

the laboratory connection

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

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word
from

the Community Relations Office

We have all been profoundly affected by the terrorist attacks on our country and have struggled to find ways to cope with our feelings of anger and grief. Many of us have chosen to focus our efforts on fundraising for the victims of this and other tragedies by participating in activities to benefit United Way agencies, which include disaster-relief agencies such as the Red Cross and Salvation Army. There have also been a number of events to raise money for the United Way's Sept. 11th Fund, which directly benefits the victims of the attacks in New York and Pennsylvania and at the Pentagon.

We have also been reminded that it is particularly important at this time to nurture ourselves, and support one another the best we can. We must acknowledge that our ability to attend to and stay focused on important safety and security tasks can be compromised. We urge everyone to double-check and ask others to monitor tasks that are most sensitive. To attempt a return to normal life, we renew our efforts to communicate with our neighbors, help educate our local youth, and support our local businesses. New and exciting programs are taking root in our elementary and middle schools that will better prepare our students for the challenges we face. Ongoing initiatives to benefit small businesses will grow our local economy and allow us all to participate in a united effort to preserve and advance our values and our way of life.



State Representative Richard Martinez, left, confers with Bennie Gonzales of the Laboratory's Small Business Office during Lab Day at the New Mexico State Legislature.

Small Business Makes Large Contribution to Lab's Mission

Small businesses in northern New Mexico have long been the lifeblood of the Laboratory. Efforts to help them help us are ongoing, with new programs being developed and promoted by the Lab's Small Business Office (SBO), in conjunction with a number of other regional partners.

Some functions of the SBO include identifying small businesses that are capable of satisfying the Laboratory's requirements. It educates and assists them in meeting the Lab's needs and in thinking beyond regional business. The office sets aside subcontracts to award small businesses, targeting historically underserved areas of the supplier community. SBO staff also works to establish internal Laboratory awareness of the importance of increasing small business participation.

During the past fiscal year, LANL spent approximately \$1 billion with subcontractors, with a goal of placing 35 percent of that—\$335 million—with small businesses. Of this amount, one-third was targeted to be spent in northern New Mexico, one-third elsewhere in

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Math and Science Academy Begins Second Year at Middle Schools

The Question of the Day, written on Española Valley Middle School science teacher Paige Prescott's blackboard, is What would be more likely to pollute a river? The possible answers listed are (a) allowing beavers to build a dam, (b) fishing from a bridge, (c) mowing the grass on the riverbank, or (d) spreading fertilizer near a river.

The seventh graders in Prescott's class don't answer the question lightly but go about attempting to eliminate the answers they know are incorrect. They strike fishing from a bridge but aren't sure about beavers building dams. "That's a natural activity," one observes. "Natural things don't cause pollution, do they?"

"Sometimes they do," answers another. "Fires can be caused by lightning, and the ash from fires can pollute a river."

After more discussion, the class decides that spreading fertilizer is the most likely polluter, but they are not positive about their answer. "Today, most fertilizers are made from chemicals, and chemicals in the river are considered pollution," one student says. The question of pollution by nature hangs over their conclusions.

"What is pollution?" asks Prescott. "Is dirt pollution?" The class ponders the question, and Prescott gives them an assignment to look up the word pollution for the next day's class.

The exercise illustrates how students whose teachers participate in the Math and Science Academy (MSA) are learning to apply principles of the scientific method to their daily classwork. Prescott was one of the teachers in the original group that launched the program in Española's middle school last year. Teachers at the Chama and Mora Middle Schools also participate in the program. The goals of MSA are to improve math and science achievement and technology application in northern New Mexico,



Española Middle School 8th grade science teacher Ezra Maurer, right, uses dirt and water to help students learn about erosion and contour planning. The students are, left to right, Anessa Williams, Dove Quintana, Yolanda Martinez and Katherine Maestas.

decrease the dropout rate, increase the pool of qualified teachers, support a flourishing economy by supplying a trained workforce, and effect systemic reform. Last year was the program's developmental year. Research suggests that transformative learning takes time and support. Institutional change is estimated to take more than 10 years to accomplish, and change in teacher practice takes 3 to 5 years.

Although reform is difficult, many more teachers are participating in MSA this year, and master teacher Carol Brown has seen some dramatic shifts since last year.

"Chama Middle School is our smallest program, but they have made a quantum leap forward this year," she says. "The teaching method they struggled with last year has become natural."

At the old campus of the Española Valley Middle School, few teachers have actual lab space, although all students will dissect frogs in the course of the school year. MSA received both frogs and microscopes over the summer. But teachers without labs have to be creative

about how they structure other experiments designed to instill the scientific method in students. Prescott has her class divide into groups to investigate how far a person can lean forward without falling over. Students are assigned jobs—taskmaster, recorder, measurer/calculator, or checker. The only tool needed for the low-tech experiment is a measuring stick.

At the new Española Valley Middle School, eighth graders learn physical science in a laboratory setting. To study soil erosion, they divide into teams with dishpans filled with mounded dirt. Each team takes a different approach to attempting to keep the soil from washing away when water is poured onto it. One team uses rocks to build retaining walls, another performs contour plowing to divert the water away from the soil. A third group covers the soil with a net material, and a fourth functions as the control group and takes no corrective action.

The students in the class are engaged and enthusiastic about the experiment. Although the class is noisy, there's plenty of learning going on. In addition to practicing the scientific method, they are learning to work in cooperative groups.

MSA was conceived and launched by the Northern New Mexico Council on Excellence in Education and is enthusiastically supported by the president of the Española school board and the school superintendent.

"We couldn't ask for better support from above," Brown says.

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the state, and one-third nationally. Over the past five years, small business expenditures by the Lab in northern New Mexico have increased by nearly 70 percent.

Five years ago, the Laboratory was the catalyst that brought about the formation of the Northern New Mexico Supplier Alliance (NNMSA). This 600-business organization increases business opportunities in the seven-county area of Rio Arriba, Los Alamos, Santa Fe, Taos, San Miguel, Mora and Sandoval Counties and their neighboring pueblos. Although not all members of the NNMSA are Lab suppliers, there is a sound working relationship between the organization and the Lab, characterized by networking and training opportunities and other support.

The Laboratory's Historically Underutilized Business (HUB) Zone Certification Program is another initiative to assist regional firms. The Small Business Administration has designated most of northern New Mexico as HUB Zone areas. A certified business located within a HUB Zone receives priority procurement status for federal contracts and Laboratory subcontracts. Although the Lab's program to certify HUB Zone companies is only a few months

old, 50 firms in the seven-county area have already been certified.

In the past 18 months, the Laboratory conducted three major business conferences to educate New Mexicans on how they can most effectively work with the Lab. These conferences have drawn hundreds of attendees, with nearly 200 local businesses exhibiting their products at the most recent conference in Pojoaque. The Laboratory also hosted two technology expositions at which Lab employees learned about the goods and services available locally.

The Laboratory uses a variety of methods to communicate with suppliers, procurement staff, and Lab personnel. A Web site that promotes small-business-related activities received a monthly average of 7,500 visitors during 2001. The "Buy Northern" Web page at <http://buynorthern.lanl.gov> has information about contract opportunities for small business and information for Lab workers who make purchases for their organization. For businesses without access to the Internet, the Lab publishes a monthly newsletter that is distributed to more than 600 firms and particularly targets northern New Mexico companies.

Easy Test Monitors Beryllium Contamination



Tammy Taylor of the Laboratory performs a swipe on a surface potentially contaminated with beryllium. Taylor has developed a beryllium detection technique using colorimetric analysis.

Detecting beryllium on contaminated surfaces may soon become as simple as testing the acidity of a swimming pool. Lab scientists have developed a colorimetric analysis—comparison of a color change to known standards, similar to the common litmus test for measuring the pH of a water solution—for real-time detection of beryllium contamination on surfaces.

Beryllium is widely used in industry and in nuclear weapons applications because of its unique materials properties, but breathing fine particulate beryllium is a health hazard for workers. Individuals who work with beryllium must minimize exposure and establish rigorous housekeeping practices. The new "swipe" technique permits workers to regularly monitor surfaces in their work environment at minimal expense, without losing work time waiting for test results.

The technique involves wiping surfaces with a prepared pad and then adding a solution. If the pad turns blue, beryllium is present. If it remains orange, the surface is free of significant contamination. Keeping workplace surfaces clean helps minimize the potential for worker exposure.



Navajo Code Talkers sign copies of a book about their role in the United States' war effort during World War II. In an August event at Fuller Lodge sponsored by the Community Relations Office and the Office of Equal Opportunity, the heroes were honored for their contributions to the Allied victory.

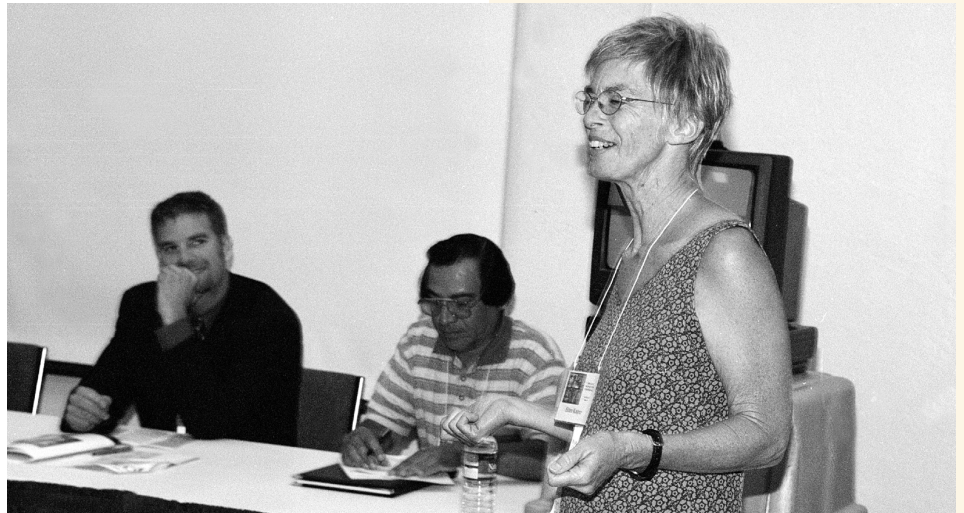
Lab Foundation Conference Explores Success in Education

Teachers, administrators, and interested parents had the opportunity to learn about existing programs that are working in northern New Mexico schools and about some promising new initiatives at the Los Alamos National Laboratory Foundation conference. Workshops focusing on "Success in the Schools" were among those offered at the annual event, held in August at Sweeney Center in Santa Fe.

A morning session on "Exemplary Programs in the Public Schools" profiled four programs that have already succeeded in improving the quality of education by integrating resources and innovative programs into the existing curriculum. From the Santa Fe Public Schools, representatives from the Indian Education Program and Partners in Education detailed those programs' history and track record. Presentations were also given on Española Valley High School's television production class and the Bridges Project for Education, headquartered in Taos.

Valerie Ingram, executive director for Partners in Education, said the program's funding has increased in 14 years from \$2,000 to \$185,000. The program matches sponsors with teachers applying for grants, or classes needing transportation for a field trip. A teacher warehouse, open Fridays and Saturdays, lets teachers help themselves to used computers, furniture, books, and other supplies. Ingram said pairing donors with specific projects and providing an easy grant application process are two keys to the program's success.

The Indian Education Program has integrated cultural awareness programs, after-school and Saturday classes, educational outreach programs, and an expanded summer enrichment program into the basic education program in the Santa Fe schools since 1998. Interim Director Glenda Frye showed examples of



Ellen Kaiper, television production teacher at Española Valley High School, describes how the TV program has evolved over the years. Fellow panelists are Stephen Patrick of the Daniels Fund, left, and Ben Vasquez of the Bridges Project for Education.

student videos produced by students during the summer.

Ellen Kaiper, who has taught television production at Española Valley High School since 1992, has observed that "kids involved in the TV program don't drop out. It involves both artistic and technological skills and provides a way for everyone to succeed." Kaiper's students, who have won Rocky Mountain Emmy Awards, work in groups to produce 45-minute television shows every month. Their 90-second to 2-minute segments, often dealing with cultural issues, are shown on public access channels in Española, Los Alamos, and Santa Fe and on Channel 13's News 101.

"Being in touch with its culture is one of Española's strengths," she said. "And the whole state gets to see something great coming out of Española."

The Bridges program aims to send more non-traditional students to college. Director and former high school counselor Ben Vasquez noted that only 10 percent of Taos County residents are college graduates. The program provides workshops on preparing for standardized tests, information on financial aid, and assistance with scholarship applications. Staff members work closely with high school guidance counselors to ensure students get the attention they need.

In the past four years, 600 people have participated and 90 percent have applied to college. "But we measure our success one student at a time," Vasquez said.

Following a workshop presented by staff of the middle school Math and Science Academy (see story on page 2), representatives from model programs for at-risk youth described how their nonprofit organizations have helped their students stay in school, make the transition to college, and obtain meaningful employment.

One of those programs, SER, Santa Fe Jobs for Progress served 800 students ages 14 to 21 last year. It is a dropout prevention program designed to bring relevance to the academic experience. The Daniels College Prep and Scholarship Program aims to provide a college education to students who might not otherwise attend. The program's founder and benefactor has focused on students in four western states, including New Mexico, with unrealized potential or previously unrecognized abilities with demonstrated financial need.

Stephen Patrick of the Daniels Fund said, "Our hope is that the students will be enriching not only themselves and their families but the overall community as well."

Worker Compensation Office Opens

A resource center to help energy workers or their families file for compensation from the federal government under the new Energy Employees Occupational Illness Compensation Program Act has opened in Española. The center, sponsored jointly by the U.S. Departments of Labor and Energy, is one of 10 nationwide that opened in July.

The new law provides \$150,000 lump-sum compensation and related medical expense payments to workers who became seriously ill from exposure to radiation, beryllium, or silica while working in the nuclear weapons industry for the Department of Energy, including its contractors and subcontractors. Compensation will also be available to some survivors and to some uranium employees. People trained to help workers compile medical and employment records will staff the center, located at 412 Paseo de Oñate, Suite D. For more information, contact the Energy Employee Compensation Resource Center at 747-6766.



National Nuclear Security Administration Director General John Gordon shakes hands with Española Valley Middle School student Amanda Salazar at Angelina's Restaurant in Española. Next to Gordon is Salazar's father, Michael, who works at the Laboratory. In August, Gordon, Laboratory Director John Browne, other Lab staff, and local officials toured San Ildefonso and Santa Clara Pueblos, and met with members of the Northern New Mexico Council on Excellence in Education and with Math and Science Academy students. The group also met with community and tribal leaders in Santa Fe.

ICON Back in Business

A lease agreement between the Department of Energy, the Los Alamos Commerce and Development Corporation, and a private company has paved the way for Spectra Gases of New Jersey to begin producing potentially life-saving stable isotopes of carbon-13, oxygen-17, and oxygen-18 for the U.S. market. Production will take place at the Lab's ICON facility. ICON stands for Isotopes of Carbon, Oxygen and Nitrogen.

Currently, foreign-owned, U.S.-based companies produce these isotopes but not in sufficient amounts to meet current market demand. Shortages are especially

severe in the areas of nuclear medicine and biomedical research. The revitalized ICON facility will help meet critical medical and diagnostic needs.

LANL scientists pioneered the process of stable isotope production, using the cryogenic distillation separation method in the late 1960s. The Lab produced isotopes for the national market until the late 1980s, when the technology was transferred to the private sector. The ICON facility was placed in stand-down mode in 1992. Industrial firms met the market demand until a few years ago.

Customer Focus Key to Realignment

Lab Director John Browne has announced a process of realignment, with clearer internal lines of authority and responsibility and more direct relationships between those carrying out the work and their customers. The new system is the result of a study that recommended the Lab undertake five initiatives, including integrating line and program organizations, dividing the nuclear weapons program into smaller units, and engaging those responsible for product delivery in work planning.

The typical Lab employee won't see major changes in his or her group or team structures, Browne said, but should see clearer assignments, clearer expectations, and quicker decisions.



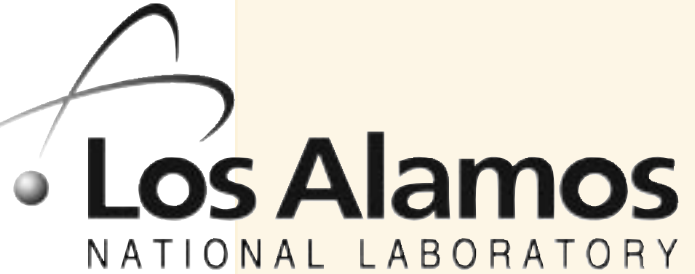
Los Alamos County Deputy Fire Chief Doug Tucker, left, was among numerous community leaders who participated in the Laboratory and community United Way September 11th Fund fundraising event in downtown Los Alamos. Also shown is **Wayne Brownlee** of the Los Alamos Police Department, **County Fire Chief Doug MacDonald**, and **Diane Quintana** of the Laboratory. Inset photo, **Dena Taylor** of the County Attorney's Office collected donations. About \$3,500 was raised at fundraising events downtown, at Technical Area 60, and at the Del Norte Credit Union in White Rock.

The Lab's New Look

Put away your bridges, pine cones, mountain scenes, spinning atoms, lasers, equations, and other images that have been used to represent the Laboratory. A new and official look for the Lab has been unveiled. The Laboratory's new logo, a stylized blue-and-gold atom, will help our customers and stakeholders more readily recognize us and our work and will convey the message that LANL is one laboratory with one central mission.

The introduction of this new logo is a symbolic but significant step on our path to being a unified and customer-focused Lab. The new logo contains several distinct identifiers: our Los Alamos name, which is easily recognized; the blue and gold University of California colors, which signify our connection to that institution; and the atom, which denotes our beginning as a nuclear laboratory and our ongoing strength in conducting science at a fundamental level.

Said Lab Director John Browne, "I am proud of this representation of who we are and where we're going. I'm excited about our future, and I want this emblem to represent the unified institution we're working hard to develop."



The Lab's new logo represents our unified, customer-focused institution.

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