

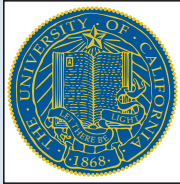
# NewsLetter

Week of June 6, 2005

Vol. 6, No. 12

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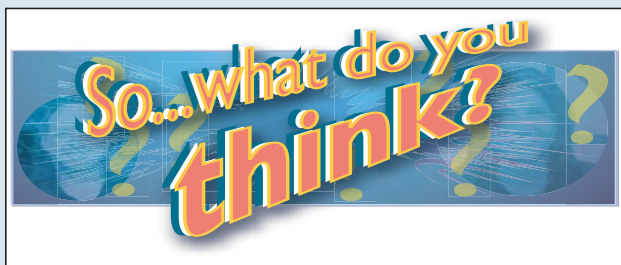


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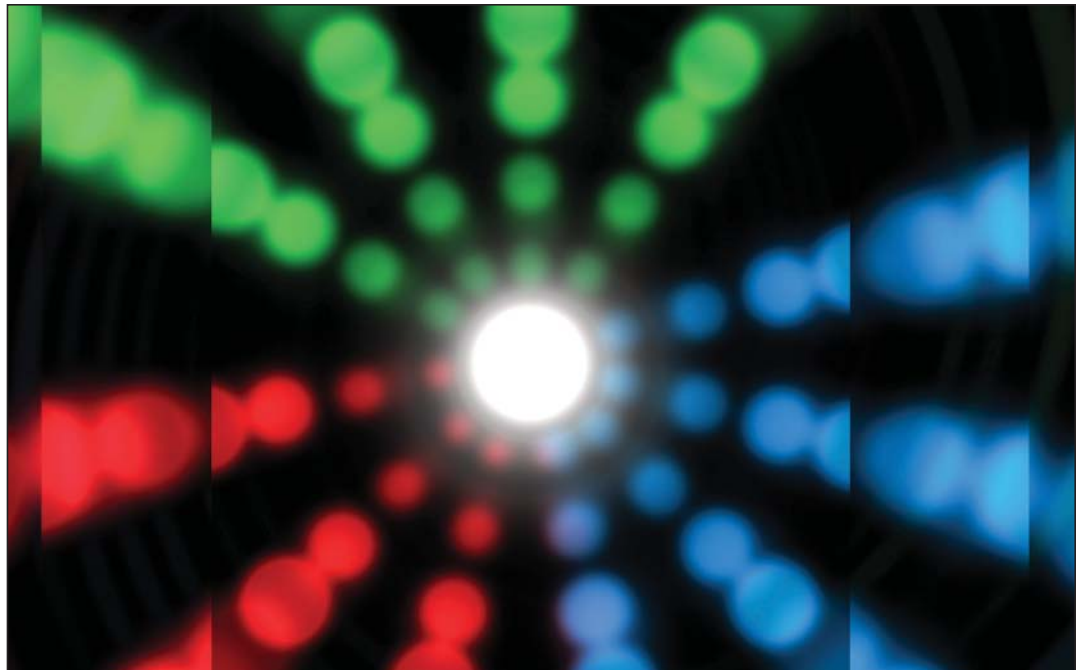


With summer and warmer weather comes an increase in the number of people who are out and about working and playing in the great outdoors. What is the most important thing you do to ensure your safety or that of your family when taking part in your favorite outdoor activities? Learn what your co-workers had to say on Page 6.

  
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## Scientists develop novel multi-color light-emitting diodes

by Todd Hanson

**A** team of scientists at the Laboratory have developed the first completely inorganic, multi-color light-emitting diodes (LEDs) based on colloidal quantum dots encapsulated in a gallium nitride (GaN) semiconductor. The work represents a new “hybrid” approach to the development of solid-state lighting. Solid-state lighting offers the advantages of reduced operating expenses, lower energy consumption and more reliable performance.

In research published in a recent issue of the scientific journal *Nano Letters*, the team reported the first successful demonstration of electroluminescence from an all-inorganic, nanocrystal-based architecture where semiconductor nanocrystals are incorporated into a p-n junction formed from semiconducting GaN injection layers. The new LEDs utilize a novel type of color-selectable nanoemitters, colloidal quantum dots, and makes use of emerging GaN manufacturing technologies.

According to Victor Klimov of Physical Chemistry and Applied Spectroscopy (C-PCS) who leads the nanocrystal-LED research effort, “numerous technologies could benefit from energy efficient, color-selectable solid-state lighting sources ranging from automotive and aircraft instrument displays to traffic signals and computer displays. Semiconductor nanocrystals, also known as quantum dots, are attractive nanoscale light emitters that combine size-controlled emission colors and high emission efficiencies with chemical flexibility and excellent photostability. The use of nanocrystals in light-emitting technologies has, however, always been hindered by the difficulty of making direct electrical connections to the nanocrystals. By putting the quantum dots between GaN injection layers, we’ve gotten around this difficulty.”

The secret to making the electrical connection to the quantum dots is the use of a technique developed at Los Alamos by Mark Hoffbauer of Advanced Chemical Diagnostics and Instrumentation (C-ADI) and his team that utilizes a beam of energetic, neutral nitrogen atoms for growing GaN films. The technique, called ENABLE (for Energetic Neutral Atom Beam Lithography/Epitaxy), allows for the low-temperature encapsulation of nanocrystals in semiconducting GaN without adversely affecting their luminescence properties. By encapsulating one nanocrystal layer or two layers of nanocrystals of different sizes, the researchers have demonstrated that their LEDs can emit light of either a single color or two different colors. The two color-operation regime is an important step toward creating devices that produce white light.

The development of the multicolor LEDs is the result of a collaboration between two Laboratory research groups: Klimov’s quantum-dot team and Hoffbauer’s team developing advanced nanoscale processing technologies. Laboratory researchers critical to the project’s success also include Alexander Mueller and Elshan Akhadov of C-ADI, and Melissa Petruska, Marc Achermann and Donald Werder of C-PCS. Daniel Koleske of Sandia National Laboratories provided the GaN substrates used for the LED structures.

The Laboratory Directed Research and Development program provided funding for the Los Alamos work as an Exploratory Research project. The research fits into a broader area of expertise that the Laboratory maintains in the field of nanotechnology in general, and quantum dot research in particular.



# For Your Safety



## Hot weather can kill you

People who work outdoors in hot weather, or work in other hot

environments are at risk for heat illnesses. The most serious of these illnesses is heat stroke, a life-threatening condition requiring immediate medical attention.

### Take precautions to avoid heat illness

- Take it easy. Working in a hot environment is a stress on the body, so don't overdo it. Take frequent short breaks.
- Drink plenty of water, and drink it frequently. Avoid alcoholic beverages and drinks containing caffeine, which can contribute to dehydration.
- Dress in lightweight fabrics that provide ventilation. Light colors are cooler than dark colors, which absorb the sun's heat.
- Individuals who are overweight, in poor health, poor physical condition, have heart disease, diabetes or other medical conditions are particularly at risk of succumbing to heat illness.

### Know the symptoms of heat illness

- Heat cramps are caused by heavy sweating, which can deplete the body of salt. They may be accompanied by hot, moist skin and a slightly elevated body temperature. Cramps in the arms, legs or stomach can occur while working or relaxing. Heat cramps are a danger signal of heat stress.

continued on Page 3

## Los Alamos National Laboratory NewsLetter

The Los Alamos NewsLetter, the Laboratory bi-weekly publication for employees and retirees, is published by the Public Affairs Office in the Communications and External Relations (CER) Division. The staff is located in the IT Corp. Building at 135 B Central Park Square and can be reached by e-mail at [newsbulletin@lanl.gov](mailto:newsbulletin@lanl.gov), by fax at 5-5552, by regular Lab mail at Mail Stop C177 or by calling the individual telephone numbers listed below. For change of address, call 7-3565. To adjust the number of copies received, call the mailroom at 7-4166.

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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.



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FROM THE TOP

## Regents vote to compete for Laboratory operating contract Dynes issues letter to Lab workers

The University of California Board of Regents voted to submit a proposal to the Department of Energy to continue operating the Laboratory.

Acting on a proposal by UC President Robert Dynes, the regents voted to grant Dynes the authority to submit a proposal to the Department of Energy by the July 19 deadline. The final bid will be submitted by a UC and Bechtel-led team that includes BWX Technologies Inc. and Washington Group International, as well as a consortium of New Mexico higher education institutions.

The regents also voted to appoint Michael Anastasio the director at Los Alamos, contingent upon the university and Bechtel-led team being awarded the contract for future management of the Lab. Anastasio, a nuclear physicist, has more than 25 years of experience in national security and nuclear weapons and has led the Department of Energy's Lawrence Livermore National Laboratory since 2002. On May 17, the University of California and Bechtel National-led team named Anastasio as the team leader in the competition preparations for the Laboratory.

"The UC-Bechtel led team is perfectly positioned to preserve the world-class scientific mission of Los Alamos while maximizing the quality and accountability of the laboratory's business, management, security and operational functions," said Dynes. "We at the university have recognized that the management of these laboratories in the 21st century requires a team effort, one bringing together skills that are greater than what the university alone can offer. And we have put together a team that I believe is incredibly strong."

"I believe we should compete for the Los Alamos contract for three essential reasons: the excellence in science that we bring to the table, the strength of the management team we have put together and the contribution this unique combination of players can make to the nation."

Dynes also thanked Laboratory employees in a letter for their service to the nation and asked for employees' patience and careful evaluation of all options related to continuing their employ with the Laboratory. "Los Alamos National Laboratory is more than its history, more than buildings and structures; it is about people doing critical work in the nation's interest," Dynes said. "The university wants to continue to manage this laboratory and to have you as part of this great enterprise."

To read Dynes' letter to the Lab work force, go to [www.lanl.gov/orgs/pa/newsbulletin/documents/Dynes\\_052605.pdf](http://www.lanl.gov/orgs/pa/newsbulletin/documents/Dynes_052605.pdf) online. To read a UC news release, go to [www.universityofcalifornia.edu/news/2005/may26a.html](http://www.universityofcalifornia.edu/news/2005/may26a.html) online.



## Governor addresses Lab workers, supports UC contract bid

Governor Bill Richardson told Laboratory personnel that the work they perform is important to New Mexico and the nation. "I came today to tell you your work is important; it's a good lab for the country; and living in New Mexico is one of the world's best miracles," Richardson said in a short talk in the Administration Building Auditorium at Technical Area 3. Before the talk, Richardson met with Lab Director Robert Kuckuck, who introduced the governor in the auditorium. During his upbeat and often light-hearted remarks, Richardson poked fun at politics and his relationship with Los Alamos. But he was serious about science and said he supported the University of California's decision to submit a proposal to the Department of Energy to continue operating Los Alamos. The UC regents, along with Bechtel National, other corporate partners and New Mexico universities, voted to submit a proposal to DOE. The university has operated Los Alamos since its Manhattan Project creation in 1943. "I'm for the University of California," the governor said. "It's a good bid — a strong bid," he said. He also said the next few months will be the most critical time for the Lab's future. Photo by James E. Rickman



# Robotic telescope discovery sheds new light on gamma-ray bursts

by Nancy Ambrosiano

A new type of light was detected from a recent gamma-ray burst, as discovered by the Laboratory and NASA scientists using both burst-detection satellites and a Los Alamos-based robotic telescope.

In a paper published in a recent *Nature*, Los Alamos scientists and NASA announced the detection of a form of light generated by the same process that drives the gamma ray burst itself, yielding new insights about these enigmatic cosmic explosions — the most powerful events since the Big Bang.

At 01:42 Universal Time, Dec. 19, 2004, both the European Space Agency's INTEGRAL satellite and NASA's Swift satellite detected the onset of a powerful gamma-ray burst in the direction of the constellation Cassiopeia. Within seconds, the RAPTOR (RAPid Telescopes for Optical Response) telescopes at the Laboratory swung into action to search for optical light from the explosion.

By responding so quickly, RAPTOR-S was the first optical telescope ever to begin observations before the gamma-ray light reached its peak brightness. The quick response allowed astronomers to study the relationship between the visible light variations and the gamma-ray variations for an unprecedented six and a half minutes. The results of that comparison is challenging what astronomers knew about the origin of visible light from gamma-ray bursts.

## Hot weather ...

continued from Page 2

- Heat exhaustion may be characterized by heavy sweating, strong thirst, cool and moist skin, a quick pulse, rapid breathing, nausea, a feeling of fatigue and possibly fainting. Heat exhaustion indicates the body's mechanism for controlling heat is beginning to break down.

- Heat stroke is a serious medical emergency that can quickly proceed to unconsciousness and death. It occurs when the body loses too much salt and water so that sweating stops. At that point, the body's temperature control mechanism fails and body temperature increases rapidly. Symptoms include hot, red, dry skin, a quick pulse, difficulty breathing, dizziness, confusion, strange behavior, weakness and nausea. Heat stroke quickly can progress to convulsions, coma, loss of pulse and an extreme body temperature. Death can follow rapidly.

## Know how to treat heat illness

- Treat heat cramps by moving into the shade and loosening clothing. Drink a lightly salted liquid. If cramps persist, seek medical help.

- For heat exhaustion, cool the victim as fast as possible, fanning and pouring water on the victim if necessary. Have the victim drink water and call immediately for medical help.

- For heat stroke, immediately begin cooling the victim to lower the body temperature as fast as possible. Immerse the victim in water or use ice to cool his or her body. Call for an ambulance immediately.

Until now, both the limited observations and the standard theory suggested that the gamma rays and the light from gamma-ray bursts had very different origins. But, these new, sensitive RAPTOR observations show that there is a unique visible light that varies in concert with the gamma-rays.

"This close correlation indicates that both components have a common origin," said Tom Vestrand of Space Science and Applications (ISR-1), the Los Alamos RAPTOR project leader, "and our best guess is they are generated by a shock driven into the GRB ejecta by the engine that powers the explosion." The GRB ejecta form a jet composed of the superheated material from the star that blew up. The ejecta, moving as a highly relativistic material, travels at 99.999 percent of the speed of light, launched by the cataclysmic explosion.

The extreme relativistic nature of the explosion means that the light from events that occur over the course of a day at the burst arrives at Earth within the span of minutes.

"The really exciting aspect of this new optical component is that when telescopes can get there fast enough to measure it, comparing its properties with those simultaneously observed in gamma rays will allow us to measure the physical characteristics of the jet and the burst engine," Vestrand added.

Robotic telescopes are fundamentally changing modern astronomy. NASA's recently launched Swift satellite has the ability to locate gamma-ray bursts rapidly, reorient itself autonomously for follow-up observing, and to distribute precise positions in seconds to an armada of ground-based telescopes located around the world.

"Robotic instruments like RAPTOR can observe GRBs during those critical first minutes of the explosion. And that's where the



game is today," said Przemyslaw R. Wozniak, an Oppenheimer Postdoctoral Fellow in ISR-1.

Astronomers at Los Alamos also are busy working on the future of robotic astronomy in the form of a program called the Thinking Telescopes Project.

"Humans do not have the attention span, response time or memory required to monitor the huge volume of data, recognize important variations, and respond in real time that one needs to monitor the night sky for important changes," said Vestrand.

The goal of the Thinking Telescopes project is to merge robotic instrumentation with machine learning techniques and advanced massive database technology to build robotic telescope systems that can recognize and autonomously make follow up observations of important changes in the night sky without human intervention — so called "thinking" telescopes.

For more about the Thinking Telescopes Project and RAPTOR, go to <http://www.thinkingtelescopes.lanl.gov/> or <http://www.raptor.lanl.gov/> online.

The RAPTOR telescopes are supported as part of the Thinking Telescopes Project that is funded by the Laboratory Directed Research and Development program.

## Science communication

by Tom Bowles, chief science officer



We live in the information age, but it seems singularly difficult to get reliable information about many things. There are many good things happening at the Laboratory, in science as well as with efforts underway to improve our ability to carry out R&D. Yet, when I visit groups around the Lab, a prime question is "What are we doing to improve our image outside the Lab?" And almost no one is aware of the efforts going on to push back on actions that are not particularly effective in being compliant but are damaging [the Lab's] ability to carry out science.

To improve communication at the Laboratory, Terry Wallace and I are forming a science communication working group. The primary goal of this group is to find better ways to present science and engineering advances to the outside world, as well as within the Laboratory. This group also will be working to find more effective means to communicate to Lab employees the actions that are under way to make the Lab more effective in both operations and science. The group will bring together both the technical and support sides of the Laboratory in developing joint approaches that support both compliance and science.

The CSO office is setting up a Web site ([see int.lanl.gov/science/](http://int.lanl.gov/science/)) that will provide an effective means to find out about recent highlights in science and engineering at the Lab. This Web site will include a section that provides information on activities under way to improve our ability to do science. It also will include a "Frequently Asked Questions" section that will be updated regularly.

Finally, members of the Science Council will be meeting with groups around the Lab (in addition to myself and my deputy, Dave Sharp) to increase two-way communication between staff and senior management.

Good communication always is important, but [it] is particularly crucial in the near term when many people will be making decisions about their future at the Laboratory. I hope [employees] will see a real improvement in communication in the near term as a result of our efforts.



## Update on Appendix F

# Division- and program-review committees

by Terry Lowe and Everett Springer, Science and Technology Base Programs (STB)

Science, engineering and technology are key products of the programs and projects at Los Alamos National Laboratory. The importance of science, engineering and technology and program integration are reflected in Appendix F, objectives one through seven, which are technical objectives. The Department of Energy/National Nuclear Security Administration combines results from milestone performance, voice of the customer and external peer review to provide an overall Appendix F grade for [the] Laboratory. External peer review is accomplished at Los Alamos through division- and program-review committees.

Currently, 15 division and two program reviews are performed annually at [the] Laboratory. Division and program committees typically have six to 12 members, each with five-year terms of service. New members are recruited periodically so that there is always an adequate balance of experienced and new committee members. Divisions and programs, with concurrence of the Lab's director, are responsible for maintaining the membership of their respective committees so that the membership is sufficient to adequately review their organization. The range of committee member expertise should match the breadth of science and technologies within the division/program and the areas in which expert advice is sought. In addition, two members from the University of California Office of the President's Science and Technology Panel are assigned to each division.

The goal of the division-review committee is to assess the quality of the division's technical contributions and advise Laboratory and division management on issues that they have identified. The assessment has two phases: 1) an evaluation of the topics selected by the division for review, and 2) an overall summary grade of the quality of science, engineering and technology that was assessed during the division review process. The evaluation uses comparison to peers and sustainability of the effort as criteria with peer comparison the more strongly

weighted component. This is the reason that presenters at division-review committees are asked to identify and discuss peers. Sustainability is concerned with the viability of the activity and whether the project is consistent with the mission of the Laboratory. The presentations are connected to Appendix F measures, but the division-review-committee evaluation is not an assessment of the Appendix F objectives.

Division-review committees provide advice on topics identified by the [Lab] director, chief science officer, appropriate associate director and division leader. The topics cover a range of issues, such as the potential future science and technology activities in the division to the evaluation of current management. Advice also is part of the assessment process.

The division-review committee provides an executive outbrief at the end of the meeting and its report scheduled to be delivered 30 days after the review meeting ends. At the outbrief, Laboratory management is given the three to seven outstanding accomplishments, opportunities for improvement and recommendations and the overall summary score for science and technology. The division-review-committee report is a deliverable for Appendix F, Objective 5, and for some divisions their review-committee report is a deliverable for other Appendix F objectives.

Program reviews follow essentially the same format as division reviews, but the objective of program reviews is to examine the integration defined as program planning, execution and impact. The two program reviews at [the] Laboratory are for the nuclear weapons and threat-reduction programs. Program reviews do address the Appendix F objectives from the planning, execution and impact perspectives. The division reviews are input for the program-review committees and many division-review committee chairs serve on program review committees. Program reviews generate an outbrief and report that follow a similar format as the division-review reports, but the evaluations are based on program and Appendix F objective perspectives.

The assessments and advice are documented in reports prepared by each

division- and program-review committee. These reports are inputs to several institutional management processes, including strategic business planning and the annual self-assessment of [the] Laboratory's performance against the objectives contained in Appendix F of the DOE-UC prime contract. The reports are submitted to UCOP, which uses them and the Los Alamos self assessment to prepare its overall performance report of the Laboratory to the DOE/NNSA. The UC Science and Technology Panel assists UCOP in its annual assessment of science, technology and engineering, and participation by the Science and Technology Panel members in division and program reviews strengthens the UC assessment. The DOE/NNSA [are provided] copies of the reports, and these are used in their assessment of the Laboratory, in addition to input from UC.

For 2005, the review cycle is near its end, and the compilation of accomplishments and recommendations has started. Many people contribute to the success of the review process, and we want to take this opportunity to thank them.

### PATENT AWARDS

*Editor's note: Some of the individuals listed below are no longer employed at the Laboratory but were at the time they applied for the patent.*



#### Recently issued patent awards

##### Electrolytes for electrooptic devices comprising ionic liquids

Patent No. 6,853,472, issued Feb. 8

**Benjamin Warner, Thomas McCleskey and Anthony Burrell** of Actinide, Catalysis and Separations Chemistry (C-SIC); and **Anoop Agrawal, John Cronin and Juan Carlos Lopez Tonazzi** of Enki Technologies

##### Method and apparatus for detecting chemical binding

Patent No. 6,858,148, issued Feb. 22

**Benjamin Warner** of C-SIC; **George Havrilla and Thomasin Miller** of Analytical Chemistry Sciences (C-ACS); and **Cyndi Wells** of International Research, Analysis and Development (N-3)

##### Reversible electro-optic device employing aprotic molten salts and method

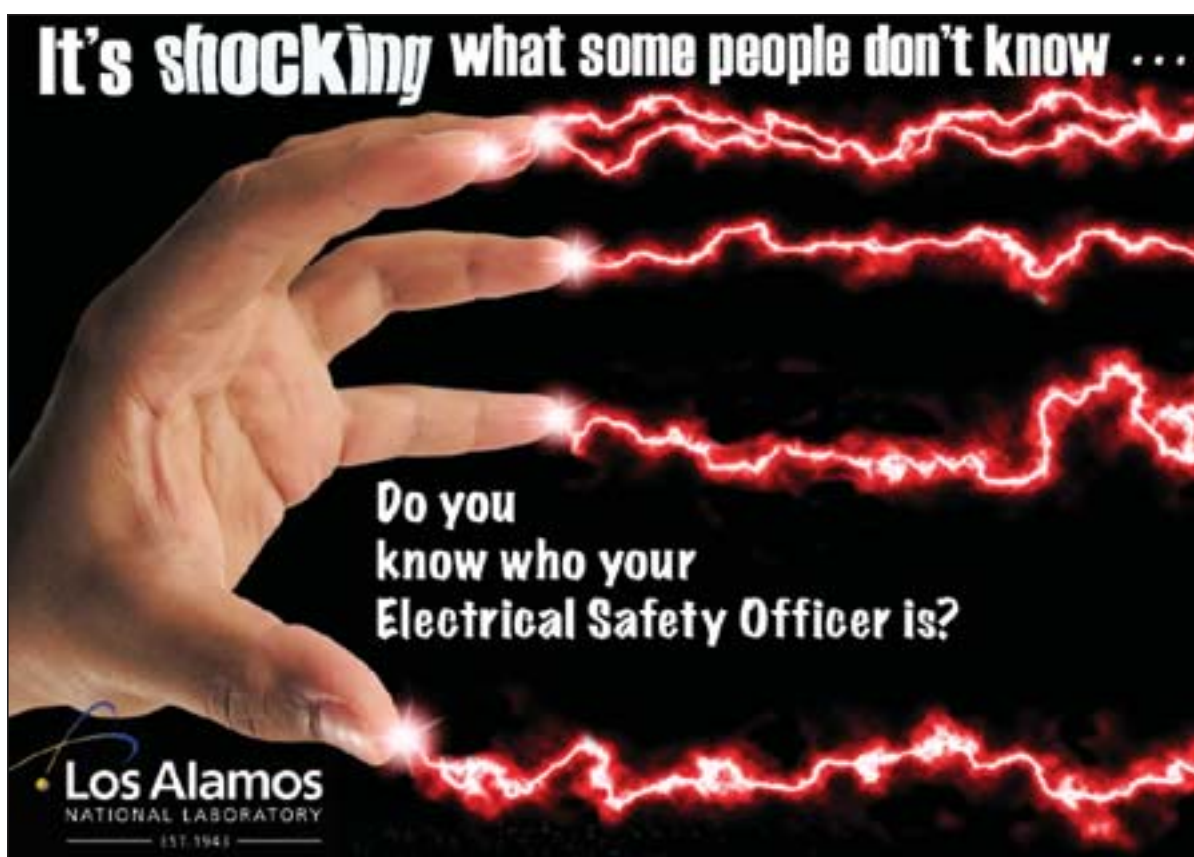
Patent No. 6,862,125, issued March 1

**Benjamin Warner, Thomas McCleskey, Anthony Burrell and Simon Hall** of C-SIC

##### Improved direct methanol fuel cell stack

Patent No. 6,864,004, issued March 8

**Mahlon Wilson and John Ramsey** of Electronic and Electrochemical Materials and Devices (MST-11)





## Skin cancer screenings to be offered at the Lab

by Steve Sandoval

Summer in the southwest is hot and sunny and can place individuals at higher risk for skin cancer if proper precautions are ignored. To help raise awareness of the importance of protecting skin from the sun's harmful ultraviolet rays, Occupational Medicine (HSR-2) is offering free skin screenings through June 17 at various locations around the Laboratory.

The screenings are open to all badge holders and no appointments are necessary, said Buffy Bergquist of HSR-2. The schedule for skin screenings can be found at [int.lanl.gov/worklife/health/ocmed/](http://int.lanl.gov/worklife/health/ocmed/) online.

Individuals with risk factors should try to find time to participate in the free screening. Risk factors include

- History (or family history) of skin cancer
- Previous severe sunburn (especially as a child)
- Suspicious lesions
- Fair complexion

Protecting skin from the sun's harmful ultraviolet rays should be practiced year around, especially by individuals with risk factors, said Bergquist. Additionally, the higher elevations in the state increase the intensity of the ultraviolet rays and place residents at higher risk for skin cancer, she said. Ultraviolet rays always are present even on cloudy days. For maximum protection, follow these simple rules:

- When planning to be outdoors for a prolonged period, apply sunscreen with Sun Protection Factor (SPF) of at least 15 to all exposed areas. Extra protection is provided with high SPF lotions or creams.
- Wear sunglasses with UV protection to block retinal exposure to harmful rays.
- Wear a broad-brimmed hat.
- Use an umbrella.
- Plan outdoor activities to avoid peak sunlight hours of 10 a.m. to 4 p.m.
- Wear light-colored tightly woven clothing to help block UV light.

The three most common types of skin cancer are basal cell, squamous cell and melanoma, said Bergquist.

Basal cell carcinoma usually develops on the face, ears, lips and around the mouth of fair-skinned people. It can start as a red patch or shiny bump that is pink, red or white. It may be crusty or have an open sore that doesn't heal or heals only temporarily. Basal cell carcinoma can be cured easily if treated early.

Squamous cell carcinoma usually appears as a scaly patch or warty growth. It has a high cure rate when found and treated early.

Melanoma is the most dangerous form of skin cancer. It may look like a brown, black or multicolored mole. It can occur on any part of the body and when found early, can be cured.

Individuals should check for changes in skin and suspect lesions on a monthly basis. Use a mirror or ask a partner to check back and neck areas. Any change in skin condition should be reported promptly to your primary care provider for early intervention as needed.

Bergquist said individuals with suspicious lesions will be scheduled to see a dermatologist on June 22.

# KSL Services taxi service to change this summer

by Kathy Delucas

The Laboratory has conducted a traffic and usage study to determine how to reduce the costs of the KSL taxi service and make it more economically feasible.

The study indicates that traffic into and out of Technical Area 3 was the principle use for the taxi service, followed by trips to and from the town site and up and down the Pajarito Road corridor. A new service plan calls for establishing regular routes for these high-density areas, with dispatch service continuing for remote areas.

The study, using GPS mapping technology linked up with drivers' logs on rider usage, pickup locations and destinations, revealed peak usage times and key facilities visited. This data provided insight for designing a more efficient service model, according to Rick Nelson of the Support Services Contract Office.

Nelson said details of the new service are still being developed, but the changes should save the Laboratory more than



\$1million annually in operating costs. The model will be rolled out in the late June early July timeframe and will be more like a traditional bus service with timed regular routes, he added.

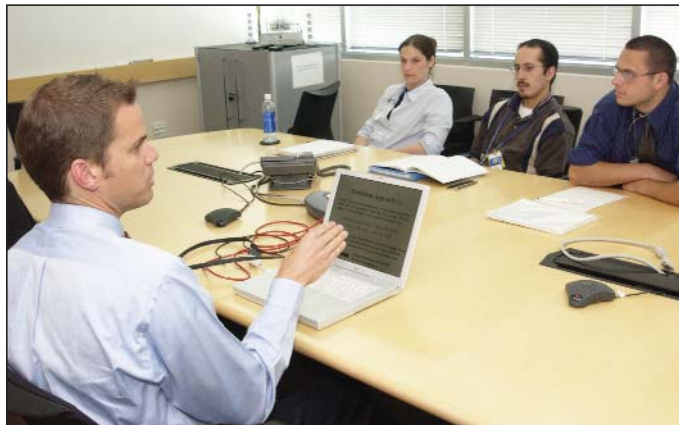
The taxi program has existed in one form or another over the history of the Laboratory. General shortages of government vehicles, in addition to the scarcity of parking make the taxi service a necessity for many Lab employees, Nelson noted.

Support for the regional park-and-ride commuter bus service will continue and every effort is being made to actually improve service while streamlining the overall operation, Nelson said.



## Lab, UC dedicate engineering institute

Laboratory Director Robert Kuckuck and University of California Board of Regents member Peter Preuss, left, share a laugh at a recent dedication ceremony for the joint Laboratory-UC, San Diego engineering institute in the Los Alamos Research Park. UC, San Diego Chancellor Marye Anne Fox and other Lab officials took part in the ceremony. The research-focused collaboration with UC, San Diego's Jacobs School of Engineering will help train potential future employees for the Laboratory, while also creating education and research opportunities for UC, San Diego students. "This partnership strengthens our comprehensive approach to recruiting, training, retention and research in an effort to better meet future engineering needs relevant to the Lab's mission of enhancing global security," said Chuck Farrar of the Engineering Sciences and Applications (ESA) Division, director of the Engineering Institute at Los Alamos. The Research Park is located on West Jemez Road across from the Otowi Building at Technical Area 3.



University of California, San Diego instructor Michael Todd, with laptop computer, conducts a class with students Jeni Wait, left, Isaac Salazar and David Mascarenas, right, all of Weapon Response (ESA-WR) at the joint Laboratory-UC, San Diego engineering institute in the Los Alamos Research Park. Photos by LeRoy N. Sanchez



# So...what do you think?

**Q:** With summer and warmer weather comes an increase in the number of people who are out and about working and playing in the great outdoors. What is the most important thing you do to ensure your safety or that of your family when taking part in your favorite outdoor activities?



**Isaac Cordova of Materials Management (SUP-3)**

Drink plenty of water, wear sunscreen and cover [my] head.



**Dave Apel of Occupational Medicine (HSR-2)**

I like to do a lot of boating and fishing. You have to really respect the water. When conditions get bad, get to a safe place quickly.



**Becky Coel-Roback of Environmental Characterization and Remediation (ENV-ECR)**

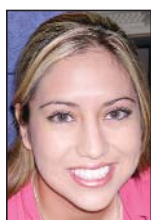
I make sure everyone in the family is wearing personal flotation devices and sunscreen when we

take the raft out.



**Sandra Estrada of Desktop Computing (CCN-2)**

I drink plenty of water, wear the right shoes for hiking and make lots of noise in case the bears are out.



**Amanda Martinez of ENV-ECR**

Since the weather is increasingly warm, I make sure that I am hydrated before venturing out into the great outdoors. People also should know the conditions of the area they will be traveling in and take maps and bug repellents. Most important, don't venture out alone.



**Leah Sandoval of Staffing (HR-S)**

I like to stay in the shade and drink lots of water.



**Manual Apodaca of Accounting (CFO-1)**

I'm out in the sun quite a bit, so I wear hats and drink lots of water.

## PEOPLE



**Gary Baker**

### Baker/Htoon receive Postdoctoral Distinguished Performance Awards

**G**ary Baker of Actinide, Catalysis and Separations Chemistry (C-SIC) and **Han Htoon** of Physical Chemistry and Applied Spectroscopy (C-PCS) are recipients of the Postdoctoral Distinguished Performance Awards. The annual award recognizes outstanding and unique contributions by Lab postdocs that result in a positive and significant impact on the Laboratory's programmatic or scientific efforts or status in the scientific community.

It also recognizes unusual creativity, innovation, or dedication and level of performance substantially beyond that which would normally be expected.

**Mark McCleskey** of C-SIC nominated Baker, a current Reines Distinguished Postdoctoral Fellow. Baker is a significant contributor in the study of ionic liquids and, in 2004, was the lead author on 11 publications on various aspects of the synthesis and spectroscopy of ionic liquids. His publication list



**Han Htoon**

includes more than 60 publications, which have been cited more than 500 times. Baker also is noted for building new internal Laboratory partnerships between the Chemistry (C), Bioscience (B) and Dynamic Experimentation (DX) divisions.

**Victor Klimov** of C-PCS nominated Htoon for this award. Htoon is noted for his research in spectroscopic studies of semiconductor nanocrystals and carbon nanotubes. These efforts have produced three Physical Review Letters in the last two years and several invited talks at important conferences in his field. Htoon also is an important player in the strategic planning and technical specification of the Laboratory's Center for Integrated Nanotechnologies. Htoon is well on his way to establishing a widely recognized independent research effort in an area of strategic importance to the Laboratory, according to Klimov.

Receiving an honorable mention were **Yu Seung Kim** of Electronic and Electrochemical Materials and Devices (MST-11) and **Zhongwu Wang** of the Manuel Lujan Jr. Neutron Scattering Center (LANSCE-12). Kim was nominated by **Bryan Pivovar**, **Piotr Zelaney** and

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### Eighteen selected for Director's Development Program

**E**ighteen Laboratory employees make up the 2005 Director's Development Program class. The Director's Development Program is a succession management program to prepare a pool for the Laboratory's future leadership. The DDP offers individualized assessments and leader-potential analyses, a director's leadership workshop, competency workshops on current, relevant topics, brown-bag learning exchanges, cohort learning sessions and opportunities, developmental assignments, and ongoing mentoring and coaching on a one-to-one basis.

Members of the 2005 Director's Development Program class are

- Joysree Aubrey, Hydrodynamics and X-ray Physics (P-22)
- Karen Bintz, Applied Electromagnetics (ISR-5)
- Jay Carnes, Engineering Sciences and Applications (ESA) Division
- Linda Ann Gallegos, Deployed Services (PM-DS)
- William Gillison, Security Plans and Programs (S-1)
- Daniel Holden, Research and Development (ISR-RD)
- Albert Jiron, Supply Chain Management (SUP) Division
- Dale Land, Computing, Communications and Networking (CCN) Division
- Leon Lopez, Enterprise Information Infrastructure (IM-3)
- Catherine Padro, Electronic and Electrochemical Materials and Devices (MST-11)
- Steven Renfro, Detonator Technology (DX-1)
- Tina Marie Sandoval, Water Quality and Hydrology (ENV-WQH)
- Raeanna Sharp-Geiger, Materials Science and Technology (MST) Division
- John Tapia, Physics (P) Division
- Bart Torres, Security and Safeguards (S) Division
- Cheryl Wampler, Associate Directorate for Nuclear Weapons Programs (PADNWP)
- R. Scott Willms, Applied Chemical Technologies (C-ACT)
- Deidre Witherell, Design Engineering and Construction Services (ENG-DECS).

The Director's Development Program introduces to the Lab a new set of leadership competencies based upon the five Leadership Core Qualifications of the Senior Executive Service: leading change, leading people, driving results, business acumen and building coalitions/communications. To these the DDP adds operational excellence.

According to John Perreault of Training and Development (HR-TD), which coordinates the DDP, participants experience four developmental components during the 15-month program:

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## Baker/Htoon...

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Francisco Uribe of MST-11 and Wang was nominated by Alan Hurd of LANSCE-12.

A committee of six technical staff members reviewed all of the nominations submitted and a final recommendation was made to the director and chief science officer, who approved the committee's recommendations.

In a letter to the Director's Office from John Sarrao of Condensed Matter and Thermal Physics (MST-10), chair of the committee that reviewed nominations for the prize, he said the committee felt it was very satisfying to see the outstanding postdoc talent that resides at the Laboratory as reflected in all of the nominations. The impact and quality of work that these individuals have accomplished is very impressive, and these awards provide another opportunity to recognize they truly outstanding talent the Postdoctoral Program brings to Los Alamos.

A reception will be held to honor the award winners, who will be presented with a certificate and monetary award. The recipients also will have an opportunity to present their work at a colloquium to be announced.

## Eighteen selected ...

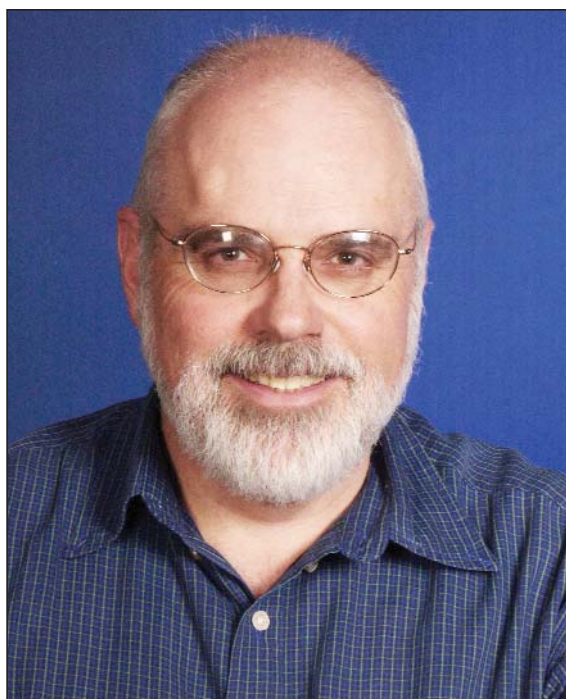
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leadership assessment, mentoring and coaching, development assignments and competency curriculum.

Participants will receive an extensive assessment from Personnel Decisions International, which includes personal history data, personality indicators, three leadership simulations, oral interviews and a 360 [degree] inventory. This information is used as the foundation for each individual's development plan. PDI also will provide initial coaching to participants to facilitate learning transfer, and transitional coaching to each participant's internal coach.

Perreault said participants are assigned an internal coach who helps them with their developmental experience by providing them with guidance that helps them expand their leadership capability. Each participant also has at least one mentor who provides the institutional context for their learning, as well as increasing their exposure to how it all works. The participant-coach-mentor association facilitates the creation and implementation of each person's individual leadership development plan. Perreault said the individual leadership development plan allows a participant to look at his or her strengths and weaknesses in new ways and to develop a more holistic leadership skill-base for future leadership roles.

For more information, see the June 25, 2003 Daily Newsbulletin [www.lanl.gov/newsbulletin](http://www.lanl.gov/newsbulletin) at or go to the Director's Development Program Web page [int.lanl.gov/orgs/hr/success](http://int.lanl.gov/orgs/hr/success) online.



Kevin Jones

## Jones named to lead DX Division

Kevin Jones will lead the Dynamic Experimentation (DX) Division, having accepted a permanent appointment to the job he has held since July of last year.

Jones, a 23-year Los Alamos employee, spent his career at the Los Alamos Neutron Science Center (LANSCE) and its predecessor organizations.

"Kevin brings key strengths to DX Division," said Sue Seestrom, associate director for weapons physics. "He is an excellent listener and makes his concern for people and their well-being the hallmark of his leadership style."

Following 18 years as a research physicist, Jones moved into a variety of management roles, serving as team leader for accelerator operations at LANSCE, deputy leader of the Accelerator Operations Group, accelerator operations manager and deputy division leader. Earlier, he held a technical role in the Accelerator Production of Tritium/APT/Low Energy Demonstration Accelerator Project.

As a LANSCE physicist, Jones was an instrument scientist responsible for operation and improvement of the High-Resolution Proton Spectrometer; played a lead role in research on nuclear continuum spin observable measurements; made significant contributions to coincidence and light-target experiments; and designed beam transport systems for the Neutron Time-of-Flight Facility and Medium Resolution Spectrometer.

"Kevin brings a strong commitment both to the operations and to the excellent science and engineering that always has been the hallmark of DX Division," Seestrom added.

As acting leader, Jones led DX Division through a lengthy restart process, operations improvements and execution of the 3625 hydrodynamic experiment, a key

programmatic deliverable, Seestrom said.

"Although I've only worked in DX for 10 months, every day I find myself excited and invigorated by the high caliber of the people who work here and the quality of their ideas," Jones said. "I hope that together we can continue to demonstrate technical and operational excellence in research and experimentation to support the Laboratory's national security mission."

Jones is a member of the American Physical Society. He earned two bachelor's degrees from the University of Witwatersrand in South Africa and a doctorate in experimental intermediate energy nuclear physics from Rutgers University in New Jersey.



John Phillips

## Former employee now on International Space Station

Former Laboratory technical staff member John Phillips celebrated his 54th birthday aboard a rocket bound for the International Space Station. Phillips, Sergei Krikalev and Roberto Vittori were onboard Expedition 11, a Russian-built rocket that reached the space station on April 17.

Phillips has been a NASA astronaut since the mid 1990s after working as a technical staff member in the former Space and Atmospheric Sciences (NIS-1).

He came to Los Alamos in 1987 as a J. Robert Oppenheimer postdoctoral fellow. A 1972 graduate of the U.S. Naval Academy with bachelor's degrees in Russian and mathematics, Phillips also earned a master's degree in aeronautical systems from West Florida University, a master's in geophysics and space science from University of California, Los Angeles and a doctoral degree in geophysics and space science also from UCLA.

Phillips has previously been to the International Space Station as part of an 11-day mission in 2001. During this mission, Phillips did two space walks and helped install a robotic arm on the space station. Phillips returned to Los Alamos in October 2002 and gave a colloquium describing the Space Shuttle Endeavor mission that carried him to the space station.

Phillips and Krikalev are scheduled to return to Earth in October but will be on the International Space Station when the first American space shuttle since the 2003 Columbia shuttle accident arrives at the space station.

More information about the Expedition 11 launch, is available at [www.nasa.gov/mission\\_pages/station/main/index.html](http://www.nasa.gov/mission_pages/station/main/index.html) online.

## In Memoriam

### James Carlton Hoogterp

Laboratory retiree James Carlton Hoogterp died on Feb. 26. He was 87.

Hoogterp was born in Rapid City, S.D. He attended Sioux Falls College in 1935-1936 and received a bachelor's degree in math and English from Southeast Missouri Teacher's College in 1940.

Hoogterp came to the Lab in 1943 to work on the Manhattan Project and was part of the team that made the first full test at the Trinity Site in 1945. During the course of his career in Los Alamos, he worked in the former Experimental Physics (P) Division, the former Operation Crossroads (B) Division, the former Experimental and Pit (M) Division, the former Weapons Engineering (W) Division and the former Nuclear Rocket Propulsion (N) Division.

He retired from the Lab in 1973.

Hoogterp is survived by his wife, Myrtelle, son James and grandson Cooper.





# Giving back to the community: A rewarding experience

by Ed Kellum

Jerry J. Romero of Physical Chemistry and Applied Spectroscopy (C-PCS) spends his free time changing lives. After work when most Laboratory employees are at home, Romero donates his time and energy to give back to his community. Devoting 600 plus hours last year alone, Romero works in his home town of Chimayo with the Española Valley/Los Alamos Habitat for Humanity, Chimayo Crime Prevention Organization and the Chimayo Boys and Girls Club.

Despite his many responsibilities and activities, Romero manages to balance his involvement with the volunteer organizations and his other commitments. "I am [involved] almost everyday of the week," said Romero. "Five to six days a week, after work and on weekends are the only times I have available." Romero serves as the vice president for the Chimayo Boys and Girls Club and the Chimayo Crime Prevention Organization, and he sits on three committees for the Habitat for Humanity, including a board member, and the Building and Family Selection committees.

Romero has worked at the Laboratory since 1975 and is senior technologist working on semiconductor and metal nanostructure projects, as well as on experiments involving the ignition and detonation of solid explosives. He attributes his philanthropic passions to his childhood. "It goes back to my mother. She raised my two sisters and me as a single parent, because my father died of a heart attack when I was only five," Romero said. "To be at this level where I am able to help people living in hard situations like my mom really motivates me," he said. "Habitat for Humanity gives families that chance and opportunity to get over that hump and finally buy their home."

Romero and other Habitat for Humanity volunteers are currently building a three-bedroom house in Arroyo Seco — he also has worked on three other houses and done renovations on other homes — and occasionally works with other Habitat for Humanity chapters around the state. "We trade ideas and get to meet other people," Romero said.

And in between his Lab job and his work with these organizations, Romero also finds time to do woodworking, tinwork, landscaping, working on cars, riding his Harley Davidson motorcycle and coaching his two sons' basketball and baseball teams.

Romero is quick to credit the Lab with his ability to give. "I feel I owe so much to the Lab, because without it I would not be able to help the way I do," he stated. "Working at the Lab has given me on-the-job experience that I have taken and used to benefit the Valley, and what I have learned in the community has benefited the Lab."

Romero noted the difference volunteering has made in his community. "We see an immediate impact from these organizations; it is just hard to find volunteers," he said. "We have a hard time getting people involved. Many people think volunteering is a lifetime commitment when really it only has to be a few hours on a Saturday."

Charitable organizations are always looking for help and Romero is working to get the word out about the need. "I think the lack of volunteers is our major weakness right now," he said.

For more information about volunteering, Romero can be contacted at 7-1177. Or call the Espanola Valley/Los Alamos Habitat for Humanity Re-store at (505) 747-2690. Donations can be made for the Chimayo Boys and Girls Club through the United Way of Los Alamos/Northern New Mexico, or by calling (505) 351-1515.

"I think you will find volunteering a rewarding experience. I cannot really explain it, but the feeling you get when you give back to the community is great. It brings so many good things into your life," Romero stated. "There are a million things that are good in my life, but my two sons, Joshua and Jeremy; my mother, Adelina; my great job with such supporting supervisors; and my health are the things I hold dear."



Top photo, Jerry Romero of Physical Chemistry and Applied Spectroscopy (C-PCS) fastens metal joists on a Habitat for Humanity steel frame home he helped build in Los Lunas in 2004. In the middle photos, Romero is on the roof of the home fastening an interior wall to an exterior wall. Bottom photo is a wide view of the same house under construction. Photos by Norm Daviess, Habitat for Humanity