be reported to Emergency Management and Response (EM&R) at 7-6211. For information about a situation that is not immediately threatening, contact Leslie Hansen of ENV-EAQ at 5-9873.

The White Rock Training Center also offers a wildlife safety class, "Wildlife Awareness: How to Avoid Problems with Large Animals." The safety and awareness class is free and open to all Laboratory workers and subcontract personnel.

Register online through the Virtual Training Center at int.lanl.gov/training/training.shtml or call 7-0059 between 8 a.m. and noon.



Illustration by Hector Hinojosa

Lawrence Livermore National Security, LLC, gets Livermore contract

A team made up of the University of California, Bechtel National Inc., and other partners is the new management and operations contractor for Lawrence Livermore National Laboratory in California.

Lawrence Livermore National Security, LLC, also includes BWX Technologies Inc., Texas A&M University, Washington Group International, Battelle Memorial Institute, and four small business subcontractors. The new contract is effective October 1.

"Livermore National Laboratory is a critical part of our nuclear weapons complex and has been for the last 55 years," Department of Energy Secretary Samuel Bodman said. "For the first time since the beginning of the laboratory, a new contractor is coming to Livermore. We look forward to working with LLNS as Livermore continues its vital national security work."

At a news conference in Washington, D.C., where DOE announced the contract award, Tyler Przybylek, the National Nuclear Security Administration source selection official said the winning bidder had a "superior technical and management proposal at a slightly lower cost than the competing proposals."

"We have a very good proposal ...," Przybylek said.

Lawrence Livermore National Security, LLC, will receive a \$45.5 million annual fee to operate Livermore. The total fee for seven years, the contract term, is \$297.6 million, and the contractor can earn an additional 13 years through successful performance under an award term provision, Przybylek added.

George Miller, currently the acting director at Lawrence Livermore, will continue as Livermore director, Przybylek said.

Regarding the Livermore contract announcement and Miller, Laboratory Director Michael Anastasio said, "I want to congratulate George Miller and his team on their success. I look forward to building on our many successful collaborations with Livermore as well as creating new ones in support of U.S. national security."

Other bidders for the Livermore operating contract were Advanced Science and Engineering Technologies; its lead partner was Northrup Grumman Technical Services and three other partners; and Livermore Lab Green composed of Tri-Valley Cares, Nuclear Watch New Mexico and two other partners. Its response to the request for proposals was deemed to be not responsive or inadequate, Walter Lips, chairman of the Source Evaluation Board said at the news conference.

To read a DOE news release, go to <http://www.energy.gov/news/5039.htm> online.

A mighty microbe ...

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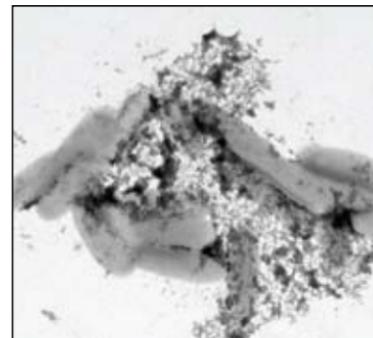
level of scientific expertise to the process that could probably not be duplicated anywhere else in the world."

S. baltica OS185 is one of many *Shewanella* strains that the Laboratory has sequenced for the Shewanella Federation, a multi-investigator and cross-institutional consortium funded by the DOE Office of Biological and Environmental Research and formed to characterize and model the biology of the metabolically versatile bacterium *Shewanella oneidensis* MR-1.

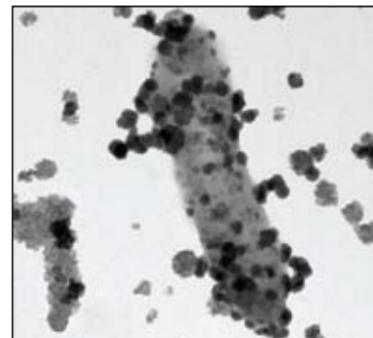
Although initial sequencing data received from the JGI in Walnut Creek contains most of the genomic information, the finishing process conducted at Los Alamos employs computational strategies and chemical reactions to work through areas of the genome that were not sequenced initially or may have been sequenced incorrectly. Los Alamos specializes in developing these techniques to take raw sequence data from the high-throughput JGI facility in Walnut Creek, California, and transform it into the finished genomes. The Laboratory began finishing sequences for JGI in 2003. Because of advancements in genome technology and chemistry over the years, more components of the process have become automated, speeding up finishing rates as a result.

In addition to Detter, other leaders in the JGI-LANL include David Bruce, Tom Brettin, and Cliff Han, and a cast of 35 scientists, technicians, and support staff.

The DOE Joint Genome Institute, supported by the DOE Office of Science, Office of Biological and Environmental Research, unites the expertise of five national laboratories, Los Alamos, Lawrence Berkeley, Lawrence Livermore, Oak Ridge, and Pacific Northwest, along with the Stanford Human Genome Center.



Shewanella oneidensis MR-1 with uranium



Shewanella oneidensis MR-1 with iron

Los Alamos National Laboratory NewsLetter

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

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



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Laboratory installing 'sentinel well' for groundwater protection

By James E. Rickman

The Laboratory has taken the next step toward protecting Los Alamos drinking water from byproducts of a chromium-based corrosion inhibitor that was discharged into the environment more than three decades ago as part of power-plant operations.

Personnel in the Lab's Water Stewardship Project recently began construction of monitoring well R-35 in lower Sandia Canyon. This regional-aquifer-monitoring well is being constructed upgradient and near Los Alamos County drinking-water-supply well PM-3. The R-35 well will act as a "sentinel" that can determine whether a plume of hexavalent chromium—a component of a corrosion inhibitor used from the 1950s to the 1970s—is approaching the county's PM-3 well.

Los Alamos County drinking water currently meets all federal and state safe drinking water standards, and no water-supply wells show levels of chromium above natural background concentrations.

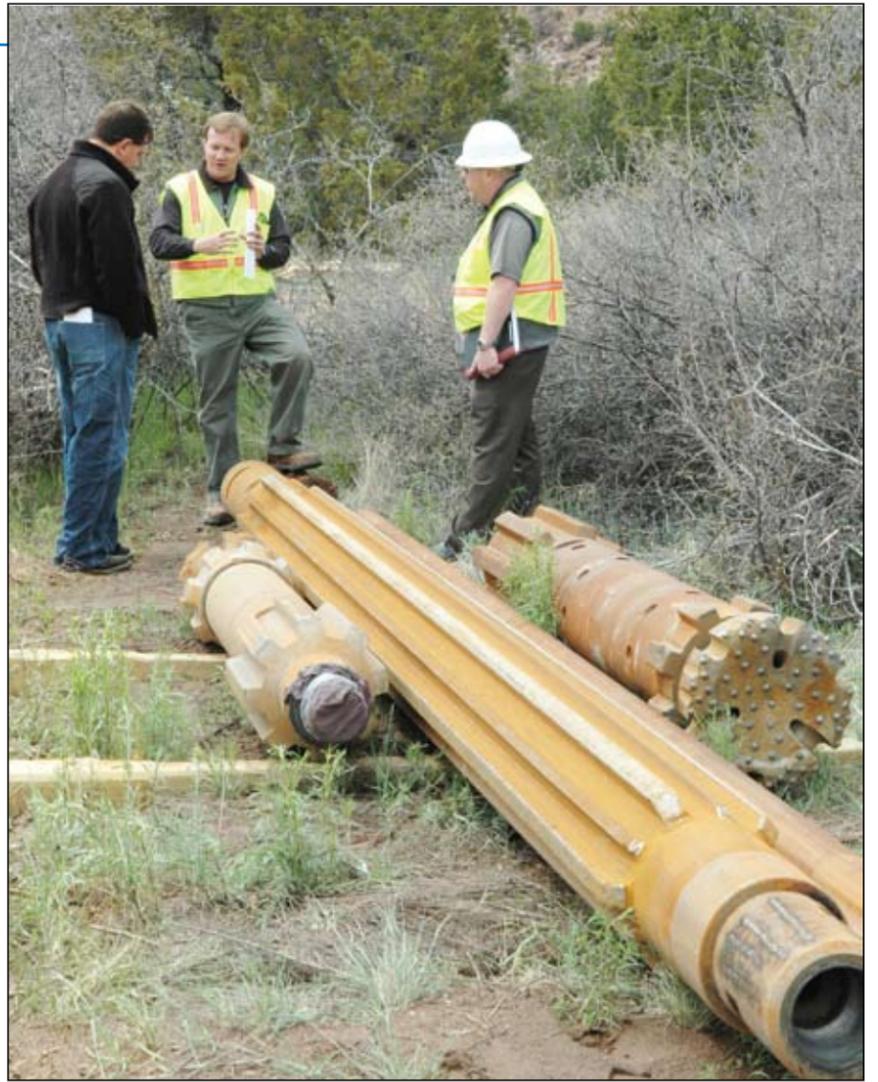
The Laboratory decided to install the R-35 sentinel well after discovering high levels of chromium in the regional aquifer in a recently installed monitoring well known as R-28, which is located about three-quarters of a mile west (upgradient) of R-35 and the county's drinking-water well PM-3.

"Protecting precious resources for future generations is a core value of the Laboratory," said Susan Stiger, associate director for Environmental Programs (ADEP). "R-35 is an important step in understanding the extent of the chromium contamination and how it is moving. This understanding will help us protect drinking water supplies now and in the future."

Work on the R-35 sentinel well has been approved by the New Mexico Environment Department and falls under requirements of the Consent Order between the Laboratory and NMED, which guides the Laboratory in cleaning up contaminated sites. The sentinel well will help assess the Laboratory's hypothesis for how chromium is moving in groundwater.

In response to suggestions from the NMED, the Laboratory is attempting to construct R-35 within the regional aquifer without the use of drilling additives other than potable water. The drilling technique is expected to optimize the well's ability to gather representative data for groundwater quality. International drilling company Boart-Longyear is constructing R-35 for to the Laboratory. The Utah-based company has extensive experience drilling without additives in similar geological formations in Oregon, said Danny Katzman of the LANL Water Stewardship Project.

If chromium were to unacceptably impact a drinking-water-supply well, a variety of treatment options are readily available. Proven technologies for chromium removal exist and can be added to existing drinking water wells.



Andy Lenderman, left, of the Santa Fe New Mexican listens to Mark Everett of Remedy Solutions, center, describe some of the drill sections at the R-35 well during a recent briefing. At right is Matt Riggs of the LANL Water Stewardship Project.



Area news reporters listen to a briefing near the R-35 sentinel well from Danny Katzman, far right, of the LANL Water Stewardship Project. Left to right are John Arnold of the Albuquerque Journal North, Roger Snodgrass of the Los Alamos Monitor, and Mark Everett and Matt Riggs of the Water Stewardship Project. Photos by James E. Rickman

Laboratory does some "spring cleaning"

by Krista D. Wilde

In an effort to reduce non-accountable classified documents and classified removable electronic media (CREM), the Laboratory is doing some spring cleaning through May 31.

Removal of unneeded classified matter will reduce the risk of future security incidents, said Michael Wismer of Security Assessments (SEC-SA5).

Each associate directorate has a point of contact for this project. The point of contact will

- provide an estimate of non-accountable documents and CREM to be destroyed
- collect data regarding the volume of

classified documents and files destroyed by workers within their associate directorate

- provide information to employees in their associate directorate
- assist with scheduling the pick up of documents and CREM for destruction.

During this spring cleaning, employees should destroy multiple copies of documents or non-accountable CREM, obsolete matter, and classified waste. However, classified matter that is covered by a current moratorium or court order should not be destroyed.

Copies of documents or CREM that were created for record-keeping purposes should be destroyed in accordance with

established Laboratory records retention requirements and procedures, including the completion of Form 1704, Wismer added.

Lab employees who have fewer than ten boxes of classified matter should destroy their own classified matter with an approved classified shredder. On May 30 and 31, KSL Services destruction crews will pick up classified burn boxes from locations that have ten or more boxes for destruction at the Central Destruction Facility.

For more information, go to <http://int.lanl.gov/security/protectinfo/cmpec/cleanup.shtml> online, or contact Melissa Metcalf of Security Assessments at 7-7851.

Wanted: Lab talent, expertise

Program offers chance for technical collaboration with small businesses

by Hildi T. Kelsey

Are you a problem-solver in need of a challenge? Have you ever wanted to expand your portfolio of projects or broaden the scope of your work, but lacked the funding? If the answer is yes to any of these questions, the New Mexico Small Business Assistance Program could be the answer.

Thanks to recently signed legislation that builds upon the Small Business Tax Credit Act of 2000, under which the NMSBA program was first established, the Laboratory can receive a gross receipts tax credit of up to \$2.4 million this year for providing technical assistance to small businesses throughout the state.

This credit gives Laboratory employees and graduate students the opportunity—and financial resources—to use their field expertise and scientific knowledge in developing solutions to technical problems faced by businesses across New Mexico.

“The NMSBA program is a tremendous opportunity to share our technical wealth with the state’s small-business community. The Laboratory’s participation will help improve the capabilities and expand the capacities of small businesses and contribute to the state’s economy,” said Carlos Chacon, NMSBA program manager in the Community Programs Office (CPO). “I think the Laboratory’s technical staff and students will find that their participation will be extremely rewarding.”

Los Alamos and Sandia national labs are partnering to manage the NMSBA program as an economic development tool designed to retain and expand current business and technology ventures within New Mexico. As such, the program will utilize the expertise and resources of both laboratories and provide up to \$4.8 million of combined technical assistance from the labs at no cost to the businesses.

The NMSBA program is a joint effort of the Community Programs Office and the Technology Transfer Division. A successful program depends upon the participation of and contribution by principal investigators from throughout the Laboratory. Employees interested in utilizing their technical and scientific talent to help a small business solve a technical challenge can call Carlos Chacon, NMSBA program manager, at 5-4284 or cchacon@lanl.gov by e-mail, or go to int.lanl.gov/nmsba online.



Richard “Vann” Bynum, seated left, acting principal associate director for operations, and John Stitchman, deputy director for Sandia National Laboratories, sign a memorandum of understanding in the Rotunda of the State Capitol in Santa Fe last fall. The MOU formalizes and strengthens a collaborative effort to bring the two national laboratories’ technology and expertise to small businesses across the state. The partnership increases the level of expertise and resources both labs can devote to communities and small businesses facing technical challenges and other obstacles to economic growth. Watching the signing are Sen. Michael Sanchez, left, D-Valencia, and Speaker of the House Rep. Ben Lujan, D-Santa Fe. Photo by LeRoy N. Sanchez, Records Management/Media Services and Operations

Projects pursued under the program are grouped into two categories: leveraged and individual.

Leveraged projects investigate one challenge involving several businesses. Typically, scientists approached by small businesses seeking technical help propose such projects. The funding amount varies, but generally these endeavors are allocated approximately \$50,000 to \$100,000 per calendar year for the scientists’ work. Leveraged projects can span multiple years and are evaluated for progress yearly. The NMSBA program office is exploring potential leveraged project opportunities for calendar year 2008. A solicitation for proposals is expected to go out this summer.

An individual project focuses on a single technical challenge of a small business. Under the updated legislation, which will become effective in July, a small business outside of Bernalillo County, can qualify for up to \$20,000 in technical assistance per year, while a small business within Bernalillo County is eligible for \$10,000 of assistance annually. The NMSBA program has more than 25 individual small business assistance projects waiting to be matched with Laboratory staff expertise and resources.

Some Lab employees already are taking advantage of new prospects presented by the program.

Lisa Henne of Ecology and Air Quality (ENV-EAQ) decided to pursue a leveraged project proposal to find sources of unappropriated water after being contacted by Roy Stoesz, a retired geologist in the community

who had heard about the program. To lead such a project, Henne tapped Scott Baldridge of Geophysics (EES-11) based on his background and technical expertise.

Baldridge and his team will investigate the possibility of finding deep (more than 2,500 feet), brackish water in confined aquifers that are hydrologically separated from shallow fresh water aquifers in the Rio Grande Rift. (The Rift runs through the middle of Colorado to Mexico.) The project team’s ultimate goal is to address New Mexico’s anticipated demand for additional water due to projected population growth.

“We’re trying to offset the supply demand gap that we’re looking at in the central part of New Mexico in the next 40 years by finding water in the Española Basin,” said Henne. “We already have identified four Santa Fe area companies that would be interested in supporting this effort.”

In cooperation with Sandia National Laboratories, Rod Linn, Bill Porch, and Cathy Wilson—all from Atmospheric, Climate and Environmental Dynamics (EES-2)—are working on four leveraged projects. Three of the projects explore water quality and quantity issues, and the fourth pertains to wildfire management.

Sandia National Laboratories has participated in the NMSBA program for six years and has completed more than 1,500 projects around New Mexico. The program has been credited for generating nearly 450 new jobs in the state, increasing small business revenue by more than \$11.6 million, and decreasing operating costs by \$6.4 million.

LANS awards outreach funds

Laboratory Director Michael Anastasio talks with New Mexico Highlands University President Jim Fries, right, and Tom Garcia, executive vice president for Northern New Mexico College, at the regional community leaders breakfast May 16 in Pojoaque. Fries and Garcia received symbolic checks for \$100,000 from Los Alamos National Security, LLC, for educational investment programs. Education, community giving, and economic development are the three pillars of the LANS community commitment plan. Three businesses also received checks for economic development programs. The Laboratory's Community Programs Office coordinates the quarterly breakfast. Photo by LeRoy N. Sanchez, Records Management/Media Services and Operations



And the award goes to....

by Kathy DeLucas

More than 300 outstanding researchers were recognized by the Technology Transfer (TT) Division during an awards celebration at Fuller Lodge.

"Laboratory employees have demonstrated their amazing abilities in solving complex problems and partnering with industry leading to new technology products," said Technology Transfer Division Leader Duncan McBranch. "This event highlights their dedication and the value of ideas and inventions."

In fiscal year 2006, the Laboratory produced a record 142 invention disclosures. Laboratory patent attorneys submitted 92 patent application filings. Laboratory researchers received 32 patents overall.

The Distinguished Patent Award this year was presented to Laboratory researcher David Reagor of the Superconductivity Technology Center (MPA-STC) and former Laboratory employee Jose Vasques-Dominguez for their "through-the-earth-radio" patent. The underground radio uses very low-frequency electromagnetic radiation, a super-conducting quantum interference device for signal reception, and digital audio compression to transmit voice and data signals. Once produced, this device can be used to solve major communication problems in mining and urban settings in which traditional radio waves don't work.

The Distinguished Copyright Award went to Chung-Hsing Hsu of the Computer, Computational, and Statistical Sciences (CCS) Division and former Laboratory employee Wu-Chun Feng for their copyright of the software called "Energy Fit." Energy Fit monitors high-performance computing systems by modifying the voltage to minimize energy use. Energy Fit can help mitigate very serious data center heat and power consumption problems.

The Laboratory's Licensing Program generated \$1.36 million through 88 licenses and 165 inventors during fiscal year 2006. Licensing a Laboratory technology is the granting of rights to commercial and noncommercial entities to patents and copyrights.

Kevin Ott of Materials Chemistry (MPA-MC) received the Distinguished Licensing Award for his selective catalytic reduction catalyst that can be used to reduce levels of nitrogen oxides in exhaust systems. Ott's research resulted in 19 new invention disclosures, 13 of which became patent applications. The research is directed at providing possible technical solutions to the nation's energy security problems.

The Muon Tomography team won the newly created Programmatic Impact Award for developing an advanced three-dimensional tomography technology that will

allow inspection of large objects using natural solar and cosmic rays in the atmosphere.

The award recognized teams that have made significant advancements to the programmatic mission of the Laboratory through their interactions with industry partners. Programmatic agreements in the form of cooperative research and development agreements, non-federal work for others, and user facility agreements brought in \$18 million for a wide variety of Laboratory activities.

The ceremony also recognized for the first time organizations, programs, or individuals that have made a significant contribution to the Northern New Mexico economy by creating new jobs or products. The award was given to CleanAir Systems Inc. of Santa Fe and to Ott.

Ott's NOx HyCat technology could enable the country to switch from inefficient gasoline vehicles to more efficient diesel-powered vehicles. CleanAIR systems was awarded an exclusive license option for the NOx HyCat technology producing emissions control systems for on and off-road vehicles, machinery, and generators. The company is a clean industry that manufactures its products locally.

NNSA/Lab team ...

continued from Page 1

"The OSRP has achieved the goal of providing an end-of-life disposition pathway for the sealed-source life cycle in the United States, including sources for which no disposal pathway previously existed," said Project Leader Julia Whitworth of Nuclear Nonproliferation (NN). "The team's efforts guarantee continued medical and other beneficial uses of sealed sources but solve the disposition problem of unwanted sources for future generations."

In 2006, under the guidance of NA-21, OSRP also began recovering unwanted or unused sealed sources of U.S.-origin distributed overseas. The team has so far repatriated U.S.-origin radioactive sources from Africa, Australia, and Uruguay with more international and domestic sites planned for this year. Other recent accomplishments include obtaining international authorization for use of its S300 shipping container and field-sealable special form capsules.



Kevin Ott of Materials Chemistry talks with Joe Vick, right, and Michael Tripodi, left, both of CleanAIR Systems Inc., at Fuller Lodge. Ott and CleanAIR Systems Inc. were recognized at the Technology Transfer Awards reception for making a significant contribution to the Northern New Mexico economy by creating new jobs or products. Photo by Richard Robinson, Records Management/Media Services and Operations

So...what do you think?

Q: The Laboratory recently launched a Web site, "Creating Our Future," for information about the Laboratory's 12 goals. The Web site is at <http://int.lanl.gov/goals/>. If you have been to the site, you may have noted that there are three linkable areas foremost in the center of the page above the goals: the director's message, progress (a listing of successes or accomplishments toward the goals), and Q&As (a means of submitting questions about anything related to the goals). Of the three, which is of most interest to you and why?



Kim Thomas of the Science and Technology Base Program Office (STBPO-PO)

Yes, I've visited the site. I'm most interested in the progress link, because we have been good at formulating goals and plans but not so strong in sustaining progress toward those goals. It's good to see a commitment toward "doing."



Gregory Close of Benefits (HR-B)

I would be interested to visit the site, specifically the link reporting on progress toward the Lab's goals. It's important to know if we are achieving what we've set out to accomplish as an organization.



Charlene Martinez of Institutional Training Services (CT-ITS)

The goals for the Laboratory are very important, especially when it comes to our safety and security.



Lisa Gonzales of the Central Training Division Office (CT-DO)

I have looked at the goals Web site. I haven't had time to study it in detail, but I read the director's message and found it very informative. I think the site overall is a good idea and it helps employees figure out where the Lab is going.



Mike Sorem of Plasma Physics (P-24)

I haven't visited the Web site, but I plan to take a look at it. As far as the three elements, I think the Q&As will be the most interesting after awhile. And are these 12 goals a metric for the Lab or LANS?

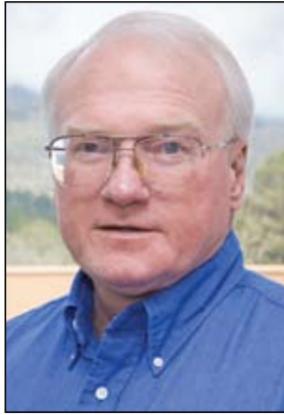
Editor's note: The goals are for the Laboratory. As the director says in his message on the Web site, "The goals are our institutional priorities ..."

PEOPLE



Brown receives Classification Award of Excellence

Jay Brown of Classification S-7 (SAFE-S7) recently received the 2007 Classification Award of Excellence from the Department of Energy's Office of Classification.



Jay Brown

Brown earned the award because of "his invaluable support to the DOE Technical Evaluation Panel, the Weapons Contractor Classification Conference, and the Computer Code Evaluation Group," said Glenn Podonsky, the chief Health, Safety and Security Officer in the Office of Health, Safety and Security at DOE.

"His outstanding accomplishments over many years... reflect great credit upon himself and [the Laboratory] within the classification community," said Podonsky.

Brown has worked at the Laboratory for almost thirty years and will retire in June. He has a bachelor's degree in physics from Rutgers University and a doctoral degree also in physics from the State University of New York at Stony Brook. He is the Classification group leader and is a Laboratory classification officer.

Benjamin Franklin Medal awarded for Sudbury Neutrino Observatory



In a ceremony in Philadelphia recently, Art McDonald, a Queen's University physics professor and director of the Sudbury Neutrino Observatory (SNO), accepted a prestigious international award for SNO's groundbreaking research into the nature of matter and the structure of the universe.

McDonald and the SNO team received the 2007 Benjamin Franklin Medal in Physics for

solving the 30-year-old puzzle of the "missing solar neutrinos" in their underground laboratory two kilometers below the surface of the Creighton Mine in Sudbury, Ontario. The discovery that neutrinos (sub-atomic particles considered a basic building block of the universe) change from one type to another on their journey to Earth from the Sun modifies the long-held Standard Model of particle physics, and was designated as one of the most important scientific breakthroughs in the world in 2001 by the journal Science.

Los Alamos has been a charter member of the SNO research and builds upon the 1956 discovery of the neutrino by former Los Alamos scientists Clyde Cowan and Frederick Reines.

"I am particularly proud of [the Laboratory's] significant contributions to the SNO experiment and its important discovery," said Andrew Hime of Neutron Science and Technology (P-23), Los Alamos principal SNO investigator. "This award is tribute to McDonald that reflects not only the kind of strong leadership SNO possesses, but the innovative role of modern science in understanding fundamental properties of the neutrino and mysteries of the universe in general."

The Franklin Institute Awards Program honors scientists, innovators and entrepreneurs who have made extraordinary scientific achievements, benefited humanity, advanced science, launched new fields of inquiry, and increased the understanding of the universe. Past winners of these medals include Albert Einstein, Alexander Graham Bell, Marie and Pierre Curie, Orville Wright, Hans Bethe, and Fred Reines. More than 100 Franklin Institute Laureates have gone on to receive Nobel Prizes.

In 2006 the SNO team members were the first recipients of the John C. Polanyi Award for outstanding scientific achievement. The SNO team includes more than 150 scientists from Los Alamos, Queen's University in Canada, Carleton, Laurentian, Louisiana State, MIT and Oxford universities; the universities of Guelph, British Columbia, Pennsylvania, Washington, and Texas; as well as Berkeley and Brookhaven national laboratories, the Tri-University Meson Facility in Vancouver, Canada, Rutherford Appleton Laboratory in the United Kingdom, and Laboratório de Instrumentação e Física Experimental de Partículas in Lisbon, Portugal.

In Memoriam

Billie Frances Kelley

Laboratory retiree Billie Frances Kelley died April 4.

Kelley joined the Laboratory in 1967 as a clerk typist in the former Shops Department (SD). At the time of her retirement in 1990, she was a budget/fiscal assistant in the former Mechanical Fabrication (MEC) Division.

She received an associate's degree from the former Northern New Mexico Community College and a bachelor's degree in public administration from the College of Santa Fe.

She is survived by her husband, Edwin Kelley; sisters Corrine Mullins and Jenna Fowler; children Orby Wright, Shirley Jarrell, Debbie Wright, Carolyn Blossom, Billie Clark, Barbara Sanchez, and Kat Brophy; step-children Rick Kelley, Cindy Kelley, Ed Kelley Jr., Janet Caldwell, Mary Lou Holmes, Deb Evans, John Kelley, Kenny Clark and Bruce Clark, 23 grandchildren and eight great-grandchildren.

Louis Geoffrion

Laboratory retiree Louis Geoffrion died April 9. He was 80.

Geoffrion joined the Laboratory in 1949 in the former Chemistry and Metallurgy Research (CMR) Division. While at the Laboratory, he worked in the former Reactor Development (K), Health (H), and Mechanical and Electronic Engineering (MEE) divisions. He retired in 1987.

Geoffrion received a bachelor's degree from the College of Santa Fe and served in the U.S. Navy during World War II.

He is survived by his wife, Marie; son Greg; daughter Angelique; brothers Robert, Arthur, and Alfred; sisters Agnes Vigil, Irene Aranda, Rosemary Duck, Juliet Ludi, and Dolores Rael; and numerous grandchildren and other relatives.



May service anniversaries

35 years

Arlene Lopez, TT-DO
Dolores Roybal, CGA-GAO
Kate Salazar, IRM-DCS
Danny Valdez, HR-OEOD

30 years

Donald Casperson, ISR-1
Gloria Chavez, EES-11
Robert Gallegos, P-23
Harold Garcia, IAT-2
Paul Hudson, CM-CE
Louella Kissane, MSS-UI
Leslie Linke, CT-ITS
Daniel Macdonell, ADESHQ
Leo Martinez, WT-8
Lawrence Martinez, IST-IS12
Kent Musgrave, ADWP
Robert Pearson, SAFE-S3
Joni Powell, WT-DO
Bernadette Quintana, MC-PC
Marvin Romero, PMT-2
Gary Stradling, ISR-2
Charles Trujillo, MSS-UI
Jimmy Vigil, CFO-3
Laurie Walker, C-AAC

25 years

Denise Dalmas, CT-DTS
Molly Herrera, MC-TDA
Gary Luedemann, ISR-3
Andy Martinez, HPC-3
Lourdes Martinez, CTN-5
Elvis Ortiz, PF-MS

20 years

James Abernathy, AOT-MDE
Carol Burns, C-NR
Raymond Cantrell, CTN-3
David Carter, W-DO
Samuel Garcia, ES-SE
David Hollowell, X-2-N1
Cheryl Lemanski, B-1
Chris Martinez, MQ-3
Cheryl Montoya, MST-6
Susan Pacheco, C-NR
Christopher Romero, WT-DO
Scott Watson, HX-3

15 years

Stephanie Archuleta, ADESHQ
James Beck, X-4-AFS
Leo Bitteker Jr., LANSCE-NS

William Brug, C-NR
Charles Costa, WT-DO
Cindy Dworzak, CFO-2
Laverne Gallegos-Graves, B-1
Devin Gray, PMT-2
Lisa Jaegers, IAT-1
Jeffrey Johnson, HPC-3
Michael Kuzmack III, FIRP-PGIU
Victor Martinez, IHS-IP
Tina Montoya, LC-DO
Martin Peifer, RP-1
Jeffrey Roach, C-NR
Marian Romero-Yeske, EES-11
Myra Stafford, IHS-IP
Martin Staley, T-7
Todd Urbatsch, CCS-2
Joanne Wendelberger, CCS-6

10 years

Daniel Abeyta, W-11
Carrie Apgar, CFO-3
Thomas Baca, OCI-OFF
Laura Barber, TT-DO
John Bretzke, ADISS
Robert Dickerson, MST-6
Penelope Gomez, ERSS-GS
Michael Gordon, MPA-NHMFL
Joseph Grider, MSS-IFCS
William Hamilton Jr., PP-MFG
Charles Harmon, SB-CS
Mark Harris, CM-CMGRS
Kriste Henson, D-4
Zhen Huang, EES-2
Paul Keyes, IST-IS12
Kenneth Laintz, DE-1
Daniel Mahoney, CCS-2
Christopher Martell, CTN-4
Thomas Mason, W-6
Mark Owens, IST-DO
Lawrence Pitt, C-IIAC
Karen Rau, MST-6
Christopher Rousculp, X-1-PTA
Rolanda Salazar-Martinez, WCM-1
Lola Sandoval, LC-LESH
Jill Seeger, SEC-DSS9
Ruth Skoug, ISR-1
James Spach, MSS-TA55FO
Darrik Stafford, FIRP-DISP
Roxanne Tapia, B-5
Joseph Trujillo, IAT-2
William Vigil, QA-IQ
Vernon Vigil, ISR-4
William Winton, AOT-OPS

5 years

Robert Adamski, W-10
Doris Aldaz, CMR-DO
Joseph Anderson, MST-16
Stephanie Baca, ADSS
Michael Brake, IST-APPS3
Constance Brown, CFO-2
Alan Christian, OCI-OFF
Daniel Cushner, SEC-PSS6
Leo Dejan Jr., ISR-3
Johnny Devargas, PMT-3
Wanda Duncan, MST-16
Ernesto Espinoza, ER-FP
Benjamin Ewing, MST-6
Nicholas Garcia, OS-PT
Gerald Geernaert, EES-IGPP
Anthony George, MSS-LFO
Frederick Gorman, AOT-MDE
Mark Gunderson, X-2-N1
Priscilla Hall, HR-B
Daniel Harper-Nixon, WCM-4
Robert James, CTN-2
Tommy Jones, W-10
John Kline, P-24
Robert Knight, CTN-1
Paul Lewis, MSS-TA55FO
Seth Littleton, SEC-PPS1
Lucille Lund, MC-PC
Edith Madrid, ISR-2
Richard Martinez, CMR-DO
Carla Martinez, ASM-PUR
Adam Martinez, AET-1
Manuelita Martinez-Brito, MPA-11
Mark Mathis, D-6
Jerri McTaggart, EES-12
Peggy Moore, N-1
Stanley Moreo, CTN-2
Matthew Nelson, D-3
Renee Ortiz, HX-6
Robert Patton, MSS-LFO
Pablo Prando, LC-LM
Roger Rodriguez, SEC-DSS9
Michael Rogers, X-3-PC
Reyna Sandoval, HR-OM
Kimberly Scott, N-2
Dwight Stevenson, IHS-OS
Jeremy Sweezy, X-3-MCC
Audrian Tastan, IAT-DO
Daniel Trujillo, W-1
Kevin Vancleave, MSS-MSE
Kenneth Vigil, PMT-3



This month in history ...

May

1792—Twenty-four merchants form the New York Stock Exchange at Number 70 Wall Street

1844—The first telegraph message is sent.

1875—"And They're Off!" as the first Kentucky Derby is held at Churchill Downs.

1920—Babe Ruth hits his 50th career home run, which also is his first as a New York Yankee.

1922—The Lincoln Memorial in Washington, D.C., is dedicated.

1937—The Dirigible Hindenburg explodes into flames at Lakehurst, New Jersey.

1943—Lt. Col. Whitney Ashbridge becomes commanding officer of Los Alamos.

1954—The first rocket to fly higher than 150 miles is launched from the White Sands Missile Range.

1960—A U-2 photo reconnaissance plane piloted by Francis Gary Powers is shot down over the Soviet Union.

1977—The movie "Star Wars" is released.

1988—The Intermediate-range Nuclear Forces (INF) Treaty to eliminate intermediate-range nuclear weapons is ratified.

1990—Hubble Space Telescope transmits photographs from space.

1991—Lab scientists report on research showing the key outbursts from the sun trigger magnetic storms on Earth.

1993—President Clinton extends a nuclear weapons testing moratorium for at least 15 months.

1997—Johnson Controls Northern New Mexico is selected to begin negotiations on a contract to provide support services to the Lab.

Crash victims remembered

And this from the 1972 Atom: Eight Laboratory employees were killed May 19 when a Ross Aviation Queenair crashed and burned shortly after takeoff at the Albuquerque International Airport. The pilot also was killed in the accident. Dead are Wright Langham, associate division leader for biomedical research, H-DO; Eugene Teatum, TD-4; Richard Neithammer, W-1; Don Larson, J-8; Bruce Bean, J-8; William Frye, J-8; Johnnie Gallegos, J-14; John Gill, N-3; and Richard Zettel, pilot.

The information in this column comes from several sources including the online History Channel, the Newsbulletin and its predecessors, the atomic archive.com, Echo Vitural Center, Science & Technology, Real History Archives, and Carey Sublette, "Chronology for the Origin of Atomic Weapons" from www.childrenofthemanhattanproject.org/MP_Misc/atomic_timeline_1.htm.



Shown is V Site before restoration, top photo, and after restoration. Photos by Ellen McGehee of Ecology and Air Quality (ENV-EAQ)

V Site restoration project honored

The Laboratory's V Site restoration project was awarded a 2007 Heritage Preservation Award for Architectural Heritage.

The New Mexico Cultural Properties Review Committee honored the project because of its "exemplary restoration of V Site." John Isaacson of the Risk Reduction Office (ENV-RRO) and Ellen McGehee of Ecology and Air Quality (ENV-EAQ) represented the Laboratory during a recent awards ceremony.

V Site is located off of West Jemez Road at Technical Area 16.

The V Site restoration was a five-year project funded by a Department of the Interior's Save America's Treasures Grant. It was the first major restoration of a Department of Energy Manhattan Project Signature Facility, and was a multi-organizational effort that included the Laboratory's Environmental Protection Division, the Atomic Heritage Foundation, the New Mexico Historic Preservation Division, the Advisory Council on Historic Preservation, the Department of Energy Headquarters Office of History and Heritage Resources, and the Los Alamos Site Office.

A public dedication of V Site was held last fall. For more information about the dedication, see the October 6, 2006, Daily NewsBulletin at http://www.lanl.gov/news/index.php/fuseaction/nb.story/story_id/9131/nb_date/2006-10-06 online.

"This was one of those rare projects that involved a large number of partnerships all working in concert to preserve one of the most historically significant buildings in the nation," said Isaacson, who served as project leader.

"The 'Gadget' [Trinity device] was assembled in these simple wooden sheds, so this site is an important part of the Nation's history."



Laboratory employee photographs nature

by Krista D. Wilde

“I began taking photographs of landscapes because I enjoy nature and like to keep memories of the places I’ve visited,” said Momchilo “Momo” Vuyisich, a biochemist in Molecular Microbiology and Immunology (B-1).

Vuyisich, who joined the Laboratory three years ago, has no formal photography training and uses no special equipment or techniques. Instead, he researched photography on the Internet and uses a Nikon 8400 eight-mega pixel digital camera to capture landscapes he visits.

Vuyisich attributes the quality of his photographs to his willingness to go outside at times other people may not. “When I take pictures, I try to capture the best conditions in that area.” This usually means Vuyisich takes pictures at sunrise or sunset, in the snow or rain. “Those are the times I see magical light,” he said.

For Vuyisich, the primary focus of his travels is not photography. He usually travels with friends or family and visits places he thinks are interesting, but he does not travel with a particular photo in mind.

“I never really analyzed why I like to photograph nature scenes. I like to travel and see the beautiful places we live near and I enjoy being outside, so it seems to fit,” said Vuyisich.

In addition to his love for nature, Vuyisich also is inspired by the work of other artists. “Currently, my favorite landscape photographer is Marc Adamus because he backpacks to distant places that many people have never seen. I like that he photographs unique landscapes that aren’t often seen,” said Vuyisich. Adamus is a landscape photographer who resides in Oregon.

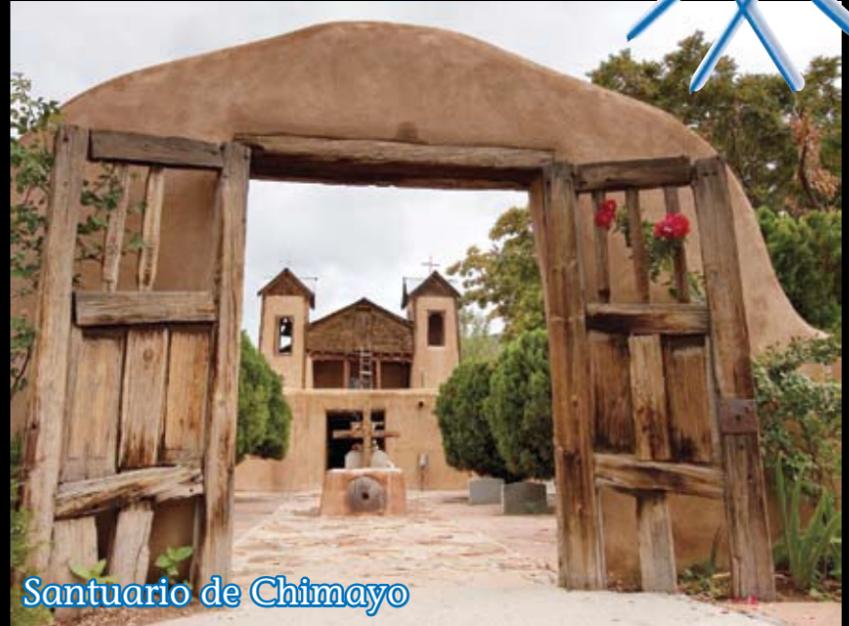
Although Vuyisich treats photography as a hobby, his work is for sale at UPEX in downtown Los Alamos. About a year ago, Vuyisich was talking to the owner of UPEX. He mentioned his photography and gave his Web site address to her. The next day she called and insisted that he allow her to sell some of his pictures in her store. He also turned some of his pictures into greeting cards, which also are for sale at UPEX.

To view more photographs, go to <http://www.wildwestgallery.com/> online.

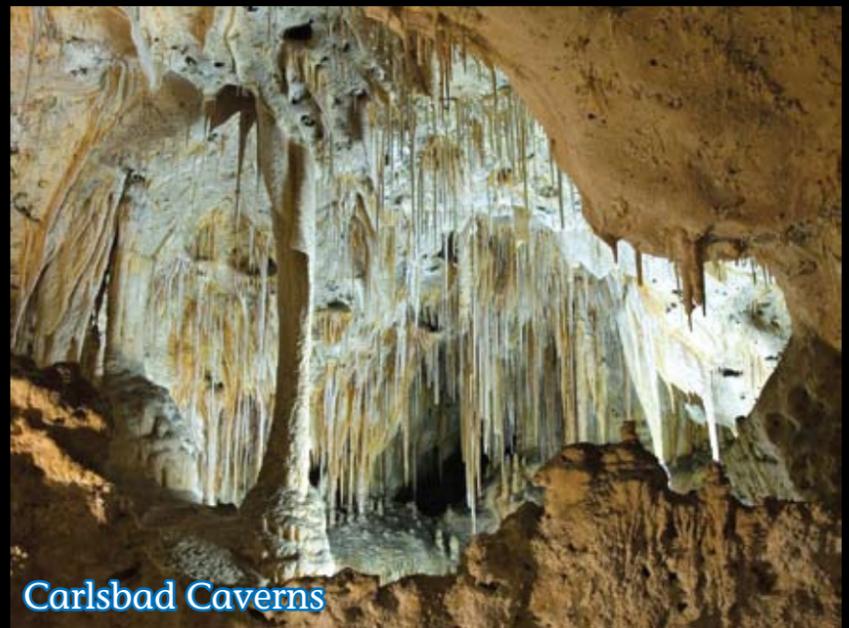
When asked about his future in photography, Vuyisich said he simply wants to continue having fun. “I focus on where I want to travel and what I want to see. Luckily, the places I am interested in are beautiful.”



Momchilo “Momo” Vuyisich



Santuario de Chimayo



Carlsbad Caverns



Very Large Array



New Mexico Desert



Valles Caldera