

NewsLetter

Week of Sept. 26, 2005

Vol. 6, No. 20

Inside this issue ...



Lab's United Way campaign kicks off this week

This week, the Laboratory began its 2006 United Way campaign, its most rewarding employee-giving program. This year's theme, "Making a Difference for Generations," acknowledges that the United Way spans the generations, helping local organizations provide food, shelter, medical and other life-giving assistance to the youngest and oldest in our community. **Page 2**

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A student's chat with 'Director Bob'

Laboratory Director Bob Kuckuck is interviewed by Erika Martinez, an undergraduate student in the Public Affairs Office



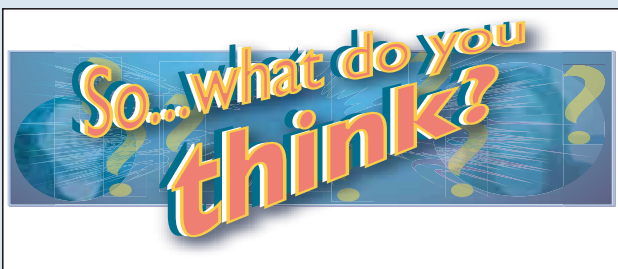
(CER-20). In the interview, Kuckuck talks about New Mexico, students at the Laboratory and more. **Pages 4 and 5**



Program gives 'hands on' experience

Thirty students from around the world had a unique summer experience courtesy of the Laboratory's Summer of Applied Geophysical Experience (SAGE) program. Now in its 23rd year, SAGE is a educational program designed to introduce students in geophysics and related fields to "hands on" geophysical exploration and research. **Page 8**

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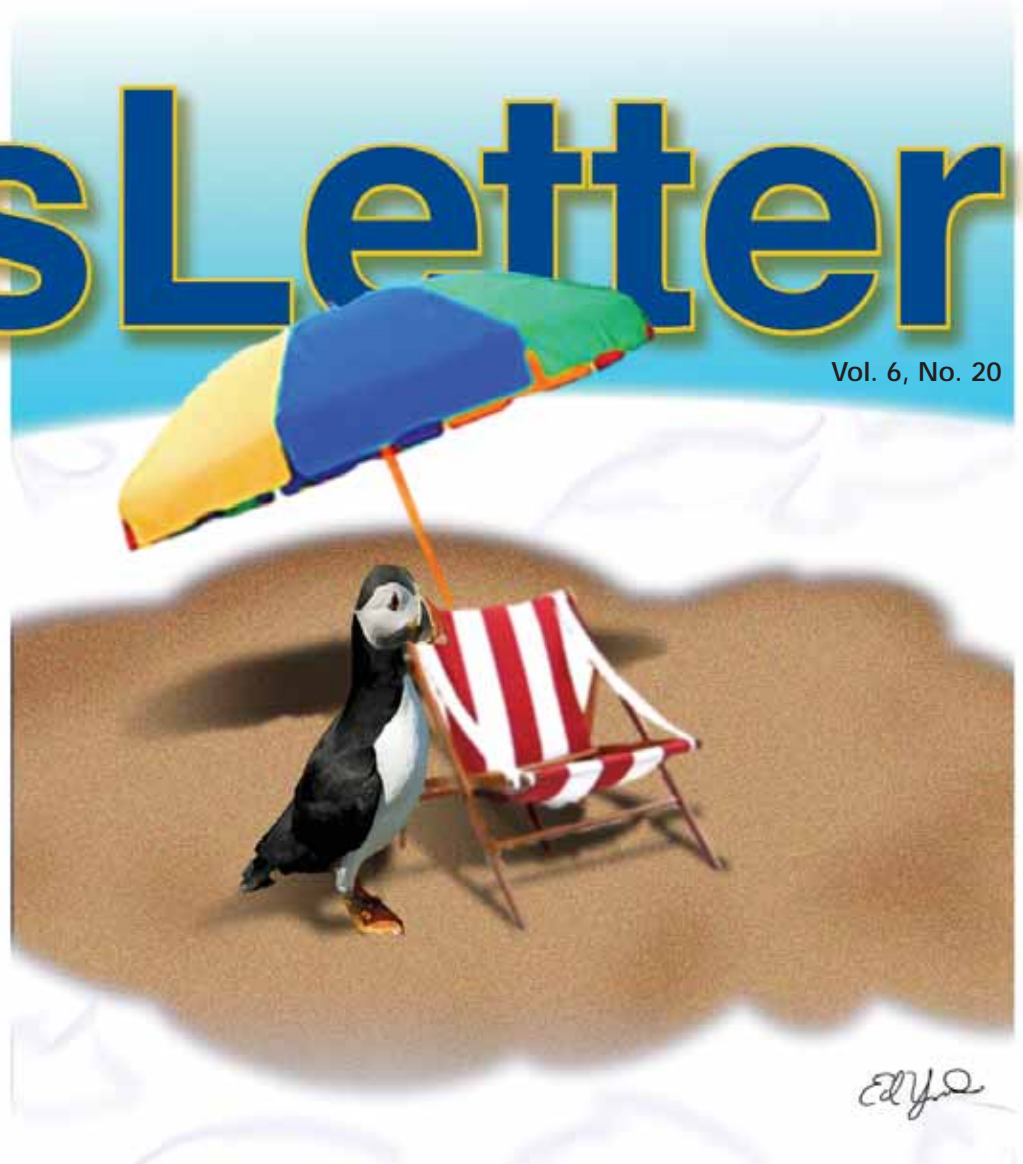
Do you think citizens should be encouraged to contribute to relief efforts when there are natural disasters? Learn what your co-workers had to say on **Page 6**.



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Temperatures in Greenland rising twice as fast as global average

by Todd Hanson

The Danmarkshavn weather station lies on the northeastern coast of Greenland. Sitting on a mile thick sheet of inland ice, Danmarkshavn was recently instrumental in helping scientists at the Laboratory and the Institute for Atmospheric and Climate Science in Zurich, Switzerland discover that the rate of temperature increase due to global warming along Greenland's northeastern shore is more than twice that of the global average. The discovery could help climatologists better understand the mass balance of the Greenland Ice Sheet. The melting of Greenland's Ice Sheet would result in a significant global rise in sea levels.

In a paper published recently in *Geophysical Research Letters* and highlighted in *Nature*, Petr Chylek of Space and Remote Sensing Sciences (ISR-2) and Ulrike Lohmann of the Swiss Federal Institute of Technology showed that North Atlantic Oscillations dominate temperature changes in most of the Greenland. The NAO is a rhythmic air pressure pattern in the North Atlantic region of the planet that results in regional climate variability, especially in swings in winter temperatures. Although climate records show Greenland has been predominantly cooling since the 1930s, that cooling actually may be due to the influences of local climate patterns such as the NAO.

It is only the northeastern coast of Greenland with the Danmarkshavn meteorological station that seems to be not affected by the patterns of the NAO. Thus this is a suitable place to test the predictions of the climate models concerning the temperature changes in Greenland and their relation to global warming, says Chylek.

According to Chylek, "For some time now, general circulation models have predicted that the temperature changes in Greenland should occur at a faster rate than global temperature changes. And until recently, there has been no confirmation that Greenland's long-term temperature changes are related to the global warming or that they proceed faster than the global temperature change. Using correlations between the Greenland temperature records, the NAO index and global temperature change, we found that the Danmarkshavn region of Greenland appear to be unaffected by the NAO. In fact, Danmarkshavn temperatures correlate well with rising global averages but actually seem to be rising 2.2 times as fast."

The implications for the team's discovery are profound. If temperatures in Greenland are, as the climate records seem to show, actually rising rather than cooling, the Greenland Ice Sheet could begin melting. Any significant amount of melting of this inland ice could result in a potentially catastrophic rise in global sea levels.

Los Alamos' Laboratory-Directed Research and Development program under a research project aimed at exploring the impact of anthropogenic aerosol (small

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For Your Safety

Seven steps to winter-proofing

With the onset of fall, it's time to start thinking about winter-proofing the home. Roofs must be able to shed rain and snow, windows and doors must reject the cold and the heating system must keep rooms comfortable. By handling a few important, reasonably easy tasks now, one can avoid considerable grief later.

Inspect the roof — If possible, go up onto the roof to check its condition, but only do this if it can be done safely. Look for cracked or missing shingles, bald spots on shingles and other conditions that might allow leaks.

Check the gutters — If they are clogged with leaves and debris, either call a gutter specialist or clean gutters yourself, if it can be done safely.

Look at the siding — Check the siding for cracks, damage and separations. In most cases, any leaky spots can be sealed with clear caulking compound (or buy paintable caulk and touch up with paint).

Investigate weather-stripping — Look to see if windows and doors are effectively sealed with weather-stripping. If weather-stripping is damaged, it's usually easier and more effective to entirely replace it rather than repair it.

Service the heating system — If the home is heated by a forced-air furnace, turn off the power to the unit and replace its disposable filter or clean its permanent filter according to the manufacturer's recommendations. While the furnace cabinet is open, brush and vacuum the blower blades.

Sweep the chimney — Creosote buildup on the inner walls of a chimney must be removed periodically to prevent chimney fires. The amount of buildup will depend on how much wood is burned seasonally and how long it has been since the last cleaning. Cleaning is generally recommended at least once a year for an active fireplace.

Adjust storm doors — To keep storm doors working properly, put a couple of drops of light oil or spray a little WD-40 on hinges and latches. Be sure the door closer is adjusted and working smoothly.

Los Alamos National Laboratory NewsLetter

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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.



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Making a Difference for Generations... Los Alamos National Laboratory and United Way



Editor's note: The following is from a memo sent to all employees by Laboratory Director Bob Kuckuck.

This week, the Laboratory began its annual United Way campaign. Our annual campaign is the most significant way that we, as a Laboratory, directly assist our neighboring communities. This year's theme, Making a Difference for Generations, acknowledges that the United Way spans the generations, helping local organizations provide food, shelter, medical and other life-giving assistance to the youngest and oldest in our communities.

Dave Beck, acting associate director for Weapons Engineering and Manufacturing is serving as chairman of the campaign. He and the Community Relations Office will be keeping you informed through electronic and printed media of special events, motivating testimonials, division/group meetings and other rewarding events that will help guide your personal choice in charitable giving. Questions about this year's campaign can be directed to unitedway@lanl.gov or by telephone to our Community Relations Office at 5-4400.

In addition, each of you will soon receive a brochure containing campaign pledge materials. As in the past, online pledging is available at <http://unitedway.lanl.gov>.

Over the years, your generosity has had an enormous positive impact on our communities and has drawn us all closer together. I ask you to continue that spirit of giving as we reach out to those who are near and dear to us — our Northern New Mexico neighbors.

Thank you for your contribution.

Bob

Reaching out

by Tom Bowles, chief science officer



The Laboratory was sited at Los Alamos during the war because of its isolation, which was a necessity at that time. Times have changed. If we are going to be highly successful in the science we do at the Lab, we must reach out around the state, the country and the world to have access to the most talented researchers, ideas and technologies.

I feel that [the Lab has] been largely successful in its efforts to look beyond the end of the mesa in formulating how we can do the best science. Our foreign national staff has made major contributions to the Laboratory and is one of the reasons we are such a great scientific institution. We continue to draw a diverse and talented group of students

and postdocs to the Laboratory. Through the Los Alamos National Laboratory Foundation and the Scholarship Fund, we help support the education of gifted students in New Mexico — a number of whom end up working at the Lab.

Through the New Mexico Research Consortium, we are working to ensure strong connections to New Mexico universities and with Sandia National Laboratories. The Center for Integrated Nanotechnologies is a prime example of partnering with Sandia to draw on the strengths of both labs.

Looking farther a field, we have strong collaborative partnerships with the University of California campuses and other universities. In fact, I was amazed to learn that the Lab has established formal connections with more than 700 colleges and universities in the United States and abroad. We are drawing on these connections to assist the universities and colleges that were affected by Hurricane Katrina by bringing students, postdocs and faculty to the Laboratory to do research while repair work goes on.

In these and many other ways, we are tied to scientific institutions outside the Laboratory. As I noted earlier, [outreach] has been one of the reasons we have excelled in research and been successful in meeting the missions of the Laboratory. We believe this is essential to our ability to excel, and we are committed to maintaining this outreach into the future.

Clarification

In the Week of Sept. 12 issue article, "Director's Instruction provides guidance on hiring of UC retirees," the statement "The retiree possesses unique, expert knowledge in a specialized field, leading to a need for ongoing consultation services of no more than 30 days per calendar year" should have read as follows: "The retiree possesses unique, expert knowledge in a specialized field, leading to a need for ongoing consultation services of no more than 90 days per calendar year."



Work for Others/Non-Federal Entities (WFO/NFE)

What is a WFO/NFE?

A Work for Others/Non-federal Entities (WFO/NFE) agreement is a bilateral contract that enables a non-federal partner to request [that] the Laboratory perform a defined scope of work or tasks that draw upon the unique capabilities of the Laboratory. While the Department of Energy financially supports the majority of research conducted at the Laboratory, funding from other sources — sponsored research — is growing in importance. At the Laboratory, sponsored research is conducted consistent with the Work for Others guidelines established by DOE for national laboratories.

The Lab's WFO/NFE program is designed to enable Los Alamos scientists to deliver their knowledge, expertise and access to highly specialized instrumentation and facilities to the important research agenda of industry, state and municipal governments, universities, non-profit associations and other organizations for broad-reaching benefit to society.

What are the WFO program objectives?

- Accomplish research or technology goals that may otherwise be unattainable and to avoid unnecessary duplication of effort.
- Allow non-federal sponsors access to highly specialized and unique facilities, services or technical expertise.
- Increase research and development interactions between DOE/NNSA facilities and industry to transfer Laboratory technologies to industry for further development or commercialization.
- Assist with maintaining core competencies and enhancing the science and technology base at the Laboratory through the diversity of non-federal, applied work.

Why should Laboratory researchers engage in WFO/NFE activity?

- Laboratory principal investigators engage in WFO/NFE work to provide supplemental funding for activities consistent with or complementary to the Laboratory's mission.
- Non-federal work can provide commercial validation of systems, processes and procedures and can be the precursor to a cooperative research and development agreement.
- Collaborative agreements can be negotiated concurrently with the WFO, providing staff with other commercial research validation opportunities and the potential to obtain additional research dollars.
- The WFO can serve as a magnet for high-tech companies to collaborate with Laboratory scientists, providing additional opportunities for technical staff to interact with industry.
- Laboratory scientists enjoy the diversity of the work that the non-federal entities can provide to their science discipline.
- Work with non-federal partners exposes Laboratory staff to different applications within industry for the work they perform.

What should Lab employees know about WFO/NFEs if approached by a non-federal entity?

- WFO/NFE is full-cost-recovery work, this includes Laboratory overhead plus the DOE federal administrative charge of 3 percent (automatically waived for small-business and non-profit entities).
- A 90-day advance of funds is required during the period of performance of the agreement.
- Intellectual Property (IP) rights may be available to the sponsor under DOE's class waiver (for more information, contact TT Division).
- The Laboratory retains IP rights to any Lab invention (including technical data) conceived during the course of work conducted for federally funded non-federal sponsors.
- All WFO projects must have proposal screening, adequate work-authorization processes, and required documentation of the work authorization, hazards and controls.

What are the keys to a successful WFO/NFE agreement?

- Understanding obligations under the WFO/NFE — it is a legally binding contract.
- Performing only those tasks included in the Statement of Work.
- Allocating only funds from the specified program code for the WFO/NFE work.
- Communicating with one's industrial partner on a regular basis.

How can employees engage in WFO/NFE activities?

For more information about the WFO/NFE process, see the Technology Transfer (TT) Division Web site at <http://www.lanl.gov/partnerships> or contact TT Division at 665-9090.

Getting to the grade — Appendix F finals

by Janine Fales, Prime Contract Office (PCO)

How do you summarize the performance of an institution as diverse as the Laboratory? Very deliberately. Associate directors recently completed our draft performance self-assessment against Appendix F Performance Objectives and Measures for the 2005 fiscal year. On Sept. 12, we submitted the 220+-page assessment to both the University of California and to our customers at the National Nuclear Security Administration, completing a key deliverable in the year-end process.

The year-end process itself actually began in July, when we provided a summary of our mission performance obtained through Division and Program Review Committee evaluations to the UC-chartered Science and Technology Panel. We answered questions from them in August and received our preliminary "grades," mostly "Outstanding," for Objectives 1-6 based on the S&T Panel's evaluation of the quality of our science, technology and engineering. At their meeting this week at Los Alamos, the UC-chartered President's Council will decide what grades to assign for all objectives, based on the evaluations from the S&T Panel, Laboratory Security Panel, Project Management Panel, National Security Panel and the ES&H Panel. UC will consider both our self-assessment and the grades from these external committees in their final assessment of our performance to NNSA.

In truth, we have been reporting our self-assessment on a monthly basis in support of our corporate goal to "achieve 90 percent Outstanding on Appendix F." We currently stand at 78 percent overall, up dramatically from the NNSA-appraisal of 26 percent Outstanding last year. Throughout the self-assessment process, we evaluate our accomplishments (which are numerous and impressive, thanks to your individual contributions) and our challenges to continued success. UC and NNSA expect us to deliver a balanced and credible self-assessment. In fact, our ability to understand and address the broader performance goals and not just our performance against Appendix F metrics is critical in our eventual appraisal from NNSA.

After Sept. 30, we will update our performance self-assessment and submit the final document to UC and NNSA by Oct. 14. Laboratory Director Bob Kuckuck has the ultimate responsibility to assign our self-assessed grades in that final document. When do we receive our final grades? We will not know what they are until after the Nov. 30 meeting among UC, the Los Alamos and Lawrence Livermore NNSA Site offices, the laboratory directors and NNSA headquarters. NNSA Administrator Linton Brooks has the final word.

Temperatures ...

continued from Page 1

particles emitted by burning fossil fuels and biomass) and carbon dioxide emissions, on the global climate, provided funding for the research.

Manvendra Dubey, Los Alamos scientist and the principal investigator of the LDRD project, added "A key finding of this paper is that only by including both aerosol and carbon dioxide increases by humans in climate model simulations can we explain the

larger warming observed in Greenland relative to the global average warming. This is in part because aerosols tend to cool global temperatures and mask part of the warming caused by carbon dioxide.

"Furthermore, the largest aerosol pollution occurs in low latitude areas of South East Asia, South America and Africa. The distribution of observed warming is highly heterogeneous globally, largely due to the variability in the distribution of aerosols," said Dubey, of Hydrology, Geochemistry and Geology (EES-6). "This creates an interesting

dilemma; since we anticipate that the developing countries will reduce aerosol emissions by switching to cleaner energy (as was done by the developed world to clean its air) the warming effect of carbon dioxide will become more severe in the future. This underscores the need for the developed world that dominates carbon dioxide emissions today [to] work in synergy with the developing world that dominates aerosol emissions today, to help mitigate the risks of future climate change from energy-related effluents," said Dubey.

A student's chat with 'Director Bob'

by Erika L. Martinez

When I first joined the Public Affairs Office (CER-20) this summer as an undergraduate student from New Mexico State University, I was excited and extremely pleased that I would be working in a job that would allow me to practice what I enjoy — writing. Little did I know that my first on-the-job experience would land me an opportunity that few young people in my position get.

Assigned to observe the Public Affairs staff photographer during a photo shoot, I found myself one-on-one with the Lab's new director, Bob Kuckuck. I was immediately impressed. He was friendly and engaging and made me feel totally comfortable. Before I knew it, I had blurted out a request to interview him. Now my boldness could have proven a bit awkward for both of us — him being put on the spot and me being turned down. But without a moment's hesitation, he said "yes" and asked me to arrange it with his office.

The following is the result of a candid one-hour session I spent with Director Kuckuck, getting to know a little about his personal life, his thoughts on students, his hopes for the Lab and more.



Laboratory Director Bob Kuckuck, right, greets Erika Martinez, an undergraduate student in the Public Affairs Office (CER-20). Photos by LeRoy N. Sanchez

LANL NewsLetter: Director Kuckuck, thank you for your time. First off, how do you like New Mexico so far?

Bob Kuckuck: Call me Bob. Actually, I love New Mexico. I've never spent much time in the Southwest, but now my wife and I are living in Santa Fe. I don't know how she thought she'd like it, but she's loving it. It's so different from any place we've been. We are finding the culture just fascinating. I've been reading all these books about when the Spaniards came and about their background. Now, I'm trying to find some books about the Anasazi and the Native Americans. It's just fascinating to see and to participate in the art and all the cultures.



LANL NewsLetter: What's your favorite thing about New Mexico?

Kuckuck: Well, the nice restaurants certainly rank up there pretty high with the scenery, the culture and the museums. We recently joined a museum society where I go around and see northern museums, so it's been good.



LANL NewsLetter: You've only been at the Lab for a short time, but what has been your experience so far and what do you expect it to be like for the remainder of your time here?

Kuckuck: It has been a very positive experience. I find the people here are working very hard and are very committed. They have reached out to help me with whatever I think needs to be done here at the Laboratory. I find the Laboratory to have an awful lot of over-work and stress. People are trying to solve everything, to fix everything, and they're working really hard. I feel that I'd like to take some of the stress off their backs, if I can.



LANL NewsLetter: What was your incentive to come to the Laboratory when you could be retired right now with you wife, doing whatever you want?

Kuckuck: There were a lot of reasons. I have spent 42 years in the nuclear weapons business and have been associating with Los Alamos for the entire 42 years. I know people here, and I have great respect for the Laboratory.



In fact, I'm in awe of the Laboratory. It's certainly a wonderful place. I'm also very indebted to the University [of California], because it has done a lot of good things for me, and I owe it a lot. So when the university asked me if I could come here, I thought if they believe I can help and because I believe in the Lab and the university, I'm going to do it. It's hard to say "no" if you believe in what the Lab and the university are doing.



LANL NewsLetter: Do you think the Laboratory will recover 100 percent from the issues it has faced recently regarding safety and security?

Kuckuck: I have no doubt that it will. I think the main problem the Laboratory has in that [arena] is that it's trying to fix everything at once and very fast. All of the other laboratories have made the same changes over time and without someone lurking over their shoulder with a microscope. So, I have no doubt.



LANL NewsLetter: What do you think the Lab will gain from your leadership and what do you intend to contribute to the Lab?

Kuckuck: The first thing I hope to contribute is to cause the people to feel better, to be more civil [to each other], to respect one another and to maybe lift some of the stress off their backs. The biggest contribution I hope to make to the people of the Laboratory is to help them move on to the next level.

All that the Lab is are its people. If we don't keep the people motivated, we are not going to be a great laboratory. I'm going to put my focus there. I'm hoping to motivate folks to take [the Lab] to the future.



LANL NewsLetter: What measures do you believe are necessary to achieve those goals and what changes have you seen since you've been here?

Kuckuck: First, let me say that from the day I arrived, people have been very responsive to me and treated me well. A change that I may have seen over these few months is that I think people are opening up to me a little more as time goes on. So, I'm able to have more meaningful dialogs, and that's what I would expect over time. So yes, with respect to my goal of working with the people, I have gotten great response, and I see people opening up more to me.



LANL NewsLetter: The Lab employed 1,650 students during the 2005 summer. What is your take on the number of students employed by the Lab, and do you believe that student employment is important?

Kuckuck: I'm overwhelmed and very impressed. I have never heard of a laboratory, let alone seen a laboratory, that attracts the number of students Los Alamos brings in. I think it's tremendous for the Laboratory, because we benefit from the students being here, and we benefit from those students who choose to become employed at Los Alamos in the long run.

The students benefit as well. I believe 38 percent of the students who come through here end up as employees. The other 62 percent of students go somewhere else, but that's great too, because they take with them what they've learned here. They take our values and our training. I think the student program is wonderful.

Sometimes, though, I am concerned about whether we can really treat such a high number of students well. I think if we are going to bring in students, we have to pay attention to them and ensure that they're safe first of all. Secondly, we have to mentor them and help them with their futures. If we bring them in and don't pay much attention to them, then I don't know how much we are helping. I don't have any indication that we are not paying attention, but we have to ensure that we are.



LANL NewsLetter: From experience, I think the Laboratory is a great place to work. I find it very helpful to be able to have a good work experience and good pay. I also think that it is very helpful that you, as Lab director, meet with students and we get to ask you questions.

Kuckuck: Well, I think that's part of the education. I think the Laboratory is a place where people should be able to speak up and ask the director, or whomever, questions. That in itself, regardless of my answer to a question, is an important education for students. They then can expect [to ask questions and get answers] as they go on in life.



LANL NewsLetter: Do you believe that students really contribute to the Lab? What would you tell them to encourage them to make Los Alamos their employer of choice?

Kuckuck: I think students contribute to the Lab much more than they realize. Certainly they come in and do things in their job that are valuable, and the Lab benefits from that. However, there is a second part that is every bit as important as that — maybe more important to tell you the truth — and that is students come in and with them they bring the attitudes of the day, the spirit of what's going on in their colleges and their universities, and that's very refreshing. It makes the Lab a younger place and a more vibrant place. Students have incredible energy, and we pick up on it. I've always found — and I've heard many people say this — how motivating and stimulating it is to be around students. It's energy, freshness and a currency of what's going on today.

Another thing that students bring to us is a sense of reward. When you work with students, and you help a student move on with his or her career, you go home feeling good at night for having done so. [Students] bring us a reward. I think it's vital that they continue to come here.

Yet, if a student didn't want to come back, I wouldn't encourage him or her to come back. I think students can recognize whether this is a good thing for them or not. I would hope it's a good thing. More than encourage students to come back, I would hope I could encourage our Laboratory to make students want to come back. I would want every student to come back, but only if it was the right thing for him or her.



LANL NewsLetter: At the dedication of a new engineering institute (a collaboration between UC, San Diego's Jacobs School of Engineering and the Laboratory) in the Los Alamos Research Park, I noticed that you broke away from the crowd to introduce yourself to students. Do you think it's important to keep in touch with students and humble yourself to our level instead of acting like the "boss man"?

Kuckuck: I think it's very important. I wouldn't say it was being humble or anything like that, because we are just people. It's important to just be people with other people. You should always just be yourself.

I've had that [talking to the students] mentioned to me before, and that surprises me, because quite honestly I was enlightening myself by finding out what the students were doing and getting some of this energy I spoke about. I love interacting with young folks and seeing their enthusiasm. So, I was kind of being selfish and reaching out to hear from these students. I actually do it because it comes natural to me, and because I wanted to hear what they were doing and had to say.



LANL NewsLetter: What one quality do you think employees and managers should possess to make the workplace more enjoyable?

Kuckuck: I think it's respect. A manager has to give respect in order to be shown respect. If you have that [mutual] respect, I think you'll have a tremendous relationship.



LANL NewsLetter: Turning again to your personal side, what hobbies do you enjoy when you aren't at work?

Kuckuck: Well, I'm finding that since I've been here, I'm not getting in any of my so-called hobbies. I'm pretty busy, but I do have some though. I'm a private pilot. My wife and I often fly to Mexico. For 35 years I've been flying to Mexico, where we hike, fish and enjoy the great little towns. I've always loved that.

I also used to oil paint and take piano lessons. In California I skied, and I'm looking forward to skiing here. Actually, on the 4th of July, my wife and I were going to take a trip up to Colorado, but she said to me, 'Gee, I'd rather explore the place we're living in,' and so we did. We went to the [Santa Fe] plaza; a fireworks show and a wine festival. We've been doing all these local things, and I don't know if we're going to leave here. We are just finding so many interesting things to see and do.



LANL NewsLetter: Has becoming director of the Lab affected your personal life a lot? If so, how?

Kuckuck: This is a very demanding and consuming job, which makes me treasure my weekends even more.



LANL NewsLetter: How does your wife feel about that?

Kuckuck: She loves being here. At Livermore, I was just as busy. She finds many things to do when I'm working. She understands why I took the job, and she thought it was important and the right thing to do. She is very supportive.



LANL NewsLetter: Here's a personal question that is a little off the subject, but rumor has it that there is some kind of a connection between your name and the cuckoo clock. Is that true?

Kuckuck: Well, Kuckuck is what the Germans and the Austrians use for the cuckoo bird. If you buy a cuckoo clock in Germany, it's spelled K-U-C-K-U-C-K. One time in Germany as tourists, my wife and I bought clocks, and when I gave my credit card to pay the lady, she saw my last name and ran to get the manager. The manager came to us and marked 10 percent off the ticket because of my last name.



LANL NewsLetter: When your tenure here at the Lab is over, what would you want employees to remember about you?

Kuckuck: Wow, that's kind of a tough one. Well, I'd like employees to believe I did my best to help them get through this period and that I made some difference.

So...what do you think?

Q: Do you think citizens should be encouraged to contribute to relief efforts when there are natural disasters?



Daniel Whalen of Theoretical Astrophysics (T-6)

Yes, I think it's a good idea for citizens to be encouraged to assist in relief efforts to aid others. I've found many benefits personally when I've had the opportunity to contribute work or money to others in need. One of the strengths of our country is its generosity, and I would be sorry to ever see this dwindle.



Annabelle Almager of Maintenance and System Engineering (FM-MSE)

Yes, because there are many people in need. I, myself, have contributed and hope that others see how important it is in a time of need.



Christopher H. Smith of Information Management (HSR-7)

Contributions should be, of course, a personal choice. It is great when the Laboratory can use its resources to aid in the collection of funds or to provide help during or after a disaster.



F. Javier Gurrola-Gal of KSL Services

Of course. These moments, that occur all the time, make us all realize how vital it is for the human race to act like one united group.



Ernestine Romero of Space Science and Applications (ISR-1)

Citizens should be encouraged to contribute, because it's our country that is in danger and we need to help out. We have been doing a good job, but more people can contribute more.



Joan vonHarders of Personnel Security (S-6)

Yes. People from all over helped us during the Cerro Grande [fire]. I think we could all spare a dollar, or clothes or something.



John Martinez of CMR Facility Management (NMT-FWO)

Yes, I certainly do. We do so much for other countries and the people there. It is important that we take care of our own as well.

PEOPLE



Van de Sompel Wins Meritorious Service Award



Herbert Van de Sompel

Herbert Van de Sompel of the Research Library (STB-RL) is a recipient of the Meritorious Service Award from the American National Standards Institute, a private, nonprofit organization that administers and coordinates the United States voluntary standardization and conformity assessment system. The award was bestowed in recognition of his outstanding service and significant contribution to ANSI's standardization objectives.

According to ANSI, Van de Sompel was instrumental in the development of the ANSI/NISO OpenURL standard, which has transformed information services within the scholarly and bibliographic community.

"The research he undertook over many years demonstrates Van de Sompel's capacity to recognize the changes in his environment and respond as well as his ability to apply remarkable energy to his technical vision," said Pat Harris, executive director of National Information Standards Organization.

The award is scheduled to be presented during an Oct. 5 ceremony held in conjunction with ANSI's World Standards Week celebration in Washington, D.C.

Stuewe appointed to Board of 2005 Examiners for Malcolm Baldrige National Quality Award

Robert Stuewe of the Prime Contract Office (PCO) has been appointed to the 2005 Board of Examiners for the Malcolm Baldrige National Quality Award for his regionally and nationally recognized expertise in organizational performance assessment and improvement.

The program, which requires an annual application process, allows members to serve for up to six years. This is Stuewe's fourth year as an appointed member and his second as a appointed senior member of the board. Hratch Semerjiam, acting director of the National Institute of Standards and Technology, appointed Stuewe.

As a senior board member, Stuewe will lead a team to evaluate, score and provide feedback to an applicant for the Malcolm Baldrige National Quality Award; help mentor and train examiners that are new to the board; and help improve the Baldrige National Quality Program.

The board is composed of about 500 leading experts from industry, professional and trade organizations, education and health care organizations and government.

"Being a member of the board helps me gain, in particular, a sense of contribution to improving the U.S. health care, education systems and the overall U.S. economy," Stuewe said. "It also adds value to the Laboratory by providing us access to information about management best-practices in role-model organizations."

Stuewe started working at the Lab as a student 20 years ago. He has worked in the former Nuclear Safeguards (Q) and Environment, Safety and Health (ESH) divisions; at the Los Alamos Neutron Science Center (LANSCE); and the Quality and Planning Office (QP), which is a predecessor to PCO.



Robert Stuewe

Lab employees, organizations receive Minute Man award

The Laboratory's procurement operations in Supply Chain Management (SUP) Division and Los Alamos' Veterans' Committee recently received the National Guard's Minuteman Award. The award recognizes the groups' continued support to members of the 1115th Transportation Company stationed in Iraq.

A presentation was made Aug. 14 by the commanding officer, **Captain Pia G. Romero** of Staffing, Technical Support and R&D (SUP-10) and the New Mexico Army National Guard 1115th Transportation Company. The trophy recognized employees in SUP and on the Veterans' Committee for the numerous care packages sent to soldiers in the 1115th Transportation Company throughout the unit's deployment during 2004. The 1115th was activated in December 2003 and spent a year stationed at Camp Taji, Iraq.

Kathy Smith of SUP-10 coordinated the donations, packaging and shipping of more than 25 care packages for the 180 men and women of the 1115th Transportation Company during the Christmas holidays. The items included homemade cookies, compact discs, magazines and handmade Christmas ornaments. She also assisted other Laboratory divisions that sent items to the transportation company.

The inscription on the trophy reads, "In appreciation for your dedication and support to the men and women of the Army National Guard who serve to defend freedom."

In Memoriam

Shirley Herrera

Laboratory employee Shirley Herrera died Sept. 1. She was 40.

A Pecos High School graduate where she was class valedictorian, Herrera of Information Management (IM) Division worked at the Laboratory for 17 years.

She is survived by husband, Johnny; daughters Kayla and Kelsey; and parents Florian and Nancy Lucero. She also is survived by sisters Lorraine Lucero of the Supply Chain Management (SUP) Division, Annabelle Moore, Sandra Valencia and Angela Sena, and brothers Florian Lucero Jr. and Ken Lucero and other relatives.

Taw, Schaller receive Postdoctoral Publication Prize in Experimental Sciences

Felicia Taw, a Director's Postdoctoral Fellow in Actinide, Catalysis and Separations Chemistry (C-SIC) and **Richard Schaller**, a Distinguished Reines Postdoctoral Fellow in Physical Chemistry and Applied Spectroscopy (C-PCS) are this year's winners of the Postdoctoral Publication Prize in Experimental Sciences.

Taw will discuss her work at a colloquium at 3:45 p.m., Oct. 6, and Schaller at the same time on Oct. 13. Both presentations are in the Physics Building Auditorium at Technical Area 3.

Taw was recognized for her paper "Early Transition Metal Perfluoroalkyl Complexes," published in *The Journal of the American Chemical Society* in November 2003. The paper concerns the synthesis and characterization of the first examples of early transition metal (groups 3, 4, and 5) perfluoroalkyl complexes.

Taw's work is relevant to the mission of the Laboratory for several reasons. First, these novel complexes can act as catalysts for the polymerization of fluorinated olefins, allowing for the preparation of previously inaccessible fluorinated materials. Fluorinated polymers are employed as binders for high explosives due to their high density and inertness. Many of the fluorinated polymers currently used by the Department of Energy complex are no longer being manufactured by industry. Taw's discovery opens the door to address this critical need, and it is anticipated that new fluorinated materials developed will possess properties that will be of interest to several sectors within the DOE and the Department of Defense.

According to Taw's mentor, Jackie Kiplinger of C-SIC, "Felicia was not only the intellectual driver of this research and dominant experimental contributor to this landmark study, she also wrote the manuscript entirely on her own, requiring virtually no editing on my part."

Schaller was recognized for his paper, "High Efficiency Carrier Multiplication in PbSe Nanocrystals: Implications for Solar Energy Conversion." Schaller currently is a Reines Distinguished Postdoctoral Fellow in



Felicia Taw



Richard Schaller

C-PCS. He joined the Laboratory in December 2002.

This *Physical Review* publication provides experimental proof of a physical phenomenon that can potentially double the electrical output of solar cells. The principle of operation of solar cells (absorption of a single photon by a semiconductor produces a single exciton) has remained unchanged for nearly 50 years despite the enormous and well-funded efforts directed at the problem. The situation has changed dramatically after the recent breakthrough publication by Schaller and Victor Klimov, of C-PCS, which demonstrated that nanosized semiconductor particles, also known as quantum dots, can produce multiple excitons in response to a single absorbed photon.

This ground-breaking work has enormous implications for alternative energy research. It is more than incremental and could potentially take solar cell efficiency a significant jump forward, according to Steve Buelow of C-PCS.

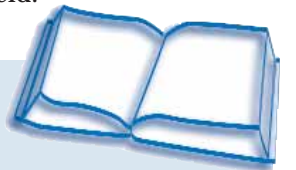
Klimov, Schaller's mentor, said, "This award is a very well-deserved recognition. Rich truly loves science. He is enthusiastic, full of ideas and has this magic touch, which makes any experiment work."

The quantum-dot team, of which Schaller is a member, currently is filing a patent on the research. Furthermore, this work has resulted in the funding of an LDRD ER grant for which Schaller is the principal

investigator, an unusual honor for a postdoctoral researcher. The subject also is the topic of a joint DARPA proposal among the Los Alamos team, Honeywell International and Professor Michael Graetzel's at Polytechnique Federale de Lausanne.

The studies of carrier multiplication recognized by this award are a part of the strong Chemistry (C) Division program in quantum dots that focuses on both fundamental and technological aspects of nanoscale semiconductors. This program has led to a number of important innovations, including the development of fundamental principles of nanocrystal lasing, demonstration of a new approach for activating nanocrystals via noncontact energy transfer, and, most recently, the development of multicolor light emitting diodes. Additional information about Los Alamos quantum dot research is available at <http://quantumdot.lanl.gov/> online.

This biennial prize is sponsored by Damon Giovanielli (former Physics (P) Division leader, now retired) and the Laboratory and is awarded for the best article in experimental sciences in the past three years. A panel of Laboratory technical staff members selects the winning papers, and the research presented represents a seminal contribution to the field.



This month in history ...

September

1692 — Don Diego de Vargas leads the bloodless reconquest of Santa Fe.

1758 — Charles Messier observes the Crab Nebula and begins his star catalog.

1821 — Capt. William Becknell leads the first successful trading expedition along what became known as the Santa Fe Trail.

1901 — Nuclear physicist and Manhattan Project pioneer Enrico Fermi was born.

1910 — World's first police woman appointed in Los Angeles.

1924 — At a meeting of American Roentgen Ray Society, Arthur Mutscheller first recommends a "tolerance" dose rate for radiation workers.

1939 — The first paper to deal with black holes is published in *Physical Review*.

1946 — Major General Leslie R. Groves, chief of the Manhattan District, approves plans for a community center in Los Alamos, estimated to cost \$1,396,000.

1952 — The Livermore branch of the UC Radiation Laboratory (later known as Lawrence Livermore National Laboratory) opens.

1964 — The last of the original Lab areas in downtown Los Alamos is razed.

1968 — For the first time in its history, the Sports Car Club of America holds its Midwest Division Inaugural Solo I Hill Climb event at Los Alamos. Twisting and turning through 15 curves on the scenic mountainous Camp May Road were 15 cars racing against time in five classes.

1970 — Harold Agnew becomes the Laboratory's third director.

1982 — The National Institutes of Health selects a proposal from the Lab and a private company to create a DNA databank, which becomes GenBank.

1992 — The United States conducts its last underground nuclear weapons test before a moratorium begins.

2004 — Carrying unique samples of the sun, NASA's Genesis spacecraft tumbles to Earth, crashing into the desert floor near the U.S. Army Dugway Proving Ground in Utah.

The information in this column comes from several sources including the online History Channel, the Newsbulletin and its predecessors, the atomic archive.com, Echo Vitural Center, Science & Technology, Real History Archives, and Carey Sublette, "Chronology for the Origin of Atomic Weapons" from www.childreofthemanhattanproject.org/MP_Misc/atomic_timeline_1.htm.



Lab personnel receive NNSA awards

Three current and past members of Nuclear Nonproliferation (N) Division were honored with National Nuclear Security Administration Outstanding Service awards for their service to NNSA's Materials Protection, Control and Accounting mission in the states of the former Soviet Union. Shown left to right are Robert Larsen and Ron Augustson of Safeguards Systems (N-4), Teri Westerfeldt, NNSA acting director for the Russian nuclear weapons complex division, John Immele, Los Alamos' deputy director for national security, Noah Pope of N-4 and Doug Beason, associate director for threat reduction (ADTR). Augustson received the award for deceased Lab employee Charlie Hatcher. Westerfeldt said NNSA and DOE were pleased to "recognize the supreme and extraordinary effort being put into one of the most important national security efforts." Immele said "the Laboratory takes great pride in our MPC&A work, as so much nuclear material has been secured and our nation is so much more secure as a result of this work." Photo by LeRoy Sanchez

Program gives 'hands on' experience

by Chris Roybal

Thirty students from around the world had a unique summer experience courtesy of the Laboratory's Summer of Applied Geophysical Experience (SAGE) program.

Now in its 23rd year, SAGE is a educational program designed to introduce students in geophysics and related fields to "hands on" geophysical exploration and research. The program emphasizes both teaching of field methods and research related to a variety of basic and applied problems.

"There is nothing like this SAGE field course in the world," said Scott Baldrige, SAGE co-director. "It is certainly known through much of the world. We had a professor from the University of Sao Paulo about three years ago come and take SAGE, because she wanted to establish a program similar to SAGE in her own country."

As part of a faculty made up of various professors from around the country, Baldrige of the Earth and Environmental Sciences (EES) Division guided students through the nearly month-long program that began in June.

This summer, SAGE students focused on characterizing the major faults and strata of the La Bajada escarpment south of Santa Fe. The students learned that the fault is not at all where geologists had mapped it. In addition, they were able to determine that it had thousands of feet of offset across it, said Baldrige.

Student participated in a variety of surveys as part of the field work. They collected seismic data, using both a hammer and a Vibroseis truck as sources for the vibrations for surveys of two different scales. They measured Earth's natural electrical currents as well as inducing currents in the ground, as part of an effort to determine the depth to and quality of ground water. Students also measured minute deviations of Earth's gravity field to determine the locations and shapes of underground rock layers and faults. After all of the



Students in the Summer of Applied Geophysical Experience (SAGE) program, along with Scott Urquhart, standing right, of Zonge Engineering and Research Organization, perform a transient electromagnetics experiment to detect ground water on Cochiti Pueblo south of Santa Fe. SAGE is an educational program designed to introduce students in geophysics and related fields to "hands on" geophysical exploration and research. Photos by Chris Roybal



A student in the Laboratory's Summer of Applied Geophysical Experience (SAGE) program measures Earth's gravity field using a gravity meter.

field work was complete, they took their results into the laboratory to conduct sophisticated computer modeling to interpret their data.

[Many] of the students first learned about the program from their universities, while others found the program online or by word of mouth from former students or their own faculty. There was strong competition for the program's 30 spots, and qualified students not only had to have taken the proper classes at school, like physics and calculus, but also had to have a background and interest in geophysics.

SAGE student Kris Maclennan praised the program. "I go to school at the University of California, Berkeley, and there really isn't that much variety in the different programs there," said Maclennan. "I really just started doing geophysics, so I saw SAGE as a really good way to kind of get a feel for the different types of geophysics that were out there and for a chance to have a field camp, do something that is really cool and travel."

SAGE students also meet people from the different geophysical companies like Exxon-Mobil, Chevron and Zonge. This "industry component" of the program, as Baldrige called it, has been the best change to the program over the years, as it helps students get jobs and find out if a career in geophysics is something they really want to pursue.

"I'm sort of using SAGE as a test to see if this is really for me, said SAGE student Morgan Jones. "There's no better way to get real-world experience than to do something like this."

Baldrige characterizes the SAGE program as "question driven." Over the years, SAGE has worked at different location from as far north as Abiquiu to Cochiti Pueblo south of Santa Fe this year. "We're working with Cochiti Pueblo to help characterize some of their ground water issues, so each year we're going to do slightly different areas ... so that over a period of time we build up a broader database," said Baldrige.

Baldrige pointed out that, although SAGE is important to students interested in careers in research and industry, it also is important to a variety of the Department of Energy's programs in fossil energy, carbon sequestration and environmental restoration.

"Over the years, we've been able to acquire a great deal of gravity points and intervals ... so that over a period of time we develop a map with all these points all over it," said Baldrige. "You can map out underground structures once you have good gravity data."

The program culminated with oral presentations and reports by the students. Overall, Baldrige called this year's program a success and said he is looking forward to preparing for next summer.

"Because of the importance of SAGE for recruiting and training the next generation of geophysicists, a number of companies and the Society of Exploration Geophysicists are taking a lead in helping SAGE with fundraising, equipment and personnel issues," said Baldrige. "They would like to see SAGE continue solidly into the future."

For more information about SAGE, go to the program's Web site at <http://www.sage.lanl.gov> online.



Above is a vibroseis truck, which is used as the source of seismic waves to image underground structure. The truck was provided to this year's SAGE program by Input/Output Inc.