

NewsLetter

Week of June 21, 2004

Vol. 5, No. 12

Inside this issue ...



Laboratory employees are seldom shy about speaking out on issues, and now they will have even more opportunity. A new feedback feature in the newsletter called "So...what do you think?" debuts on Page 7 of this issue. Here's how it works. Newsletter staff will travel to different locations around the Laboratory stopping random employees to solicit their responses to a predetermined question relevant to the Lab community; staff also will snap a photo of each responder. Three to six responses to a question will be featured in the newsletter.

So, be on the lookout. You never know when one of the newsletter's roving reporters will walk up to you and say, "So ... what do you think?"

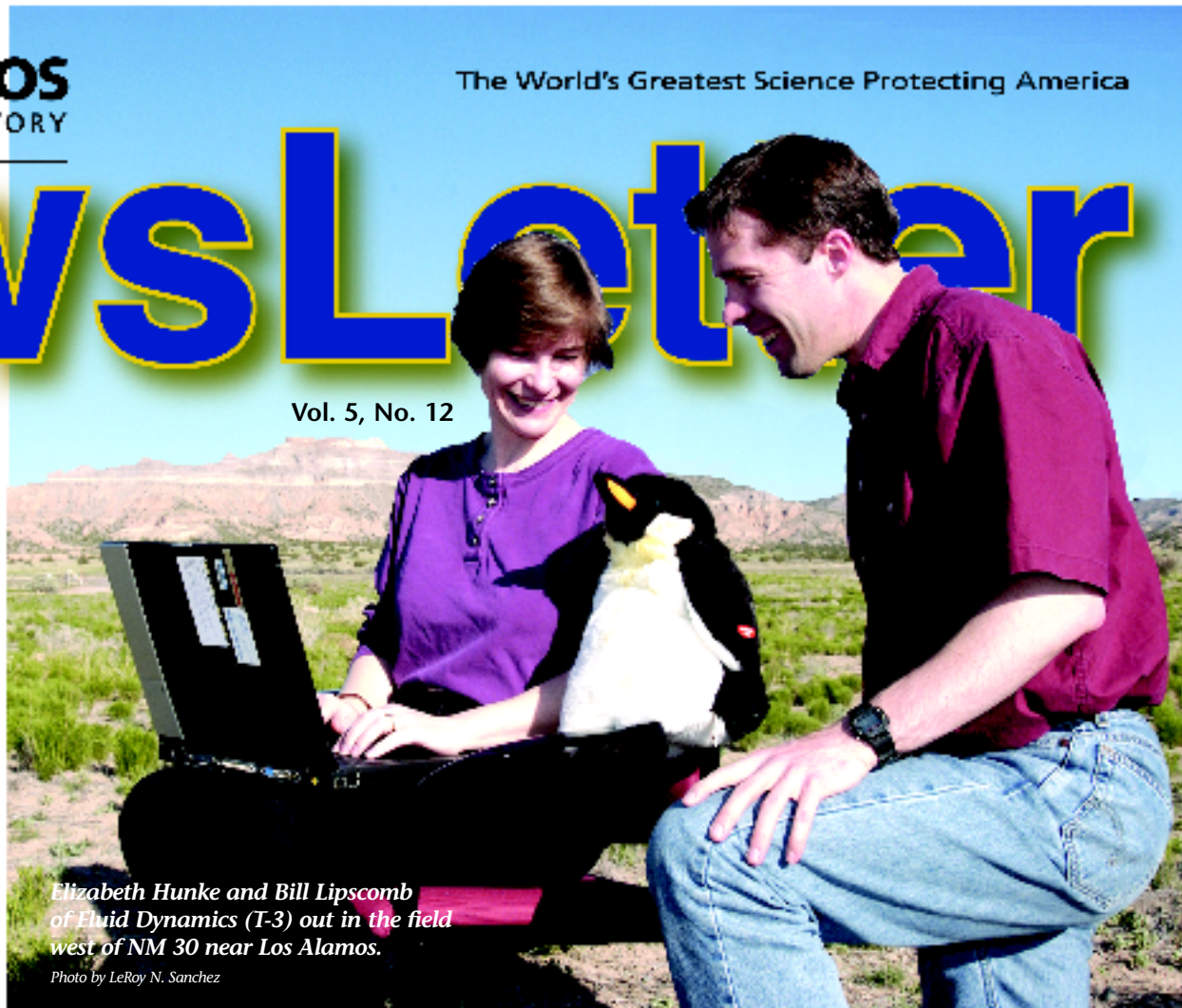
Nanos lauds efforts of workers at all-employee meeting

Laboratory Director G. Peter Nanos recently told employees that Los Alamos is making substantial progress in addressing Classified Removable Electronic Media issues, but more work needs to be done. . . . **Page 2**



Karing Keeshond founder honored for lobbying efforts

Laboratory retiree Norm Wilson has a houseful of dogs, six of them to be exact. Although currently, only three dogs actually belong to him and his wife, Jean. Welcome to the land of the keeshonds. . . . **Page 8**



Elizabeth Hunke and Bill Lipscomb of Fluid Dynamics (T-3) out in the field west of NM 30 near Los Alamos.

Photo by LeRoy N. Sanchez

Lab scientists explore complexities of sea ice from high desert venue

by Todd Hanson

For nearly a decade, Laboratory researchers have been upgrading and fine-tuning a sea ice modeling program created at Los Alamos. From their dry place in New Mexico's high desert, the Lab team has helped climate scientists around the world develop a better understanding of the surprisingly complicated role that sea ice plays in the global climate.

Called CICE, and pronounced "sea ice," the computer model has been the principal focus of Elizabeth Hunke's work at Los Alamos since she was first hired as a postdoctoral researcher in 1994. Working with Los Alamos staff members Bill Lipscomb and Phil Jones of Fluid Dynamics (T-3), Hunke, also of T-3, and the CICE team have made the state-of-the-art model one of the most widely used tools for understanding the complex nature of sea ice. CICE currently is able to model various physical characteristics of sea ice at global resolutions of just less than one-half degree, or roughly 20 miles in the polar regions. In Arctic-only simulations, the ice has been modeled at resolutions as small as 6 miles. Hunke and her team are working at making these resolutions even finer.

Sea ice forms from seawater under arctic conditions. The ice moves around polar oceans in various states from thin, loosely amalgamated ice floes to thick, nearly solid ice sheets whose thickness is often increased by snow cover. Its presence in the oceans affects not only the ocean's salinity, since it leaves salt behind as the ice forms, but also the atmospheric conditions above the ice, where it affects chemical and heat exchanges between the two regimes.

According to Hunke, "Sea ice has quite a significant impact on global climate; it usually covers an area of ocean larger than the United States and Canada combined. It also has a very high albedo, or reflectivity, and that much area reflects a significant amount of the sun's radiation, rather than allowing it to be absorbed by the ocean."

CICE was originally designed to be a component of global climate models and is a vital part of the Climate, Ocean and Sea Ice Modeling program at Los Alamos. Along with Los Alamos' powerful ocean model, the Parallel Ocean Program, CICE is a critical element of the Community Climate System Model, one of the world's leading general circulation climate models based at the National Center for Atmospheric Research in Boulder, Colo.

CICE has been used for a variety of global studies of climate, including variability of atmosphere and ocean processes, over time scales of decades to centuries. It has found use in regional climate studies where sea ice plays a major role, including studies of the Arctic and Southern oceans, North Atlantic and Baltic Sea. Researchers have used CICE in global carbon cycle studies, paleoceanographic studies and studies of sea ice physics and material properties.

Modeling groups around the world use CICE to make climate change predictions under various energy-use scenarios. The Intergovernmental Panel on Climate Change uses some of these predictions in its state-of-the-art climate assessments for policy makers. Whether used alone, or as a part of other larger modeling systems, CICE has been adopted by a number of institutions in the United States, including the National Centers for Environmental Prediction and NASA, along with at least 18 institutions in 10 countries.

The most recent release of the program allows CICE to run more efficiently on Japan's Earth Simulator supercomputer, currently the world's fastest computer, as part of NCAR's Community Climate System Model.

CICE has been funded by various sources over the years, but principal support has been from the Department of Energy's Climate Change Prediction Program.

NewsLetter
P.O. Box 1663
Mail Stop C177
Los Alamos, NM 87545

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

LALP-04-001

'10-K-A-Day' walking program continues through mid-June



Former Laboratory Director and now Senior Fellow Sig Hecker joined other Laboratory personnel at the Wellness Center for the annual Walking Month kick-off walk. With Hecker is Lee McAtee, Health, Safety and Radiation Protection (HSR) Division leader. Walking Month is an incentive program designed to tout the health benefits of walking. The theme of this year's Walking Month program is "10-K-A-Day" to encourage employees to walk 10,000 steps daily. Staff from the Wellness Center, part of Occupational Medicine (HSR-2), have scheduled a number of walks through mid-June for Lab workers. Those walks are listed on the Wellness Center Web page at www.wellness.lanl.gov/index.htm online. Photo by LeRoy N. Sanchez



FROM THE TOP

Nanos lauds efforts by workers at all-employee meeting

by Chris Roybal

Laboratory Director G. Peter Nanos recently told employees that Los Alamos is making substantial progress in addressing Classified Removable Electronic Media issues, but more work needs to be done.

At a special, mandatory all-hands meeting in the Administration Building Auditorium at Technical Area 3 and for employees watching on Labnet, Nanos compared the current safety and security situation at the Laboratory to living in New Mexico during the dry, fire-filled summer.

"We are like fresh tinder for the news media," Nanos said, referring to how — because the Laboratory is constantly being scrutinized and watched over — a single security incident could ignite a "flame" that might have disastrous results.

But he said the Lab will be stronger as a result of actions Lab workers have taken in addressing a recent CREM discrepancy. During a recent disposal of approximately 200 pieces of CREM, an accounting error was made and a ZIP cartridge was determined to either be missing or not counted in inventory. The good news, according to Nanos, is that the incident was self-reported.

"I'm really satisfied with the actions that were taken and how we proceeded through this particular incident," Nanos said. "Under the rubric of whatever doesn't kill you makes you stronger, I think we'll come out of this in a much more proactive and positive way," Nanos said.

"I need a strong commitment from all of you to work securely, in light of today's challenges. Let's find the problems and work together to provide lasting solutions," Nanos said. "We have made a lot of headway."

Nanos credited the Laboratory's survival through incidents such as this to people acting straightforward and businesslike. He also said the Laboratory is not going to take extraordinary measures in dealing with CREM in the future, but instead is going to use mechanisms in place to deal with CREM issues.

In addition to reducing by two-thirds the number of CREM items at the Lab, Nanos also highlighted other security successes:

- limiting cyber worm/virus damage through detection;
- 100 percent accountability for security keys;

continued on Page 5



Laboratory Director G. Peter Nanos

Message from Foley on security

Dear Colleagues:

[Recently], I visited Los Alamos National Laboratory to participate in a series of security discussions with managers and employees. I first want to say that, while the Laboratory has identified some recent security issues, I was pleased to see the overall progress the Lab is making and the best practices being implemented to ensure that strong safeguards and security practices are in place. The University of California and the American taxpayers place a great deal of trust in the work that we do, and I know that you are all well aware that our nation fully expects us to continue to maintain security as a top priority.

During my visit, I reiterated the importance of fully implementing UC's corporate policy for "Accountable Classified Removable Electronic Media." This UC policy that I issued in March requires "that there be a consistent and uniform approach for managing accountable classified removable electronic media." It is my expectation that the aggressive implementation of this UC policy will lead to a significant reduction of CREM and improve the management of existing accountable CREM.

The Laboratory already has significantly reduced its CREM holdings as part of our goal to reach zero CREM holdings. We also are increasing our investment in technology to move toward a diskless work environment consistent with recent initiatives announced by Department of Energy Secretary Spencer Abraham. During the briefings at the Laboratory, I witnessed other practices being developed and incorporated to ensure the safe and secure handling of classified materials. We will be updating our policies to ensure that lessons learned are applied in all Laboratory organizations.

I am particularly proud of the individuals who are identifying issues and communicating up their line-management chain. This is the kind of behavior that we want to encourage.

While at the Lab, I discussed with senior Laboratory management and employees the opportunities to share best practices Labwide and to reinforce the importance of security. The meetings you will be participating in [during] the weeks ahead are designed to reinforce the things you are doing right in the area of security and improve the Lab's overall security practices. This is not a stand down, but rather an opportunity for you to stand amongst your colleagues and reiterate your commitment to the implementation of strong and effective security procedures being in place at your laboratory. This is an important demonstration of line-management accountability and our commitment to UC and [the Laboratory's] Integrated Safeguards and Security Management program. We are counting on each and every one of you to prevent security incidents and strengthen security vigilance in your work place.

Thank you for your commitment to this effort and the work you are doing on behalf of our nation.

Sincerely,

S. Robert Foley Jr.

UC vice president for laboratory management



Robert Foley, UC vice president for laboratory management

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, by fax at 5-5552, by regular Lab mail at Mail Stop C177 or by calling the individual telephone numbers listed below. For change of address, call 7-3565. To adjust the number of copies received, call the mailroom at 7-4166.

Editor:
Jacqueline Paris-Chitanvis, 5-7779

Associate editor:
Steve Sandoval, 5-9206

Production editor:
Denise Bjarke, 7-3565

Graphic designer:
Ed Vigil, 5-9205

Staff photographer:
LeRoy N. Sanchez, 5-5009

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.

Scientists model dynamics of DNA transcription

by Todd Hanson

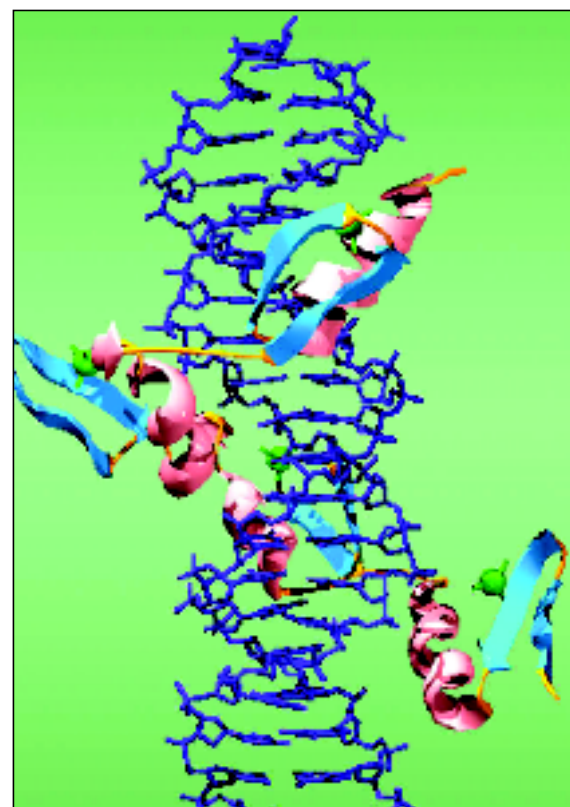
Laboratory researchers collaborating with colleagues at Harvard Medical School have developed a model and diagnostic tools to simulate the dynamics of DNA. The work is an important step toward beginning to decipher the genetic information contained in the human genome and could be a significant leap in our understanding of the fundamental processes of life.

The work, led by Los Alamos scientist Kim Rasmussen, has demonstrated the predictive capabilities of the modeling technique through direct comparison with experiments performed on several viral and bacterial DNA sequences by researchers working at Harvard. DNA is deoxyribonucleic acid, the molecules that carry the genetic information essential for the organization and functioning of living cells.

According to Rasmussen, "At a time when the human genome is being sequenced at an amazing rate, it is actually quite remarkable how limited our understanding is of the tremendous amount of information stored in the genome. In other words, we have many of the genetic sequences, but we are largely ignorant of how to decipher them. Our work could be a step toward doing just that."

Genomic sequences consist of only four distinct nucleotides: adenine (A), guanine (G), cytosine (C) and thymine (T). This sequence is strung together by a sugar-phosphate backbone, and stabilized by a complementary strand of DNA that protects each base in the sequence as a pair, wrapped inside the familiar double helix. Genes are the stretches of DNA that contain the blueprints for specific protein and range in length from a few hundred to several thousands of base pairs. Think of them as discrete, linear "files" stored within the genome. The sequential reading of these files by a protein complex is known as transcription. The modeling technique is capable of predicting transcription initiation sites in DNA sequences and may predict the binding sites of important proteins in the transcriptional process.

In addition to Rasmussen of Condensed Matter and Statistical Physics (T-11), George Kalosakas of T-11 and Alan Bishop of the Theoretical (T) Division, along with Chu Hwan Choi and Anny Usheva-Simidjyska from the Harvard Medical School's Division of Endocrinology developed the modeling technique. Funding for the DNA transcription modeling project was provided by Laboratory-Directed Research and Development (LDRD) funds. LDRD funds basic and applied research and development, focusing on creative concepts selected at the discretion of the Laboratory director.



Each gene is preceded by a genetic "marker" called promoter DNA, which points to the exact base pair from which to begin transcription. The image from a computerized model shows the double helix structure of promoter DNA with polymerase (pink and blue ribbons) bound to it. Image courtesy of Kim Rasmussen, Condensed Matter and Statistical Physics (T-11)

NEWS FROM UC



Parsky named chair of UC Board of Regents

Editor's note: The following is from a May 20 news release issued by the University of California. To read the entire release, go to

www.ucop.edu/news/archives/2004/may20b.htm online.

The University of California Board of Regents [recently] selected Gerald Parsky as its chair for the next two years.

"Gerry Parsky is a dedicated advocate for the university and the essential contributions that its faculty, staff and alumni make to California's economic vitality and the quality of life for all Californians," said UC President Robert C. Dynes. "His leadership will be especially valuable in the coming year as we seek ways to sustain the university's academic excellence and keep educational opportunities accessible in a period of tight budgets."

"Gerry Parsky has served with distinction as a member of the UC regents for nearly a decade," said Gov. Arnold Schwarzenegger. "I am grateful to him for his dedicated service to our state's higher education system, and I congratulate him on being named chairman. I look forward to continuing to work with Gerry on our common goal of ensuring the UC system remains the envy of higher education systems around the world."

Meeting in San Francisco, the regents also named Richard C. Blum as board vice chair as well as chair of the finance committee.

Parsky, 61, is chairman of Aurora Capital Group, a Los Angeles-based investment firm, which acquires and builds U.S. companies. He serves on a number of corporate boards. From 1977 to 1992, Parsky was affiliated with the Los Angeles law firm of Gibson Dunn & Crutcher, where he was a senior

partner and a member of the executive and management committees. From 1974 to 1977, he served as assistant secretary of the U.S. Treasury Department in charge of international affairs and capital markets.

Appointed to the UC Board of Regents by Gov. Pete Wilson in June 1996, Parsky has chaired the regents' investment committee for four years and served on the board's audit, finance and the Department of Energy laboratory oversight committees. He also has served on the selection committees

for the chancellors of the UCLA and Berkeley campuses.

Parsky has been involved with the University of California for many years, serving on the board of visitors of UCLA's John E. Anderson Graduate School of Management, serving as a trustee of the UCSD Foundation, and assisting the UC Davis School of Veterinary Medicine. His UC ties run in the family: his wife, Robin, graduated from UCLA and his daughter, Laura, is a graduate of UC Berkeley's Boalt Hall School of Law.



Lab breaks ground on new nanotechnology center

Laboratory, Department of Energy and Sandia National Laboratories officials helped break ground recently on the new Center for Integrated Nanotechnologies northeast of the Materials Science Laboratory at Technical Area 3. CINT is a Department of Energy/Office of Science Nanoscale Science Research Center operating as a national user facility devoted to establishing the scientific principles that govern the design, performance and integration of nanoscale materials. The \$18.2 million facility is scheduled to be completed in September 2005. A similar groundbreaking ceremony also took place at Sandia National Laboratories in Albuquerque. Representatives from New Mexico's congressional delegation also took part in the groundbreaking ceremony, as did Raymond Orbach, DOE's Office of Science director. For more information, see the May 20 Daily Newsbulletin at www.lanl.gov/newsbulletin.

Photo by Ed Vigil

New Manufacturing Systems and Methods Division created at Lab

by Jim Danneskiold

A new division responsible for supporting and optimizing all nuclear and non-nuclear manufacturing work at the Laboratory has been established within the Weapons Engineering and Manufacturing Directorate (ADWEM).

Rich Mah, associate director of WEM, named James Muller acting leader of the new Manufacturing Systems and Methods (MSM) Division. Mah said formation of the new division is the first phase of his manufacturing consolidation initiative, which was announced in an April 7 memorandum located at www.lanl.gov/orgs/pa/newsbulletin/2004/05/18/MfgConsolidateMemo_040704.pdf online. (Adobe Acrobat Reader required)

"I have the highest confidence in Jim's technical and management abilities to stand up the new division and consolidate management of the Laboratory's manufacturing capabilities and the infrastructure that supports them," Mah said. "Our goal in setting up the MSM Division is to meet or exceed customer requirements and expectations and to contribute to the future vision for manufacturing technology in the nuclear weapons complex."

Jeanne Ball, currently director of the pit manufacturing project, will serve as MSM acting deputy division leader.

Mah said about 150 employees will form the initial staff for the new division, mostly from the Nuclear Materials and Technology (NMT) and Engineering Sciences and Applications (ESA) divisions, both of which are within ADWEM.

MSM Division will provide the foundation for all production and experimental manufacturing at Los Alamos through such activities as quality assurance, production control, product engineering, equipment management and support for standards and calibration, Mah said. A memorandum containing additional information about MSM Division also is available at www.lanl.gov/orgs/pa/newsbulletin/2004/05/18/MfgSystemsMethods.pdf online. (Adobe Acrobat Reader required)

The new division will deploy its quality and production engineers to the principal "satellite centers" where manufacturing takes place at the Laboratory: the Plutonium Facility at Technical Area 55; the main machine shops at TA-3; the Sigma and Beryllium Technology facilities at TA-3; and the tritium and related manufacturing facilities at TA-16.

The division will comprise five groups, for whom Mah has named the following acting leaders:

- Quality Systems Support (MSM-1), Robert Shoup
- Production Control (MSM-2), Andrew Andrews
- Equipment Management (MSM-3), Billy Baker
- Manufacturing Engineering (MSM-4), Lawrence Lucero
- Manufacturing Capability (MSM-5), John Milewski

Before the formation of the new division, Muller served as project director for the W76 Life Extension Program in ADWEM. He was project leader for detonator production in Detonator Technology (DX-1), and both deputy and acting group leader of Materials Technology: Metallurgy (MST-6).

Muller originally came to the Laboratory in 1972 and later worked as a senior program manager for Aerojet, a GenCorp company, from 1982-99, where he managed the TOW-2 warhead and other warhead programs. He also has worked in engineering development and metallurgy at Pratt and Whitney Aircraft, Avco Corp. and Delavan Corp. He holds a master's degree in metallurgy and a bachelor's degree in metallurgical engineering, both from Rensselaer Polytechnic Institute.

Laboratory creates hydrogen and fuel-cell research institute

by Todd Hanson

Building on more than 25 years experience in the area of fuel cells, the Laboratory recently announced the creation of the Institute for Hydrogen and Fuel Cell Research (IHFCR) to better address technical issues and provide solutions for enabling key aspects of the hydrogen economy and broadening the use of fuel cells.

According to Tom Meyer, associate director for strategic research, "The IHFCR is an important step for the Laboratory. It not only acknowledges our considerable experience in the field, but it also provides a foundation for future success and national leadership in an area of growing importance to the nation's energy future. The Institute will coordinate hydrogen and fuel-cell research projects across the Laboratory, improve access to some of our unique capabilities and facilities, and enhance the Laboratory's ability to attract high quality entry-level and senior staff in the field."

The institute is a partnership between the Chemistry (C) and Materials Science and Technology (MST) divisions. Bill Tumas, group leader of Actinide, Catalysis and Separations Chemistry (C-SIC), will be the institute director, and Ken Stroh, program manager for hydrogen and fuel-cell programs in MST, will be the deputy. Institute research will take place in existing Lab facilities.

The institute will provide an effective forum to bring together, on a project basis, scientists and engineers from across the Laboratory to collaborate on cutting-edge research. It also will foster external partnering with other national laboratories, universities and industry. Project coordinators, thrust leaders and staff working on hydrogen or fuel-cell-related projects will be members of the institute. In addition, the institute will coordinate researchers' activities in related areas, such as climate change, carbon sequestration and nuclear energy.

Since the 1970s, Laboratory scientists have been responsible for a number of scientific and technical breakthroughs that have contributed to the development of modern fuel-cell systems.

The Lab recently joined with Pacific Northwest National Laboratory to create a new national Center for Chemical Hydrogen Storage that will focus on the use of chemical hydrogen compounds for releasing hydrogen spontaneously and controllably at suitable pressures and temperatures, and in amounts consistent with the targeted end use.



DOE, congressional officials visit Lab

U.S. Rep. Ken Calvert, R-Calif., left, listens to an overview of Laboratory programs from Tom Meyer, associate director for strategic research, during a recent lunch-hour meeting in the Los Alamos Research Park. Also visiting the Laboratory was Raymond Orbach, inset, the Department of Energy's Office of Science director. The two were in Los Alamos to receive briefings on Laboratory programs and tour Lab facilities. Orbach later took part in a groundbreaking ceremony for the Laboratory's new Center for Integrated Nanotechnologies at Technical Area 3. Photos by Ed Vigil

Stephen Younger: Terrorism makes valuing diversity even more important



Stephen Younger of the Theoretical (T) Division talks about terrorism and its affect on diversity at an Asian Pacific Islander Heritage Month talk at the Laboratory. Photo by LeRoy N. Sanchez

by Kathryn Ostic

“Terrorism is an insidious threat because there is no one to attack, no clearly defined group or center,” said Stephen Younger of the Theoretical (T) Division. Younger spoke in the Physics Building Auditorium for Asian Pacific American Heritage Month.

Younger’s talk, “A Changing World in the Face of Global Terrorism,” focused on his unique perspective of the government’s defense policy changes since Sept. 11, 2001, and the resulting implications on diversity.

Younger contrasted today’s world of terrorism and the yesteryear of the Cold War by stating that during the war both sides followed rules of engagement. “We knew how to behave; there was stability in approach,” Younger said.

Younger added, “At the end of the Cold War there was a peace dividend. We extended a hand to the Eastern block countries. There also was optimism that the threat of nuclear war had been buried. Our optimism was shattered by the tragic events of Sept. 11.

“Americans were shocked that we were attacked on our own turf by icons of commerce. American icons attacking American icons,” he said, referring to the Boeing aircraft that attacked the World Trade Center and the Pentagon.

There was a new enemy. Global terrorism seemingly would stop at nothing to achieve its goals. Enemies that die to become martyrs — who receive their reward in the afterlife — are an enemy without a territory, Younger said.

Why haven’t terrorists attacked the U.S. using weapons of mass destruction? Younger offered various reasons, most notably U.S. intelligence disruption of terrorist activities.

He said terrorists have a greater interest in chemicals and biological weapons than in nuclear weapons because they are easier to use to accomplish their goal. “It will be a challenge to stop, but it can be done by shipping and storing these toxic chemicals in a more secure fashion,” said Younger.

Efforts exist to help manage the daunting

task of stopping terrorist activities, such as the work done by the Defense Threat Reduction Agency, exercising rights under various treaties, and the Cooperative Threat Reduction Program, which allows dismantlement of weapons of mass destruction and defense against chemical and biological weapons, Younger said.

While director of DTRA, Younger made significant contributions to national security and the Department of Defense. Younger implemented a Threat Anticipation Program and employed authors, artists, sociologists, religious historians, people from the United States, Asia, Africa and around the world to talk and to develop simulations about why terrorists were active and what could be done to stop the activities, he said.

“The frontier of national security studies is shifting from technology to social science. Force is no longer the issue ... it can be very expensive and the U.S. can’t sustain the operational tempo,” Younger explained.

“We must embrace diversity and understand how different cultures think and learn about their value systems. One must experience them, preferably by living in close contact. We are blessed in this country by having people from a wide range of cultural backgrounds. This is a national asset,” said Younger.

“If there is ever a time for diversity, this is it,” Younger said.

The talk was sponsored by the Asian American Diversity Working Group, the Diversity Affirmative Action Board and the Diversity Office (DVO).

Nanos lauds efforts ...

continued from Page 2

- and 97 percent self-reporting of security incidents.

“It’s a good thing. This is extremely important,” Nanos said of the high self-reporting of security incidents.

Nanos said Phase Two of the CREM Reduction Plan will consist of such things as consolidating CREM holdings, establishing CREM libraries and continuing to eliminate CREM Labwide. Between naming the common causal factors for CREM issues and listing other security issues of concern at the Laboratory — such as improper transmission of classified information and computer worm/virus attacks — Nanos also spoke about the Nested Safety and Security Committee efforts that will be taken in the future. Starting next week, he said, NSSC meetings will begin to address refinement and validation of the Phase Two CREM Reduction Plan and also will provide a mechanism for Laboratory employee input on this and other security issues.

Nanos also presented a list of the current security challenges facing the Laboratory, which, to name a few, included 12,204 cleared workers, 100 security areas, 100,000 classified weapon parts and 90,000 items of CREM, since reduced to about 30,000. Everyone, from associate directors to group leaders and employees is accountable for security at the Laboratory, said Nanos. “We’ve got to find the problems and work together to solve them,” he said, calling the effort a “shared sense of responsibility.”

Added Nanos: “We’ve come a long way ... You’ve all been working hard at it.”

For Your Safety



Be cautious during thunderstorms

Lightning is one of the most under-rated severe weather hazards, according to the National Weather Service. In the United States every year, lightning kills more people than hurricanes or tornadoes.

One ground lightning strike can heat its path five times hotter than the surface of the sun and generates between 100 million and 1 billion volts of electricity.

Lightning depends on the vertical development of clouds. During summer months, precipitation comes primarily from clouds that have vertical development caused by convection. Ice is a key element in the development of lightning. In a storm, the ice particles vary in size from small ice crystals to large hailstones. In the rising and sinking motions within the storm there are many collisions between these particles. This causes a separation of electrical charges between the upper end and lower region of the clouds. The negatively charged electrons collect at the cloud base.

A moving thunderstorm induces a positive charge along the ground. As the positive charge builds up, it moves up taller objects such as trees, houses, telephone poles and even people. The negatively charged area in the storm sends out an invisible charge toward the ground called a stepped leader. When the leader gets close to the ground, it is attracted by all the positively charged objects and a channel develops. The electric transfer occurs through this channel as lightning.

There have been four employees struck by lightning within the last 15 years on Laboratory property — one while talking on a telephone, one on a crane, two inside a building that was struck by lightning and three bicyclists who were struck by lightning while standing under a tree.

The Laboratory has a lightning stroke counter at Technical Area 6 that responds to cloud-to-cloud or cloud-to-ground strokes within a 30-mile radius, depending on atmospheric conditions. A lightning flash may contain between one and 30 strokes with an average of four

continued on Page 7



Hjeresen new chair of ASC Industrial and Engineering Chemistry Division

Dennis Hjeresen of Pollution Prevention/Sustainability Program (RRES-PP) is the new chair of the Industrial and Engineering Chemistry Division of the American Chemical Society.

Hjeresen's career began in 1986 as a postdoc in the former Life Sciences (LS) Division. For the past 14 years, he has served as program manager for the Risk Reduction and Environmental Stewardship (RRES) Division and its predecessors. He serves as team leader for the development and implementation of an environmental management system for the Lab. Hjeresen also has been on loan for the past three years to the American Chemical Society as director of the Green Chemistry Institute. The institute is a 24-nation program promoting scientific innovation for upstream pollution prevention.

"It is an honor to serve as chair-elect of the Industrial and Engineering Chemistry Division. The fact that the membership would elect a nonchemist to lead the division is a tribute to the multidisciplinary

continued on Page 7



Dennis Hjeresen



Begay elected to New York Academy of Sciences

Fred Begay of the Government Relations Office (GRO) is a recently elected member of the New York Academy of Sciences.

"I'm pleased and proud to receive the New York Academy of Sciences award and to be included in the oldest academy in the country. The Academy is widely recognized as one of the world's foremost organizers of scientific conferences and symposia and has evolved beyond convenor to include the roles of communicator and mentor," Begay said.

Begay's career began in 1971 in the former Laser Research and Technology (L) Division as a nuclear physicist, where he participated in numerous controlled thermonuclear fusion programs. He has worked for various groups throughout his Laboratory career, including the Physics (P) and Human Resources (HR) divisions, the Science and Technology Base (STB) Programs Office and the Community Relations Office (CRO).

Begay also has held research and teaching appointments at Stanford University, where he worked on fundamental elementary particle studies (1975); and at the University of Maryland, where he worked on fundamental plasma physics studies (1987-1988).

Begay has received the following awards for his contributions in science, science education, and public service: Ely Parker Award, American Indian Society for Engineering and Science, 1992; LifeTime Achievement Award, National Science Foundation, 1994; Distinguished Scientist Award, Society for the Advancement of Chicanos and Native Americans in Science, 1999.

Begay also has had numerous films produced about his life including the "Nation within a Nation," Hearst Metrotone News, 1972; "In Our Native Land," Sandia National Laboratories, 1973; "The Long Walk of Fred Young-Begay," British Broadcasting Corporation and NOVA, 1978; and "Dancing with Photons," KNME-TV, 1997. He is featured in numerous books and magazines, including National Geographic, 1987, and Notable Twentieth Century Scientists, Gale Research Inc., 1994.

Begay earned his bachelor's degree in physics and math, his master's degree in physics and his doctorate in nuclear physics from the University of New Mexico.

Since 1817, the New York Academy of Sciences has brought together scientists of different disciplines from around the world to advance the understanding of science, technology and medicine.

Council for Chemical Research recognizes collaboration success

by Todd Hanson

Laboratory researchers from the Decisions Applications (D) Division, working in collaboration with Proctor & Gamble, recently received a government/industry collaboration award from the Council for Chemical Research. The Collaboration Success Award was presented at CCR's annual meeting in Tampa, Fla., to the developers of PowerFactorE, a suite of reliability engineering tools for optimizing the manufacturing process.

Emerging as the result of an extremely timely and successful collaboration between P&G and the Laboratory, the PowerFactorE toolkit was created and adapted to address manufacturing problems for P&G.

According to Donna Smith, leader of the Laboratory's Technology Transfer (TT) Division, "The joint discovery and major breakthrough of PowerFactorE would not have happened if P&G had not had the foresight to divert from their usual research partners to a much less likely collaboration with Los Alamos. It was truly a surprising connection that proved to be mutually beneficial."

The PowerFactorE methods and tools, which have been proven effective in small-scale nuclear materials processing applications in the Department of Energy complex, have been successfully applied to large-scale manufacturing processes and currently are being applied to a variety of other large-scale industrial processes. P&G licensed the software from Los Alamos and presently uses the software in 200 of its plants. P&G claims savings of more than \$1 billion.

The purpose of the CCR Collaboration Success Award is to recognize a collaborative team that has made outstanding contributions to the progress of chemistry-related science and/or engineering. The CCR award is not the first for the PowerFactorE team; the technology was one of the Laboratory's eight R&D 100 Award winners in 2003.

The Council for Chemical Research is an organization based in Washington, D.C., whose membership represents industry, academia and government. Formed in 1979 to promote cooperation in basic research and encourage high quality education in the chemical sciences and engineering, CCR's



Left to right, Charley Eberhard from Proctor & Gamble receives the Collaboration Success Award from Dady Dadyburjor of the Council for Chemical Research, as Mike Hamada of the Decision Applications (D) Division looks on. Photo courtesy of the Technology Transfer (TT) Division

mission is to benefit society by advancing research in chemistry, chemical engineering and related disciplines through leadership collaboration across discipline, institution and sector boundaries.

Hjeresen ...

continued from Page 6

interests of the organization. Further, the selection of someone with an environmental focus demonstrates a strong commitment to sustainable science within the ACS," said Hjersen.

Hjeresen has received numerous awards throughout his career including the Best of What's New award for top 100 new technologies of the year, Popular Science Magazine; Best of What's New award for number one new technology, Popular Science Magazine; Research and Development 100 Magazine award for dry-wash technology; Department of Energy Office of Industrial Technology, Technology of the Year award; and Los Alamos National Laboratory Recognition of Excellence award in Achieving Industrial Partnerships.

The IEC was established in 1908. It also is the largest scientific society in the world with approximately 161,000 members.

Hjeresen earned his master's and doctoral degrees from the University of Washington in neurobiology.

Sixteen UC researchers elected to the National Academy of Sciences

Sixteen researchers affiliated with the University of California were elected to the National Academy of Sciences during its annual meeting in Washington, D.C., in recognition of their achievements in scientific and engineering research.

The 16 UC researchers were among 72 new members and 18 foreign associates



from 13 countries elected at the academy's 141st annual meeting. No other institution in the country had more than four new members and no other institution in the world had more than five new members.

Membership in the National Academy of Sciences is considered one of the highest honors that can be accorded a U.S. scientist or engineer. Total active NAS membership is 1,949 — with this latest election, there are now 345 researchers affiliated with the University of California who are members.

"Membership in the National Academy of Sciences is a tremendous honor," said UC President Robert C. Dynes, who himself has been a NAS member since 1989.

The newly elected University of California members are as follows:

- Armand Paul Alivisatos, UC Berkeley
- Phillip Colella, Lawrence Berkeley National Laboratory
- Shaun Coughlin, UC San Francisco
- Andrea Ghez, UC Los Angeles
- Jacob Israelachvili, UC Santa Barbara
- Raymond Jeanloz, UC Berkeley
- Edward Jones, UC Davis
- David Julius, UC San Francisco
- Elizabeth Loftus, UC Irvine
- M. Brian Maple, UC San Diego
- Erin O'Shea, UC San Francisco
- George Oster, UC Berkeley
- Peter Quail, UC Berkeley
- Peter Walter, UC San Francisco
- Tilahun Yilma, UC Davis
- Charles Zuker, UC San Diego

The National Academy of Sciences is a private organization of scientists and engineers dedicated to the furtherance of science and its use for the general welfare. It was established in 1863 by a congressional act of incorporation, signed by President Abraham Lincoln, which calls on the academy to act as an official adviser to the federal government, upon request, in any matter of science or technology.

Be cautious ...

continued from Page 5

strokes per flash. The stroke counter measures, on average, more than 25,000 lightning strokes per year, 97 percent of which occur between May and September. Eighty to 90 percent of summertime lightning activity occurs between noon and 9 p.m.

When the threat of thunderstorms develops, the following precautions should be taken, according to the National Weather Service:

- If your hair stands on end or you feel a tingling sensation, lightning may be about to strike. If no shelter is available squat down with feet together and place hands over ears to minimize hearing damage from thunder. This also reduces your chances of being struck or becoming a conductor for nearby lightning strikes.
- Remember the "30/30" rule. If lightning is sighted and its accompanying thunder arrives in less than 30 seconds, the lightning is within six miles and shelter should be taken. Remain in that shelter for 30 minutes after the last clap of thunder.
- Avoid projecting above the surrounding terrain as you would if standing in an open field or on a mountain top.
- Stay away from open water.
- If indoors, avoid water and stay away from doors and windows. Don't use telephones with cords and take off headsets. If possible, turn off appliances, such as computers, power tools and televisions, because an exterior lightning strike of electric or telephone lines can induce shocks to indoor equipment.
- Stay off motorcycles and bicycles, tractors and other metal farm or construction equipment.
- Put down golf clubs and take shelter. Metal-spiked golf shoes increase the probability of being struck.
- Don't stand under natural lightning rods such as tall, isolated trees.
- Avoid taking shelter in small structures that are isolated in an open area.
- If in a forest, seek shelter in a low area under a thick growth of small trees; if in an open area, seek a low place such as a ravine or valley but stay alert for possible flash flooding.

Laboratory employees and subcontract personnel who work outdoors should be especially alert to the possibility of being struck by lightning. Heavy equipment vehicles and cranes serve as grounding paths for lightning because of their metal construction and girth.

Ninety percent of lightning victims survive the lightning strike. Individuals struck by lightning do not carry a charge, and it is safe to touch them to provide medical treatment. Providing first aid to the ones who look dead may revive them. This aid would involve cardiopulmonary resuscitation, because the lightning may cause the heart and lungs to stop functioning.



Q: What do you see as your role or responsibility in ensuring security at the Laboratory?



Lenna Andrews of Desktop Computing (CCN-2)

"Personally, I take my roles and responsibilities for ensuring security at the Laboratory very seriously! As a CREM custodian, I understand the responsibility of protecting our national security as well as maintaining the integrity of the Laboratory as a very secure institution."



Leonard Beebe of the Applied Physics (X) Division

"I view security as our number one priority — the protection of Laboratory information. We cannot afford to inadvertently give away millions of dollars worth of research and intellectual property. Weapons can provide us with a lot of security, but in the wrong hands they can do us a lot of harm. We owe it to the public to protect that information."



Robert Pelak of Hydrodynamics (DX-3)

"Proper security is central to the way I perform work at the Laboratory. I work with classified information on a regular basis and understand how important it is to keep it out of the wrong hands."



Brendon Sehorn of the Institutional Budget Office (CFO-4)

"I see my role as important. I don't work with classified information, but I do safeguard the sensitive information I handle. I also try to remain alert on and off Laboratory property."



John Schroeder of CFO-4

"Everybody's role, including my own, is important to maintaining the Laboratory's image as a positive one when it comes to security."



John Waterbury of the Computing, Communications and Networking (CCN) Division

"Security is everyone's responsibility, not only in my area but everywhere throughout the Lab. If things don't look right, they probably aren't. We all have to work hard to protect the Lab's assets"



Karing Keeshond founder honored for lobbying efforts

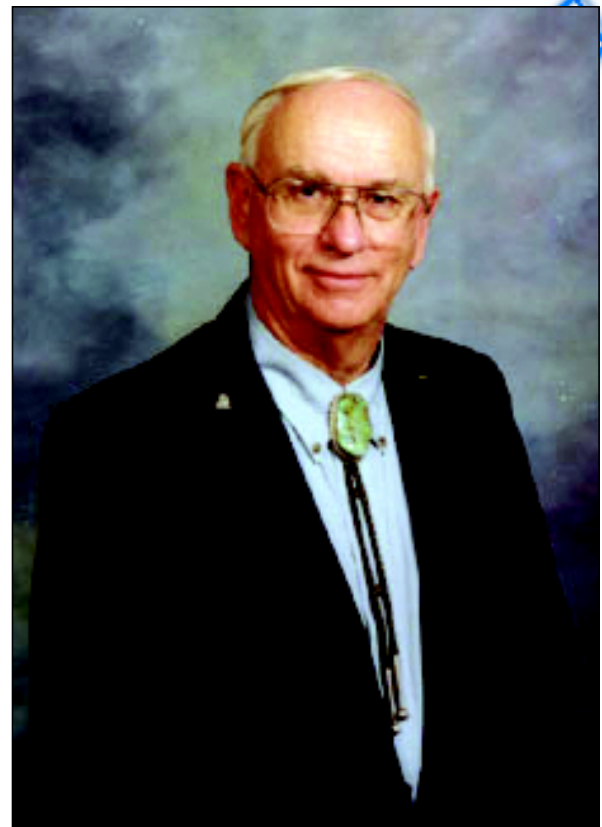
by Hana Binder

Laboratory retiree Norm Wilson has a houseful of dogs, six of them to be exact. Although currently, only three dogs actually belong to him and his wife, Jean. Welcome to the land of the keeshonds (pronounced kayz-hond).

For 30 years, the Wilson family has owned at least one of this Dutch-originated breed, getting the first puppy in response to a burglary. In 1985, Wilson, along with his wife and daughter Sandra, founded Karing Keeshond Rescue to aid keeshonds at risk. Now, after so many years of receiving loyal canine service and returning the favor, Wilson is being recognized for his work. The American Kennel Club has awarded Wilson a Community Achievement Award for his work in lobbying against a bill put before the New Mexico Legislature. His goal, Wilson said, was “to protect the constitutionally guaranteed right of responsible dog owners and ethical breeders against the threat of a bill that is the most vicious piece of proposed legislature” he had seen.

The award is one of 12 given each year and includes a \$1,000 donation to the Rio Grande Kennel Club, of which Wilson is a member. Maggie Amacker, a fellow kennel-club member in Albuquerque, nominated Wilson.

Wilson, who started at the Lab in 1957 in the former Reactor Development (K) Division and retired from the Accelerator Technology (AT) Division in 1990, led the opposition against a bill introduced in the New Mexico Legislature that would make owning too many pets (more than 20) a felony. While pet



Laboratory retiree Norman Wilson

“hoarding” can result in animal neglect by owners who don’t have enough resources or time, Wilson said, it shouldn’t result in the owner becoming a felon. Wilson cited a study by Tufts University on pet hoarders. That study indicated that the typical pet hoarders are regular people who simply become overwhelmed after taking in too many strays. “In all honesty they’re trying to do something for the animal ... they need help, not being made criminals, which is the thrust of this bill,” Wilson said. He believes that existing statutes allow prosecution of animal abuse and cruelty offenders while providing for public health, safety and tranquility if enforced properly.

According to Wilson, another problem with the poorly written bill is that it doesn’t take into account continued care for the animals once they are removed from the so-called hoarder. The confiscated animals would put too much strain on the already overburdened state animal shelters so the alternative would probably be euthanasia, he said. Therefore, Wilson said, this would result in dogs being disposed of while the judicial system was proceeding, even if their owners were found innocent of being in violation of the proposed statute.

Further, Wilson added, several provisions of the bill violate citizen rights that are protected by the first, fourth, fifth and 14th amendments to the Constitution. Provisions of the bill appear to allow law enforcement officers to simply receive an anonymous complaint, request a search warrant and conduct an investigation, without justification except the original complaint. Often, with unconstitutional, ineffectual and unnecessary bills, “unless someone challenges them, they become the law,” according to Wilson. In this case, Wilson took the initiative to make sure this one didn’t become law. Because of his actions, animals and owners in New Mexico know they have a worthy advocate for their defense.

For more information about the award, the American Kennel Club legislature affairs office can be reached at (719) 816-3720 or doglaw@akc.org by e-mail. Karing Keeshond Rescue can be reached at (505) 662-9544 or 105645.2271@compuserve.com by e-mail.



Clarification

Clarification from the May 24, 2004 issue of the Los Alamos NewsLetter: Ken Alvar is an active employee in Safeguards Science and Technology (N-1).