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the laboratory connection

your community's link
to information, opportunities, and people
at Los Alamos National Laboratory

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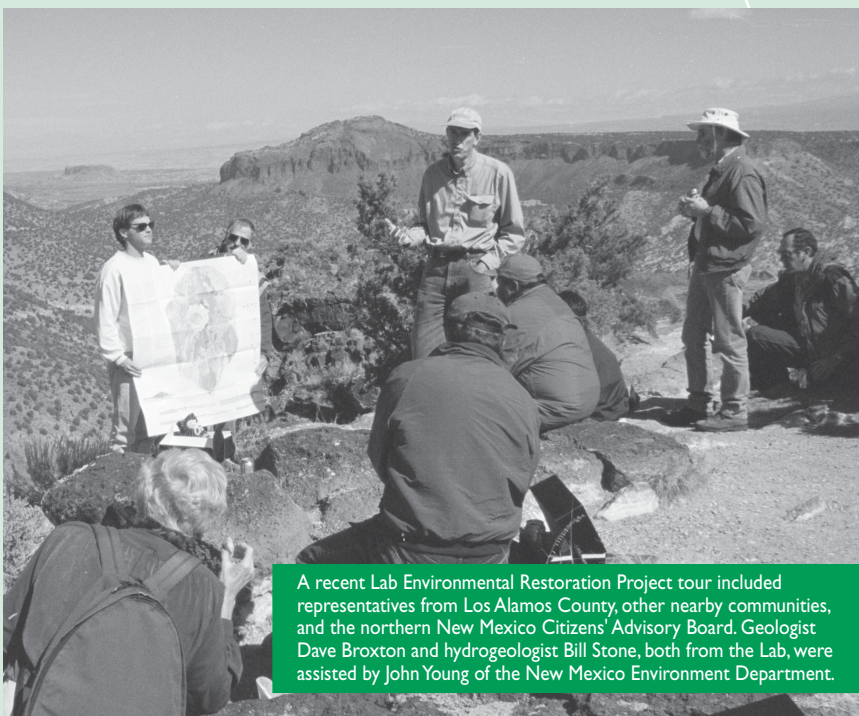
the Community Relations Office

As any married couple knows, communication is the key to harmonious co-existence. At Los Alamos National Laboratory, we have tried to find new and different ways to share information about our science and other programs with the people who live in the region for our mutual benefit. Lab organizations doing work in the areas of economic development, education, and environmental monitoring and remediation are particularly proactive in their efforts to reach segments of the local population who can use our programs to enhance the quality of their lives.

We have a stake in supporting the economic, academic and cultural strengths of our region. We believe that when we consult the local communities and pay attention to their concerns, they will be better able to support us in our mission and in times of crisis. During the Cerro Grande Fire in 2000, the Laboratory drew both comfort and strength from the compassion and generosity of our neighbors.

The Laboratory is emerging from a difficult period during which we have suffered some grievous losses. These include the loss of public confidence in our business practices and the loss of Lab Director John Browne and Principal Deputy Joe Salgado, both leading supporters of our efforts to partner with local communities. But interim Director Pete Nanos has reaffirmed the Lab's commitment to the many initiatives designed to advance the quality of life in our region, and we expect these efforts to continue for many years to come.

Lab Outreach Programs Foster New Community Partnerships



A recent Lab Environmental Restoration Project tour included representatives from Los Alamos County, other nearby communities, and the northern New Mexico Citizens' Advisory Board. Geologist Dave Broxton and hydrogeologist Bill Stone, both from the Lab, were assisted by John Young of the New Mexico Environment Department.

Interaction with the communities in our region is an important component to our success at the Laboratory. Although the Community Relations Office is primarily responsible for these contacts, many other Lab organizations support their efforts with outreach programs of their own whose aim is to inform and involve our neighbors in the work we do. Public involvement is particularly critical when the Laboratory's work affects the environment.

In the past, environmental outreach took the form of a Lab presence at Earth Day and similar community events, occasional public meetings and comment periods related to Environmental Impact Statements, and public meetings related to the issuance of the Lab's Environmental Surveillance Reports, published annually for more than twenty years. More recently, outreach efforts have become more organized and proactive.

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The Lab's Environmental Restoration (ER) project is governed by its hazardous waste permit, which requires that all of its cleanup activities have a public involvement plan, reviewed and approved by the New Mexico Environment Department. In addition to holding quarterly public meetings, the Lab works closely with the Northern New Mexico Community Advisory Board (CAB) in sponsoring tours, poster sessions and a variety of other forms of public outreach.

"The Los Alamos town site is built on the old Lab sites and some haven't yet been completely cleaned up," said Paul Schumann, acting director of the Office of Environmental Communication and Stakeholder Involvement. "Under the old rules, cleanups had to be done so there were no human health impacts. Now there must also be no impacts to the environment. It is our job to be good stewards of the natural resources on the Pajarito Plateau."

The annual Environmental Surveillance Reports detail the results of widespread sampling and monitoring of everything from water and soil to fruits and vegetables and even pollen from local beehives to make sure there are no inappropriate environmental impacts. These reports are published and widely distributed, but Schumann is looking for a better way to broadcast the information they contain.

"Historically, one of the Lab's biggest challenges has been how to effectively communicate information about itself to our neighbors," he said. "Public meetings, tours, websites, reports, newsletters, and brochures are the standard methods. We would like to be able to do

a better job at meeting people where they live, to talk about environmental issues in a place that's comfortable for them. We'd like to meet with acequia associations and church groups, not just hold public meetings."

Many of the Lab's environmental organizations participated in preparations for DOE's recent land transfers, gathering and analyzing information about air quality, surface water, species habitats, and cultural sites. Lab staff conducted a number of tours, produced a video, and even put together a virtual tour on the ER project website.

For the past five years, the Lab's Ecology Group has also published "For the Seventh Generation," a report to the communities on environment, safety, and health. The report details some of the Lab's cleanup projects and profiles some key players and partners. The reports embrace the principle of sustainability, an important part of the Lab's environmental ethic and a concept

that has gained ground over the past decade.

"One of the fundamental principles of sustainability is transparency—speaking the truth about what goes on in the institution so the public can clearly understand, can make themselves heard, and be responded to," Schumann said. "We want the Lab to join the growing number of international companies and organizations who are leaders in behaving sustainably."

For example, a Corrective Measures Study currently in progress for Material Disposal Area H at Technical Area 54 will include members of the community in a focus group that will review the Lab team's work before, rather than after, alternative measures for cleanup are finalized.

"In the old way of doing business, the study would be finished first, decisions would be made, and then the report would be put out for public comment," Schumann said.

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Members of the northern NM Citizens' Advisory Board are given a tour of Mortandad Canyon and Cañada del Buey to observe the recovery of the canyon environments surrounding Los Alamos. Lab staff member Jeff Walterscheid describes the mitigation and remediation activities that the Lab has implemented to expedite the recovery process.

Interim Lab Director Reaffirms Community Emphasis



Interim Lab Director Pete Nanos

The new year brought significant change to the Laboratory beginning with the resignations of Lab leaders John Browne and Joe Salgado, both leading supporters of Lab partnerships with the surrounding communities. The resignations came in the wake of allegations regarding LANL business practices that dominated the Laboratory's news coverage during the final weeks of 2002.

Although Browne and Salgado's valuable advocacy will be missed by many, Laboratory Acting Director Pete Nanos has reaffirmed his commitment to programs initiated for the mutual benefit of the Laboratory and the people who live in our region.

"Community relationships will play a vital role in our efforts to restore confidence in Lab operations," Nanos said. "Community leaders and other stakeholders can rely on us to keep their interests in mind as we move forward. I have pledged to keep the workforce informed on personnel and policy changes because I believe our employees are ambassadors for the Laboratory to the communities where they live."

Browne, a physicist at the Lab for more than two decades, served as director for five years. Salgado had been a top LANL official for more than three years. Under their

leadership, the Lab launched significant new community events and partnerships including Browne's annual State of the Lab receptions in Los Alamos and Española and the Lab's participation in the Northern New Mexico Council on Excellence in Education (NNMCEE). NNMCEE oversees the Math and Science Academy, which has already made a significant contribution to the improvement of math and science education at the mid-school level in Española, Chama, and Mora.

"While there were many challenges to overcome during my tenure, my fondest memory will be of the great people that I came to know both in the Laboratory and in the local communities," Browne said in a message to Lab personnel. "The current controversy over our financial and business controls, which arose initially from the misuse of government procurements by a few employees, has brought serious criticism of management at our Laboratory. I believe that only a change in leadership will restore the confidence that is needed for this Laboratory to carry out its difficult and important mission. Los Alamos is a great Laboratory whose national security mission has never been more important to our great nation."

Browne will stay on at the Lab in a senior research capacity. The president of the University of California, which manages the Lab for the Department of Energy, had high praise for the former director's integrity and accomplishments. In his message to Lab employees, Richard C. Atkinson said that Browne "led the Laboratory through times of significant achievement, as well as times of difficulty. He has achieved a long and distinguished career of service to our nation as both a scientist and senior administrator."

Nanos, a retired vice admiral in the U.S. Navy, is a former commander of the Naval Sea Systems Command and of the Navy's

strategic nuclear program. He worked in the Lab's Threat Reduction directorate for five months before being named interim director. He will serve in that capacity until a permanent director is appointed.

"I joined the Laboratory because of its science," Nanos said. "We can't lose track of scientific excellence as we rally our workforce to restore public confidence in the Laboratory's business practices," he said. "As we embark on this mission, I am heartened by the knowledge that we have strong allies in our northern New Mexico neighbors."

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"This way, the public can provide input upfront through their representatives on the focus group, giving them an unprecedented opportunity to affect the outcome of the project."

A number of other Lab groups also conduct aggressive outreach campaigns to share information and technology for the benefit of our neighbors in the region. The Education Program Office, for example, offers competition, workshops and a variety of training programs for students of all ages. The Go Figure Mathematical Competition and Expanding Your Horizons are aimed at sparking interest in younger students, while Adventures in Super-computing and electromechanical and materials science training programs are geared to developing career skills in high school and college students. The annual Robotics Workshop is open to kids of all ages.

More on the Lab's educational initiatives in the March issue of Lab Connection.

San Ildefonso Pueblo Governor Assesses Historic Land Transfer

Several laws require the Department of Energy (DOE) to identify and transfer ownership of lands that are no longer needed to fulfill the national security mission of the Lab and other DOE facilities. However, Public Law 105-119, passed in November of 1997, specifically mandated that DOE identify surplus property and transfer it. That same year, San Ildefonso Pueblo negotiated a partnership with Los Alamos County to be included in the land transfer being discussed.

Three governors and five years later, San Ildefonso Governor John Gonzales accepted the key to the gate from Ralph Erickson, the Office of Los Alamos Site Operations (OLASO) area manager. DOE identified 10 parcels, amounting to about 4,000 acres, for transfer. The goal was twofold: to help San Ildefonso Pueblo preserve historic, cultural, environmental and economic diversification; and to help Los Alamos County develop a tax base through economic development. The area transferred to San Ildefonso on October 23, 2002, measures about 2,100 acres.

“The original tracts measured about 4,700 acres,” said former San Ildefonso Pueblo Governor Elmer Torres, who now works in the Lab’s community relations office. “This recent land transfer is for about half of that, but nine more sites are still being considered for future transfer.”

Because the transfer parcels are located on the Pajarito Plateau — an area rich in archeological sites representing 10,000 years of occupation by San Ildefonso Pueblo ancestors — they contain nearly 200 sites that are eligible or potentially eligible for listing on the National Register of Historic Places.

The Laboratory prepared the legally required cultural resources mitigation plan

and cultural preservation agreement between the Federal Advisory Council on Historic Preservation, the New Mexico State Historic Preservation Office, and Los Alamos County. San Ildefonso Pueblo was also consulted. Lands scheduled for transfer to Los Alamos County lose federal protection once the transfer is complete.

Former San Ildefonso governors Perry Martinez and Torres provided background information at the negotiations, as did San Ildefonso Tribal Attorney Peter Chestnut.

“The whole experience of negotiating the land areas to transfer was an interesting one,” said Governor Gonzales. “These lands have significant cultural value that we wanted to recapture.”

Gonzales explained that the lands had fallen outside the jurisdiction of San Ildefonso through the creation of the US Forest Service and the National Park Service.

“Senator Pete Domenici was responsible for including San Ildefonso in the land transfer discussions and we’re very grateful for that,” Gonzales said.

Gonzales explained that the next step was to educate both the Pueblo and the Los Alamos communities about the renewed San Ildefonso ownership and the need for continued respect for ancestral lands.

“We need to become accustomed to the fact that these lands are ours again and we need to look at how we’re going to protect their cultural value. This is something that promotes our spiritual well-being,” Gonzales said. “We believe that we have a responsibility to our ancestors to do whatever it takes to protect the ancestral homelands.”

Gonzales said that the overall negotiation process was positive, especially the interaction with Ralph Erickson.

“He took the time to educate himself about the importance of our ancestral lands,” Gonzales said. “I think that the understanding that he has will translate to a very positive continuing relationship.”

Gonzales said he also appreciated the opportunity to interact with the Los Alamos County Council.

“We’d like to continue the relationship with the Los Alamos County Council. After all, we are neighbors and have been for a while,” he said.

The Governor also said that the other major player involved in the land transfer was the Laboratory.

“We hope there will be more recognition by top Laboratory management about the importance of these lands to San Ildefonso,” he said. “These lands once belonged to us and in our minds, they still do. We’re the only tribe in the country that has a national lab on our lands.”

San Ildefonso Pueblo and the DOE hosted a celebration of the land transfer in December that was attended by both Secretary of Energy Spencer Abraham and Senator Domenici.



San Ildefonso Pueblo Governor John Gonzales

Technology Transfer Benefits Many Local Entrepreneurs

The Laboratory has restructured the Technology Commercialization Office, created in 1997 to help cultivate regional research and development. Over the past two years, the Industrial Business Development (IBD) Office was given the task of rethinking ways of doing business. Its charter was to improve the mechanisms for the transfer and commercialization of Laboratory technologies for the benefit of the nation. IBD works hand in hand with the Regional Business Development Office (RBD) to match the Lab's scientific and technical talent, expertise, and facilities with research and development projects outside the Lab to improve national security and technological innovation.

IBD has concentrated on three key focus areas of tech transfer and commercialization: managing the Lab's intellectual property through patents and copyrights and executing licenses and partnership agreements; building strategic partnerships with private industries, universities, government agencies, and other national laboratories; and nurturing new high-tech businesses and attracting entrepreneurs and capital to northern New Mexico.

In fiscal year 2000, the Lab saw a revenue increase of more than 45 percent from licensing Lab technologies. In 2001, there was an additional 24 percent increase in revenues that will help fund additional research and development. The 2002 fiscal year figures are being compiled.

Through IBD, the Lab has successfully forged strategic partnerships with Motorola and Proctor & Gamble to develop technologies such as fuel cells and manufacturing system modeling.

IBD has also been actively involved, along with the Los Alamos Commerce and Development Corporation, in the development of the Los Alamos Research Park.



The Flash CT, built by Hytec, is a 3D tomography system used for model-based engineering and nondestructive inspection.

"Veriscape relocated to New Mexico when they were forced to vacate their offices in Battery Park [because of the September 11 terrorist attack]," Smith said. "The Research Park now has tenants who all share the same entrepreneurial spirit. They are entrepreneurs who have a passion and a vision and they want to spend a lot of time growing their company."

Over the last five years, IBD/RBD has assisted 68 new startup companies in northern New Mexico.

Another new program recruits midterm MBAs from top business schools to provide business plan development, financial analyses, marketing, and technology maturation and development support to regional companies. So far the program participants have reviewed more than 200 technologies and assisted more than 70 regional companies and entrepreneurs.

"We've had 28 students participate in the Master of Business Administration (MBA) Entrepreneurial Internship program," said Donna Smith, IBD Division Leader. "One is now the vice president for Hytech and three have finished their degrees and are interested in starting high-tech companies in the region."

Smith is quick to point out that although the Lab didn't start these companies, every one of them has a tie to the Lab.

Other IBD accomplishments include establishing a regional/national advisory board, conducting 22 regional entrepreneurial training workshops, recruiting and growing entrepreneurial talent, improving seed capital availability and providing business mentors and consultants. They have an abundance of success stories, including the following:

- **Hytec** is a fast-growing engineering design and consulting firm started by two former LANL mechanical engineers. The company's prototyping and testing laboratories provide full-service engineering and development to customers. The company made \$7.2 million in 2001 and has hired 10 new people this year.

- **QTL Biosystems, LLC** was founded in September, 1999 and began operations in January of 2000. Its research and development laboratory and offices are located in Santa Fe. The company currently has fourteen employees, including technical staff and support personnel. QTL is growing rapidly and anticipates hiring technical staff over the next two years.

QTL's mission is to revolutionize biomedical research by simplifying the process of drug development and by creating powerful new tools for diagnosing infectious diseases and monitoring biological processes. QTL technology is based on a new class of biosensing plastic materials that allow nearly instantaneous detection of proteins, hormones, viruses, and other biological compounds that impact human health.

- **STAR Cryoelectronics** was founded in the spring of 1999 by a former Lab scientist. STAR, headquartered in Los Alamos, produces and sells advanced sensors based on superconductors and related sensor control electronics.

Two Lab Projects Win Pollution Prevention Awards

What do leftover roofing material, wood and concrete blocks have in common? They're being reused at Technical Area 35, and the individuals with the foresight to reuse the materials won a Pollution Prevention award.

The leftover materials from an old gravel and tar roof on one of the buildings at TA-35 were used to fix a section of a parking area that became very slippery and unusable during and after rainstorms. Some of the gravel and tar fragments also were used to fill ruts in a dirt road on site. Personnel who work in the vicinity are much happier with the improved parking area and none of the old material from the gravel and tar roof was sent to the county landfill.

In another example, wood and concrete blocks left over after several old portable buildings were salvaged now are part of an outdoor deck. Several engineering graduate students designed and constructed the deck on site using the leftover materials. These materials also were diverted from the landfill.

The improvements won the teams pollution prevention awards from the Laboratory by demonstrating the value of reusing materials.

Pollution Prevention or P2 Awards recognize the successes of individuals or teams that have minimized waste, conserved water

or electricity, reduced air or water pollution, or procured products with recycled content. Teams may consist of up to 20 University of California employees and subcontractor employees, although most subcontractors will receive certificates but not cash awards. Some subcontractors will provide cash awards through their own incentive awards programs.

The Pollution Prevention Awards Program is a feature of the Department of Energy's Environmental Stewardship Office where \$10,000 is allocated annually to improve the awareness of pollution prevention at the Lab.

Lab Logo Store Proceeds to Benefit the Math and Science Academy

Laboratory workers and retirees have purchased more than \$12,000 worth of golf-style shirts, sweatshirts, stainless-steel travel mugs and other items inscribed with the LANL logo from a makeshift store in the Otowi Building.

Lab senior managers and the Department of Energy approved the logo merchandise initiative to help strengthen employee morale and to enhance the visibility and reputation of the Lab in retention and recruiting efforts. ARAMARK manages the sales of Lab logo merchandise and earns no profit from the store.

After costs and sales taxes are deducted, more than \$2,200 has been raised to date. The funds have been earmarked to benefit the Math and Science Academy through Northern New Mexico Community College, said Mike Kolb of the Community Relations (CRO) Office.

David French, general manager of ARAMARK, the Laboratory's cafeteria system operator, said they recently received a new shipment of merchandise that includes long-sleeve T-shirts just in time for everyone's winter wardrobe.

The Laboratory logo store will be open during cafeteria operating hours, roughly from 6:45 a.m. to 4 p.m., said French.

Items for sale include long- and short-sleeve T-shirts and baseball-style caps. A 60th anniversary belt buckle with the Lab's logo is planned for sale in 2003 he said.

Kolb said that in response to demand, ARAMARK plans to make more merchandise available in children's and youth sizes. He added that children's short-sleeve T-shirts are currently available.

French said that ARAMARK accepts personal checks and credit cards for Laboratory logo merchandise.



This white long-sleeve sweatshirt with the Laboratory logo sells for \$35 and also is available in black and beige. Golf shirts, hats, and coffee mugs are also available.

Air Quality Staff Seeks More Public Input

Increasingly, the Laboratory is working to keep the public informed of its activities. For example, the Lab recently submitted its request for an air operating permit to the New Mexico Environment Department (NMED), but first the Lab voluntarily met with members of organizations such as the local Indian Pueblos, the Northern New Mexico Citizen's Advisory Board, the Community Radiation Monitoring Group, and the Sierra Club to hear what kind of concerns people might have.

"We hoped that by going to concerned parties first and taking their comments into account, the Lab would end up with a better product that more closely matched the concerns in the community," said Jackie Hurtle, with the Lab's Air Quality Group. "It was helpful to hear the kinds of concerns community members had," she said. The permit itself covers all Lab nonradioactive sources as specified in the Clean Air Act (for more details on the act see http://www.epa.gov/oar/oaqps/peg_caa/pegcaain.html).

The Laboratory's number-one emission is byproducts from combustion from the Lab's main power plant as well as from small

boilers and heaters located around the Lab. Other much smaller sources include chemicals used at the Lab for research and activities like bench-top chemistry. Some other emissions sources are considered too "trivial or insignificant" under regulations to be listed individually but must be considered in overall releases. Examples of trivial sources include fumes from painting buildings and from personal-use heaters as well as stand-by generators for emergency use.

The permit includes information on source monitoring methods, including the record-keeping process as well as frequency of reporting. For instance, degreasers require the use of tight-fitting covers on vats when not in use, wipe rags kept in closed containers, and records of the solvents contained in the vats, and reports must be submitted within 45 days of the end of the twice-yearly report periods.

Even the Lab's main paper shredder is included in the permit because it generates particulate air emissions. Although the control devices on the shredder operate at over 90 percent efficiency, about one pound of "dust" a year is released. "We're not

required to report this data in the annual emissions inventory, but we do it because we're trying to look at everything we put into the air," said Hurtle.

Now that the Lab's finished with the application stage and is preparing for implementation when the permit is issued, the feedback provided by the public is proving invaluable, she said.

The permit asks for the air emissions limits necessary for the Lab to perform its work. Hurtle also said the Lab plans to limit some operations to ensure that it stays within the requirements of the permit. "This approach is the most environmentally friendly," she said.

The state will offer its own comment period as part of its review process. To check the status of this permit, you can visit NMED's web pages at <http://www.nmenv.state.nm.us>. In addition, NMED will be hosting an open house and poster session in late February that will be open to the public.

Weather on Mars Suggests that the Environment Once Supported Life

Researchers at the Los Alamos National Laboratory, the University of Arizona Lunar Planetary Laboratory, Tucson, Arizona, and Cornell University, Center for Radiophysics and Space Research, Ithaca, New York, have discovered further evidence for the possible existence of a changing, and perhaps predictable, climate on Mars.

Maps based on data from a neutron spectrometer built at the Laboratory and flown aboard NASA's Mars Odyssey spacecraft detailed the location of hydrogen that may indicate water/ice just below Mars' surface. Locating water on Mars would

support theories that the environment once supported life and possibly still does.

According to Los Alamos' principal investigator on the project, Bill Feldman, the data collected between February and November 2002 were broken into sixteen, roughly two-week intervals of time. The edge of the carbon dioxide frost cap is seen to steadily recede during the period, revealing subsurface deposits of water-rich soil.

Previously, the Los Alamos' neutron spectrometer had mapped the Martian surface while it was summer in the south

and winter in the north. That data revealed the extent to which the northern and southern polar caps are covered by a thick layer of carbon dioxide, or dry ice. During winter, the carbon dioxide layers extend from the poles to within about 60 degrees of the equator because the dry ice frost settles out of the atmosphere when temperatures fall about 186 degrees below zero Fahrenheit. During the warmer summer, the carbon dioxide layer evaporates completely in the north but remains as a thick cover of the residual polar cap in the south.

Lab, DOE, and Pueblo Officials Hold Executive Meeting

In November, tribal representatives from the pueblos of Cochiti, Jemez, Santa Clara, and San Ildefonso met with Laboratory and DOE officials to share progress updates in the Strategic Initiatives process established in 2002. They also discussed the status of the environmental projects conducted

jointly as a result of the Cerro Grande Fire in May 2000. These projects included the tree-thinning project, erosion control, and cultural assessments of the burned area.

The participants also listened to input from the audience at the 14th Cooperative

Agreement Executive Meeting at the Laboratory's Study Center.

Overall, attendees were pleased with the projects' success and emphasized that a strategic approach will ensure more and better collaborative work in the future.

Participants included, left to right, Cochiti Pueblo Governor Andrew Quintana, Santa Clara Pueblo Director of Environmental Affairs Joseph Chavarria, Jemez Pueblo Tribal Administrator Vincent Toya, Office of Los Alamos Site Operations Area Manager Ralph Erickson, San Ildefonso Governor John Gonzales, and former Laboratory Director John Browne.



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