

the laboratory connection

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 Hear 'Ya ...

According to more than 80 percent of community leaders surveyed in Santa Fe, Los Alamos, and Rio Arriba counties, the Laboratory is a dominant economic force in northern New Mexico. And nearly 70 percent of those same leaders applauded the Lab's education programs.

The poll is the third conducted for the Lab by Research and Polling, Inc. Previous surveys were conducted in August 1999 and June 1998. Two hundred sixty-two leaders were identified as potential respondents to the survey by the Lab's Community Relations Office and 162 leaders took part in the telephone survey.

The survey was commissioned to measure the Lab's perceived progress in responding to the needs of communities in northern New Mexico, and to measure community leaders' awareness and satisfaction levels of specific Lab programs and activities. Government, business, education, tribal, special interest groups, and DOE community leaders participated in the survey.

The Lab, in the eyes of local community leaders, has to do a better job communicating with Native Americans and, in the area of Lab partnerships, with state government entities. Community leaders told Research and Polling last fall that the most important information they would like to receive from the Lab deals with community involvement, employment opportunities, and economic and environmental impacts. "No matter

continued on page 3



Jim Freyer and Cheryl Lemanski of Biosciences Division speak with Rich Okinaka (back to camera, also of Biosciences) at a February public scoping session in Los Alamos. Both Freyer and Lemanski serve on the Institutional Biosafety Committee, of which Freyer is chair.

Lab Requests Environmental Assessment on Bioscience Facility

The Laboratory has taken an important step in evaluating the possibility of adding additional capability for biological research. Lab officials have asked the Department of Energy's (DOE) Los Alamos Area Office to begin an environmental assessment of a Biological Safety Level (BSL)-3 capability at the Laboratory.

"Our bioscience research is aimed at strengthening our ability to protect people against emerging infectious disease as well as the effects of biological agents that might be introduced into an environment, either by accident or for harmful intent," said Jill Trehwella, Bioscience Division (B) director. "As a natural extension of this research, we have been evaluating the possibility of building a new facility that would allow us to handle under enhanced safety procedures other organisms and explore the mechanisms by which they cause disease. The next appropriate step in this evaluation is an environmental assessment under the protocols of the National Environmental Policy Act, and the DOE will take the lead on this process," Trehwella said.

The Laboratory currently operates research labs with BSL-2 capability. BSL categories are based upon accepted national standards that have been developed by the Centers for Disease Control and the

continued on page 3

Students Win at Recycling Fair

Dealing with recycling is part of daily life for employees at the Lab. Now, it is something on the mind of students who participated in the first Student Recyclable Material Fair for northern New Mexico schools held in January at the Cities of Gold Hotel in Pojoaque.

The Lab and Johnson Controls Northern New Mexico, sponsors of the popular competitive event, asked students to present their ideas about using recyclable materials to create useful products or to craft art projects. The event drew 83 fifth-through 12th-grade students from Pojoaque, Los Alamos, Española, Peñasco, Dixon, and Santa Fe schools, as well as the Truchas Community Library. The JCNM Recycling Program coordinated the event, with sponsorships by the Lab, Los Alamos National Bank, Benchmark Environmental, Giant Industries, Valley National Bank, and the Cities of Gold Hotel. First place winners received \$100; Second place winners received \$50.

Student winners included:

Fifth through Eighth Grade: First Place, Julia DePaula, Pojoaque, for crafting a piggy bank out of a bleach bottle. Second Place, Laurel Romero, Truchas Community Library, for crafting a sculpture out of polystyrene, plastic spoons, and magazine photos.

Ninth through 12th Grade: First Place, Margaret Garcia and Veronica Lopez, Penasco, for creating a sculpture out of electronic parts and other waste material. Second Place, Robert Trujillo Pojoaque, for a wildlife collage made of recycled materials.

Honorable Mention Awards: Christina Salazar and Sara Borrego, Pojoaque, and Heather Martinez and Amery Romero, Truchas Community Library.

Innovators Honored



Ronald J. Martinez, left, of Physical Chemistry and Applied Spectroscopy, and his son, Ronald K. Martinez of Advanced Chemical Diagnostics, hold plaques they received during February's Lab Patent and Licensing awards ceremony. At right is Tom Meyer, associate Lab director for strategic and supporting research.

Researchers at the Laboratory who received patents or copyrights in 2000 were honored at a ceremony in February. The Lab's Patent and Licensing Awards ceremony also honored employees whose inventions generated license royalties. Awards were given to employees in three categories — Distinguished Patent, Distinguished Copyright and Distinguished Licensing.

Approximately 260 current and former employees were honored at the reception for work resulting in patents, copyrights, or license royalties. In fiscal year 2000, 57 United States patents were issued for Laboratory inventions, 30 commercial licenses were approved and \$1.3 million in license income was generated. The Laboratory's license portfolio now contains more than 600 noncommercial licenses with academia, government

entities and other nonprofit organizations, and more than 100 active commercial licenses. Since its inception in 1988, the licensing program has generated more than \$4.5 million in royalties. Approximately two-thirds of this income goes to fund research, education, and technology transfer activities at the Lab. The remainder goes to the innovators.

Innovators and the institution share income from patents and licenses, according to University of California policy. Collectively, last year's innovators received \$494,000 in income generated by their participation in licensing and commercialization activities. The Lab received \$554,000 for scientific research and development, technology transfer activities, and education programs at the Lab.

Community Leaders Survey
continued from page 1

what types of new programs or program improvements that [the Laboratory] decides to make now or in the future, it is essential that more is done to improve communication with community leaders," the report states.

However, the nonprofit Los Alamos National Laboratory Foundation continues to draw high marks, with 88 percent of the respondents saying they know of the foundation's programs and efforts in local communities. And eight of 10 respondents on average said they were very satisfied or somewhat satisfied with the foundation.

The surveys are a good faith effort on our part to work with community leaders, to respond to their concerns, and to continue improving in those areas where leaders feel the Lab can do better. We know community leaders are concerned about the Lab's regional involvement, where it makes its purchases, and how it responds to educational needs in the local communities. We're

Environmental Assessment
continued from page 1

National Institutes of Health. The categories range from BSL-1 to BSL-4.

BSL-1 procedures are comparable to those used in a high school biology laboratory. BSL-2 procedures add access control and enhanced microbiological practices, and are commonly employed in medical centers, dentist offices, and research institutions. BSL-3 procedures add additional access control and engineering controls for air-flow into and out of the facility. Procedures used in a hospital surgical operating suite, for example, are BSL-3 level. BSL-4 facilities are designed to handle the most deadly agents and have exceptional engineering controls. BSL-4 facilities are highly specialized and are only operated in a few locations.

committed to addressing these issues.

Some 84 percent of the leaders surveyed said they were "very satisfied" or "somewhat satisfied" with the overall impact of the Laboratory on their community's economy. "[The Lab's] biggest asset in the eyes of community leaders comes in the way of its economic impact on local communities. The vast majority of community leaders express satisfaction with [the Lab's] impact on the economy in their community," the report authors wrote.

Leaders also were asked to describe what they believe are the major issues they face in their communities. For the third straight year, economic issues, such as diversification, the lack of jobs, and high housing costs were the most important issues community leaders said they face. Community leaders in the Española Valley said lack of jobs and infrastructure/land use issues were the most important issues they must deal with. Santa Fe community leaders cited poor schools and water shortages as major issues, while

"A BSL-3 facility would greatly benefit our researchers working with detection and protection technologies," Trehwella said. "These scientists need to have daily access to a laboratory specifically designed to safely handle small amounts of organisms that, while infectious, can be vaccinated against or treated to prevent or eliminate infection."

The environmental assessment process provides avenues to receive input from the community. A public scoping session was held in Los Alamos on February 22. Also, Trehwella and her staff have been meeting with Tribal and community leaders in the region since early December 2000 to discuss the Lab's multifaceted bioscience activities.

"Laboratory Director John Browne has previously stated that after the environmental review for this facility

issues related to last year's Cerro Grande Fire topped the list of Los Alamos leaders.

About half of the community leaders responding to the survey said the Lab is a good corporate citizen. However, only 8 percent of the respondents said "unacceptable" when asked to rate the Laboratory as a corporate citizen, which continued a downward trend from the first survey in 1998 when 21 percent said the Laboratory wasn't a good corporate citizen.

One area showed a marked decline from previous surveys: 52 percent of respondents were either very satisfied or somewhat satisfied with the work in encouraging new businesses to relocate to northern New Mexico. That was down 16 percent from last year. In the area of education, 68 percent of community leaders responding said they were very satisfied or somewhat satisfied with the Lab's education programs. The figure is up from the first two surveys.

is completed he will be in a position to make a decision on behalf of the institution whether the Laboratory goes forward with this or not," Trehwella said. "The EA is a necessary part in this process, and I look forward to helping provide information to the community and hear community response."

The DOE holds the authority to make the final decision on whether or not a BSL-3 facility is constructed at the Lab.

Bioscience Division was formed in October 1999 to bring together biologists, chemists, physicists, and computer scientists to create and discover frontier science and technology that benefits public health, the environment, and national security.

From 'Off Ramps' to 'Gateways'

Stepped up responsibility was the recurring message of Director John Browne's all-employee meeting February 27th on the new University of California-Department of Energy contract provisions. Outlining the five major areas in the "gateway" Appendix O of the contract and encouraging the workforce to play its part in meeting the challenges they present, Browne noted the context that surrounded the "fast-track" negotiations to extend the current contract to September 30, 2005, and the need to partner with DOE at all levels of interaction. Crucial to the Lab and UC's success is positive relations with our DOE counterparts, said Browne.

The management fee is going to be "harder to earn, easier to lose," stressed Browne. It will be earned through meeting the Appendix O provisions and scoring well in Appendix F performance measures. Consequences are substantial: fee reductions for serious problems could be in the \$1- to -5 million range. But there are rewards, too. If the Appendix O requirements are successfully met by the milestone date of Sept. 30, 2002, there are opportunities to earn up to an additional \$800,000 per year in fees. These funds can go directly into research.

"This is not a new initiative, we are not changing course," said Browne. But the Lab will have to focus on some of the contract objectives detailed in Appendix O that define the criteria for meeting facility safety, safeguards, and security, project management, maintaining critical skills in the Lab's nuclear weapons programs, and an increased emphasis on management accountability by UC for the



Laboratory Director John Browne

operation of Los Alamos and Lawrence Livermore national laboratories. The new provisions are not unique to this contract; they are found in many DOE contracts throughout the complex. "We're not being singled out," Browne noted.

Browne had help in driving home the message. Robert Van Ness, UC's assistant vice president for Laboratory Administration, added UC's emphasis on working together to meet the "stretch" goals represented in the contract additions. He also thanked Lab management, employees, and community members for the strong support that helped convince National Nuclear Security Administration head General Gordon, then-Secretary of Energy Bill Richardson and others that extending the contract was in the best interest of the nation. Van Ness affirmed the commitment of UC to the management of Los Alamos, Lawrence Livermore, and Lawrence Berkeley national laboratories.

Browne closed with, "Let's make our management as good as our science ... I think we can do it and do it in a way that still maintains outstanding science."

Laboratory Is Top Contributor to Santa Fe's United Way

The Laboratory recently was recognized at a ceremony in Santa Fe as the top contributor to the United Way of Santa Fe County's 2000 giving campaign. University of California Lab employees pledged or donated \$92,840 to the Santa Fe campaign. The figure includes about \$9,000 from the not-for-profit Los Alamos National Laboratory Foundation. The amount also is the largest ever donated by one organization to the United Way of Santa Fe County.

"I am so proud of Los Alamos National Laboratory for their generosity in helping Santa Feans in need," said Ron Stevens, United Way of Santa Fe County executive director. "The donations will be used to help children learn and grow, encourage self-sufficiency, provide services to the elderly, and promote health and healing. "Los Alamos Laboratory employees, [many] of who live in Santa Fe donated a generous \$82,351. The corporate gift totaled \$10,489 for a grand total of \$92,840 which is an all time record in corporate giving."

"Our Lab employees can take pride in this accomplishment," said Laboratory Director John Browne. "Once again, Lab personnel have shown through their generosity that their community is important to them and that they are eager to help the less fortunate." University of California Lab employees pledged or donated over \$613,000 to the Santa Fe County and Los Alamos/Northern New Mexico 2000 United Way campaigns.



Hispano Legislators Meet in Santa Fe. Joe Salgado, the Lab's deputy director for business administration and outreach, talks with State Senator Manny Aragon, D-Bernalillo, Valencia, and Ellen Bernstein of the Albuquerque Federation of Teachers at the ninth Tribute to Hispanic Legislators February 15th at Sweeney Convention Center in Santa Fe. The event is hosted yearly by the Hispano Round Table, and the Lab helped sponsor the event.

TV of the Future

Lab scientists have developed a technology that could make the coming transition from current analog television to high-definition television a whole lot easier. The technology is a new transmission algorithm capable of compressing a HDTV data stream to the point where the HDTV and analog television signals can be broadcast over the same channel. This is of particular significance to consumers since Congress has mandated that HDTV be the required format for broadcast television signals by 2006.

"The most significant advantage of the technology over existing methods is that it permits broadcasting television networks to avoid spending millions of dollars on transmission systems for both analog and HDTV signals," said George Nickel of Hydrodynamics and X-Ray Physics Group and the algorithm's developer. "Those potential savings could help stimulate a more rapid acceptance of this technology."

The Lab developed compression technology allows both the new digital and old analog

television sets to receive a signal compatible to each system without requiring broadcasters to simulcast two distinct signals on two separate channels. The compression concept permits transmission of digital and analog signals in a form that does not require a converter for old receivers since an added software loop in the HDTV receivers recovers the digital information from the same channel. The information content in the picture using the algorithm, as measured in bits per pixel, will amount to approximately 80 percent of that for a dedicated HDTV transmission.

The use of this scheme would supplement the current HDTV format and could allow early expansion of HDTV availability without the use of additional simulcasting bandwidth during an interim period. After HDTV sets are more common, the signal could be converted to the regular HDTV format.

"Currently, there are an estimated 120 million analog TV sets in use in the United States and researchers estimate that only 30 percent of the population is familiar with HDTV," said Kathleen Herrera, a technology licensing specialist in the Lab's Industrial Business Development Office. "This presents a significant problem for consumers and manufacturers. HDTV manufacturers generate minimal revenue from HDTV sales and prices for the sets are high. Since HDTV receivers are expensive and programming is limited, consumers are hesitant to adopt the new format. This conundrum means the technology may not take off on its own. When the time comes in 2006 to convert broadcast formats, a large percentage of the population may not be aware of the advantages of HDTV sets and refuse to pay the additional costs for them while manufacturers must produce HDTV sets to comply with the congressional mandate."

The Lab's compression algorithm offers an interim solution to the problem faced by

consumers since it would permit the continued broadcast of analog signals until consumer awareness of HDTV increases and the costs of HDTV sets decrease with improvements to the technology and increased sales volume. The Lab technology also could provide television broadcasters significant savings by avoiding the purchase of transmission equipment to broadcast both signals simultaneously as well as requiring fewer support personnel to operate equipment.

The Lab technology is the result of compression research initially conducted for image processing used in underground nuclear testing. A patent application has been filed on this technology and the Lab is seeking qualified licensees. Licensees must be able to demonstrate prior professional experience in the fields of television broadcasting and/or equipment manufacturing.

For information on this and other licensing opportunities contact Herrera at 667-5844, or write to kaherrera@lanl.gov by electronic mail.



Regents Meet Community, Lab leaders. University of California Board of Regents member Sue Johnson, left, talks with Laboratory Director John Browne and San Ildefonso Pueblo Governor Perry Martinez, right, at the Convento in Española in mid-February. Española Mayor Richard Lucero hosted the gathering. During their visit to northern New Mexico, the Regents and other UC officials met with community and pueblo leaders, heard presentations from Lab researchers, and also toured several Lab facilities.

Lab's Education Equipment Gift Program Shows Early Success



Santa Fe Indian School students Ryme Martinez, left, of San Juan Pueblo, Denise Lucero of Isleta Pueblo, and Joseph Calvert, right, of San Juan Pueblo, work on computers that were donated to the school under the Laboratory Education Equipment Gift program. Substitute teacher Preminda Ram, standing, talks with Martinez. Nearly \$1 million in excess equipment has been given to colleges, universities, and not-for-profit organizations through the LEEG program. Educational or nonprofit institutions receiving excess property must use it for technical and scientific education or research activities. Organizations wishing to be considered for donation can request an application by writing to leeg@lanl.gov by electronic mail. Or call Thomasina Gurule at 665-8079.

Inside

Community Leaders Survey

Environmental Assessment on Bioscience

Students Win at Recycling Fair

Innovators Honored

From 'Off Ramps' to 'Gateways'

Lab Contributes to Santa Fe's United Way

TV of the Future



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