

# LANL

## LOS ALAMOS NEWS LETTER

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# Lab laser measures carbon in soils

by James E. Rickman

Laboratory scientists have developed a small, portable instrument that uses a laser to analyze the amount of carbon in soils, which can give scientists a better understanding of terrestrial processes that could accelerate or retard global warming.

With increasing international concern about greenhouse gases and global warming, scientists have sought better and more cost-effective approaches for measuring significant changes in the amount of land-based carbon, much of which is located in soils. But because the amount of carbon varies considerably from one spot to the next,

measuring changes in land-based carbon in fields, ranch lands and forests is difficult. The newly developed Los Alamos technology will aid scientists as they try to determine how soil-based carbon is released into the air through natural or man-made causes, or whether atmospheric carbon is being absorbed into soils. The new technology was highlighted recently in a paper appearing in the *Journal of Environmental Quality*.

"Carbon truly is the currency of life," said Los Alamos ecologist David Breshears of Environmental Dynamics and Spatial Analysis (EES-10) and a co-author of the paper. "For years, scientists have sought to improve accounting of Earth's carbon budget. This instrument will help us improve that accounting and our understanding of how soil carbon responds to different types of land management."

Using a technology called Laser-Induced Breakdown Spectroscopy — known simply as LIBS — scientists can now point a flashlight-sized laser device at a soil sample in the field or taken from the ground and determine how much carbon the sample contains. LIBS works by firing a brief, very intense pulse of laser light at a surface. The laser beam vaporizes a spot on the target sample that's roughly the size of a pencil point. A small spotting scope mounted near the laser source captures light emitted from

*continued on Page 3*



**David Cremers, left, and Monty Ferris of Advanced Chemical Diagnostics (C-ADI) use Laser-Induced Breakdown Spectroscopy to determine the amount of carbon in a sample of soil contained in the tube at right. The bright flash on the soil sample is where a pulse of laser light vaporizes a bit of the soil. By analyzing the spectral characteristics in the flash of light, the researchers are able to determine the amount of carbon contained in the soil. Carbon-LIBS is being developed to allow scientists to determine the carbon budget of terrestrial areas — knowledge that can help scientists gain a better understanding of forces that influence global warming.** Photo by James E. Rickman

# Don Cobb: Challenges to our national security

**Editor's note: Below are excerpts from an interview with Don Cobb, associate Laboratory director for Threat Reduction by Alison Grieggs of Communication Arts and Services (IM-1). For the complete interview, go to <http://int.lanl.gov/taskforce/director/cobb.shtml> online.**



**Don Cobb**

As associate Laboratory director for Threat Reduction, Don Cobb has overall responsibility for Laboratory organizations and activities that provide innovative scientific and technical solutions to new and evolving challenges to our national security. These challenges include proliferation of nuclear materials and know-how, threats from chemical and biological weapons of mass destruction and threats to the national infrastructure.

When Director John Browne announced the new senior management team, he emphasized his goal of unifying us around six

corporate values: trustworthiness, excellence, public service, diversity, safety and security, and teamwork. Don Cobb chose three of these values to highlight.

## **Trustworthiness**

"Trust is the key, our fundamental credibility. ... We have an important mission for our nation's security — citizens fund our work, and they have the right to expect us worthy of their trust. ... Trust is the foundation of what we give to our country," Cobb said.

## **Accountability**

"Accountability requires clear responsibilities and authorities. ... When you integrate line and program responsibilities, authority, responsibility and accountability are much clearer," he said.

## **Teaming**

"Project teams are where the Lab gets its work done. ... I've seen teams accomplish amazing things that no one thought they could. That synergy is very powerful," he noted.

## **Serving our nation after Sept. 11**

Cobb is coordinating the Laboratory's response to the nation's needs after Sept. 11, and teamwork will be crucial. In a letter he posted on the Lab's Web-based readers forum following the attacks (<http://www.lanl.gov/orgs/pa/News/Letters.html>), Cobb said, "We have a team looking at possible new or follow-on threats. We took stock of our capabilities to respond to attacks involving nuclear, chemical or biological weapons. And we are rethinking how the chain of events leading to a terrorist attack can be better understood, including motivations, so that we will be able to find and stop such acts before they happen."

*continued on Page 3*

## TR team demos Lab technology

A team of scientists and staff from across the Laboratory's Threat Reduction Directorate was in Washington, D.C., last month as part of a Department of Energy demonstration of counterterrorism technology.

Energy Secretary Spencer Abraham and Tom Ridge, head of the new Office of Homeland Security, viewed demonstrations of counterterrorism technology at DOE's Forrestal Building headquarters. The demonstration included posters and actual operation of equipment for Abraham, Ridge and guests.

Laboratory staff members making presentations included Paul Jackson of the Bioscience (B) Division. Jackson demonstrated a field DNA extraction kit and pathogen strain identification techniques.

From the Nonproliferation and International Security (NIS) Division, Rob York and Jim Wieting demonstrated a pedestrian radiation detection portal, and Bill Murray showed a hand-held radiation detector operated via Palm Pilot that detects gamma and neutron sources.

Wiley Davidson of the Decisions Application (D) Division explained the networked detectors of BASIS, the Biological Aerosol Sentry and Information System.

Ray Gordon of D Division and Nancy Ambrosiano of the Public Affairs Office (CER-20) briefed visitors on the National Infrastructure Simulation and Analysis Center, and a research partner from Sandia National Laboratories in Albuquerque demonstrated the on-screen capabilities of the Rapid Syndrome Validation Project.

The TR team is assisted by Ambrosiano and David Lyons of CER-20.



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# Employee comment system has new name

by Shelley Thompson

RevCom, a Web-based tool for obtaining employee feedback on proposed changes to Laboratory policies that affect terms or conditions of employment, has been renamed. The Comments Bulletin Board allows employees to submit comments, according to Pam Ulibarri of Deployed Resources (HR-9).

According to Ulibarri, policies for review are generally those with changes affecting the Laboratory, University of California Laboratory

employees and subcontract personnel rights and obligations.

When a policy comes up for review, Laboratory workers are notified through an all-employee memo. The all-employee memo will describe the new policy or proposed changes to an existing policy and a proposed effective date. The all-employee memo also will provide a Web address to the Comments Bulletin Board where Lab workers can view the policy and its proposed changes and provide comments pertaining to the proposed changes. Ulibarri said Lab workers

may submit comments anonymously, but this practice is discouraged.

Comments from Lab workers are posted on the bulletin board and made available for other employees to read and comment on.

After the comment period is over, Human Resources (HR) Division staff, with the assistance of appropriate subject matter experts, will review and summarize the comments on each proposed change and recommend a final policy draft that takes into consideration input from Lab workers.

For more information, call 7-8730.

## Lab laser ...

*continued from Page 1*

the vaporized area and directs it to a spectral analyzer. This analyzer, part of the LIBS device, looks at the signature of the light to determine what elements are present. Each element creates its own spectral fingerprint.

In field trials conducted on agricultural soil, the research team, led by Los Alamos physicist David Cremers of Advanced Chemical Diagnostics (C-ADI) and soil scientist Michael Ebinger of EES-10, configured the spectral analyzer to measure the carbon signature coming from the soil. Subsequent field trials on woodland soils with Carbon-LIBS, or C-LIBS for short, have shown that the instrument can be used reliably to determine the carbon content of different soils.

The Lab researchers plan to take the instrument to other areas to determine how C-LIBS can be used to quantify carbon in soils throughout the world.

"With C-LIBS, we now have a rapid way to collect many measurements of

soil carbon and come up with better estimates of how much carbon is in a field plot or across a landscape and how that amount of carbon is changing over time," Ebinger said.

Added Breshears, "Appropriate land management could increase soil-carbon retention. Conversely, disturbances like fires could result in rapid losses of soil carbon. We plan to apply C-LIBS to help scientists get a better handle on these trade offs."

Laser-Induced Breakdown Spectroscopy technology itself is not new. Earth and space scientists have proposed using the technology to

determine the composition of the surfaces of other planets, asteroids, moons and comets. The device is small, rugged and portable and is easy to use and maintain. In other Earth-bound applications, LIBS can analyze samples from as far as 50 feet away or can be used to analyze areas inside tight nooks and crannies that might not be convenient to sample by conventional methods.

The C-LIBS team includes Breshears, Cremers, Ebinger, Los Alamos biologist Pat Unkefer of Szilard Resource (B-3) and Joel Brown of the U.S. Department of Agriculture.

## Don Cobb ...

*continued from Page 2*

The Laboratory is responding in many ways, and employees of Threat Reduction are being called upon to lead and coordinate the Laboratory's response. People with highly specialized skills are moving into new assignments. Managers conducted an inventory across the Laboratory to see what capabilities we can offer, including our computing and information analysis tools. The Laboratory is a recognized leader in modeling critical infrastructures, and we are applying that expertise in many ways: to look at the as-yet-unanticipated consequences to events, to understand the links between events, to examine by-products of events in an effort to protect our infrastructure and to better understand our vulnerabilities," he said.

"The Lab also is a leader in sensors, systems and detectors; the data that they collect loop immediately back into the information analysis tools that look for trends, patterns and indicators of future activity. The media recently have reported about the vast volume of leads and information that agencies such as the FBI and CIA grapple with daily; people at Los Alamos are supporting these agencies by analyzing those data."

Cobb also discussed protecting the nation's infrastructure and Decisions Application (D) Division's role toward that end as well as biological threats and the new Biothreat Reduction Program.



**There will be no  
"Los Alamos News Letter"  
on Jan. 10. The next issue  
will be published Jan. 24.**

# When it's snowing outside ...

by Kathy DeLucas

Wondering if the Lab will be open or delayed because of snow?

There's a toll-free employee hotline that employees can call to find out. That toll free number is 1-877-723-4101. The toll free number provides easy access to the UPDATE phone number that employees should call to find out if the Lab's operating schedule is affected by winter storms. The hotline is the Lab's official, primary source for obtaining such information.

The local phone number for Santa Fe and Los Alamos residents is 667-6622. The message will not change unless there has been a change in schedule at the Lab or new information concerning an emergency.

The Laboratory's Early Dismissal/Closure/Delayed Opening Plan for determining the Lab's operating schedule because of inclement weather involves several resources. Gene Darling of Emergency Management and Response (S-8) said the duty emergency manager at

EM&R keeps up with the latest local forecast and usually knows ahead of time if a weather system can potentially affect the Lab's schedule.

In the case of Lab closures or delayed openings, the process usually begins around 3 a.m. The duty emergency manager begins receiving calls from Johnson Controls Northern New Mexico Roads and Grounds, Protection Technology Los Alamos and Utilities and Infrastructure to receive information on road conditions at the Lab. The duty emergency manager calls the State Highway and Transportation Department, Los Alamos Police Department, New Mexico State Police and Air Quality (ESH-17) for weather and additional information.

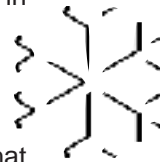
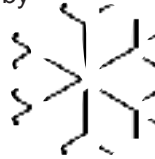
Once the duty emergency manager has received the latest information concerning road conditions, JCNMM's progress in clearing sidewalks and parking lots, current weather conditions and the forecast for what is expected to occur later that day, he or she discusses the situation with other EM&R personnel before

contacting the Director's Office.

There are several backup contacts throughout each phase of the plan in case the primary cannot be reached for any reason.

That person then confers with Department of Energy senior managers. The final decision and authority on whether to close entirely, delay opening or dismiss early rests with the DOE Los Alamos Area Office. Once such a decision has been made, the duty emergency manager is contacted; EM&R personnel call the primary contact in the Public Affairs Office (CER-20). Public Affairs places the message on the UPDATE information hotline.

The entire process for delayed opening or Lab closure usually is completed before 5:30 a.m., giving Lab and contractor employees time to find out ahead of time what the situation is at the Lab. Darling says the plan works relatively well when bad weather occurs very early in the morning, but there's really not much EM&R can do in terms of warnings



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## The OPSEC process *Analyze your vulnerabilities*

by Kevin Roark

The third step is the heart of the Operations Security process. In step one you have identified your critical information, in step two you have analyzed potential threats. So, by the time you reach step three you know which information is critical to keeping your plan or project both operational and successful and you know who is likely to want this plan or project to be derailed, as well as who is likely to want to steal it from you.

You should also have identified what information would make it possible for your adversary/competitor to obtain your critical information in time to successfully derail or steal your project.

In step three you will want to get inside the head of your adversary. Try enacting a different scenario for each of your adversaries. Remember that while one adversary might want to learn your organization's secrets, another may want to steal the entire project and yet another may just want the project stopped.



Study your operation from beginning to end to find out where you are or will be making information available to your adversary. Also, remember that when activities are planned or undertaken, associated administrative, physical, observable and technical actions become possible indicators of capabilities and intentions, which may then convey information to your adversaries.

Some examples include

- construction activities;
- physical security measures like the protective force, gates and fences; and
- deviations from the regular schedule evidenced by a facility.

For more information on OPSEC, call the OPSEC Program Office at 5-3372.

# Laboratory has new opportunities for recycling, pollution prevention

by Todd Hanson

The Laboratory's Environmental Stewardship (E-ESO) Office has developed, in a partnership with Johnson Controls Northern New Mexico, Nambe Recycling Facility and Los Alamos County, pollution prevention and recycling opportunities for almost every type of trash generated at the Laboratory. In addition, the Laboratory has a program to encourage the purchase of materials and supplies with recycled content.

These new opportunities, said Pat Gallagher of E-ESO, will help the Laboratory meet a Department of

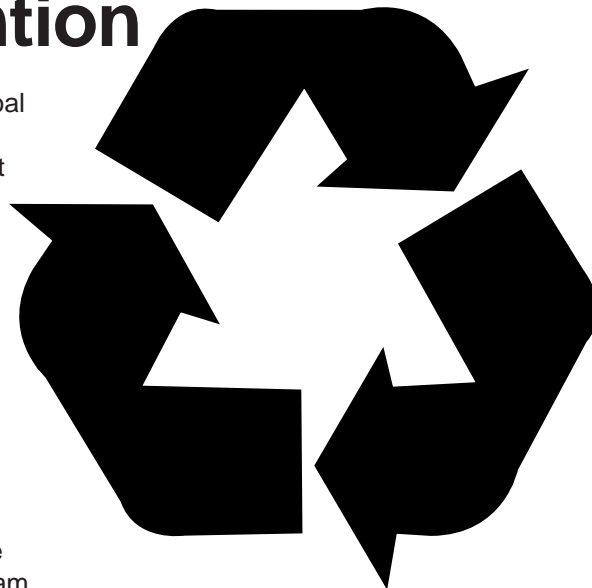
Energy sanitary waste reduction goal of 75 percent by 2005. The key is realizing that almost every waste at the Laboratory can be reduced by simple pollution prevention techniques and that the remaining waste can be recycled.

The last step in closing the loop on waste reduction is to buy supplies and materials with recycled content, which helps to support a robust recycling industry.

Here are few simple ideas for reducing two major waste streams: paper and food. Paper waste is the largest nonconstruction waste stream at the Laboratory. Double-sided printing and copying can reduce paper and waste significantly. Clearing the copier of preceding jobs can reduce the number of copies made accidentally. A neat and organized office can avoid waste by reducing coffee or water spills that may damage documents or reduce documents "lost" in the desk piles. Lab workers can use "Mail Stop J568" to get their name off of mailing lists and eliminate junk mail.

Lab workers also can recycle all paper wastes except for cross-cut paper that is shredded for security purposes. That includes white paper, and MS A1000 materials such as colored paper, Post-It notes, envelopes, catalogs, binders, overhead transparencies and other paper wastes. The Laboratory has a limited number of MS A1000 side caddies available upon request. These caddies clip to the green desk side recycling bins and help separate white paper from MS A1000 paper, keeping desks neater and making recycling easier. Contact Camille Bustamante of Johnson Controls Northern New Mexico at [wastenot@lanl.gov](mailto:wastenot@lanl.gov) by e-mail to obtain a side caddy, while supplies last.

Food waste disposed at desks and in office kitchen areas is a significant



source of sanitary waste at the Laboratory as well as a potential source of food for rodents and insects in the office. Wet-food wastes from office areas create even more waste because it contaminates other office wastes during waste collection, rendering paper, cardboard and plastic unrecyclable.

Reducing food waste is a simple step that can significantly decrease the Laboratory waste that is sent to the landfill. Only buy what you will eat or share the rest with co-workers. Use reusable food containers; segregate wet-food wastes into one trash can in the kitchen area rather than disposing in many desk-side trash cans.

For more ideas and information on waste prevention, go to the E-ESO Web page by clicking on the "Chasing arrows" symbol from the Laboratory home page at <http://www.lanl.gov>. Or contact Gallagher of E-ESO at 7-2278 or [patg@lanl.gov](mailto:patg@lanl.gov) by electronic mail.

For information on recycling, contact Bustamante at 7-2111 or [wastenot@lanl.gov](mailto:wastenot@lanl.gov) by e-mail.

For information on "Buying Recycled," contact Eleanor Chapman of E-ESO at 7-1550 or write to [eleanorc@lanl.gov](mailto:eleanorc@lanl.gov) by e-mail.



## Flu medicine alert

You now can find many over-the-counter preparations that claim to alleviate the symptoms of flu. These medicines are basically the same ones that are marketed for colds and neither work to cure the virus that causes the flu. Like colds, flus will generally run their course and go away by themselves.

## Preventing colds and flus

Cold and flu viruses are transmitted through the air as well as on objects. One way to shorten their lives is to use a humidifier. Viruses prefer dry air, which is why colds and flus are more common during the winter months.

Source: *American Institute of Preventive Medicine*



## NEWSMAKERS



**Bob Newell**

**Bob Newell** has been named Information Management (IM) Division leader after serving as acting division leader for the past year. IM Division was created in October 2000 when the Computing,

Information and Communications (CIC) Division was reorganized. Newell joined the Laboratory in 1998 as CIC deputy division leader for Information Services. Before coming to the Lab, Newell was manager of Information Systems at Basin Electric Power Cooperative in Bismarck, N.D. He holds a bachelor's degree in electrical engineering from the Massachusetts Institute of Technology and a master's degree in electrical engineering from Queen's University in Kingston, Ontario.

**Philip Kruger** has been named as one of the two deputy division directors in the Human Resources (HR) Division. He was formerly the group leader for Staff Relations (HR-8) and also was acting group leader for Distributed Services (HR-7) until the groups merged. Kruger came to the Lab in November 1999 from B.F. Goodrich Corp. where he was vice president of labor relations. He has a jurist doctorate from the University of



**Philip Kruger**



**For Laboratory closures, delays or early dismissal information, call UPDATE at 667-6622 or 1-877-723-4101 (toll free).**

California, Davis, and a bachelor's degree in comparative culture from the University of California, Irvine.

**Bryan Fearey**, special adviser to the deputy director for National Security on nuclear strategy, arms



**Bryan Fearey**

control and nonproliferation, recently received one of the highest noncareer civilian awards given by the Department of Defense. The Office of the Secretary of Defense Medal and Award for Exceptional Public Service was awarded to Fearey when he worked as science adviser under the Under Secretary of Defense for

Acquisition, Technology and Logistics. Fearey provided detailed scientific advice and expertise on both technical and nuclear systems issues. He served as the official OSD science adviser and delegation member for the Intermediate-Range Nuclear Forces Treaty and the Strategic Arms Reduction Treaty negotiations in Geneva. He also received a commendation from the Office of the Assistant Secretary of Defense Policy (Strategy and Threat Reduction) for this work. Fearey has been at the Lab since 1986. During his tenure at the Laboratory, he has supported advanced technologies related to ultrasensitive detection, international and domestic safeguards and worked on a variety of arms control and non-proliferation initiatives, as well as nuclear weapons work.

## Don't be a wreck on the road

*by Fran Talley*

There are almost as many opinions about how to drive safely on ice or snow as there are automobiles. A few precautions can help when the unexpected occurs.

- Remember that bridges and overpasses freeze first. Slow down and avoid sudden changes in speed or direction.
- Keep windows clear of snow and ice.
- Maintain a steady speed, but not too slow. In deeper snow, it's often necessary to use the car's momentum to keep moving.
- Use brakes cautiously. Abrupt braking can cause brake lock-up, which may result in loss of steering control.
- For antilock brakes, apply constant, firm pressure to the pedal. During an emergency stop, push the brake pedal all the way to the floor, if necessary, even in wet or icy conditions.
- If stuck in snow, straighten the wheels and accelerate slowly. Avoid spinning the tires. Use sand or cinders under the drive wheels.

If it is necessary to drive in inclement weather, call 1-800-432-4269 or log on to the New Mexico State Highway and Transportation Department Web site at <http://www.nmshtd.state.nm.us/> for the latest in road closures and related traffic news. And for Laboratory early closure, full-closure or delayed-opening information, call the UPDATE Information Hotline at 667-6622 or 1-877-723-4101 (toll free).



# December employee service anniversaries

## 35 years

Valerio Armijo, P-25

## 30 years

Carl Ekdahl, DX-6  
Donald Gettemy, ESA-TSE  
Beraldo Montoya, ESH-1  
Betty Perkins, DX-DO  
Barbara Ritchie, IM-1  
Robert Stewart, CCN-5

## 25 years

Graydon Anderson, C-PCS  
Ezekiel Aragon, ADWEM  
Thomas Brown, ESH-12  
Susan Carlson, IM-1  
Theresa Cdebaca, NIS-10  
Fermin Garcia, MST-6  
Earle Marie Hanson, ESA-DO  
John Langford, ESA-WR  
Dennis Naranjo, ESA-DE  
Gerard Quigley, C-PCS  
James Stelzer, LANSCE-2  
Daniel Varley, ESA-DO-PO

## 20 years

John Baumgardner, T-3

James Freyer, B-DO  
James Holt, ADO  
Glenn Magelssen, X-2  
Phillip Rinard, NIS-5  
Maurice Sheppard, X-4  
Barbara Smith, C-ACT

## 15 years

John Archuleta, BUS-5  
Cecilia Burciaga, ESA-WR  
Anothony Cimabue, ESA-DE  
Miles Corrie, C-FM  
Epolito Lopez, SNS-03  
Maria Lujan, D-DOD  
Fred Moya, BUS-4  
Ronnie Quintana, BUS-3  
Gene Sacoman, CCN-7  
Nancy Sauer, C-SIC  
Gerald Seitz, DX-3

## 10 years

Andrew Hime, P-23  
Bennie Martinez, E-ET  
Derrick Montoya, DX-1  
Mark Padilla, BUS-2  
Rita Spencer, STB-LDRD

Rachel Taylor, PM-DS  
Sharon Trujillo, IBD

## 5 years

Richard Ames, NMT-2  
Lisa Colletti, C-AAC  
Robert Greene, CCN-8  
John Hopkins, IM-1  
Lianjie Huang, EES-11  
David Ireland, SNS-03  
Steve Lamoreaux, P-23  
Joseph Latino, NIS-4

Per Lysne, CCN-7  
Robert McQueeney, LANSCE-12  
David Mercer, NIS-5  
Dana Netz, DX-6  
Lucille Peralta, IBD  
Gilbert Ratliff, HR-5-STAFF  
Dane Spearing, NMT-11  
Amy Urbatsch, BUS-2  
Douglas Weaver, EES-7  
Wesley Wilburn, P-23  
Cathy Wilson, EES-10  
Christopher Worley, C-AAC

## This month in history

### December

**1612** — Simon Marius becomes the first person to observe the Andromeda galaxy through a telescope

**1737** — Celebrated Italian violin maker Antonio Stradivari died at Cremona

**1832** — Michael Faraday announces the first law of electrolysis

**1924** — Edward Hubble announces the existence of other Milky Way systems

**1930** — Robert Goddard launches his first rocket in New Mexico from a ranch near Roswell

**1946** — The Town Council committee announces the winners of a contest to name the three principal streets in Los Alamos — Trinity, Central and Canyon

**1957** — First full-scale nuclear power plant becomes operational in Pennsylvania

**1965** — First doctoral degree is awarded by a computer science department (University of Pennsylvania)

**1979** — The Soviet Union invades Afghanistan

**1987** — Congress approves a measure designating Yucca Mountain in Nevada as the only site to be considered as a high-level radioactive waste repository

**1998** — Former President Clinton impeached by the House of Representatives (acquitted by the Senate in 1999)

**2001** — Lunar eclipse (Dec. 30) Penumbral eclipse of the moon. Moon enters penumbra at 3:25 a.m. EST

## When it's snowing ...

*continued from Page 4*

when bad weather strikes the area unexpectedly after 5 a.m. "There's just no time to adequately respond to the situation," he said.

If it's a delayed opening or closure, Public Affairs then calls various radio and television stations, asking them to report the Lab's operating status.

In the case of an early dismissal, the information is immediately put on the UPDATE Information Hotline and the Daily Newsbulletin. E-mail announcing the early dismissal also is sent to master management and administrative distribution for dissemination to all employees.

Emergency Management personnel also contact the Los Alamos Public Schools superintendent, Los Alamos and state police, PTLA and other organizations.

If you are at work and want to know if the Lab is closing early, periodically call the UPDATE hotline (667-6622) or check the daily Newsbulletin at <http://www.lanl.gov/newsbulletin> (remember to click the "Reload" button if you have previously accessed the site).

If you are at home and want to know if the Lab is on a delayed opening schedule or is closed for the day, call the hotline first. Listen to the news on radio or television stations. For more information about the Lab's Early Dismissal/Closure/Delayed Opening Plan, call 7-6211.

## From 'conehead' to cowboy

# Burick says 'Don't fence me in'

by James E. Rickman



For Dick Burick, a Lab veteran who retires next month after more than a quarter century of service, the phrase "being put out to pasture" brings excitement.

On Jan. 4, the former deputy Laboratory director of Operations will officially trade in his duties as a career engineer and Lab manager for new duties as a rancher managing nearly 160 head of fine Black Angus cattle.

"Being able to shift my focus from a career as an engineer to owning an absolutely beautiful working ranch is a dream come true," says Burick, who plans to spend as

much time as possible at his Rocking Sigma Ranch, a sprawling 20,000 acre spread located in Southern New Mexico. The Rocking Sigma borders a ranch owned by media mogul Ted Turner.

For Burick — a rugged individual who has a great love for the outdoors and the romance of the West — the transition from technical and managerial work at Los Alamos to the job of running a ranch seemed natural enough. Raised on a small farm in Pueblo, Colo., Burick was used to a saddle, dust and livestock. But his work at the Lab with other Ph.D.s has given him good training, too.

"I've spent much of my life herding Ph.D.s," Burick quips. "Herding cows probably will be a lot easier."

Others, however, were a little more skeptical about the transition from "conehead" to cowpoke.

"Shortly after I had bought the ranch, I was talking with some of the locals down there," Burick said. "I had told them that I worked at Los Alamos and they all started looking worried. I asked them what was wrong, and one guy said to me, 'Well, we just thought you should know right up front that we don't think they make cows long enough to be able to brand them with  $E=mc^2$ .' We all had a good laugh, and I knew these were my kind of people."

All kidding aside, Burick's beef will bear a brand with a scientific slant. The unique symbol for the Rocking Sigma Ranch is the Greek letter sigma underscored by a curved line. Burick says most brands typically take months or even years to register. Because the Rocking Sigma's brand was so unusual, it was approved in just weeks.

While he looks forward to his new life, Burick reflects fondly on his Los Alamos career. Burick and his wife were first captivated with Los Alamos during a chance drive through the community in the mid 1970s. The views were so spectacular that they moved here shortly afterward.

Of course, some things about Los Alamos never seem to change.

"We couldn't find housing. There were a total of five houses on the market," he said. "We were living in the Hilltop House when we finally found a house in White Rock. Three years later we were finally able to find a lot we liked — we built a house on North Mesa."

Burick's duties through 25 years at the Lab have run the gamut: He worked on isotope separation programs; he helped develop particle beams, including one that would go into space and help secure the U.S. advantage during the Cold War; he served as a deputy associate director; directed the Engineering Sciences and Applications (ESA) Division; and eventually took charge of Laboratory operations as a deputy director. That last job included the demanding task of maintaining continuity at the Lab during and after the Cerro Grande Fire.

His fondest memories come from working on the Beam Experiment Aboard Rocket (BEAR) Project, which put a small particle accelerator in space, a feat many said couldn't be done.

"That work was a little like doing a nuclear shot," Burick said. "You push the button and it either works or it doesn't. You only get one chance."

Life is similar, says Burick.

He's happy to take his next chance riding fence, tending cattle and settling into a pastoral life after a productive technical career.

### Los Alamos News Letter

Mail Stop C177  
Los Alamos, NM 87545

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