

Homeland Security Secretary Chertoff visits Sandia, speaks highly of Labs' antiterrorism technologies

'We don't need to reinvent the wheel,' he says about national labs' R&D resources

By Bill Murphy



WELCOME MR. SECRETARY— US Sen. Pete Domenici, left, praises new Homeland Security Secretary Michael Chertoff, right, during last Friday's news conference at Sandia. With them is new Labs President and Director Tom Hunter, who hosted Chertoff. Rep. Heather Wilson also spoke. (Photo by Randy Montoya)

Taking up Sen. Pete Domenici's suggestion that he tour Sandia, Homeland Security Secretary Michael Chertoff said during a visit to the Labs last Friday that "it turned out to be good advice."

Chertoff spent a half day at the Labs to learn about Sandia's capabilities, and received briefings on several specific Sandia-developed homeland security technologies and programs. The briefings came from new Labs President and Director Tom Hunter, other members of senior management, and several subject matter experts.

Following the briefings, Chertoff, joined by Domenici, Rep. Heather Wilson, and Tom, conducted a half-hour news conference in the Bldg. 810 lobby to talk about the relationship between Sandia and the Department of Homeland Security. Representatives from most of the Albuquerque news media attended.

Chertoff said he was impressed with what he had learned at Sandia and expressed a hope to spend more time at the Labs in the future.

"There is a tremendous contribution [to homeland security] to be made here," he said. He said the energy, the dedication, and the creativity at Sandia "truly are remarkable."

The 21st century challenges in national security, Chertoff said, more and more will be

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Port officials — with Sandia help — are using new radiation-detection technology. Story on page 3.



Paul Robinson says goodbye at special function in his honor. Story on page 5.



Issues Management Team prepares plan to prevent future beryllium contamination at Labs. Story on page 6.



VP Frank Figueroa gives presentation on the Integrated Enabling Services Management Unit. Story on page 9.



Kids have lots of fun at Space Day and learn about — well — space. Story on page 12.

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Sandia-developed game helps Special Forces learn adaptive thinking, problem solving

Video games can be more than fun; they can also be serious tools

By Chris Burroughs

Video games aren't just for kids anymore.

A multiplayer, nonviolent simulation game developed by a team led by Sandia researcher Elaine Raybourn (15241) is being used by members of the US Army Special Forces to hone their skills in adaptive thinking, negotiation and conflict resolution, and leadership in cross-cultural settings.

"This simulation game is the only one of its kind focused on interpersonal and strategic communication in cross-cultural settings," Elaine says. "It's a serious application of technologies that the entertainment industry has spearheaded. The graphics look as compelling as any other video game, but everything else about the simulation suggests that it was carefully designed for discovery learning."

The game — which Elaine refers to as an Adaptive Thinking and Leadership (ATL) simulation game — is designed to allow players to discover their strengths and weaknesses in mental agility, cultural awareness, interpersonal adaptability, and communication. By role-playing in a dynamically changing environment, users sharpen their ability to anticipate the consequences of different courses of action to problems that may not have a "right" answer.

Currently people can play the game by themselves on a personal computer or with as many as



IN SILHOUETTE — Elaine Raybourn is silhouetted in front of an image of the adaptive thinking simulation game she and her team developed for the US Army Special Forces. (Photo by Randy Montoya)

14 players on networked computers. Instructors can easily modify scenarios, monitor the play, and jump in and change the direction of the game at any time.

Participants serve as either role-players or spectators. Their tasks vary according to the role. Spectators' tasks involve providing feedback on how well the role-players are doing during the game. Later, when the training game is over, the instructor can lead debriefing sessions via an "after action review" that incorporates the real-time evaluations as well as player statistics and

(Continued on page 4)

What's what

The mysterious Hardin Boulevard boulder is back.

Charles Hanley (6216) pointed out its presence late last year (*What's what*, Dec. 10), then it disappeared. Now, say Joseph Pavletich (6146, aka Mr. Lucky) and John Gould of the SSO, it's back – in the same location and orientation. In a field with no other rocks around.

Charles wondered originally if – among other possibilities – it had been pushed up from underground by industrious prairie dogs excavating their den.

Following its reappearance, Mr. Lucky suggested some possibilities:

- It had been taken back underground by the prairie dogs, then ransomed by Kirtland.

- It's simply back after being sent out for cleaning.

- Pressed by an impending wedding, it faked its abduction and fled to Georgia.

I don't have a clue, but if recent history is any guide, it could join the likes of grilled cheese sandwich religious art, crop circles, lights in the evening sky, and giant stick figures on the Nazca Plains. It could show up soon on CNN's American Morning "news" report, in a quickie TV docudrama, on the cover of at least two of those supermarket checkout-lane newspapers, and be the subject of an Entertainment Tonight debate about which hotties du jour will play the lead roles in the sure-to-be-made movie.

Anyway, for whatever reason, it's back. So, as suggested originally, get a Twinkie while you still can and get out there and have a look at it.

* * *

A group of first-graders from Albuquerque's Double Eagle Elementary School would put the priorities of much of the grownup world to shame. Members of the class, which include Mark Boslough's (9216) daughter Kobie, and Judy Moore's (16000) grandson Zachary, thought it would be really neat to do something to help the victims of the December tsunami that devastated parts of Indonesia, Thailand, and other countries in that part of the world. So they did.

They recorded a CD, and the proceeds from sales will go to help the tsunami victims. The kids also did the artful cover artwork, shown at right. The playlist includes nursery rhymes and other familiar tunes long in the public domain, such as Pop Goes the Weasel, Take Me Out to the Ballgame, Baa Baa Black Sheep, Home on the Range, and Old MacDonald. The CDs have been selling, helped in part by an appearance on KOAT-TV.

If you're interested in buying a copy, or just in knowing more about the project, I bet Mark or Judy would be more than happy to steer you in the right direction.

– Howard Kercheval (844-7842, MS 0165, hckerch@sandia.gov)



Julia Phillips elected Fellow of American Academy of Arts and Sciences

Sandia's Julia Phillips has been elected a Fellow of the American Academy of Arts and Sciences, one of America's oldest and most distinguished honorary societies.

Julia, director of physical and chemical sciences at Sandia, is one of 213 leaders in scholarship, business, science, the arts, and public affairs elected in the 2005 class of Fellows, announced April 27.

"It gives me great pleasure to welcome these outstanding leaders in their fields in this, the Academy's 225th year," said Academy President Patricia Meyer Spacks. "Fellows are selected through a highly competitive process that recognizes individuals who have made preeminent contributions to their disciplines and to society at large."

Founded in 1780 by John Adams, John Hancock, and other scholar-patriots, the Academy has elected as Fellows the finest minds and leaders from each generation, including George Washington and Benjamin Franklin in the 18th century and Albert Einstein and Sir Winston Churchill in the 20th. Current membership includes more than 150 Nobel laureates and 50 Pulitzer Prize winners.

"It's both a tremendous honor and very humbling to be included among such people," Julia says.

Among other Fellows in the class of 2005 are Supreme Court Chief Justice William Rehnquist, Nobel laureate University of Colorado physicist Eric Cornell, NASA Mars Rover principal scientist Steven Squyres, Dante scholar Robert Hollander, actor Sidney Poitier, Google co-founders Sergey Brin and Larry Page, and journalist Tom Brokaw.

New Fellows will be inducted at a ceremony Oct. 8 at the Academy's headquarters in Cambridge, Mass. A complete list of newly elected members is at www.amacad.org.

Sandia, UNM to host regional meeting of National Academy of Engineering

Sandians invited to attend discussions of solid-state lighting

Interested Sandians are invited to attend the National Academy of Engineering's regional meeting Thursday afternoon, May 19, in Ballroom A of the Student Union at the University of New Mexico.

The meeting's theme is "Solid State Lighting: The Next Revolution in Lighting." It will be hosted by Sandia and by UNM's School of Engineering.

Luminaries expected to open the meeting at 1 p.m. include Sandia Labs Director Tom Hunter, NAE President Bill Wulf, and UNM engineering dean Joseph Cecchi. Sen. Jeff Bingaman, D-N.M., who initially expected to attend, will appear in a video from Washington.

Slated to assess the current and future status of the solid state lighting field are George Craford of Lumileds Corp., speaking on inorganic semiconductors; Princeton professor Stephen Forrest on organic LEDs; and Sandia's Mary Crawford (1123), Jeff Tsao (1123), and Jerry Simmons (1130) on, respectively, deep UV LEDs, an LED roadmap of the future, and Sandia's solid-state lighting program; Jerry will deliver the talk.

The program ends at 5 p.m. and is followed by a reception.

Sandians who want to attend should e-mail their name, phone number, and organizational affiliation to Marsh Burfeindt at miburfe@sandia.gov, says George Samara (1130), meeting coordinator.

An early morning visit to Sandia by Bill Wulf will be hosted by Tom and by VP Pace VanDevender (1000).
—Neal Singer

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Ken Frazier, Editor 505/844-6210
Bill Murphy, Writer 505/845-0845
Chris Burroughs, Writer 505/844-0948
Randy Montoya, Photographer 505/844-5605
Nancy Garcia, California site contact 925/294-2932
Contributors: Janet Carpenter (844-7841), John German (844-5199), Neal Singer (845-7078), Larry Perrine (845-8511), Howard Kercheval (columnist, 844-7842), Will Keener (844-1690), Iris Aboytes (844-2282), Michael Padilla (284-5325), Rod Geer (844-6601), Michael Lanigan (844-2297), and Michelle Fleming (Ads, Milepost photos, 844-4902). Dept. 12651 Manager: Chris Miller (844-0587).

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Sandia's 'SMART' radiation detection technology is helping thwart terrorists

'SMART' vehicles and other technology could be future model for ports of entry and other key venues

By Mike Janes

Homeland security experts generally agree that the threat of dirty bombs or other nuclear devices being smuggled into secure venues looms as one of the gravest concerns for those charged with keeping the nation safe from terrorists. Seaports, airports, border patrol stations, even government buildings are among locations that could be vulnerable.

Now, port officials on the East Coast — with a major assist from Sandia researchers — are capitalizing on new radiation detection technology that may serve one day as a model for other venues across the country.

Known as SMART — for Sensor for Measurement and Analysis of Radiation Transients — the technology uses sodium iodide detectors and special software to distinguish between normally occurring radioactive materials and those that might suggest ill intent.

Currently operational in test-bed mode at one major East Coast port, the technology enhances other detection capabilities in use at the facility and provides inspectors with a much greater level of sensitivity and accuracy, according to Sandia researcher Linda Groves (8114). Even better, SMART may perform just as well in different locales and scenarios where highly discriminatory radiation detection is necessary.

"It can be configured to fit your problem," she says, and in fact was deployed last year during a high-profile political event.

SMART's proprietary software, developed by Sandia researcher Dean Mitchell (5935), is key to the technology's success. The software helps operators easily and accurately identify the isotopes associated with radiological emissions. Most important, Dean and his group have worked to successfully integrate the software with the system's detection equipment and data management scheme, a complex design that enables each component of the system to "talk" to one another and work as a cohesive unit.

The most visible part of the technology is the mobile SMART. One version is on a golf-cart-sized vehicle that performs analysis of suspect vehicles, while the other is mounted on a Jeep. Both are used in concert with hand-held radiation detectors. The mobile SMART, says Linda, is appealing to port officials because of its ease-of-operation, mobility, and accuracy. The vehicle,

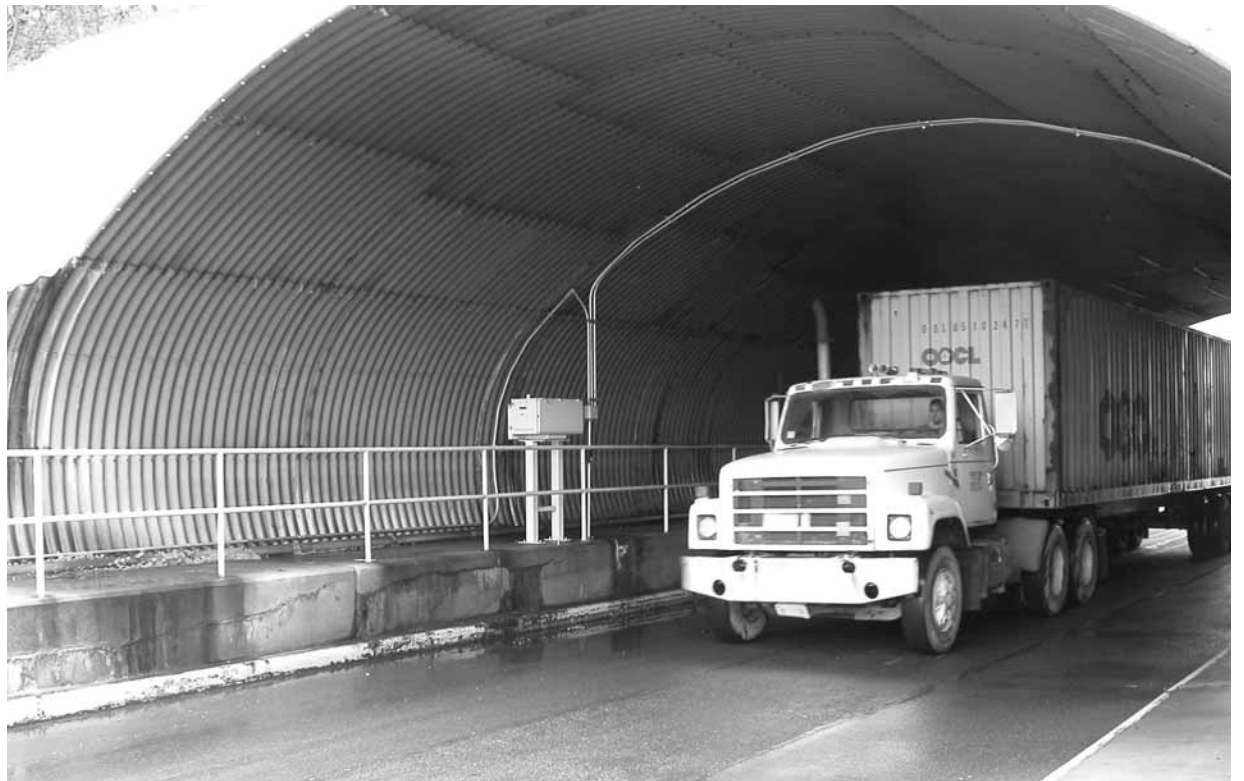


MOBILE — The SMART Cart impressed Gen. Larry D. Welch, chairman of the Department of Homeland Security's Science and Technology Committee, when he rode in one.

which is easily accessible and normally travels 1-2 mph during the inspection phase and at higher speeds when necessary, is mounted with equipment that can pinpoint whether the radiation is harmless or dangerous and in need of further scrutiny.

Sandia researcher Kevin Seager (5935) says SMART is deployed as both a primary and secondary detection method for port personnel.

"It can be configured to fit your problem."



WAY TO GO — The SMART system is demonstrated in a viaduct.

(Photos courtesy of Linda Groves)

Sandia California News

Initially, it is used in conjunction with plastic inspection portals to ensure that the detection methods are reacting in concert with one another and that SMART "sees" the same alarms that the other portals see. Upon an initial alarm (signifying that radiation material has been "sensed" on an outgoing cargo truck), an operator can drive the SMART Cart around the inspection area to further inspect the truck. The SMART Cart enhances the sensing work being conducted with the hand-held detectors.

Sandia researchers, however, acknowledge that SMART technology is far from perfect. Sandia physicist Nathan Hilton (8233) and researchers at other national laboratories are discussing both "active" and "passive" detection to hash out the myriad effectiveness, safety, and cost issues associated with each approach.

"It's a classic trade-off," Nathan says. "Some active detection methods use neutrons or gamma rays to search for shielded radioactive materials, but these interrogating sources are harmful to humans. Passive detection, on the other hand, does not run the same kind of risks, but it might not detect as wide a range of fissionable materials."

Sandia has programs in both active and passive detection (the method used for SMART), Nathan says the ongoing debate within the research community is "good for science" and will likely lead to firmer conclusions in the future.

The Sandia researchers say efforts are under way to commercialize components of the SMART system. A licensing agreement with Thermo Electron Corp., for instance, will make possible the manufacturing of radiation monitoring systems that use advanced radioisotope identification software — known as FitToDB and PASSBY — that Sandia developed. (The Thermo Electron agreement was one of 37 successes at all DOE laboratories highlighted in a 2004 annual report to Congress on technology transfer and partnering activities.)

Though the technology's applications are largely limited to defense and homeland security, SMART can function in many ways for any number of potential customers. Getting the system

integrated into an earlier point in the shipping line, for instance (rather than waiting until cargo is at the tail end of the inspection process), would be ideal for a shipping company or overseas port authority.

Gene Kallenbach (5935), a project manager in Sandia's systems technologies department, says authorities at other venues are keenly interested in advanced, mobile detection units and are requesting SMART units for their areas.

Other venue authorities may eventually choose to integrate SMART technology with their existing detection technologies, though the program's primary sponsor, the Department of Homeland Security, maintains responsibility for



TRAVEL FRIENDLY — The SMART Jeep is an alternative way of carrying the technology.

deciding when or if to "shop" the capability to other potential users.

Officials seem pleased with the state of the technology. Gen. Larry D. Welch, chairman of the Department of Homeland Security's Science and Technology Committee, rode in a SMART Cart last year and gave the technology a "thumbs up." Sen. Charles Schumer, D-N.Y., toured the Homeland Security Countermeasures Test Bed to view the new, state-of-the-art equipment, noting that "for too long, our ports were sieves."

With the installation of SMART and other detection technology, Schumer said, "we're finally beginning to close the security gap."

Chertoff visit

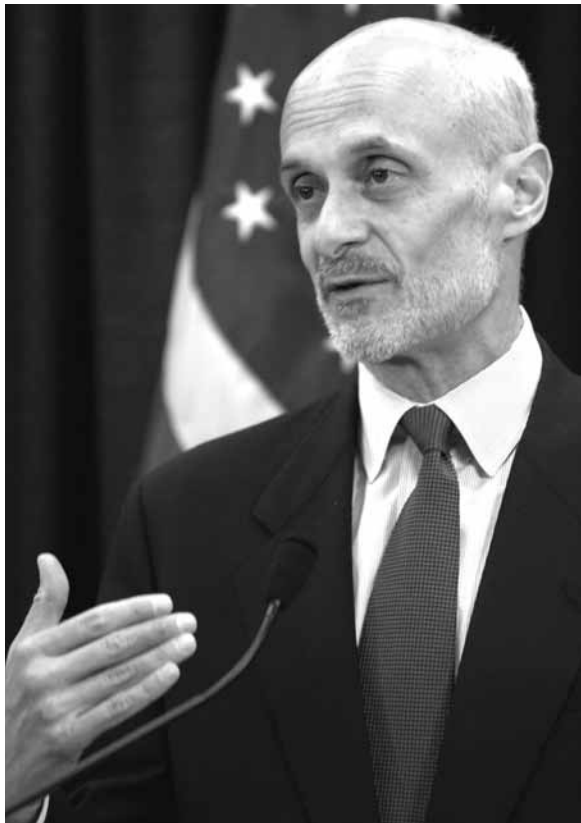
(Continued from page 1)

characterized by “asymmetric warfare,” conflict in which a much weaker adversary can challenge a much stronger one through the use of such tactics as suicide bombers, improvised explosive devices, and other low-tech but lethal technologies.

“This is a set of challenges we haven’t had to deal with before,” Chertoff said, adding that America’s technology is the “added value” that can differentiate it from its asymmetrical adversaries.

Chertoff noted that Sandia had begun addressing many homeland security, counterterrorism, and related issues even before 9/11. The Labs’ foresight in tackling those problems before they rose high up on the national radar, he said, “is a tribute to the value of these labs.” Chertoff said Sandia and the other national labs, because of their track record of looking at and addressing challenges before they fully materialize, are invaluable in preparing the nation for the wars it may have to fight not just today, but in the future.

Introducing Chertoff, Tom said the secretary had very quickly established himself “as a person in whom we can have great confidence.” Domenici, speaking of Chertoff, said that the sec-



NEW HOMELAND SECURITY SECRETARY Michael Chertoff addresses the media at a news conference at Sandia during his visit. (Photo by Randy Montoya)

retary’s sharp mind and probing intellect were on display during the morning briefings. “Sandians will attest that he’s quick.”

Domenici said he hoped the briefings will help convince the secretary that the Department of Homeland Security doesn’t need to “re-invent the wheel” in the matter of research and development. “Today was another way to show [Chertoff] that he has a lot of resources right here. This laboratory is premier; this is first-class.”

Chertoff, who noted that he has a longstanding personal affection and regard for Domenici (which Domenici also noted in his own remarks), indicated that he got the message.

“We don’t have to re-invent the wheel,” he said. “There are tremendous wheels right here and at the other [national] labs.”

“Today was another way to show [Chertoff] that he has a lot of resources right here. This laboratory is premier; this is first-class.”

— Sen. Pete Domenici

Simulation game

(Continued from page 1)

replays of actual events.

The Special Forces turned to Sandia for help after Elaine appeared on a National Public Radio program where she discussed decision-making in stressful environments. One Special Forces officer, who worked in training and doctrine, heard her and came to Sandia to learn more about Elaine’s research, and in particular the focus she placed on culture in decision-

making. After presenting a proposal to Special Forces, Elaine was tapped to lead a team to create a simulation game with both single-player and multiplayer scenarios. The game



SCENE FROM Special Forces simulation game

was to be designed to help people improve their skills in critical thinking, problem solving, situational awareness, understanding of novel situations, cross-cultural sense making, and communication.

Elaine, working with a team from Sandia and the Army Game Project directed by the Office of Economic Manpower Analysis at US Military Academy at West Point, developed the game for the Army Special Forces in nine months. Sandia provided the theoretical approach, innovative human performance measurements, and culturally rele-

vant content design.

“Developing a simulation game is truly a collaborative effort requiring many talents,” Elaine says. “We’re not a game company; that’s why we partnered with the Army Game Project, and in particular with its Government Applications Team. We’re a national laboratory with expertise in training, simulation experience design, and intercultural communication. By pooling Sandia’s expertise and those of our partners, we were able to design a game with scenarios that feel very real.”

The ATL game is built on the “America’s Army” video game platform, which is based on the game engine Unreal Tournament 2004 produced by Epic Games (see “Game built on ‘America’s Army’” at right).

In developing the game, Elaine and team member Michael Senglaub (15301) spent the first few months evaluating the Special Forces training program. It became apparent that an innovative approach to teaching adaptive thinking would enhance their existing training program.

“The requirement for adaptive thinking — being able to make good decisions on the fly — is very important to Special Forces,” she says. “In fact, Special Forces has been on the forefront in adaptive thinking among US military organizations.”

Two aspects of the simulation game make it different from any other video game of which Elaine is aware. It focuses on teaching interpersonal adaptability, negotiation, and communication skills. The game also uses a novel approach for which a patent has been filed to provide instructional or peer evaluation in real time. Players get feedback immediately

“This simulation game is the only one of its kind focused on interpersonal and strategic communication in cross-cultural settings. It’s a serious application of technologies that the entertainment industry has spearheaded.”

Simulation gaming and training and Sandia

Elaine Raybourn works in the Intelligent Systems and Robotics Center’s Cognition Exploratory Systems & Simulation Dept. 15241, managed by John Wagner. This department is providing leadership for Sandia on several key technologies that focus on the human cognitive element of future military and DoD systems. Russ Skocypec is the 15240 Level II Group Manager and leads a growing line of business (LOB) called “Transformational Analytics and Systems (TAS).”

Alan Nanco (15240) has supported the ATL project from its inception and championed Elaine’s business development efforts within Sandia.

“The Army is serious about this type of cutting-

edge innovative training to help their leadership be more adaptive thinkers and leaders,” Alan says. “To drive the point home, it just put out a professional development video entitled ‘Adapt or Die.’”

Elaine is responsible for a research program and business development initiative within TAS LOB called “Simulation Gaming and Training.” The Special Forces ATL project is part of the initiative.

“We are really excited about the opportunity for Sandia to help advance culturally relevant training for the military,” Russ says. “This is a rapidly growing strategic need given the kinds of conflict confronting our warfighters. Additional work with Special Forces and the Army is underway.”

Game built on ‘America’s Army’

The Adaptive Thinking and Leadership simulation game developed by Elaine Raybourn and her team is built on the Army Game platform, which is based on America’s Army, a video game designed to give young people a virtual taste of military life.

The Special Forces game has less action and more adaptive thinking. But the ideas behind the games are similar.

The Army launched America’s Army, a series of PC games depicting realistic modern combat situations, three years ago to overwhelming interest. It now has more than five million registered players.

Besides being a source of information for prospective recruits, the game gives non-soldiering types a realistic view of Army life. All scenarios in the game are designed to actively reflect real-life tactics.

According to an official of the America’s Army project last year at the E3 gaming trade show, prospective soldiers who contact Army recruiters after playing the game have a better follow-through rate than any other form of advertising or promotion.

about cultural errors they may have committed, for example.

Now that the game is developed and being used, the next steps are to evaluate how well it is working in the classroom, add enhancements, and expand it into different training areas, such as humanitarian assistance.

Elaine says Special Forces began training with the simulation game earlier this year, and so far results have been positive.

“This game is not about violence,” Elaine says. “It’s about learning to respect and work with other cultures by honoring other people’s ways of being and doing. The Special Forces are keen to improve communication skills so that if there is a problem they can talk their way through it. We believe this interpersonal adaptability ultimately saves lives.”

Game testers and project support

Justin Basilico, Phil Chamberlin, David Charles, Brian Clark, Kyle Cochrane, Melanie Corn, Sidney Holman, Jonathan McClain, Alan Nanco, Marta Parnall, Tiara Poland, Paul Sanchez, William Stubblefield, Stephen Verzi, Steve Roehrig, Michael Senglaub, Russell Skocypec, Ronald Trelue, Roger Vesey, John Wagner

Security: 'Q' clearances averaging 430 days to complete

Representatives from Sandia Clearance Office explain lengthy process

By Michael Padilla

Obtaining DOE access authorizations, commonly known as "L" or "Q" clearances, is taking an average of 270 days for an "L" and 430 days for a "Q," according to figures compiled by Sandia's Clearance Office. The interim "Qs" granted through the Accelerated Access Authorization Program (AAAP) process are at 100 days.

Boris Starr, manager of Personnel Security (4233), says the time it takes to get a clearance has been frustrating to many new employees.

"During the wait for a clearance, many Sandians are unable to participate in mission work requiring cleared access," he says. However, he says, it is important for Sandians to understand the current environment for investigating applicants and processing clearances and the timeframes involved.

Sandia processing

The clearance process starts when a manager decides on an appropriate clearance level for the applicant and completes the proper form, justifying the need for a clearance. The form is sent to Dept. 4233 and if needed, a packet is sent to the applicant to be completed.

When the Clearance Section receives the completed packet of forms from the applicant, the staff will verify that all the information is complete.

Clearance Office Supervisor Brenda Wickham (4233-2) says the form — questionnaire for National Security Positions (QNSP) — is complex and must be thoroughly completed.

"Not filling out this form correctly is one of the reasons for delays associated in getting a clearance," Brenda says, adding that this could lead to an average delay of 20 to 25 days. She says mistakes and gaps in information submitted must be corrected before the form can be sent to DOE for processing. DOE implemented an additional requirement in April 2005 that all information (such as residence

and employment) on the QNSP must be in chronological order or it will be rejected.

Processing at DOE Service Center

When the packet is received at the DOE Service Center, here on Kirtland Air Force Base, it is reviewed for completeness. Information is logged and is forwarded to the investigative agency for the next phase of processing. Average time for cases to be initially processed and sent to the investigators is about 30 days.

Background checks

Based on the information contained in the QNSP, the investigators (usually the Office of Personnel Management) will research many aspects of an applicant's background. Factors affecting the duration of an investigation include multiple residences, multiple jobs, criminal activity, foreign involvement, financial obligations, emotional or mental disorders, alcohol abuse, and drug use.

Multiple investigators could be working on a single case. There have been instances where an investigator has told the applicant that a particular interview will complete his work on the case. This does not indicate that the case is complete. It may reflect on only a piece of the background investigation process.

The average duration for a background investigation for an "L" clearance is 89 days; for a "Q" clearance, 256 days. "These are all averages," Brenda says, "Many cases can take longer because of various factors."

Adjudication phase

Once the investigation is completed a report is sent by that agency to the DOE Service Center. At that point, the case goes into an adjudicative process. During this process all of the information gathered during the investigation is reviewed and the DOE analyst uses that information to make a

determination about whether the person should be granted a clearance.

Backlog

Within the last several months, the backlog of cases at the DOE Service Center has grown from 600 to more than 4,000. The DOE Service Center is currently able to process about 600 cases per month, while completed investigations have been coming into their offices at almost double that rate.

As of March 2005, the average time in adjudication was more than 120 days. Boris says the DOE Service Center has indicated it might be experiencing average adjudication time frames of 180 days in the near future.

Granting a clearance

When adjudication is completed by the DOE Service Center and it has granted a clearance, Sandia clearance personnel are notified. The staff will verify that the information is correct and send out a notification to the applicant and the manager.

A new process is soon to be implemented that will require Sandians and on-site contractors who have never before held a DOE clearance to attend the comprehensive security briefing SEC 150 after the notification, but prior to receiving a new badge reflecting the new clearance level.

Both Boris and Brenda agree that requesting a status check on the process will not expedite the process. Sandia has an agreement with the DOE Service Center to follow a specific schedule related to requesting status checks on clearance processing. The initial Q check is one year and L check is six months — both the time after the case is sent to investigation. For cases that are in adjudication after 120 days, DOE will do only a system check — essentially looking in the tracking system to verify it is in process. After 180 days, DOE will do a physical search to verify the processing status.

'Godspeed to you,' Paul Robinson tells Sandians at farewell reception

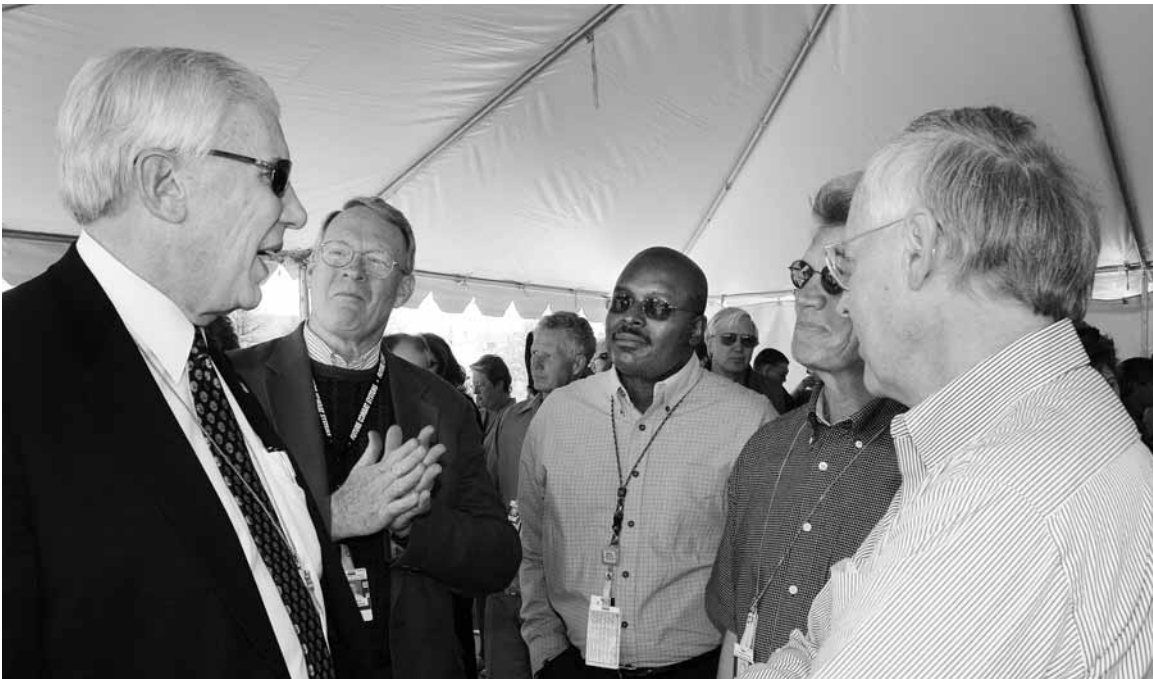


Photo by Randy Montoya

During his last two weeks as Sandia's president and laboratories director, Paul Robinson spent a lot of time saying goodbye.

In addition to the countless e-mails, voice-mails, and other personal notes of farewell to Paul, he participated in a couple of formal, planned send-off events as well. During an April 27 function on the plaza in front of Bldg. 810, many of Paul's friends and colleagues had an opportunity to wish him well as he embarks on a new mission: to head up the Lockheed Martin team preparing the bid for the M&O contact at Los Alamos National Laboratory.

And Paul, in turn, offered poignant words of farewell. Here are some of the excerpts from remarks he made that day:

"I've got two more days of the best job I

ever had. I reminisced with some folks the other day that this probably is the best job in the country. One of the things I'm proud of is that I actually had a chance to tell two presidents that this is an even better job than they had. . . ."

"We've come a long way together. I hear comments that Sandia is the best performing lab. I also have been proud that over these past 10 years, it's also the lab with the lowest overhead rate. . . . I think there just might be a correlation. We have trimmed down and people are doing great things. . . ."

"We have expanded our missions a lot together. . . . The most exciting part of my nearly 10 years here has been watching us move from a nuclear weapons lab to be very much a

national security laboratory. . . . There's little doubt we [have risen to a \$2.3 billion annual budget] because of our focus on customers and exceptional service. . . ."

"I really do appreciate all of you who have come out here today. To say that I'm going to miss you is a huge understatement. But I hope you'll keep your eye on the future. I intend to keep my eye on a future that if we're successful just might bring the possibility for us to be joined up in an ever better way in years to come."

"So all the best. Godspeed to all of you and thank you once again."

Memory Book writers wish Paul Robinson well

As is frequent practice for retiring Sandians, an electronic memory book was set up for friends and colleagues to reminisce a bit about Paul. Here are just a few of the many messages that Paul has received (the names have been omitted):

- I'm very proud of you and your accomplishments and feel privileged to be a part of this company. We will miss you greatly. I'm sure your future will be filled with exciting possibilities and others will reap the benefits that we have gained under your leadership. Best wishes to you.
- Congratulations on the LMC decision to bid for Los Alamos. If anyone can get it back on the path to success, it is you.
- I know the great reputation of SNL was strongly influenced on your leadership.
- Under your leadership Sandia has thrived. You are leaving a wonderful legacy and, in my opinion, a worthy successor in Tom.

Sandia on fast track to seek out and correct energized electrical hazards

VP Les Shephard asks everyone who works with energized electrical circuits to complete an action plan

An increased number of “near miss” dangerous accidents involving electrical work over recent months is causing Sandians to take the fast track and seek out and correct any possible hazards.

Last month VP 6000 Les Shephard in a memo to directors and above asked all centers conducting energized electrical work to complete by May 14 an “Action Plan to Improve Electrical Safety.”

Sandia defines energized work as those activities performed on or close

to exposed parts of electrical circuits and equipment operating at 50 volts or more. Some 2,000 people at Sandia have taken an electrical safety course and might be doing energized work.

In his memo Les, whose division includes the Environment, Safety, and Health (ES&H) Center at Sandia, said, “During the performance of various work activities throughout Sandia, organizations continue to have incidents that indicate immediate concerns with electrical hazard awareness and identification, and the controls needed to mitigate the associated risks to personnel and equipment.”

He pointed out that between August 2004 and March 2005, there have been “eight electrical events and two electrically related lockout/tagout incidents with the potential for serious injury or fatality. Each of these incidents was associated with an unrecognized exposure to energized circuit parts.”

Hence the need to take quick action to reduce potentially deadly electrical incidents.

Prior to even starting the required action plan, all energized electrical work that could cause serious injuries had to be authorized by the appropriate level II manager. In some cases work was paused until the proper controls were established.

The action plan — developed by a team from the ES&H Center and reviewed by representatives from line organizations — has four phases. Each phase was due on four consecutive Fridays. The four phases are:

• **Phase 1** — Two actions were required for completion of this phase. The first was to review all electrical work activities and identify those involving worker exposure by direct contact with energized circuit parts. The second was to review electrical worker qualification and work authorization processes for such activities to ensure qualifications and authorization was commensurate with the worker health risk. This was due April 22. In some cases work was paused until the proper controls were established.



• **Phase 2** — Evaluate. Following Phase 1 where energized work activities were identified, this phase asked whether the energized electrical work activities were absolutely required. For those required, a review of work practices was to be done to make sure that every possible method to mitigate electrical hazards or control exposure to electrical hazards are implemented. This includes making sure that appropriate technical work documents are completed, such as troubleshooting operating procedures or electrical work justification and permit forms. This phase also included a worker training and qualifications review, electrical accident review, lessons-learned training, and a work control process to determine appropriate means for change control. This was done on April 29.

• **Phase 3** — Control. Problems discovered in Phase 2 are to be corrected. If a problem was found in Phase 2, fix it. If procedures were missing, write them. If permits didn't exist, get them. This was due May 6.

• **Phase 4** — Feedback and improvement. This is the wrap-up stage where lessons learned are presented to directors and vice presidents. This will include deficiencies identified, a list of underlying causes, actions taken to correct the deficiencies, and estimated dates of action completed. Deadline for this phase is May 13.

Gil Herrera, director of Manufacturing Science and Technology Center 14100 and chair of a newly formed Electrical Safety Standing Committee, says the four phases are consistent with what “we already do” in terms of the Integrated Safety Management System (ISMS).

“It involves scoping, evaluating, implementing controls, and feedback, just like ISMS,” he says. “From my point of view Phase 4 is the most important because it's where everything comes together and is sustained.”

The committee was formed a couple of months ago just as plans for the electrical safety action plan were being drawn up. Gil helped plan crafters to “put a line perspective in the plan.”

Gil says over the past several months there have been many improvements in the processes and tools supporting electrical safety, particularly in lockout/tagout.

“The ES&H organization has done a good job of making the process for electrical safety simpler and more understandable,” Gil says. “But we must remember that it is a line responsibility to follow these processes as we execute work. Electrical safety is ultimately the responsibility of people conducting work, and that means the line.”

Jeff Downs, one of the staff members in Safety Engineering Dept. 6322 helping members of line

organizations that are adhering to the electrical safety action plan, believes people are really committed to make this work. “People in my Dept. 6322 have been spending a lot of our time over the past weeks helping people who really want to improve electrical safety,” he says. “They are not doing the work involved in this action plan because they have to. They are doing it because it is the right thing to do.”

He says Sandia is not the only national laboratory seeking to improve its electrical safety

work. Across the DOE complex there is concern because the number of injuries due to electrical accidents is on the rise. Last year in the DOE nuclear weapons complex there was one serious accident and a death resulting from contact with energized electrical circuit parts while using tools or other conductive objects. These accidents occurred within six months of each other.

Statistics show that each year within the US workplace about 300 people are killed by electrocution; 3,600 experience a disabling injury — including cases of severe disfigurement; 4,000 experience nondisabling injuries from electrical accidents, some requiring hospitalization; and 2,000 people are admitted to burn centers with third-degree burns.

“We don't want to be among these statistics,” Jeff says. “That's why we're taking efforts to improve our electrical safety programs and are committed to supporting the line to help them ensure a workplace where electrical hazards are understood and tools and work methods are in place to prevent exposure to these hazards.”

Feedback

Why was safety such a big problem that Family Day had to be canceled?

Q: Sandia executives have tried to explain the logic for their last-minute postponement of Family Day, which had been scheduled for May 14 in Albuquerque. They say key reasons were safety considerations coupled with the significant amount of construction underway. There always will be construction projects. So, if it is not safe enough for us to bring family members in for what may be a once-in-a-lifetime opportunity to see and learn about where we work, why is it safe enough for us to be expected to be present on site everyday? Perhaps it isn't.

A: I apologize that the decision to cancel Family Day was made after the time many at Sandia had finalized plans to participate that resulted in significant inconvenience and even expense for some. The impact of this decision on all Sandians and their families was seriously considered as the Laboratory Leadership Team (LLT) discussed the situation, and while we value Family Day, our first commitment must be to the safety of all who participate. Our Family Day planning team had considered visitor safety and construction schedules as part of our planning effort. Honestly, I did not anticipate the impacts scheduled construction would have on streets, sidewalks, and walkways nor did I anticipate the number of open ditches and trenches within Tech Area 1. Statistics from all past Family Day events suggest we would have an expected attendance of 15,000 people including employees and guests, resulting in considerably more foot traffic than on a typical workday in Area 1 and elsewhere. While our employees are accustomed to working in an environment where safety is paramount and rigorously following procedures, requirements, signage, etc. is routine, many of our guests — ranging from toddlers to elderly — would be unfamiliar with the area per se and unaccustomed to the expectations of our safety culture. Data for Sandia employees in FY 2004 indicated that 25 percent of the injuries occurring on site to our employees and contractors are a direct result of slips, trips, and falls — this pertains to employees and contractors familiar with our site and our policies and practices. (See *Lab News*, April 15 for other data relative to safety.)

We are now evaluating alternative dates for Family Day and other similar events (e.g., Take Your Daughters/Sons to Work Day) to assure our next scheduled event is congruent with site construction and other related activities that may adversely impact our guests.

We anticipate a decision over the next few weeks and hope that all Sandians and their guests are eager to participate.

— Les Shephard, VP Energy and Infrastructure Assurance

THIS “SAFETY FIRST” poster starts a series to heighten awareness about the importance of safety in our lives at work and elsewhere. It was commissioned by senior management as an important element of the best-in-class objective to be the ES&H leader among the nuclear weapons labs within three years. The posters will be distributed throughout Sandia starting this week. Other posters will address issues including ergonomics as well as slips, trips, and falls.

Beryllium Issues Management Team prepares plan to prevent future beryllium contamination

By Chris Burroughs

The Beryllium Issues Management Team (IMT) is winding down its efforts after putting together a plan that will help prevent future beryllium contamination at Sandia.

Established a year ago following the discovery of higher than expected levels of beryllium contamination at the Z machine in Area 4 and other buildings, the team was created to make sure that Sandia sys-

Lessons learned

As a wrap-up to the Beryllium Issues Management Team (IMT) efforts, the group put together a "lessons learned" designed to help everyone in dealing with future issues of beryllium and ES&H. They include:

- Unexpected things happen. If we as an institution don't do a better job of having a questioning attitude, these things (like unexpectedly finding beryllium) will continue to happen.
- Ask questions. Is this operation safe to proceed? Prove to yourself that the work is safe — the hazards are known and analyzed, and proper controls are in place to safely proceed.
- The safety content of everyone's work is just as important as technical work.
- Mission, safety, and security — all three must work together, and simultaneously.

Most Sandians, contractors to receive safety survey next month

As an important key step in Sandia's goal to be the best in the nuclear weapons complex for safety within three years and the best-in-class nationally within a decade (*Lab News*, April 2), all Sandians and contractors will receive a safety survey next month. The survey will benchmark employees' levels of awareness and thought processes about safety at the Labs.

"This survey is an important element as we gear up to improve safety awareness and our safety record," says Jaime Moya, level II manager of ES&H



Planning and Assurance Dept. 6333, who is leading the survey effort. "We hope to learn how important safety is and its value at Sandia. This will help us develop a path forward."

Working with Sandia to tailor a survey for its population is DuPont Safety Resources, a spinoff company of DuPont that does safety consulting. Sandia has hired the company to help implement a new safety initiative.

The survey will be e-mailed to most employees and contractors with computers, and hard copies will be given to all without computers. Employees in Organizations 8000 and 10000 will not be issued the survey because they will be participating in a behavioral based safety program.

"I can't emphasize enough how important it is for everyone to take 15 minutes to complete the survey," Jaime says. "By filling out this simple survey, people can indicate that they are committed to making Sandia a safer place to work."

Jaime says the survey will have 24 easy-to-answer questions. They fall into nine themes:

- Priority given to safety
- Priority others give to safety
- Extent safety is built-in
- Presence of safety values
- Safety values up-to-date and influential
- Line management held accountable
- Involvement in safety activities

tematically addresses the potential for contamination from unexpected sources of the metal. The IMT was formed by Executive VP Joan Woodard and VPs John Stichman and Les Shephard, who were concerned for the safety of people.

"When it comes to beryllium, this is only the beginning of the journey for Sandia," says Steve Rottler, IMT chair. "Finding beryllium contamination outside of beryllium work areas was a wakeup call, and it should change the way everyone thinks about ES&H [environment, safety & health]."

The team had several hefty tasks, including developing and implementing a plan for systematically evaluating Sandia facilities for beryllium contamination; establishing guidelines and processes for use by line management upon discovery of beryllium contamination; and identifying lessons learned and how to apply them to the future.

One of the team's early discoveries was an absence of policy and process about how to manage beryllium contamination. Over the past year the team — made up of representatives from ES&H, procurement, communication, medical, legal, line organizations that have beryllium-contaminated facilities, and the NNSA Sandia Site Office — developed the much-needed plan that outlines how to identify and characterize beryllium contamination and manage it.

Their job of determining all the potentially beryllium-contaminated buildings was handled by surveying Sandia directors who identified possible suspect facilities.

- Extent safety rules are enforced
- Recognition for safety achievements

Safety at Sandia has been a growing concern as numbers of accidents and near misses remain high. Last year Sandia had an accident rate of three per 100 full-time-equivalent employees a year, which represents about 275 to 300 people annually suffering injuries requiring more than simple first aid.

This injury rate, Jaime says, is a factor of three higher than the industrial standard for scientific and technical services industries, and is "unacceptable," he says

"Our employees are our most important asset," Jaime says. "We don't want them hurt. We have to get those numbers down."

Improving safety at Sandia will involve more than just saying we want a safe environment; it will require a culture change, he says

"Sandia has so many strengths — a highly diverse and strongly technical workforce, a highly goal-oriented organization, a culture that allows for emergence of leaders, and empowerment of employees," Jaime says. "But we also have a lot of areas that need improvement to raise safety on the radar screen."

Some examples he gives:

- Formal documentation is not valued. Processes are seen as stifling creativity.
- Mission goals don't include ES&H objectives. ES&H is viewed as punitive.
- Business units function as independent organizations.
- Sandia tends to be reactive versus proactive about safety.

Jaime says Sandia's administrators are taking safety very seriously, and in fact have taken the position that safety comes from the "top down": If upper management cares, sets it as a priority, and makes necessary funds available, then everyone else will take it seriously as well.

All the vice presidents have been briefed about the survey and agree that safety needs to be more of a concern at the Labs. They soon will receive executive training sessions on safety provided by DuPont. — Chris Burroughs



SANDIA EMPLOYEES work in a beryllium-designated area at the Z machine using safe-handling methods. (Photo by Randy Montoya)

"These we divided into three categories," Steve says. "They were those known to be contaminated, those that someone remembered had operations that could have resulted in beryllium contamination, and those that may have had operations, but there was no paperwork to verify the status."

After an initial review in 2004, 22 buildings were deemed likely to be contaminated, 28 had possible sources of contamination, and 84 had a low probability of being contaminated. As of today 80 buildings have been cleared, including three through decontamination; 11 buildings are still partially contaminated; and 43 buildings remain to be completely evaluated, including 15 in California.

There were some surprises.

For example in Bldg. 809, a facility not designated as a beryllium work area, contamination was discovered and traced to an old nuclear weapon component being demilitarized. The original military specs did not list beryllium as part of the component. The dust that settled in the work area from the demilitarization operation contained higher than acceptable beryllium levels.

Like several other buildings contaminated with beryllium, Bldg. 809 was closed for several months while it was being decontaminated.

"Workers in special protective clothing went in and decontaminated hardware and moved equipment to another facility," Steve says. "They disposed of equipment and parts that could not be easily cleaned."

Several million dollars, budgeted elsewhere, were used to support the facilities assessment and subsequent cleanup operations.

Steve says the good news in all the building investigations is that no airborne contamination was found above DOE's thresholds. "That," he says, "was an important concern because people can inhale it. Only higher than acceptable levels of *surface* beryllium were found in contaminated buildings."

As soon as a building was identified to have high levels of beryllium exposure, the buildings were secured and the workers checked medically on a voluntary basis as part of the federal Chronic Beryllium Disease Prevention Program.

"No one was forced to get a medical checkup, but they were highly encouraged," says Lisa Hooper of Industrial Hygiene Dept. 6327. "Those who did were interviewed, given a general physical, and provided blood tests and chest X-rays."

Now the IMT's work is coming to a close, and Steve says it will become part of a standing ES&H committee that will focus on beryllium.

What is beryllium?

Beryllium is a metal that occurs naturally in rocks, coal, soil, and volcanic dust. Beryllium compounds are commercially mined, and the beryllium purified for use in defense and electronics applications. Beryllium is not radioactive but can be dangerous to your health when it is reduced to a form that can be inhaled, e.g., powder. Beryllium is considered a toxic metal and thus is heavily regulated by DOE. Some people who have been exposed develop sensitivity to the metal. A small percentage might later develop a lung disorder known as chronic beryllium disease.

2005 Thunderbird award winners show us how to overcome obstacles in a big way

By Iris Aboytes

Imagine being five years old, speaking only French, and coming to this country with the promise of being adopted and finally belonging to a family. The only person you know is your brother, who is four years older and has the same expectations. Welky Theodore, Belen High School, one of this year's Thunderbird Award winners, was the five-year-old.

Two years later on Christmas Eve, Welky's prospective new family placed him and his brother in foster care. They were in numerous foster homes until they were 18. Sometimes they were placed together, other times they were in separate homes. His older brother lives in Oregon.

Welky, now 18, is out of the foster care program and lives with a family where he helps with some of their bills. He works more than 40 hours a week and attends school. He participates in Project 504, a program where troubled teens can seek advice from its members. This year they went before the State Legislature to address students' concerns.

According to Belen High School counselor Gretchen Weibeft, Welky is interested in law. He

feels he can help others whose lives are controlled by "the system" that has had such an impact on his own life. Welky will be attending either UNM Valencia campus or TVI. "I can get a degree and become a paralegal at TVI," says Welky. "But I have no transportation to get there, so I think I will be attending UNM."

Another Thunderbird winner, Antonio Lopez, School on Wheels, is very grateful for his Thunderbird award. "Antonio Lopez's life has been full of adversity, but he has turned this adversity into opportunity for growth," says Sue Abare, School on Wheels teacher. "Antonio's parents split up when he was very young. He dropped out of high school his sophomore year to work full time and help support his mother and four older sisters."

In April 2003 Antonio returned to high school because he realized how much he needed his education. Since 2003 he cared for his mother until she died of cancer a year ago. He maintained a full-time job and completed his graduation requirements last December.

"There are only two outcomes derived from adversity," says Antonio. "Either the person folds under the pressure and never succeeds in life, or the person is forced to grow in courage and strength to better his chances for advances in life. Facing adversity head on and overcoming it causes a person to acquire self-reliance, responsibility, and integrity."

Antonio is planning to attend TVI. In the future, he would like to own an auto mechanic business.

Chris Goy, Eldorado High School, had great difficulty during the spring semester of his freshman year and fall semester of his sophomore year. He was finally diagnosed with Crohn's disease. Chris' biggest concern during this period was his GPA. He felt disconnected from his schooling.

"My parents are an inspiration to me," says Chris. "They are both deaf, but are very successful." Chris fought back. His current semester GPA is 4.3.

Chris has worked for Relay New Mexico, where he processes telephone calls for deaf, hard-of-hearing, and speech-disabled persons. "His vastly differ-



THREE T-BIRD RECIPIENTS, from left, Antonio Lopez (School on Wheels), Chris Goy (Eldorado H.S.), and Welky Theodore (Belen H.S.). (Photo by Bill Doty)

ent upbringing has taught him patience, respect for all others, and an understanding for what is different in life," says school counselor Gerry Gardner. "Chris has always wanted to be involved in politics — he sees that as a productive way a person can make a difference for his fellow citizens."

Chris has applied to different universities but has not decided what curriculum he will pursue.

"Every year these students put my perspective on life in check," says Cheryl Garcia (12652), Community Involvement. "They set examples for all of us. I am happy that Sandia can help them, even in a small way."

Thunderbird Awards are presented yearly to 21 graduating seniors from 11 Albuquerque public high schools, five alternative schools, and five outlying schools (Bernalillo, Rio Rancho, Los Lunas, Belen, and Moriarity) who have overcome obstacles with ability, determination, and desire to turn their lives around, and also raise their grade point average. Created in 1994 by Sandia and Lockheed Martin, the awards come with a \$1,500 check. The awards were presented to the winners on May 5.

2005 Thunderbird Award Winners

Albuquerque HS	Guadalupe Marquez
Belen HS	Welky Theodore
Bernalillo HS	Cassandra Crespín
Cibola HS	Brandi Fucci
Del Norte HS	Madlin Jabarkhail
Eldorado HS	Chris Goy
Evening HS	Jennie Wyse
Freedom HS	Pervaiz Sattarzada
Highland HS	Andre Vaughn
La Cueva HS	Tara Ransom
Los Lunas HS	Andrei Rivera
Manzano HS	Karl Nieman
Moriarity HS	Ashley Sanforth
New Future School	Perla Cabrales
Rio Grande HS	Candance Lopez
Sandia HS	Sydney McCallister
School on Wheels	Antonio Lopez
Sierra Alternative	Shawna Tillberg
Valley HS	Mikel Enriquez
West Mesa HS	Erica Baca

Emily Hnath, Robert Rieden, Stan Hall are Sandia 2005 volunteer award winners

By Iris Aboytes

Community Involvement (12652) recently held its annual volunteer awards celebration. Volunteers recording the most hours during the last year were honored.

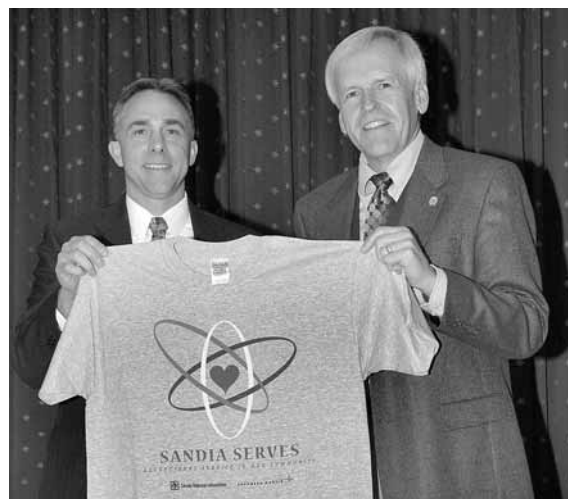
Emily Hnath (9612) was awarded the Shining Eagle Award. The award is given to the employee volunteering the most hours. Emily volunteered a total of 2,304 hours. She and her husband are puppy handlers. They provide a foster home for the puppies until the Assistance Dogs of the West places the puppy with a companion.

She is required to attend weekly classes that include training sessions and field trips to public settings. The mission is to produce and place assistance dogs with individuals who have disabilities.

Assistance dogs help people with disabilities be more self-sufficient. They "see" for blind people, "hear" for deaf people, offer mobility for people in wheelchairs, and offer therapy and love to people who are lonely or sick. With the award came \$500 for Assistance Dogs of the West.

The retiree Shining Eagle award winner is Robert Rieden. Robert volunteered 615 hours to Habitat for Humanity and 231 hours to New Mexico Search and Rescue Support. According to Community Involvement, Robert retired from Sandia in 1997 so he could have more time to work on things he really enjoys. He wanted to be able to give back to the community. Both Search and Rescue and Habitat for Humanity received checks for \$250. Robert will again serve as a lead volunteer on Sandia's sixth Habitat for Humanity house that began May 6.

The Goodness Award created to honor the memory of Sandia volunteer Harriet Goodness



FIT TO A T — Bruce Fetzer (12600) and Mike DeWitte (12650) display the new Sandia Serves T-shirt. The name and logo were changed to differentiate Sandia Labs from the many "Sandias" in the Albuquerque area. A contest was held for the new name. Paul Sands (9312), Liz Scott-Patterson (5010), and Jonathon Lee (14417) all suggested the name "Sandia Serves." Wilbur Johnson (6225) suggested adding "exceptional service in our community." Michael Vittitow (12653) designed the new logo. (Photo by Bill Doty)

was presented to Stan Hall (9623). The award recognizes a Sandian who has significantly contributed to Sandia's corporate volunteer efforts. Stan served as the Division 9000 Habitat for Humanity representative. In addition to coordinating Division 9000's Sandia participation and working on the house, he solicited numerous contributions.

Stan was recently quoted in the *USA Weekend* magazine as saying, "It's fun to bring a smile to

people's faces."

A new Community Service Award was developed to provide financial support for the non-profit organization with which employees are involved. Volunteers donating 100, 250, or 500 hours to one nonprofit in a calendar year are eligible. After paperwork is completed an award of \$100, \$250, or \$500 is given to the nonprofit.

These Sandians received awards on behalf of their nonprofit organizations: Melecita Archuleta, Dennis Bateman, Virginia Cleary, L. Jay Clise, Nancy Clise, Patricia Cordeiro, Leonard Duda, Charles Duus, Ronald Espinoza, Margaret Furman, Neill Gilbertson, Calvin Guymon, Cody Henderson, Jane Hillman, Bryan Ingram, Christina Jenkin, Charles Jenkins, Tim Knewitz, Steven Knudsen, Jannifer Levin, Christine Morgan, Tina Nenoff, Lewis Reif, Joseph Anthony Romero, Dick Steele, Sandra Tonnesen, Julian Trujillo, Jeffrey Tsao, Larissa Velasquez, Barbara Wampler, Barbara Wells, Jan Williams, and Elton Wright.

New database for Sandia Serves volunteers

A database for use by Sandia Serves volunteers is now in place. Sandia volunteers can enter their hours as they are completed or enter them at the end of the calendar year.

Amy Tapia and Patty Zamora (12651), new volunteer coordinators, refer to the database to identify Sandia Serves volunteers.

Invitations to this year's breakfast were sent to volunteers recording their times on the new database. You too can register your hours at <https://cfwebprod.sandia.gov/cfdocs/VolunteerHours/templates/index.cfm>

Absolutely, positively: IES all-minds meeting talks mission success

T-shirt slogans have this going for them: by their nature, they're short and to the point.

That's why the slogan on the back of the new IES T-shirts, introduced by VP Frank Figueroa during a series of IES all-minds meetings, resonated with the 200 or so folks at the Steve Schiff Auditorium.

The slogan: "Absolutely, Positively Enable



DIV. 10000 VP AND IES CHIEF Frank Figueroa, right, shares a light moment with Jesus Martinez (4225) during the IES all-minds meeting. Jane Zingleman of IES Support Systems looks on.

Labs Success." That, in a nutshell, defines the goal of the Labs' Integrated Enabling Services Management Unit, headed by Frank (who is also the Labs' Chief Financial Officer and VP of Business Management and Enabling Services Division 10000).

Frank's presentation on May 5 was the second of three IES all-minds meetings ("We want more than just your hands here") scheduled to accommodate the schedules of the 2,000-some IES staff at both the New Mexico and California sites.

Frank used the T-shirts — with their descriptive slogan — as a central metaphor in his discussion of the role of IES in the Labs. Everyone wearing the same T-shirt is a sign of unity, of purpose, and of commitment to common goals, said Frank, whereas everyone secretly wearing different T-shirts causes discord and inability to perform as a team. Frank emphasized that when we all wear the IES T-shirt, we are committing to the IES vision of

enabling Sandia to achieve its mission.

He recounted how John Brown, shortly after stepping down as head of Los Alamos National Laboratory, came and talked to a group of Sandia leaders. Brown told the Sandians that the problem at LANL — and one he never fully got a handle on — was that everyone, while ostensibly working for the same institution and with the same high purpose, wore a different T-shirt.

"If we're going to be successful," Frank said, "we all have to wear the same T-shirt."

Frank spelled out a number of fundamental principles that guide Integrated Enabling Services:

- We are one team delivering the whole job.
- We are first and foremost about the interest of the nation.
- Sandia interests come before corporate or parochial organizational interests.
- Safety and security are not an afterthought or an added-on component of Sandia's mission, but an integral, inseparable part of it.

While the IES T-shirt slogan offers a good shorthand description of IES's ambitions, the mission statement is a bit more detailed: "[The mission of IES is to] proactively participate in Sandia's mission success by delivering high-quality, sustainable, and affordable infrastructure systems and services."

Frank described three IES 10-year goals, the critical one being that "IES delivers its services so well that SMUs, programs, and organizations choose IES as a partner to achieve mission success."

Joe Polito (10700), sharing the stage with Frank, discussed some of the specifics that define IES. Briefly, IES encompasses the management and operational services of the Labs. Approximately 2,000 FTEs are associated in IES functions; they come from 16 centers spanning eight divisions. The operational budget for IES in the current fiscal year is just shy of \$300 million. That investment in money and people, Joe said, provides the essential support needed by the technical line to carry out its mission-related work.

"Our job is to keep these [R&D] systems working every day," Joe said. "Without IES, [researchers] can't do their jobs." — *Bill Murphy*

Retiree, Michener devotee Gay Dybwad edits the Michener Society Newsletter

If at first it seems surprising that a retired Sandia scientist is the new editor of the James A. Michener Society *Newsletter*, it soon sounds eminently reasonable when you recall that a decade ago he and his wife wrote and published a book about Michener's early life as a beginning teacher — with Michener's consent and collaboration (*Lab News*, Jan. 5, 1996).

But that's exactly what Sandia retiree Gay Dybwad and his wife Joy Bliss are now doing — editing and producing the Michener Society newsletter from their home in Albuquerque. It's even printed by an Albuquerque printer. The first issue under their tutelage, Spring 2005, has just been issued.



JAMES A. MICHENER

Michener, the great historical novelist (*Tales of the South Pacific*, *Hawaii*, *Centennial*, *Space*, *Caravans*, *Texas*, *The Covenant*, *The Source*, and several dozen other like works) and educator, died in 1997 at the age of 90. He described himself simply as "citizen, traveler, writer," but his works entertained and educated generations of readers about the geography, history, and culture of lands and peoples around the globe. Shortly after his death a group of his friends founded the Michener Society to celebrate his life and work. The newsletter is its semiannual publication.

Recently the newsletter's editor, an administrator at the University of Northern Colorado where Michener's papers reside in the James A. Michener Library, gave up the editorship due to time constraints. Gay, who retired in 1997 after seven years at Sandia and 21 years at Bell Labs, gladly stepped into the gap.

"This was a perfect project for us, having known Mr. Michener and having written that book with him," says Gay. He says their experience in design and publishing, including their now four books on the World's Columbian Exposition in 1893 in Chicago (*Lab News*, Sept. 12, 1997), didn't hurt either. "Also," says Gay, "it was a perfect time for us and is an opportunity to give something back to the Michener Society."

Sandians interested in the Society (www.unco.edu/library/jamsociety) or the newsletter can contact Gay and Joy by phone or e-mail: 505-296-9047 or gdlybwad@comcast.net.

— *Ken Frazier*

Sandians help author two guidebooks to the Sandia Mountains

By Neal Singer

Two books focused solely on aiding those of us who frequent the Sandia Mountains for hiking, picnicking, running, skiing, bird watching, rock climbing, hang-gliding, and other healthy pastimes have been published by the University of New Mexico Press (unm-press.com). Contents of the two handsome paperbacks contain sizable contributions from Sandia employees.

The Field Guide to the Sandia Mountains has plenty of facts, figures, and technical images — not surprising, since six retired and three active Sandians took part in the writing and editing. It even has anecdotes.

A brief introduction by noted fiction author Tony Hillerman establishes the Indian mythology surrounding the largest natural prominence in the area.

Carrying the book with you is like having a knowledgeable, nonintrusive friend along to explain, as you want it, the background of the area's plants, animals, trails, geology, and amusements.

However, I confess that for me — a frequent run-

ner and hiker in the Sandias — the field guide was the setting — like a ring for a jewel — for its companion volume, *Sandia Mountain Hiking Guide*, written by Sandian Mike Coltrin (1126).

This book is interesting because it chiefly discusses what one encounters in trying to get somewhere on the mountain. It suggests trails many of us may have started on, and gives enticing glimpses of what awaits you further up the trail. It gives directions to trails not often spotted. It warns when a trail becomes vague and what to look for to stay on it. Altogether, it has the intensity of an enthusiast to whom these trails, and hiking them, matter.

Not that the *Field Guide* doesn't shine with its own interests. You learn that "This flower smells like chocolate!" [Chocolate Flower, Green Eyes] or that "the tall plant with droopy ray flowers catching your eye" is the Cut-leaf Coneflower, which can be made into a tea, the authors inform us.

You learn the history behind Tinkertown, the odd collection of "whittled wooden characters and critters living in the whimsical miniature frontier community" one passes on the road to Sandia's crest.

I had a general geologic idea of how the Sandias were formed but had heard conflicting views of whether they were the southernmost part of the Rocky Mountains; the book gives the current definitive answer.

There's a useful list and explanation of Sandia Mountain place-names by lead co-editor and New Mexico place-name guru Bob Julyan, whose

interest on how places came to be called what they are called seems inexhaustible.

There's a technical explanation of the role of higher-elevation aspen in the fire cycle.

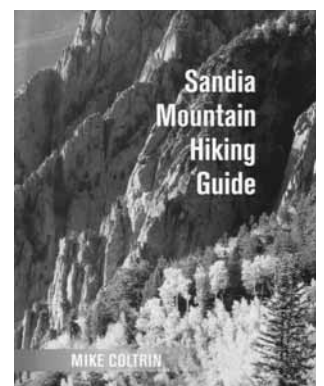
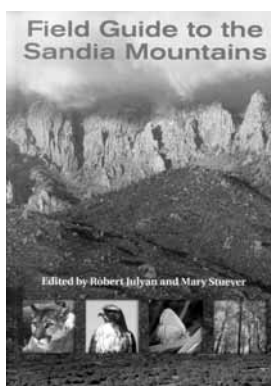
Mountain Hiking's

tone is both more casual and more urgent. About a potentially confusing stretch of the mountain's Embudito trail, Mike writes, "One or two paths go over the rise, and you will see that they start heading down toward the canyon bottom.

You want to take the branch just to the left of those paths and head uphill past a large boulder. It's easy to take the wrong fork here, because the paths appear almost equally worn."

Advice on safety measures is frequent and apt in both volumes.

Contributing to the *Field Guide* are retired managers Art Arenholz, Don Carnicom, Don Peterson, and Dick Traeger; retired staff Sam Beard and James Karo (deceased); and Mike Coltrin, Margaret Furman (5524), and Jeff Young (10223). The volume was co-edited by Bob Julyan and Mary Stuever, now in Arizona.



Manager promotions



New Mexico

Scott Collis from SMTS, Optimization and Uncertainty Estimation Dept. 9211, to Manager, Computational Math/Algorithms Dept. 9214.

Scott joined Sandia's Optimization and Uncertainty Estimation Department in July 2003. Before coming to Sandia, Scott was assistant professor of mechanical engineering at Rice University in Houston.

Scott's specialty is in high-order spatial discretizations applied to nonlinear partial differential equations. He uses these methods to simulate and model transitional and turbulent fluid flows for aeronautical and hydrodynamic systems. He has also used optimal control theory to improve the performance of such flows using small-scale actuators and sensors within an active flow-control system. He has applied these technologies to reduce drag due to turbulence and to reduce the sound generated by unsteady flows over airfoils and rotor blades.

Scott has a BS in aerospace engineering from the University of Kansas and an MS and PhD in mechanical engineering, both from Stanford University.

J. Bruce Kelley from PMTS to Manager, Chemical & Biological Systems Dept. 6245.

As a metallurgical engineer, Bruce worked 14 years for the locomotive and gas turbine divisions of General Motors, then did corrosion and failure analysis consulting for two years, just before joining Sandia. As a powertrain materials and heat-treating expert for GM, he worked on transmission metallurgy for the first "super-series" (wheel-slip controlled) locomotives and worked on design teams for turbine engines and gearboxes for V-22, C130J, and

JSF STOVL (liftfan) aircraft.

Bruce joined the Labs in June 1993, working on the Intelligent Induction Hardening Project with Saginaw Division of GM (now called Delphi Saginaw Steering Systems). He was awarded an R&D100 Award and a Lockheed Martin Nova Award for teamwork in leading the team that conducted the work. He continued to lead a cross-laboratory, multidisciplinary team on the Intelligent Induction Processes CRADA with Big 3 for an additional four years.

He transferred to Division 6000 in 1999, and has worked on materials application projects and served as project manager for a variety of Sandia organizations. Bruce has been actively involved in business development across the Labs since 1997 and participated in the Advanced Sales Training program.

Bruce developed funding for the SERAPHIM maglev propulsion project, and continues to serve as industrial technologies coordinator for EE programs. He also served as Acting Manager for Dept. 6245.

He has a BS in metallurgical engineering from Illinois Institute of Technology and an MS in the same field from the Colorado School of Mines.

John McAuliffe from PMLS to Manager, Employee and Labor Relations Dept. 3501.

From 1970 to 1972, John worked for Western Electric as an internal auditor in manufacturing at No. Andover, Mass., and Kearny, N.J., as well as the regional service headquarters in Newark, N.J. He was then at corporate headquarters in New York City from 1972 to 1977 working in corporate statistics and banking relations.

He became Section Chief in Bank Reconciliations in 1973. In 1977, John was promoted to Department Chief, Wage Practices



J. BRUCE KELLEY



SCOTT COLLIS



JIM NOVAK



JOHN MCAULIFFE

(Corporate Compensation) in Greensboro, N.C.

In 1984, John joined Sandia's negotiating team for the contract negotiations with the Metal Trades Council (MTC) and the Office and Professional Employees International Union (OPEIU).

On Jan. 1, 1985, he took what was originally to be a five-year leave-of-absence from AT&T Technologies and became Supervisor of what was then the Position Evaluation Division. Eventually, John was able to stay permanently at Sandia. He became Supervisor of the Personnel and General Employment Division in September 1989 and Supervisor in the Labor Relations in January 1990. John has a BA in economics from Boston College and an MBA from Columbia University.

Jim Novak from Team Leader, Micro-Product Applications Team 1738-1, to Manager, Systems Technologies Dept. 5935.

Jim first joined Sandia in 1998 to develop tactile, proximity, and positioning sensors for robotic and remotely operated machinery in the Intelligent Machines Principles Department. He has been involved with sensors since his graduate work developing systems to analyze electrical signals from rat brains. In

1994, Jim moved to Sandia's Microsensors Department, where he developed sensors for nondestructive evaluation and manufacturing process control.

In 1997, Jim left Sandia to found SenSolve, Inc, to commercialize several of the eight patented sensor technologies he developed at Sandia. He returned to Sandia in the Integrated Microsystems Department in January 2003 to develop microsystems-based products for a variety of customers. In May 2004, he was promoted to team leader of the Micro-Product Applications.

Jim has an MBA from University of New Mexico and BS, MS, and PhD degrees in electrical engineering from the University of Illinois at Urbana-Champaign.

20 companies will present at TVC's Equity Capital Symposium

Twenty startup companies from New Mexico, California, and Nevada will present their business cases before investors at the 12th annual Equity Capital Symposium sponsored by Technology Ventures Corporation, May 18-19, in Albuquerque.

The annual forum provides hundreds of investors from the US and abroad the chance to invest in new technology-based products and services. Of the 20 companies presenting, seven have strong connections to the national labs or universities, including five with Sandia-specific connections.

This year's symposium features 13 New Mexico-based companies, four from California, and three from Nevada. The companies were selected by TVC in January. Since then, the presenters have worked with TVC project managers and advisors to refine their business case, hone their business plan, and package their funding proposal. After months of work, each entrepreneur will have 10 minutes to present the company's business case to the assembled investors.

TVC serves as a bridge between the investor community and publicly funded technology that has commercial application.

"Nationally, one entrepreneur in a thousand will receive seed equity funding," says TVC President Sherman McCorkle. "We have an amazing record. One out of every three TVC symposium presenters has received funding. We have the honor to work with some very outstanding clients and advisors. Our success is really a reflection of the hard work and talent of these entrepreneurs."

For more detail about presenters and for registration information, go to the TVC web site at www.techventures.org.

Sympathy

To Dan Saladin (8947) and Maria Beltz (2025) on the death of his mother-in-law and her grandmother, Leonela Sanchez, May 1.

First the Duke City Marathon, then Boston, what next for Vanessa Berg?

By Iris Aboytes

Vanessa Berg (15322) started running a year and a half ago. In October she won the Duke City Marathon, and that qualified her to run in the Boston Marathon. Last month in Boston she finished among the top one percent of women runners.

Vanessa first ran in the Duke City Marathon in 2003 and had an 11th-place finish. When she ran in 2004, her goal was to set a personal best and maybe break into the top ten. She ran the race half an hour faster than she did in 2003. Her time was recorded at 3:08.12. The win qualified her to run in the 2005 Boston Marathon.

In Boston Vanessa posted another personal record. Veterans who had run in Boston told her about the notorious course and how very few people set personal records or better their qualifying time. She did both by more than two minutes. She ran a 3:06:04, placing 65th overall out of 7,901 women. This also placed her in the top one percent of female runners (where all runners must qualify).

Vanessa placed 1,028th overall out of

20,405 runners, male and female, placing her in the top five percent of all entrants. "It was an amazing experience," says Vanessa. "I felt so blessed to be running with such wonderful runners. There was so much emotion as I

crossed the finish line. I did it! It was a once-in-a-lifetime feat. It was a great race. I'll never forget it."

"Mentally I was strong," says Vanessa. "I knew I would finish. When I finished mile 10, we were in the hills. I thought 'yeah,' and got stronger as I got into my rhythm. I do better in the hills."

In preparation for the Boston Marathon Vanessa ran about 80 miles a week. When Vanessa is not

training she usually averages 30 to 40 miles a week. "It feels good to go out and run after a long day," says Vanessa. "That's my time when I can get out and be by myself." She also changes her routine by swimming and riding her bike.

"I am one of the lucky ones," says Vanessa. "Some people cannot run marathons. The only thing that I have gotten from running is a blister."

What's next for Vanessa? "I am considering a fall marathon," she says. "Right now it will probably be either Twin Cities or Chicago."



Space Day 2005 sizzles skyward

Space Day is an annual educational initiative sponsored by Lockheed Martin and dozens of other corporate and institutional partners. This year's event, held May 5 at venues around the country, was designed to inspire young people to explore careers in mathematics, science, engineering, and technology and to realize the vision of our space pioneers.

In Albuquerque, Space Day activities were held again this year at the National Atomic Museum. The event attracted scores of students from several local schools.

Photos by Randy Montoya

