



# NewsLetter

Week of May 13, 2002

Vol. 3, No. 9

## LANSCE builds on 2001 successes as it readies for new run



*Siva Chinta from Texas A&M University's Department of Chemistry loads a sample of gold/titanium oxide into a closed-cycle refrigerator during the successful 2001 run cycle at LANSCE. Chinta used the Filter Difference Spectrometer at the Lujan Center to study the catalytic oxidation of propene on nanoparticles of gold on titania.*

range in the world to solve a broad variety of issues in nuclear science, condensed matter physics, material science and nuclear weapon physics.

"Last year's run cycle at LANSCE was an outstanding success," said LANSCE Division Leader Paul Lisowski. "We're excited about both the large number and high quality of proposals for experiments in this

by Jim Danneskiold

As researchers at the world's most powerful linear accelerator prepare for the upcoming run cycle, they look back on a successful 2001 run cycle that produced scores of experimental results for basic and defense science, built key new facilities and instruments and set records for operating efficiency.

These are remarkable achievements for the venerable Los Alamos Neutron Science Center, whose 800-million-electron-volt accelerator celebrates its 30th birthday next month.

LANSCE's unique value to the nation is found in the breadth of science that can be done there. Scientists come to LANSCE to study and make use of neutrons over the largest energy

summer's running period. Response from the basic and applied research communities shows that after nearly 30 years of operation, LANSCE is still one of the world's premier research facilities."

Recently completed analyses of the seven-month, round-the-clock run cycle for 2001 showed LANSCE achieved 92 percent operational efficiency, far better than any previous run cycle, with significantly fewer long outages. The 92-percent figure measures the amount of time the accelerator delivered beam to its many users, taking into account scheduled maintenance and replacements. Generally, large accelerators and associated target stations operate at about 85-percent efficiency.

About 250 users ran more than 200 experiments at LANSCE during 2001, many of them from top universities and from industry. Their work has resulted in or will lead to dozens of publications and doctoral dissertations.

"LANSCE has once again shown its value to the international scientific community while delivering on its commitment to its major sponsor, the National Nuclear Security Administration," Lisowski said. "The quality of research done by our users proves LANSCE's value as a magnet facility to attract young scientists who will reinvigorate our fundamental research and national security work."

LANSCE has always attracted an extensive and diverse community of outside users from industry, universities, other government laboratories and foreign research institutions, providing a base for collaboration and scientific advance, Lisowski said.

The LANSCE user facility comprises the half-mile-long proton accelerator, a proton storage ring, production targets at the Manuel Lujan Jr. Neutron Scattering Center, the Weapons Neutron Research Facility and a variety of associated experimental areas and spectrometers. Both the Lujan Center, which provides low-energy neutrons,

continued on Page 4



*Hyun Yim of Sandia National Laboratories used the Surface-Profile Analysis Reflectometer at the Lujan Center at LANSCE to understand the interactions of macromolecules to surfaces. Yim's research could lead to more durable paints and polymer coatings. Yim also is studying how model biological membranes interact with proteins for development of biosensors.*

Photos courtesy of LANSCE

### World-class neutron scattering

by Jim Danneskiold

Besides the scientific and operational successes, LANSCE staff brought four new world-class neutron scattering instruments on line during the 2001 run, greatly expanding the research possible at the Lujan Center. These include

- HIPPO, the High-Pressure Preferred Orientation neutron diffractometer for the characterization of bulk materials, which enables researchers to undertake a broad range of studies in materials science, crystallography, geology, physics and chemistry.
- SMARTS, the Spectrometer for Materials Research at Temperature and Stress, which helps researchers study residual stress and strain in materials at microscopic levels, which aids in engineering and the creation of new, higher-performance composite materials
- The Protein Crystallography station, a new tool for studying the structure of proteins and similar large molecules, a perfect match for the advanced capabilities Los Alamos has built over the years in functional genomics and proteomics. Proteomics is the emerging field that seeks to determine protein structure and related cell biology, a potential key to the design of new drug and disease treatments.
- Asterix, a new spectrometer for studies of nanomagnetism and the magnetic properties of complex materials, which could lead to better thin magnetic films for data storage and a deeper understanding of other materials.

## Inside this issue ...

### Science Day 2002

Invited talks, poster sessions and a tour of the Proton Radiography Facility were part of the many activities held during the Laboratory's Science Day 2002. . . . .Page 3



### Under one roof

The Laboratory's new Emergency Operations Center to house multiple emergency agencies. . . . .Page 4



### Wildfire meeting hits home

Experts are concerned that things will grow worse before they get better in and around the county. That was the message to a standing room only crowd at the fourth annual public meeting about wildland fire. . . . .Page 5

### People

There are two announcements out of the Business Operations (BUS) Division: the new Business Planning and Budgeting (BUS-3) group leader and the new head of the Program Integration Office. Also, the winners of the new Postdoctoral Distinguished Performance Awards are announced. . . . .Page 6



### Computer whiz kids

A computer wizard from Silver High School took home the top prize recently in the 12th annual New Mexico High School Adventures in Supercomputing Challenge at the Laboratory. . . . .Page 7



### The final chapter draws near

After a long and varied history, the Omega West Reactor will undergo decommissioning and demolition beginning in June. . . . .Page 8

## Los Alamos National Laboratory NewsLetter

The *Los Alamos NewsLetter*, the Laboratory bi-weekly publication for employees and retirees, is published by the Public Affairs Office in the Communications and External Relations (CER) Division. The staff is located in the IT Corp. Building at 135 B Central Park Square and can be reached by e-mail at [newsbulletin@lanl.gov](mailto:newsbulletin@lanl.gov), by fax at 5-5552, by regular Lab mail at Mail Stop C177 or by calling the individual telephone numbers listed below.

#### Editor:

Jacqueline Paris-Chitanvis, 5-7779

#### Associate editor:

Judy Goldie, 5-0297

#### Managing editor:

Denise Bjarke, 7-3565

#### Graphic designer:

Edwin Vigil, 5-9205

#### Contributing photographers:

John Bass, 5-9204

Michael Carlson, 5-4610

LeRoy N. Sanchez, 5-5009

#### Contributing writers:

John Bass, 5-9204

Jim Danneskioldi, 6-1640

Michael Carlson, 5-4610

Judy Goldie, 5-0297

David Kratzer (CCN-7), 5-4444

Kathryn Ostic, 5-8040

Kevin Roark, 5-9202

Fran Talley, 7-5225

Los Alamos National Laboratory is operated by the University of California for the National Nuclear Security Administration (NNSA) of the U.S. Department of Energy and works in partnership with NNSA's Sandia and Lawrence Livermore national laboratories to support NNSA in its mission.

Los Alamos enhances global security by ensuring safety and confidence in the U.S. nuclear stockpile, developing technologies to reduce threats from weapons of mass destruction and improving the environmental and nuclear materials legacy of the Cold War. Los Alamos' capabilities assist the nation in addressing energy, environment, infrastructure and biological security problems.



Printed on recycled paper.  
Please recycle.

## FROM THE TOP



# DOE review shows benefits of Laboratory's integrated approach to safety

Recently a team from the Department of Energy's Office of Independent Oversight and Performance Assurance visited the Lab and reviewed our environment, safety and health and emergency management programs. In addition to a review of our overall programs in these areas, the team looked in detail at how we applied our Integrated Safety Management processes at the Chemistry and Metallurgy Research Building and the Radioactive Liquid Waste Treatment Facility at Technical Area 50.

The team shared with us, through a briefing and a draft report, the results of its inspection. I'm pleased to report that overall the team gave the Lab a positive review. I applaud the dedicated efforts of our technical divisions and our environment, safety and health and emergency management staff to improve significantly our performance in these areas over the last review in 1996.

The inspection results also prompt me to extend congratulations to each and everyone of you, because one of the team's findings is that Integrated Safety Management has grown deep roots in our work force. Lab employees demonstrated to the inspection team a sense of commitment to the concepts of ISM and a feeling of empowerment for ensuring our mutual safety through their individual actions and decisions.

The inspection results are often presented in a color-coded form for quick visual recognition of how an institution is doing. Red means "significant weakness," yellow means "needs improvement" and green means "effective performance."

When DOE-OA inspected Lab programs in 1996, they described the chart of findings as a "house on fire" because of the predominance of red and yellow items. The chart of results from the current inspection shows a reassuring majority of green, tempered with somewhat less yellow.

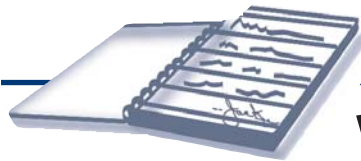
*When DOE-OA inspected Lab programs in 1996, they described the chart of findings as a "house on fire" because of the predominance of red and yellow items. The chart of results from the current inspection shows a reassuring majority of green, tempered with somewhat less yellow.*

The yellow shows we still have areas for improvement. The areas in which we need to improve our efforts relate to the formality with which we apply the ISM five-step process, in particular improving our hazard analysis, establishment of effective controls, and feedback and improvement.

I believe the results of this inspection show the benefits of an integrated approach to our safety programs. We are seeing similar positive results through our Integrated Safeguards and Security Management program. These results are important steps along our course toward an overall Integrated Management approach for the Laboratory

Our ultimate goal through this integrated approach is to demonstrate to the University of California, the National Nuclear Security Administration and the nation a level of excellence in our operations that matches our long-standing tradition of excellence in our scientific and engineering contributions to national security. It will take the continued dedication and efforts of all of us to reach this goal, but I am encouraged by the amount of progress recognized through the OA inspection.

Congratulations and thank you. Let's keep it going.



## EDITOR'S NOTEBOOK

### Why the changes?

As promised [see the May 2 issue], the *Los Alamos NewsLetter* has a new look (four-color, tabloid size) and improved content. Why the changes? Having access to color allows the newsletter staff to use charts, graphs and other visual images that rely on color for clarity, and the larger size allows for more copy to be included in each issue, which means we can give you, the employee, more of the types of things you want and need to read about.

Comments and feedback received in the Public Affairs Office indicate you want to read about individual, organizational and institutional successes. You also want more information about benefits and articles that explain or clarify policies, procedures and changes that affect why and how you do your job. And you want to hear more about the science being done at the Lab and the people doing it. The staff is striving to make the employee newsletter one that you will read and enjoy. To that end, we invite your continued feedback on the publication.

And remember, the *Los Alamos NewsLetter* can be recycled. Just drop it in a Laboratory recycling bin when you have finished reading it. Better yet, share it with your family and friends ... and then recycle it.



Laboratory Director John Browne

# ScienceDay2002

## Making the World a Safer Place



by Kathryn Ostic

Research in nanoenergetics — ranging from composites with increased strength and high-temperature stability to components in thermite-like materials — was just one of the areas of science covered at the Laboratory's Science Day 2002. Also discussed was weapons radiochemical analyses dealing with stockpile stewardship's main goal of developing more accurate physical models for the performance assessment of the nation's nuclear weapons.

Poster sessions and a tour of the Proton Radiography Facility at Technical Area 53 were part of the many activities.

According to Bill Press, deputy Laboratory director for science and technology, "This year's Science Day spotlighted the depth and diversity of science and engineering at Los

Alamos. Across the wide set of fields in which our people excel, we saw many examples of our Laboratory 'making the world a safer place.'"

Maureen McCarthy, chief scientist for the National Nuclear Security Administration and guest speaker, said, "We are the intellectual base that can make the world a safer place. I credit the people at Los Alamos, their friends and colleagues for all that you've done to rise to the occasion in the last several months and in the last 50 years." Citing five key milestones of the Lab, McCarthy said, "The staff at Los Alamos have done amazing things recently." She noted that the Laboratory has

- placed instruments on a variety of platforms supported by NASA including the Mars Voyager;
- invested in unraveling the Human

Science Day 2002 guest speaker Maureen McCarthy reviews the events and abstracts for Science Day April 17 at the J. Robert Oppenheimer Study Center. McCarthy is the chief scientist for the National Nuclear Security Administration. McCarthy's presentation, "Why the National Laboratories are Essential to Homeland Defense," meshed with this year's Science Day theme of "Making the World a Safer Place."

Genome, sequenced viruses and biological pathogens such as anthrax (leads this important effort);

- made advances in quantum computing;
- certified the safety, security and reliability of the nuclear weapons stockpile that is key to the mission of national security; and
- contributed and continues to contribute to the efforts of nonproliferation and national security and now homeland security.

McCarthy also said, "The [Lab's] knowledge and expertise is being used real time in Washington to fight the war on terrorism."

Topics covered by Lab researchers during Science Day also included superconducting quantum interference devices, spectroscopic characterization of uranium, machine learning, anthrax gene expression and acoustics.

The poster sessions represented research in computational and theoretical science, fuel fabrication, reconfigurable computing and geospatial information management.

For more information about this year's Science Day 2002, see the March 25 Daily Newsbulletin or the Science Day Web site at <http://int.lanl.gov/science/sciencedays.shtml> online.



Community leaders listen to Robert Kraus of Biophysics (P-21), far right, talk about Superconducting Quantum Interference Devices (SQUIDs) for biological and nonbiological applications. Elected officials and leaders from Los Alamos and neighboring communities were invited to Science Day 2002. Standing from left to right are State Sen. Richard Martinez, D-Los Alamos, Rio Arriba, Sandoval; Dolores Garcia of U.S. Sen. Jeff Bingaman's office; Toni Martorelli, chief of staff to Senate President Pro-Tem Richard Romero, D-Bernalillo; and Veronica Rodriquez of the office of U.S. Sen. Pete Domenici. SQUIDs convert magnetic fields a billion times smaller than the magnetic field of Earth into measurable voltages. SQUIDs are used for a variety of applications, including measurement of the magnetic fields from neuronal activity in the brain, called magnetoencephalography, or MEG. Photos by LeRoy N. Sanchez

## New program to enrich student experience

by Michael Carlson

The Laboratory and the University of California are piloting a program beginning this summer for UC students who intern at the Laboratory.

Laboratory Director John Browne recently signed agreements with UC Santa Barbara and UC Riverside that will streamline and enhance student and employee relationships already in existence under UC's Directed Research and Development Program.

In the new program, officials at the Lab and the UC campuses identified areas of research at the Lab from which students can benefit. By communicating with the two schools on an individual basis, the Lab will enhance a student's career and academic goals, Jim Porter of the Science and Technology Base (STB) Program Office said.

After an initial pilot program, the Lab will expand the individual agreement process to other UC campuses as well as other universities, Porter explained.

Porter said the new program gives students real-world opportunities at the Lab. Students have contact with top-notch researchers and access to equipment not usually found on a college campus,

such as a neutron accelerator at the Los Alamos Neutron Science Center (LANSCE) at Technical Area 53.

"We want to give students a sense of deadlines and a sense of importance to education," Porter said. "The Lab is a different culture and offers a different experience."

"The Laboratory and campuses hope to achieve many benefits through the new agreements," Debbie Wilke of STB said. "Such agreements include stronger student and mentor connections, better matching of student opportunities to fit with their academic plans and achievements, a greater exchange of students, professors and Lab staff, as well as enhanced opportunities for faculty and staff."

For more information, contact Debbie Wilke at 7-5403 or write to [dwilke@lanl.gov](mailto:dwilke@lanl.gov) by electronic mail.



# Under one roof: Lab's new EOC to house multiple emergency agencies

by John Bass

The new Emergency Operations Center being built at Technical Area 69 will house not just the Laboratory's Emergency Management operations, but also Los Alamos County, the neighboring pueblos, the National Guard, the State Police, the Red Cross, the Department of Energy and New Mexico Emergency Management.

Housing all emergency agencies under one roof will enhance safety for the entire county, according to George Van Tiem of Emergency Management and Response (S-8).

The new EOC also will be the first joint-use facility of its kind between a laboratory and local government. The two-story, 38,000-square-foot facility will enable all the agencies to handle any emergency situation that arises.

The second floor of the building will permanently house Los Alamos County's police, fire, medical and 9-1-1 dispatchers.

Construction of the new Emergency Operations Center has begun and is scheduled to be completed in the fall of 2003.



Looking to the northeast from West Jemez Road (NM 501) toward Anchor West Road, site preparation is under way for the construction of a new two-story Emergency Operations Center for the Laboratory and Los Alamos County. More space with the latest communications technology will provide better emergency coordination among the Lab, the county, the state and the Department of Energy. Left: An architect's rendering of the planned new Emergency Operations Center at Technical Area 69. Photos by John Bass

## LANSCE builds ...

continued from Page 1

and the WNR, which provides high-energy neutrons, are designated by the Department of Energy as National User Facilities. At the Lujan Center and WNR, defense and academic researchers can use 18 separate instruments simultaneously.

"By providing an exciting experimental tool to address basic science and stockpile issues, we are continuing to attract early-career scientists who bring fresh approaches to Los Alamos National Laboratory's mission," Los Alamos Director John Browne recently told Congress.

During 2001, researchers at LANSCE used new and existing instruments to do important science and seek solutions to problems that affect national security.

Among those were work on a new nuclear physics instrument at the Lujan Center's DANCE, the Detector for Advanced Neutron Capture Experiments. Using the instrument, astrophysicists are studying how heavy elements are made in stars, and weapons designers and engineers are analyzing past nuclear test data to improve their understanding of how robust the nation's nuclear stockpile is. Their work ultimately will help improve the sophisticated, three-dimensional computer codes that integrate the past test data with new fundamental experiments to provide full-physics simulations of weapons phenomena.

Another major breakthrough at LANSCE was a new technique for production of ultracold neutrons that can be kept bottled up and

studied to provide clues to the fundamental nature of matter and the origins of the universe. Construction has begun on a facility to take advantage of the new technique.

Laboratory researchers and industrial engineers used Lujan Center instruments to study the molecular fundamentals of creep — deformations or changes in the shape of metals or alloys caused by constant stress, pressures or high temperatures. Their findings could lead to machine tools that last longer and make even better drill bits for millions of home handymen.

Using the Germanium Array for Neutron-Induced Excitations, or GEANIE, researchers made the first accurate measurement over a wide energy range of the cross section, or probability of reaction, linking two key isotopes of plutonium: plutonium 239, the isotope used in nuclear weapons, and plutonium 238. By recreating this neutron reaction

experimentally at LANSCE's Weapons Neutron Research Facility and combining their measurements of gamma rays produced from plutonium 238 with detailed theoretical models, they were able to use past nuclear test data to improve their understanding of nuclear weapons performance.

Researchers from LANSCE and the Physics (P) and Dynamic Experimentation (DX) divisions ran dozens of experiments using proton beams for radiography in 2001, providing new insights into the behavior of nuclear weapon components and metals at high temperatures and pressures.

Nearing completion at LANSCE is the Isotope Production Facility, funded by DOE's Office of Nuclear Energy, which will produce a variety of short-lived isotopes for research, medical diagnosis and therapy, including isotopes used with Positron Emission Tomography to pinpoint cardiac artery blockages.

## Absolutely no compromise

As we accomplish our work here at the Laboratory, nothing is more important than ensuring the safety of our employees, contractors and visitors. On many occasions, I have stated that one of our core values is that

**We will never compromise safety or security for programmatic or operational needs.**

That principle remains true today. One essential factor in applying this principle is every worker's right and responsibility to stop work if he or she believes that the work is not being performed safely. No one will face repercussions for having stopped work, if the person, in good faith, believes the work cannot or is not being performed safely. I rely on each and every worker at the Laboratory to take this responsibility very seriously.

Safety simply is not to be compromised.

—John C. Browne, Laboratory director



# Wildfire meeting hits home

by Fran Talley

Lack of precipitation, unseasonably warm weather and pre-existing drought conditions have experts from the Interagency Wildfire Management Team concerned that things will grow worse before they get better in and around Los Alamos County.

That was the message to a standing room only crowd at "Wildfire 2002,"

the fourth annual public meeting about wildland fire sponsored by the Laboratory and the Interagency Wildfire Management Team, last month. Speakers included experts from the Los Alamos Fire Department, Santa Fe National Forest, Bandelier National Monument, the Lab and the U.S. Geological Survey.

"Part of the reason the fire danger is so great is that we haven't had much moisture in recent years," explained Steve Coburn, fire marshal for Los Alamos County Fire Department. "Right now the fire danger is worse than it was in 2000 before the Cerro Grande Fire. I think people kind of have a misconception that if it rains a little bit, the fire danger has gone away, but the reality is that's not the case. The drought is so bad that a half day of rain a week would not be enough," Coburn said.

An aggressive mitigation project is under way on Lab land; 10,000 acres will have been thinned by the end of September 2003, said Steve Mee of the Laboratory's Cerro Grande Rehabilitation Project Office (FWO-CGRP).

The Laboratory has created a defensible firebreak along Laboratory property that parallels Bandelier National Monument on State Road 4. A similar effort is scheduled to begin soon on neighboring Bandelier property said Dean Clark, fire management officer for Bandelier National Monument.

Thinning also is under way in Los Alamos County. "Since October, we have burned, thinned and removed most of the material on about 60 acres, with about 1,200 acres still to treat," Coburn said. "Sixty acres may not seem like a lot to you, but it really makes a big difference. In relation to that, the Pueblo Shelf project

that we did in 1996, which was a five-acre tract, was pretty much responsible for saving the Denver Steel area in the Cerro Grande Fire."

"The County project isn't going to eliminate fires altogether," Coburn explained, "but we're trying to eliminate the ability for ground fires to become crown fires. We can deal with fire on the ground but when it gets up in the trees, then it's out of our ability to deal with it."

Experts at the meeting emphasized that while people can't control the weather or the topography of the land influencing wildfires, there is much that agencies and residents in and around Los Alamos can do to reduce flammable vegetation and help rehabilitate the landscape.

Claudia Standish of the U.S. Forest Service urged everyone to create defensible space around their property by clearing it of brush, pine needles and other dry fuels, leaving it "lean, clean and green." She also warned of the danger of ladder fuels that create an elevated path for ground fire to reach rooftops and trees.

More information on how residents can protect their homes and property from wildfire is available at [www.firewise.org](http://www.firewise.org) online.

*'... the fire danger is worse than it was in 2000 before the Cerro Grande Fire.'*



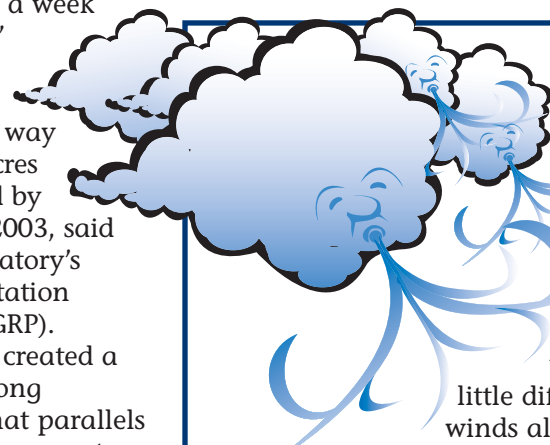
## How bad is it?

- On April 1, 2001, fuel in the Jemez Mountains was 34 percent below normal moisture content. This year the moisture content is 63 percent below normal

- In 2001, 44 fires were recorded by April, burning a total of 344 acres. For the same period this year, there have been 547 fires with a loss of 87,000 acres.

## Volunteer Task Force

The Volunteer Task Force is a community-based group that works with representatives from local and area organizations, Los Alamos County, the Laboratory, the U.S. Forest Service, the National Park Service and other federal agencies to coordinate volunteer efforts for recovery after the Cerro Grande Fire and to provide public education for understanding forests and their interface with urban areas. For more information, go to [www.los-alamos.com/mavtf](http://www.los-alamos.com/mavtf) online.



## Winds of Change

by Steve Coburn,  
Los Alamos  
County fire  
marshal

"In case you haven't noticed, the weather has been a little different recently! The winds always increase in the spring, but what's different this year is the consistency and speed of the winds we've been experiencing. The reason for this is that the mountain range west of town is basically barren rock (those dead trees out there don't count as vegetation anymore). When the spring winds kicked up in the past, the trees actually broke up the wind and reduced the speed and volume. This won't happen anymore; when the winds come, you'll definitely notice.

"The wind creates additional problems by bringing down trees in the burned area much sooner than anticipated. (Recent surveys show significant falling of trees in the burned area). This poses a significant danger to anyone, especially

children, playing or hiking in the area. So pick your time wisely when you use this area and leave quickly if the winds pick up.

"These winds bring other concerns to the community. Structures may lose roofing material, siding may blow off and out-buildings that are not properly attached to their foundations may blow over. Flying debris of this magnitude presents considerable danger to residents. The green trees, which under normal conditions look healthy, may blow over because the drought has severely weakened their roots.

"The same risks exist whether in the burned or unburned areas, so use caution while out in the forest. Residents should inspect any large trees next to their houses. With the current conditions, the possibility of one blowing over and causing considerable damage and possible injury to your loved ones is very high. Large trees may also knock out power lines, fall across roads and generally create major problems.

"Please use caution when outdoors during extremely windy conditions."

Note: Current fire and extreme-weather-condition updates are on KRSN radio (1490 AM) every other hour.

# Symposium to showcase student research

by Michael Carlson

Students and postdoctoral appointees from Los Alamos and Sandia national laboratories will showcase their research at Symposium 2002 on July 29 and 30 in the J. Robert Oppenheimer Study Center in Technical Area 3 and at the adjacent Los Alamos Research Park.

The Lab-sponsored event will provide a unique opportunity for college students and postdoctoral appointees to present their scientific research to their peers; Laboratory mentors; technical staff; and representatives

from academia, government agencies and professional societies.

The symposium will prepare students and postdoctoral appointees for careers in science by broadening their experiences.

"This is an excellent way for students to present the work and research they have accomplished for the summer," said Carole Rutten of the Education Programs Office (STB-EPO). "It's also the most appropriate way to summarize a student's learning experience."

Calvin Mackie will address the awards banquet at 6:15 p.m. July 30 at the Research

Park. Mackie is a motivational speaker who operates his own consulting firm and streamlining-video Web site, which specializes in motivating young people to succeed. He has bachelor's, master's and doctoral degrees in mechanical engineering from Georgia Tech.

The symposium also will offer three professional development seminars: Academic/Life Success, Student to Permanent Employee and Financing Graduate Studies.

For more information, contact Carole Rutten at 5-5194, or visit <http://set.lanl.gov/symposium> on the Web.



## Simpson to lead Program Integration Office in BUS

Laboratory veteran Nancy Simpson is the new Program Integration

Office leader. Her duties will include integration of Laboratory programmatic budgets and financial information. Simpson has 29 years of financial experience at the Laboratory with 19 of those specifically supporting programmatic and financial support to nuclear weapons programs, environmental programs, Department of Defense reimbursable programs and Laboratory indirect programs. Her previous positions have included financial analyst, group leader, assistant to the associate director and business program manager for the Nuclear Weapons Directorate. In 1989, Simpson was recognized with an Outstanding Women at the Laboratory award.

She has a bachelor's degree in business education from Eastern New Mexico University.



Nancy Simpson



K. Aaron Menefee

## Menefee named new Budget Officer; BUS-3 group leader

K. Aaron Menefee is the new Laboratory budget officer and Business Planning and Budgeting (BUS-3) group leader. Menefee has 10 years of Laboratory experience with programmatic, division and indirect budgets.

His previous responsibilities include being the financial analyst in Materials Science and Technology (MST) Division; financial analyst on the indirect core team; business team leader for Los Alamos Neutron Science Center (LANSCE), the Accelerator Production of Tritium project and the Spallation Neutron Source project; BUS-3 deputy group leader; and BUS Division chief of staff.

Menefee holds a bachelor's degree in business administration with honors from New Mexico State University and a master's degree in finance from Texas A&M University.

# New award recognizes postdoctoral contributions

by Judy Goldie

Jackie Kiplinger of Structural Inorganic Chemistry (C-SIC) and Eddy Timmermans of Atomic and Optical Theory (T-4) are the first individual winners of the Postdoctoral Distinguished Performance Awards, announced recently by William Press, deputy director for science and technology. Jennifer Hollingsworth and Alexandre Mikhailovski, both of Physical Chemistry and Applied Spectroscopy (C-PCS), garnered the small team award.

The PDPA recognizes outstanding and unique contributions by Lab postdocs that result in a positive and significant impact on the Laboratory's programmatic or organizational efforts or status in the scientific community.

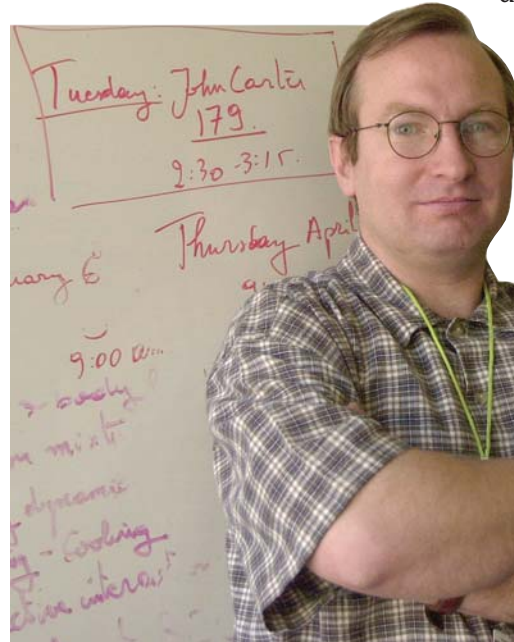
Kiplinger is recognized for her work in elucidating the nature of metal-ligand multiple bonds in actinide complexes. Timmermans is honored for his work in superfluid behavior in Fermi

*Jackie Kiplinger is recognized for her work in elucidating the nature of metal-ligand multiple bonds in actinide complexes.*



gasses. The team of Hollingsworth and Mikhailovski is recognized for its work in the area of synthetic chemistry of nanoscale semiconductor particles and work on optical characterization of those nanoparticles using spectroscopic methods, including ultrafast and near-field optical spectroscopies.

*Eddy Timmermans is honored for his work in superfluid behavior in Fermi gasses.*



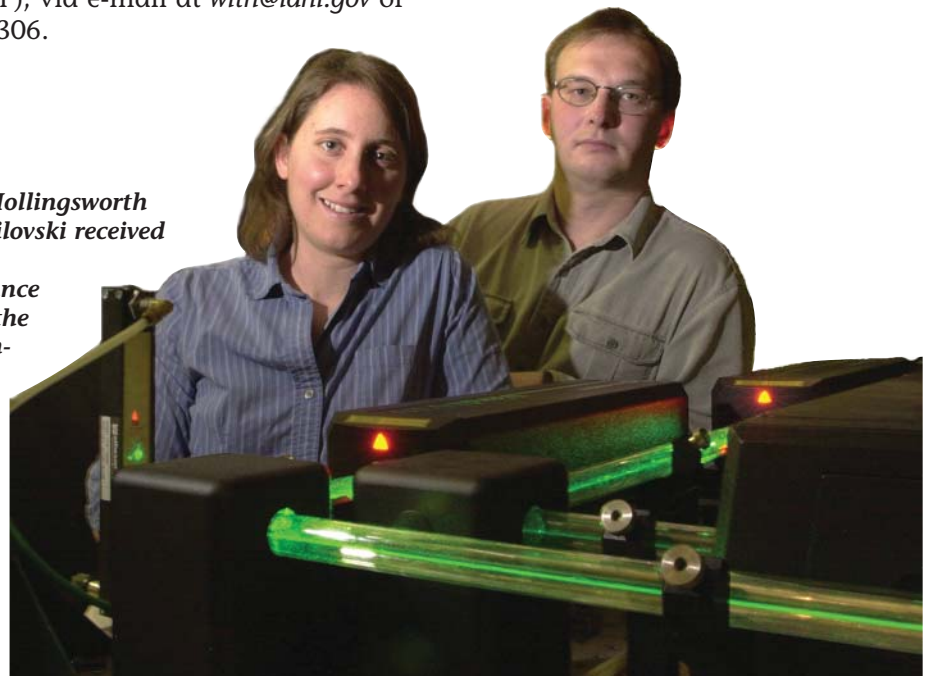
The call for nominations for the first Postdoctoral Distinguished Performance Awards, which include a certificate or plaque and a monetary prize, went out from Director John Browne late last fall. All Laboratory postdocs were eligible, upon nomination by a Lab manager, supervisor, mentor or peer.

A committee of six technical staff members, chaired by David Forslund (CCS-1), reviewed the nominations and made recommendations to Browne who then made the final decisions.

An awards banquet was held in April. All the winners also will have the opportunity to present their work during a colloquium later this spring. Check the Daily Newsbulletin for dates.

For more information about the Postdoctoral Distinguished Performance Awards, contact Mary Anne With, Institutional Oversight, Postdoctoral Program (STB-DSTBP), via e-mail at [with@lanl.gov](mailto:with@lanl.gov) or by telephone at 5-5306.

*The team of Jennifer Hollingsworth and Alexandre Mikhailovski received the Distinguished Postdoctoral Performance award for its work in the area of synthetic chemistry of nanoscale semiconductor particles and work on optical characterization of those nanoparticles using spectroscopic methods, including ultrafast and near-field optical spectroscopies.*





## Beware of unsolicited requests for information

by Kevin Roark

Unsolicited requests for information were the most frequently used "collection method of operation" employed by foreign interests in the year 2000, according to the Defense Security Service's report, "2001 Technology Collection Trends in the U.S. Defense Industry."

Requests for information frequently involve faxing, mailing, e-mailing or telephoning individual U.S. citizens, rather than contacting corporate marketing departments. These unsolicited requests may involve surveys or questionnaires and are frequently sent over the Internet, according to DSS.

Below are some common indicators that may raise suspicions about an unsolicited request for information:

- The requester has an e-mail address in a foreign country.
- The person in question may be associated with a known embargoed country.
- Requesters identify themselves as "students" seeking empathy because their nation lacks the scientific or technical information they need.
- Individuals wanting information identify their employer as a foreign government or say the work is being done for a foreign government.
- Requesters ask about technology related to a defense-related program.
- Information seekers insinuate that the identity of the third party they work for is "classified."
- Requesters admit they cannot get the information elsewhere because it is classified, sensitive or controlled.
- People asking for information assure their targeted person that export licenses are not required or are not a problem.

If you do not know or normally conduct business with the person asking for information, these types of requests should be ignored. If you do know the person or conduct business with him or her, you need to ask yourself, or them, why they want the information. As always, all unsolicited requests for classified or sensitive information should be reported to Internal Security (ISEC).

For more information on methods of operation or unsolicited requests for information, contact ISEC at 5-6090.

**ISEC Tip:** *If someone knows facts and personal information about you, and you didn't give them that information directly, you might be the target of a foreign intelligence service.*



Moriarty High School students (from left to right) Eric Owen, Eric Geil and Jens Madsen discuss their Supercomputing Challenge project among themselves at the Los Alamos Research Park during the 12th annual New Mexico High School Adventures in Supercomputing Challenge. The Annual Supercomputing Challenge drew teams from schools all over New Mexico. Photo by James E. Rickman

## Computer whiz kids shine at statewide competition

### Silver High takes the 'gold' at computer competition

by Jim Danneskiold and David Kratzer

A computer wizard from Silver High School who built a model of how human culture evolves took home the top prize recently in the 12th annual New Mexico High School Adventures in Supercomputing Challenge at the Laboratory.

Roeland Hancock, the sole member of Team 90 from Silver High, won a \$1,000 savings bond for his supercomputing project, "Computer Modeling of Cultural Interaction and Evolution."

Top individual honors went to Heather Menzer of Silver High School. She captured the Amy Boulanger Memorial scholarship, from New Mexico Technet, which is good for \$2,400 a year for four years at any accredited institution of higher education in the United States.

Students from 36 schools throughout New Mexico spent the last year researching scientific problems and writing programs, which they then ran on supercomputers at Los Alamos and Sandia national laboratories.

For the first time, the students and teachers from the top two teams will win a trip to NASA's Ames Research Center of Excellence in Sunnyvale, Calif. NASA Ames is one of the many sponsors of the AiS Challenge.

Another innovation for this year's AiS Challenge is the award of a \$100 gift certificate to all the students and teachers from the four teams who garnered the top Honorable Mention awards. In addition, each student and teacher in the second set of Honorable Mention teams received a \$50 gift certificate. Altogether, more than \$21,000 in scholarships were given to AiS Challenge participants this year.

The goal of the New Mexico High School AiS Challenge is to increase knowledge of science and computing; expose students and teachers to computers and applied mathematics; and instill enthusiasm for science in high school students, their families and communities. Any New Mexico student in grades seven through 12 can enter.

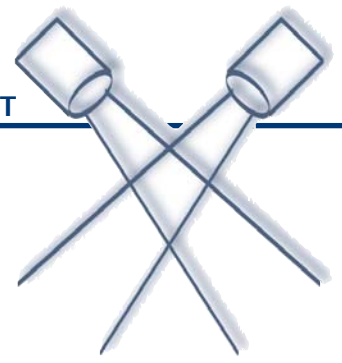
More information about the program and copies of the final reports are available for viewing at the AiS Challenge Web site at <http://www.challenge.nm.org> or see the Daily Newsbulletin article at <http://www.lanl.gov/orgs/pa/newsbulletin/2002/04/24/> online.



## Beer has hidden nutritional value, study says

The ancient Egyptians found a number of uses for beer as a mouthwash, an enema and a wound healer. While not necessarily endorsing these medicinal applications, University of California, Davis, brewing scientist Charles Bamforth suggests that beer may possess many nutritional qualities that make the beverage part of an overall healthy and balanced diet. He notes that beer contains antioxidants, chemicals frequently found in plant-based foods that appear to protect against heart disease and some forms of cancer. Furthermore, beer contains several B vitamins, notably folic acid; certain useful minerals; and fiber. Bamforth cautions that nutritional content varies considerably depending on the ingredients and techniques used in processing the beer. And he stresses the unacceptability of excessive alcohol consumption.





# Omega West: The final chapter draws near



by Kathryn Ostic

The Laboratory's Omega West Reactor will undergo decommissioning and demolition beginning in June, with a projected completion date of September 2003. The Cerro Grande Rehabilitation (FWO-CGRP) Project Office is spearheading this effort.

**This 1991 aerial photograph shows the Omega West facility. The coolant leak was located in the delay line buried underground that ran from the high bay area, center in photo, to the cooling tower located on the far left. The delay line was later fully excavated and no subsequent leaks were found.** Photo by Jose "Mitzie" Ulibarri, former Information Services (IS-7)

Located in Technical Area 2 in Los Alamos Canyon and TA-61 on the south mesa of the canyon, the Omega West Reactor has a long and varied history. The reactor was completed in 1956 and operated eight hours a day, five days a week at a power level of 8 megawatts thermal.

"The reactor's original purpose in 1956 was for conducting nuclear research by collecting nuclear data of isotopic species in support of the weapons program,"

noted Donald Barr of Isotope and Nuclear Chemistry (C-INC). Barr was a staff member who used the facility when the reactor first became operational.

During the 1960s-70s, the reactor also was used for neutron activation analysis to determine elemental compositions of solids, said Gene Peterson of Actinide, Catalysis and Separations Chemistry (C-SIC). Peterson was group leader of the Medical Radioisotope and Reactor Applications as well as program manager for Isotope Production and Distribution in 1993.

According to Peterson, in the late 1980s, alternative funding sources were needed for the continuation of the reactor, so the U.S. radiopharmaceutical industry petitioned the Department of Energy to use the Omega West Reactor as a possible production source of Molybdenum-99. "About 85 percent of all medical isotopes used for imaging and treatment are derived from Molybdenum-99. We expected to produce approximately 30 percent of the U.S. demand for Molybdenum-99 starting in 1993," he said.

However, the reactor has not operated since December 1992. At that time, Peterson said, an operational error caused the reactor to power up beyond normal limits, causing the system to shut down automatically. During the course of an investigation of the incident, operators noticed that the reactor was leaking tritium-contaminated primary coolant water into the ground. The coolant leak was found in a 30-inch-diameter pipe buried underground. The source of the leak was a delay line that later was fully excavated. The Laboratory found that the 70-foot-long pipe underwent stress corrosion cracking, which was enhanced by a bacterial action. No subsequent leaks were found after metallurgical tests were conducted. Although the cooling system could have been repaired, DOE decided to permanently shut down the reactor. The reactor's fuel rods were removed in 1994, allowing the reactor to be placed in a safe shutdown mode.

Peterson said, "I always enjoyed being associated with the Omega West Reactor, and I felt good that I could help to develop a future mission for the medical isotope program. However, I'm still disappointed that we didn't take the Molybdenum-99 project at the reactor to a successful conclusion."

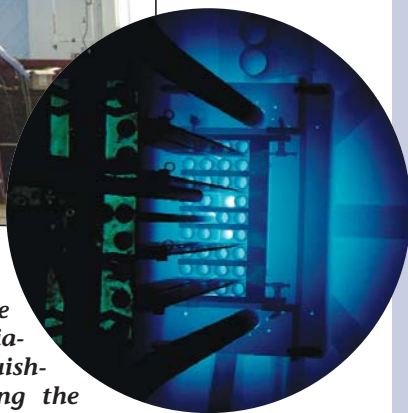
For more information on the decommissioning and demolition, see the May 15 Daily Newsbulletin.



A Laboratory technician performs work in the water boiler room, which was the first nuclear water boiler reactor at the Lab. Omega West was the first reactor that used enriched uranium as fuel to achieve a self-sustaining nuclear reaction. Photo by Gene Lamkin, Documentary Division (D-1), circa 1951



A biological shield, center, surrounds the core of the tank-type reactor in which primary coolant was used for cooling the reactor's core. Inset photo: Cherenkov radiation, when it is intense, appears as a weak bluish-white glow in the pools of water shielding the nuclear reactor. The Cherenkov radiation is caused by electrons from the reactor traveling at speeds greater than the speed of light in water, which is 75 percent of the speed of light in a vacuum. Top photo by LeRoy N. Sanchez; inset photo by Jose "Mitzie" Ulibarri, former Information Services (IS-7)



Los Alamos  
**NewsLetter**

Mail Stop C177  
Los Alamos, NM 87545

Nonprofit Organization  
U.S. Postage Paid  
Albuquerque, NM  
Permit No. 532

LALP-02-3