

## Los Alamos scientists at forefront of atmospheric research

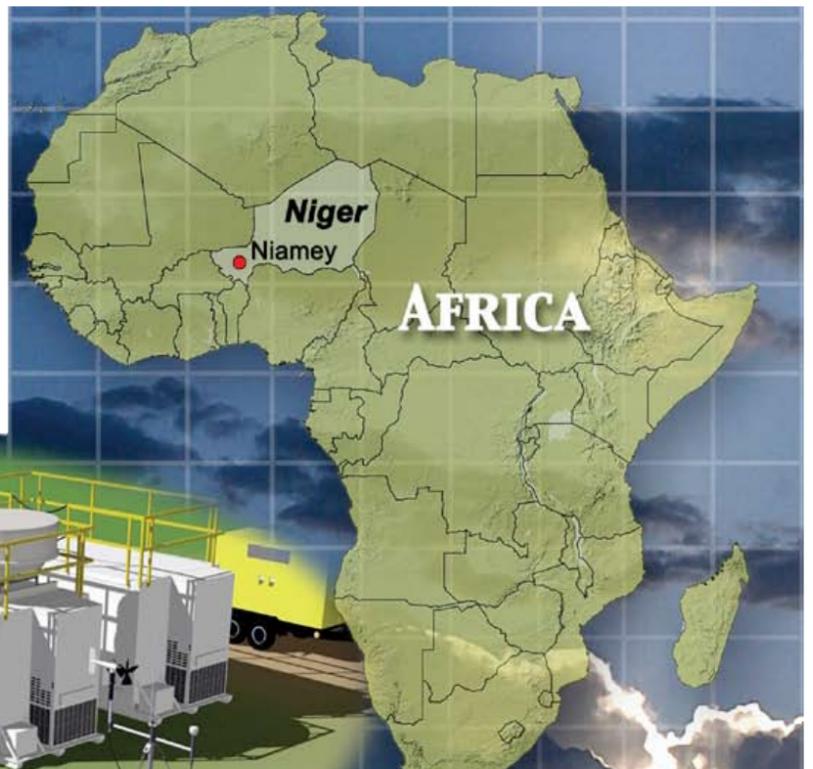
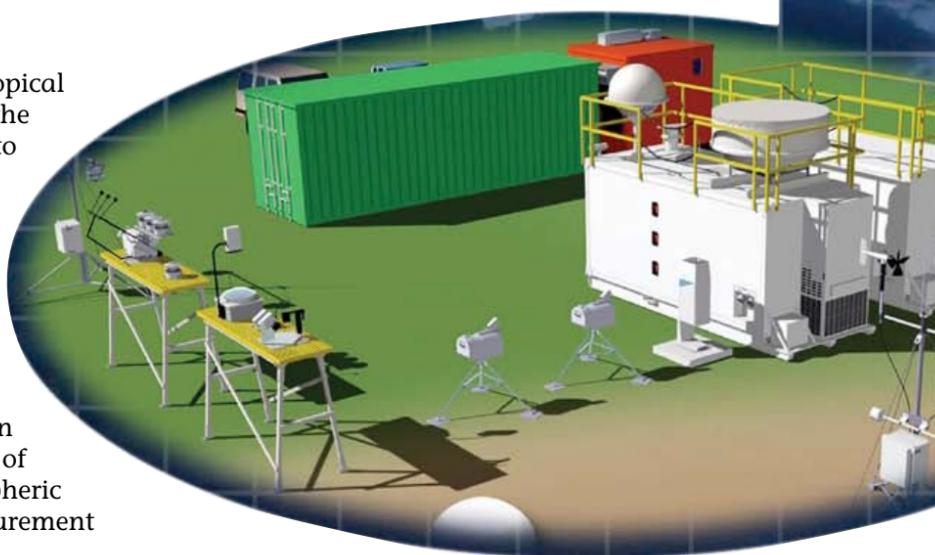
by Hildi Kelsey

From the tropical islands of the Western Pacific to the lush forests of Southwest Germany, the Laboratory is taking global climate research by storm as an integral player in the Department of Energy's Atmospheric Radiation Measurement Program (ARM).

Building on the Laboratory's successful 10-year involvement in ARM's Tropical Western Pacific research, several Los Alamos engineers and technicians will accompany other ARM researchers to the Black Forest region of Germany next month for a nine-month deployment to study rainfall resulting from atmospheric uplift (convection) in mountainous terrain.

"We are contributing to one of the largest international weather research efforts performed in Europe," said Larry Jones, climate team leader in Atmospheric, Climate, and Environmental Dynamics (EES-2). "ARM relies on us to ensure continuous real-time data collection during these deployments, and in doing so we are putting Los Alamos on the map as a major contributor to unprecedented global climate research."

ARM scientists will collaborate with researchers from the University of Hohenheim as part of the long-term Convective and Orographically-induced Precipitation Study, or COPS. Information obtained during COPS should improve regional weather forecasts to help protect people and land, and help



*The ARM Mobile Facility consists of large shipping containers converted into laboratories. They are equipped with computer systems connected to high-tech instruments that collect data from the atmosphere. Courtesy of the Department of Energy's Atmospheric Radiation Measurement Program*

scientists determine how clouds affect the climate in complex terrain around the world. Because of its relevance to society, COPS has been endorsed as a research and development project by the World Weather Research Program. More information on COPS is at <http://www.uni-hohenheim.de/spp-iop/index.htm> online.

Currently, a team of specialists in Los Alamos' Earth and Environmental Sciences (EES) Division manages and operates three climate research facilities in the Tropical Western Pacific on behalf of ARM. The first of those sites was installed on Manus Island, Papua New Guinea, in 1996. A second followed on the island of Nauru in 1998, and a third in Darwin, Australia, in 2002. Over the past 10 years, the Los Alamos team has enabled ARM scientists to collect continuous real-time data from a climatically significant region of the world known as the "tropical warm pool."

"The tropical-warm-pool region plays a large role in the global climate system," said Jones. "For example, the El Niño phenomenon has far reaching implications for weather patterns over much of the Northern Hemisphere and possibly the entire planet. The data collected at our tropical-warm-pool facilities will help improve general circulation computer models used to predict long-term climate change."

The Los Alamos climate team also is involved in operating and managing

the ARM Mobile Facility (AMF), created in 2004 to explore science questions beyond those addressed from ARM's permanent sites. Designed to function in any environment, the mobile facility deploys to locations around the world for campaigns lasting 6 to 12 months.

Using the AMF, researchers assist in collecting climate-related data from under sampled regions. Active remote sensors are used to characterize the location and evolution of the cloud, aerosol, water vapor, and temperature profiles above the deployment location. Cloud radar is used to determine cloud location, reflectivity, particle vertical velocity, and velocity distribution.

Just last month, the AMF completed its second deployment in the Republic of Niger. As part of the ARM initiative in Germany, the mobile facility will be deployed in the village of Baidersbronn-Heselbach in the Murg Valley.

"Differences in culture, language, and work dynamics have made each foreign deployment a distinctive challenge," said AMF Project Manager Kim Nitschke of EES-2. "So far, Germany has proven to be equally exciting."

The ARM Mobile Facility was developed through funding from DOE's Office of Science. Additional ARM program descriptions and information is available on the ARM Web site at <http://www.arm.gov/> online.

**Andrea Maestas of EES-2 contributed to this story.**

 **NewsLetter**

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## Safety, security team addresses TA-54 traffic issue

One issue the Worker Safety and Security Team plans to look at is possible solutions to a long-standing traffic concern along the Pajarito Corridor. The WSST is working with Scott Miller of Environmental and Remediation Support Services (ERSS), who raised this issue.

The Technical Area 54 intersection of Mesita del Buey and Pajarito Road has been the site of numerous near misses and several accidents. Drivers traveling northwest to Los Alamos on Pajarito Road who need to turn right to enter TA-54 must slow down considerably and risk getting rear-ended by cars behind them. Additionally, some cars swerve left to get around the car turning right, with some of these drivers swerving into oncoming traffic in the opposite lane and risking a head-on collision.

WIPP trucks have difficulty in maneuvering the sharp turns in and out of the area and sometimes completely block traffic trying to cross Pajarito Road.

There also are the usual driving hazards, such as speeding and elk or deer encounters.

Employees and all drivers should exercise caution near this intersection.

Laboratory safety and traffic officials currently are reviewing options to alleviate these issues.

## New worker involvement team formed

by Kathy DeLucas

Employee involvement and input feeds the continuous cycle of safety and security improvement. That's the goal of the Worker Safety and Security Team formed last fall by Laboratory Director Michael Anastasio.

Each associate directorate, as well as KSL Services and Protection Technology Los Alamos, has a member and an alternate on the WSST. Success for the program is dependent on every employee at the Laboratory.

"The mission of the team is to improve safety and security at the Laboratory through direct involvement of all people performing work here," said Felicia Taw of Inorganic Isotope and Actinide Chemistry (C-IIAC), chairman of the team.

The WSST is chartered and given full endorsement by Anastasio, according to Taw. It has responsibility and authority to identify, communicate, and champion safety and security related issues.

The team's motto is "Think safety. Live safely."

The WSST has sent several members to a Human Performance

Improvement class, and several members are benchmarking safety successes with other companies and institutions such as Georgia Power, Savannah River Site, and WIPP. The first issue the team is addressing is to make sure that people feel comfortable reporting any injury they might incur on the job.

"It is important that all employees report injuries they receive on the job, and that they feel empowered by doing so, knowing that they may prevent a future injury to someone else," Taw said. "Employee involvement will make the difference at Los Alamos and make everyone safer in their job."

Sub-teams that will reside at the associate directorate and division levels also will be established and provide input to the WSST so that worker involvement includes all levels. Communication will flow down to and up from these sub-teams.

The WSST also is a part of the Laboratory's effort to achieve Voluntary Protection Program "Star" status. The VPP is an official Occupational Safety and Health Administration-established and Department of Energy endorsed program that recognizes outstanding efforts of employees and employers who have achieved exemplary occupational safety and health. VPP sets performance-based criteria for a managed safety and health system, invites sites to apply, and then assesses applicants against these criteria. OSHA's verification includes an application review and a rigorous onsite evaluation by safety and health experts.

Below is a listing of representatives on the Worker Safety and Security Team.

**Think safety**  
**Live safely**

	Primary member	Alternate
Business Services	Amy Nuckols	Albert Jiron
Chemistry, Life, and Earth Science	Felicia Taw	Pete Silks
Engineering and Engineering Sciences	John Erickson	Donald Casillas
Environmental programs	Dwain Farley	Steve Henry
Environment, Safety, Health, and Quality	Therese Trujillo	James Bland
Experimental Physical Sciences	Jeff Schinkel	Mike Salazar
Intrastucture and Site Services	Time Gallegos	Michael Bodelson
Nuclear and High Hazard Operations	Tony Stanfor	Bart Ortiz
Project Management	Floyd Strub	Jim Jones
Safeguards and Security	Andrew Budka	Doug Dick
Stockpile Manufacturing and Support	Marilyn Peabody	Steve Yarbrow
Theory, Simulation, and Computation	Ron Day	Kei Davis
Threat Reduction	Tom Lopez	Terry Cremers
Weapons Engineering	Janine Fales	Joe Sanchez
Weapons Physics	Chuck Owens	Ray Flesmer
KSL Services	Jerry Byrd	Leroy Espinosa
PTLA	Stephan Maestas	Ross Cordova

VPP Program Office	Bethany Rich	Paula Whitehead
KSL ES&H Director	Tom Courtney	
PTLA ES&H Senior Specialist	Walter Archuleta	
AD ESH&Q SME	Chris Cantwell	Clay Davis
LASO	Joe Vozella	Fred Bell
IRM-CAS	Mig Owens	

The WSST Web site can be found at <http://wsst.lanl.gov> online.

Workers also can notify the Safety Concerns Program of any safety issues they might identify by writing to [safety@lanl.gov](mailto:safety@lanl.gov) by e-mail.

## Los Alamos National Laboratory NewsLetter

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Los Alamos enhances national security by ensuring the safety and reliability of the U.S. nuclear stockpile, developing technologies to reduce threats from weapons of mass destruction, and solving problems related to energy, environment, infrastructure, health and global security concerns.



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# So... what do you think?

**Q.** Within the Laboratory are numerous organizations (divisions, offices, groups) with a variety of focuses. What Lab organization do you most want to learn more about and why?



**J. Patrick Trujillo of Employee Relations (HR-ER)**

I would like to know more about the work done in the Sensitive Compartmentalized Information Facility (SCIF), because I am intrigued by the spy stuff and what they do.



**Chowell Puente of Mathematical Modeling and Analysis (T-7)**

I would like to know what Biosciences (B) Division is doing, and specifically what kind of experiments they are doing in BSL-3.



**Susan Chastain of Program, Policy, and Infrastructure (CT-PPI)**

I would like to learn more about the Contractor Assurance Office (CAO) and what it is they are working on, especially since they are a new organization.



**Weigang Wan of Plasma Theory (T-15)**

I am interested only in my own research, and I am not curious about other Lab organizations.



**Joel Miller of Mathematical Modeling and Analysis (T-7)**

I would be interested in who is doing work in renewable energy. I know there are several [organizations at the Lab] doing work in renewable energy. I'm just curious about who coordinates these efforts.

## PEOPLE



### Hurd named Materials Research Society president

**A**lan Hurd of the Lujan Neutron Scattering Center (LANSCE-LC) is the new Materials Research Society president for 2007.

As president, Hurd said he plans to emphasize reaching out to the government for more federal funding of physical sciences. His plan for increased government interaction includes more frequent and higher impact congressional visits by the materials community and an additional Congressional Fellow to be shared with another technical society, he said.

The Materials Research Society has more than 14,000 members. The group is known for its interdisciplinary meetings and intellectual diversity, said Hurd.

Hurd began working with the Materials Research Society in 1986 as a tutorial instructor and served as vice president in 2006.

Hurd earned his degrees in physics from the Colorado School of Mines and the University of Colorado, and is an adjunct professor of physics at the University of New Mexico. He began working at the Lab in 2001.



**Alan Hurd**

### McKigney receives IEEE award



**Edward McKigney**

received the award for his contributions to the development of nanocomposite scintillators and other materials, and electronics for the next generation of nuclear safeguards.

IEEE is a nonprofit, professional association and works in areas such as aerospace

**E**dward McKigney of Safeguards Science and Technology (N-1) received the Institute of Electrical and Electronics Engineers (IEEE) Early Career Award for outstanding achievement in radiation detection.

McKigney was honored at a Nuclear Science Symposium in San Diego. He

systems, computers, telecommunications, biomedical engineering, and consumer electronics.

McKigney earned his doctoral degree in high energy physics in 1998 from the University of London and began working for the Lab in 2003.



**National Security Sciences Building**

### NSSB Phase I project team receives DOE award

**T**he Laboratory's National Security Sciences Building continues to receive recognition. The Phase I project team recently received the Secretary's Award of Achievement from the Department of Energy.

The annual award is given to individuals or teams who have demonstrated "significant" results in completing a project within cost and schedule. The DOE award notes that the \$93 million project was completed three months ahead of the original baseline schedule and well under budget, said Keith Orr of Weapons Engineering and Physics (PP-WEP), NSSB project director.

Phase I project team members included Orr, Joe Brophy, Cindy Costa, and Angela Thomas, all of PP-WEP; Ed Artiglia of Environmental Management (PP-EM); Mark Harris of Construction Managers (CM-CMGRS); Kevin Hogan of Safeguards and Security Systems (N-4); Leslie Romero of Planning (FIRP-PLNG); Chris Steller of Safeguards and Security (CS-PCS-6); Adan Ortega of Operations Support (HIS-OS); Lawrence Quintana of the CMR Replacement Project Office (CMRR-PO); and Myron Koop of Construction Management (CM-DO). The staff of Parson's Brinckerhoff, a planning, engineering, and construction management organization provided construction management support for the project.

The 275,000-square-foot NSSB Project includes office space for nearly 700 employees and a lecture hall that can hold 600 people. A 400-car parking structure adjacent to the NSSB at Technical Area 3 also was part of phase 1 of the project.

The NSSB was designed as the replacement for the Administration Building.

Last year, the NSSB received a first place award in the category of "Design Build" as part of Southwest Contractor magazine's "Best of 2005" competition.

In that competition, the NSSB was judged on the following categories:

- design,
- construction,
- innovation,
- contribution to the industry, and
- overall excellence.

## In Memoriam

### William McGrath

William McGrath, 85, died October 26, 2006.

McGrath joined the Laboratory in 1971 as a staff member in the former Engineering (ENG) Division where he remained until his retirement in 1985.

He received a bachelor's degree in electrical engineering from Columbia University and served in the United States Navy during World War II, receiving several commendations and a purple heart for his service in the Pacific Theatre.

He is survived by wife, Dorothy; daughters Mary Jo, Christine, Karen, and Theresa; sons Patrick, Michael, Timothy, Matthew, and Richard; and numerous grandchildren.

### Charles Woodard

Laboratory retiree Charles Woodard died November 18, 2006. He was 83.

Woodard joined the Laboratory in 1967 in the former Meson Physics (MP) Division where he remained until his retirement in 1993.

He is survived by his wife, Dorothy; sons Kramer and Stephen; daughter Dyanne Pompeo; brother George Woodard; and many grandchildren, nieces, and nephews.



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# Pushing the limits of endurance

*‘Emotionally, it makes you appreciate all the things you take for granted on a daily basis. Athletically, it’s the best you can achieve.’*

by Krista D. Wilde

“It is amazing what the body can endure when it is exhausted from racing for eight to ten days and has only a few hours of sleep,” says Pete Stilwell of the Facility and Infrastructure Recapitalization Project (FIRP), as he describes his experience during an adventure race.

Stilwell and three teammates participated in the Primal Quest Utah Expedition Adventure Race last summer. The 455-mile race took the team about eight and a half days to finish and included biking, hiking, rappelling, horseback riding, and white water rafting.

Adventure racing is a sport that requires mental, emotional, and physical stamina. The races are usually attempted by co-ed teams of two to five members, and incorporate a number of different kinds of challenges. Most races include hiking, mountain biking, paddling, swimming, and navigating challenges.

The first adventure race that Stilwell participated in was six hours long, and in 2004 he participated in the Subaru Primal Quest, his first expedition length race. Expedition races are typically about 350 miles and require five days or more to complete. Stilwell has participated in about forty adventure races over the past eight years in addition to numerous bike races, and triathlons.

“I’ve always been active in a variety of sports that center on cycling. I saw Eco Challenge on TV and was in awe,” said Stilwell.

Preparing for a race as intense as PrimalQuest is a yearlong process. Stilwell said he usually trains five to six days a week for one to two hours each day when he begins to prepare for the race.

About eight months before the race, he begins to train for four to nine hours at a time. About six months before the race, Stilwell trains for 18-36 hours at a time and participates in two-to-three-day races. In the last month before the race, he backs off to about two-to-three-hour sessions and doesn’t exercise much during the last two weeks before the race. During these last two weeks, he also tries to gain about 10 pounds in good fat so he will have fuel during the race.

Stilwell said he prepares for the mental duress by training with a pebble in his shoe, and toughens his feet by running barefoot. He also practices by exercising until he uses all of his caloric energy and “bonks” so that he can practice competing under extreme stress.

“The great thing about adventure racing is that when you have no sleep and you are just trying to survive, egos melt away and you really bond with your team. It really puts things in perspective and makes me appreciate all the things I take for granted,” said Stilwell.

Stilwell has been cycling for twenty years and he excels at this element, but said he enjoys the mountaineering and rappelling portions of the races.

This year, Stilwell plans to participate in a few one-to-three-day races and local races. He hopes to race in more expedition-length races in 2008.

When asked why he participates in such grueling competition, Stilwell said, “Emotionally, it makes you appreciate all the things you take for granted on a daily basis. Athletically, it’s the best you can achieve.”

Stilwell is a decommissioning and deactivation project manager for American Radiation Services, a Lab subcontractor. He oversees projects that tear down buildings and cleans up contaminants while protecting the environment.



Rappelling



Biking



Running for the finish line



Taking a breather (Pete Stilwell)

Photos courtesy of Pete Stilwell