

Adaptive zoom

Prototype rifle scope has push-button magnification



By Heather Clark

When an Army Special Forces officer-turned engineer puts his mind to designing a military rifle scope, he doesn't forget the importance of creating something for the soldiers who will carry it that is easy to use, extremely accurate, lightweight, and has long-lasting battery power.

Sandia optical engineer Brett Bagwell (5331) led the development of the Rapid Adaptive Zoom for Assault Rifles (RAZAR) prototype. At the push of a button, RAZAR can toggle between high and low magnifications, enabling soldiers to zoom in without having to remove their eyes from their targets or their hands from their rifles.

"The impetus behind the idea of push-button zoom is you can acquire what you're interested in at low magnification and, without getting lost, zoom in for more clarity," Brett says.

In addition to military riflescopes, RAZAR technolo-

(Continued on page 4)

A MEMBER of the US Army Special Forces, left, demonstrates the Rapid Adaptive Zoom for Assault Rifles prototype developed at Sandia National Laboratories.

NNSA Defense Programs
AWARDS of EXCELLENCE

Two individuals, 16 teams honored with DP Awards of Excellence. See pages 8-9.

Sandia LabNews

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'Fall is the new spring' for Labs' Campus Recruiting Program

By Valerie Larkin

This fall, as Sandia's Campus Recruiting team deploys to college campuses nationwide, it will be competing for top talent in a recruiting environment that has grown more sophisticated and aggressive in recent years. Instead of waiting to recruit students in the spring, companies hoping to hire the best and brightest students — particularly those in STEM fields — now do most of their recruiting in the fall.

"We have very stiff competition from companies like Google, Intel, eBay, Twitter, Facebook, and startups. But what we are trying to market and sell is the wonderful science and engineering work that we do here at Sandia."

— Jessica Pascual, senior manager, Talent Acquisition Dept. 3550



MARKETING SANDIA TO MILLENNIALS — At the Fall Recruiting Kickoff, Alicia Acevedo (3555-3), an employment, staffing, and recruiting specialist, talked about the strategies Sandia's recruiters use to attract millennials. Their "high-tech, high-touch" approach includes using social media, texting, and other technologies to reach prospects and tout the benefits of working at Sandia. (Photo by Randy Montoya)

"Fall is the new spring," says Jessica Pascual, senior manager of Talent Acquisition Dept. 3550. "If you're not out there recruiting in the fall to pick up candidates who are graduating in May, you're too late. Now is also the time to open requisitions for new college graduates with the intent to interview and make offers in Q1 for December and spring graduates."

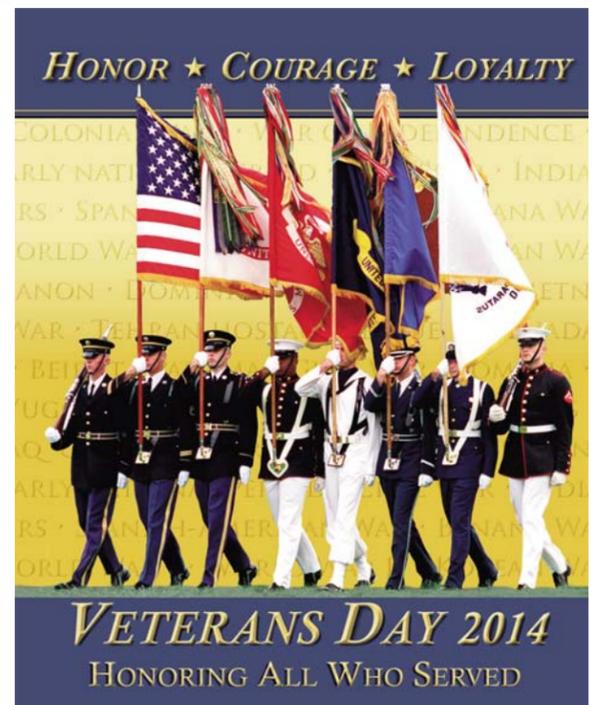
Through its Campus Recruiting Program, Sandia relies on technical experts, managers, and executives who serve as volunteer recruiters. Led by a team of human resources recruiting specialists, these Sandians attend career fairs, diversity recruiting events, technical talks, and symposia at selected universities to meet with prospects and interest them in Sandia careers.

Six hundred individuals at the New Mexico and Cali-

fornia sites currently volunteer to identify, connect with, and attract prospects in STEM and other disciplines. Their efforts occur year-round but intensify in the fall when they set their sights on students seeking internships and recent graduates seeking full-time employment, with the goal of having them on-roll in May.

Last October, because of government budget uncertainty, Sandia stopped all recruiting activities during the height of the recruiting season. Despite the interruption in hiring during a critical time, Sandia's recruiters achieved an FY14 Corporate Milestone goal to increase acceptance rates from targeted schools over the FY13 baseline.

Karen Gardner, director of Human Resources Center
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HISPANIC HERITAGE MONTH CELEBRATION

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That's that

As you read this, Sandia is marking a significant birthday, one that in human terms is a real milestone: On Nov. 1, Sandia officially turns 65. That was the day in 1949 that AT&T took over management of an independent Sandia Laboratory, which had begun its life as a division of Los Alamos Scientific Laboratory.

The backstory of AT&T's involvement with Sandia makes for compelling reading for history buffs. As described in Necah Furman's indispensable 1990 history of the Labs' early days, *Sandia National Laboratories: The Postwar Decade*, it had become increasingly clear by the late 1940s at the highest levels of government that Sandia should be split off from Los Alamos and managed as a separate laboratory. In the new order of things, Los Alamos would focus primarily on the science challenges of nuclear weapons, while Sandia would tackle the engineering issues. There would be crossover and synergy, but the need for a separate engineering laboratory was evident. The question was, who would manage it?

The Atomic Energy Commission, the civilian agency that oversaw the weapons enterprise, determined that for a number of compelling reasons – experience in running perhaps the best R&D laboratory in industry (Bell Labs) and a track record of success in manufacturing and innovation – AT&T was the logical choice. The hitch was that while AEC wanted the phone giant to manage Sandia, the US Justice Department was in the process of pursuing an antitrust case against the company. After a lot of backchannel discussion and negotiation, AT&T agreed to take on the Sandia job for \$1 a year. (As an aside, according to Furman's book, the Justice Department didn't drop its antitrust case, suggesting that there was no quid pro quo, no "We'll manage the laboratory, if you drop the lawsuit.")

In the middle of this negotiation, President Truman became personally involved. After hearing AEC Chairman David Lilienthal make the case for AT&T, Truman sent a letter to AT&T President Leroy Wilson soliciting the company's support. He wrote, "This operation, which is a vital segment of the atomic weapons program, is of extreme importance and urgency in the national defense and should have the best possible technical direction. I hope that after you have heard more in detail from the Atomic Energy Commission, your organization will find it possible to undertake this task."

Now, if you are the head of one of the nation's great companies and your president makes this request of you, what can you say? And if maybe you were still hedging a bit, the president's next sentence must have been the clincher: "In my opinion," Truman added, "you have here an opportunity to render an exceptional service in the national interest."

Wilson agreed and thus began, on Nov. 1, 1949, an association between AT&T and Sandia that lasted 44 years. I think all parties agree that it was a happy and fruitful one.

In doing some background reading for this column, I came across some comments from a former Sandian who dismissed the "exceptional service" phrase as just so much PR fluff intended to flatter AT&T.

Surely, the language was meant to inspire Wilson and convince him of the merits of the cause and its importance to the nation. Does that make it fluff? You'd have to be a lot more cynical than me to think so.

I prefer to see it the way former Labs Director C. Paul Robinson does. In an *Albuquerque Journal* article five years ago marking the Labs' 60th birthday, science reporter John Fleck quoted Paul as saying of the "exceptional service" phrase that it was "one of the most meaningful things of my career."

And in that same story Fleck also recounted how Martin Marietta embraced the phrase when it assumed management of the Labs in 1993. Fleck writes that when Martin Marietta chief Norm Augustine met with Paul in 1995, he said: "That phrase – 'exceptional service in the national interest' – that truly is you guys."

Not long after that 1995 meeting, two aerospace giants, Lockheed Corp. and Martin Marietta, merged to become Lockheed Martin, under whose leadership the "exceptional service" still holds pride of place, front and center of the Labs' 2014-2018 Strategic Plan. Sixty-five years on, we still embrace it as defining our core purpose.

And though we're now 65 and collectively qualify for senior discounts, I don't think we'll ever grow old. With our steady infusion of new talent, with an ever changing suite of challenges and solutions, we'll be, in the words of the Rod Stewart song, Forever Young.

See you next time.

– Bill Murphy (MS 1468, 505-845-0845, wtmurph@sandia.gov)

Sandia Open Enrollment begins soon

Nov. 3-20 for MTC, OPEIU, and non-represented employees

Open enrollment, your annual opportunity to review and update your Sandia benefit elections, runs Nov. 3-20 for MTC, OPEIU, and non-represented employees. All benefits elections made during open enrollment take effect Jan. 1, 2015. In addition to making changes to your medical, dental, and vision coverage, this year you can:

- Increase your Long Term Disability (LTD) Plus insurance to 60 percent or 70 percent without evidence of insurability;
- Enroll in a healthcare or daycare Flexible Spending Account (FSA);
- Enroll in a commuter transportation FSA (California employees only);
- Enroll in the vacation buy plan;
- Review your 401(k) investment asset allocation and consider enrolling in the auto-increase option.

HBE says 'Thank you!'

It is because of your participation in programs like Virgin Pulse that we are able to effectively manage healthcare costs. National healthcare costs have increased 30-35 percent in the past 5 years while Sandia has maintained a controlled increase of 6.5 percent in this same time-frame. This year premiums are going up only 1.7 percent compared to the 5 percent national average.

For more detailed information, look for HBE's comprehensive Open Enrollment newsletter in your email (which was distributed Oct. 27) or on hbe.sandia.gov. The newsletter includes a summary of highlighted changes, 2015 premiums, how to enroll, and more.

Sandia is committed to providing you with benefits that promote your health and well-being as part of your total rewards package. To learn more about preventive health or open enrollment go to hbe.sandia.gov.



Note for retirees

PreMedicare and Medicare retirees should have received their 2015 Benefit Choices Open Enrollment guides in the mail. PreMedicare open enrollment began Oct. 15 and runs through Nov. 21. Medicare open enrollment began Oct. 15 and runs through Dec. 6. For more information on open enrollment or benefit fairs, go to hbe.sandia.gov.

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Bobby Baca makes his mark at ParaLong Drive competition



Bobby Baca (2557) took 3rd place in the 2014 ParaLong Drive World Golf Championship in Mesquite, Nev., Oct. 15-17. Bobby's drive was 265 yards, with the winning drive of 275 yards.

Bobby was born without a left hand just below the wrist. "My family did not consider it a disability, and neither do I," says Bobby. Always competitive and always interested in sports, Bobby found his true passion in golf. He goes into every tournament determined to do his best, and sometimes even wins. Of the ParaLong Drive World Championship, he says, "I expected it to be competitive; but I didn't expect that other people would hit it further than me."

The 2014 ParaLong Drive Worlds featured disabled golfers from 10 countries competing at the world-famous Long Drive "Grid" at the Mesquite Sports & Event Complex. Mesquite has been home to the World Long Drive Championships since 1995 and seen by millions on ESPN and the Golf Channel.

ParaLong Drive is for amputees, paralyzed, and blind golfers and is fast becoming a movement for reaching Paralympic status. Some of the athletes are wounded warriors, athletes dealing with the aftermath of a traumatic accident, or are those who have learned to adapt to a disability from birth.

'Tinkertoy' materials with colorful solar cells for increased photovoltaic efficiency

By Mike Janes

Sandia researchers have received a \$1.2 million award from DOE's SunShot Initiative to develop a technique that they believe will significantly improve the efficiencies of photovoltaic materials and help make solar electricity cost-competitive with other sources of energy.

The work builds on Sandia's recent successes with metal-organic framework (MOF) materials by combining them with dye-sensitized solar cells (DSSC).

"A lot of people are working with DSSCs, but we think our expertise with MOFs gives us a tool that others don't have," says Sandia's Erik Spoerke (1816), a materials scientist with a long history of solar cell exploration at the Labs.

Sandia's project is funded through SunShot's Next Generation Photovoltaic Technologies III program, which funds projects that apply promising basic materials science that has been proven at the materials properties level to demonstrate photovoltaic conversion improvements to address or exceed SunShot goals.

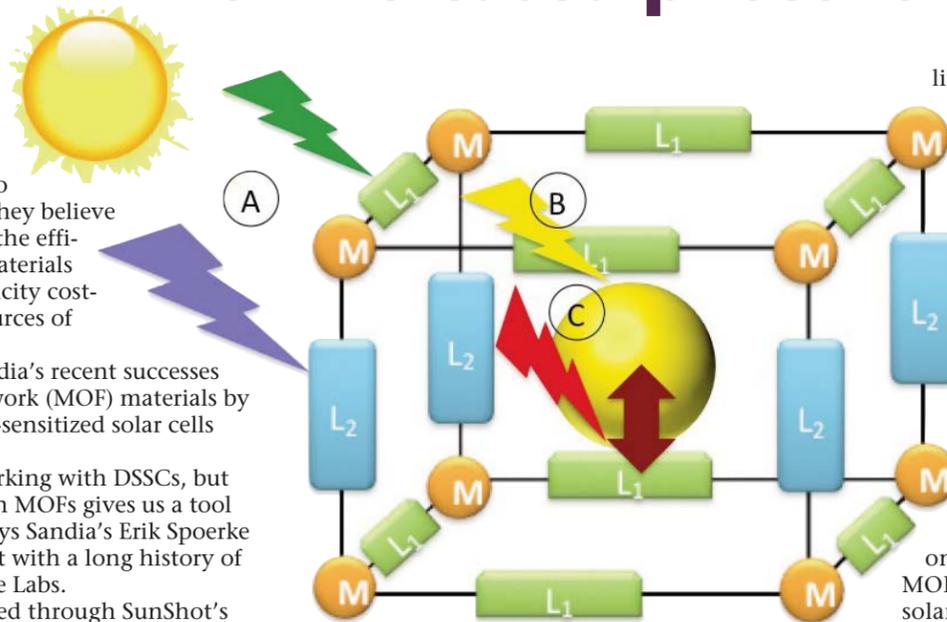
The SunShot Initiative is a collaborative national effort that aggressively drives innovation to make solar energy fully cost-competitive with traditional energy sources before the end of the decade. Through SunShot, the Energy Department supports efforts by private companies, universities, and national laboratories to drive down the cost of solar electricity to \$0.06 per kilowatt-hour.

A basis for future advancements

Dye-sensitized solar cells, invented in the 1980s, use dyes designed to efficiently absorb light in the solar spectrum. The dye is mated with a semiconductor, typically titanium dioxide, that facilitates conversion of the energy in the optically excited dye into usable electrical current.

DSSCs are considered a significant advancement in photovoltaic technology since they separate the various processes of generating current from a solar cell. Michael Grätzel, a professor at the École Polytechnique Fédérale de Lausanne in Switzerland, was awarded the 2010 Millennium Technology Prize for inventing the first high-efficiency DSSC.

"If you don't have everything in the DSSC dependent on everything else, it's a lot easier to



SCHEMATIC of light-harvesting mechanisms available in MOFs

M: metal ions; L1, L2: linkers; yellow sphere: guest molecule.

THE MODULAR, multifunctional structure provides three possible light harvesting mechanisms in MOFs: A) one or more organic linker types within a framework; B) light-absorbing guest molecules in the pores; and C) charge transfer interactions between guest molecules and MOF linkers that produce new absorption to the red of the isolated guest and linker.

optimize your photovoltaic device in the most flexible and effective way," says Sandia senior scientist Mark Allendorf (8300). DSSCs, for example, can capture more of the sun's energy than silicon-based solar cells by using varied or multiple dyes, and also can use different molecular systems, Mark says.

"It becomes almost modular in terms of the cell's components, all of which contribute to making electricity out of sunlight more efficiently," says Erik.

MOFs to the rescue

Though a source of optimism for the solar research community, DSSCs possess certain challenges that the Sandia research team thinks can be overcome by combining them with MOFs.

Mark says researchers hope to use the ordered structure and versatile chemistry of MOFs to help the dyes in DSSCs absorb more solar light, which he says is a fundamental

limit on their efficiency.

"Our hypothesis is that we can put a thin layer of MOF on top of the titanium dioxide, thus enabling us to order the dye in exactly the way we want it," Mark explains. That, he says, should avoid the efficiency-decreasing problem of dye aggregation, since the dye would then be locked into the MOF's crystalline structure.

MOFs are highly ordered materials that also offer high levels of porosity, says Mark, an MOF expert and 29-year veteran of Sandia. He calls the materials "Tinkertoys for chemists" because of the ease with which new structures can be envisioned and assembled.

Mark says the unique porosity of MOFs will allow researchers to add a second dye — placed into the pores of the MOF — that will cover additional parts of the solar spectrum that weren't covered with the initial dye. He and Erik are convinced that MOFs can help improve the overall electron charge and flow of the solar cell, which currently faces instability issues.

"Essentially, we believe MOFs can help to more effectively organize the electronic and nanostructure of the molecules in the solar cell," Erik says. "This can go a long way toward improving the efficiency and stability of these assembled devices."

In addition to the Sandia team, the project includes researchers at the University of Colorado-Boulder, particularly Steve George, an expert in a thin film technology known as atomic layer deposition. The technique, Erik says, is important in that it offers a pathway for highly controlled materials chemistry with potentially low-cost manufacturing of the DSSC/MOF process. "With the combination of MOFs, dye-sensitized solar cells, and atomic layer deposition, we think we can figure out how to control all of the key cell interfaces and material elements in a way that's never been done before," says Erik. "That's what makes this project exciting."

Sandia California News

Recruiting

(Continued from page 1)

3500, attributes this success to the commitment of the recruiting teams. "A special thanks to all the recruiters for their outstanding leadership and contributions to helping staff the Labs with top talent. Thanks to their dedicated work we continue to find great talent for Sandia to ensure mission success today, tomorrow, and for generations to come," she says.

Fall Recruiting Kickoff

Recognizing the importance of this partnership, Sandia's recruiters convened recently at the Fall Recruiting Kickoff coordinated by Recruiting and Student Intern Programs Dept. 3555. At the event, the recruiters received information on process changes and improved recruiting tools that will help them succeed in impressing top talent and meeting Sandia's hiring targets.

"We have very stiff competition from companies like Google, Intel, eBay, Twitter, Facebook, and startups. But what we are trying to market and sell is the wonderful science and engineering work that we do here at Sandia," Jessica said after the event.

A critical part of marketing and selling Sandia's work involves employing technology to reach prospects and build their interest in joining Sandia. To that end, Sandia recently released an iPad recruiting app that allows prospects to view publications, videos,

Recruiters recognized for FY14 successes

At a celebration held on Oct. 21 at the New Mexico site, Sandia's Campus Recruiting teams were recognized for their success during FY14. Hosted by Karen Gardner, director of Human Resources Center 3500, the celebration also honored the efforts of Sandia's diversity recruiting community. A similar event will be held at Sandia/California in November.

Special recognition awards were presented in the following categories for results achieved in FY14. The name of the team lead follows the school they represent.

- Greatest increase in technical degree female hires – New Mexico State University — Michael Holmes (1753)

- Greatest number of intern hires (non-New Mexico schools) – Purdue — David Zage (9526)

- Greatest number of regular campus hires (non-New Mexico schools) – Texas A&M — Arnoldo Muyschondt (5964) and Erin Akinnikawe (1768)

- Greatest increase in summer intern hires – University of Southern California — Lee Druxman (8248)

- Greatest increase in technical degree minority regular campus hires – Black Leadership Committee — Chris Collins (157)

- Greatest increase in overall hires – Stanford — Megan Slinkard (5752) and Patricia Gharagozloo (8253)

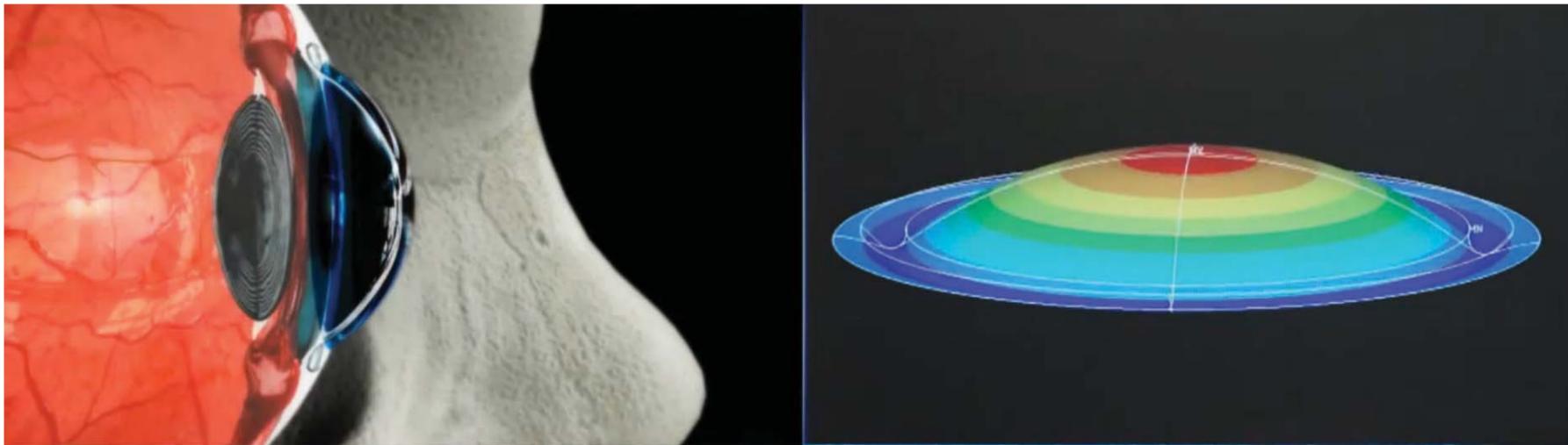
and information about the Labs' mission areas and research. The app also links to Sandia's social media and networking profiles, which represent another facet of the strategy to increase Sandia's visibility to prospects and promote its mission areas.

This fall, Sandia's recruiters will attend dozens of career fairs and other recruiting events, with the intent of filling 300 regular positions with new college graduates in FY15. One of the recruiters' most valuable marketing advantages is an open job posting.

Margaret Quinn, manager of Recruiting and Student

Programs Dept. 3555, says the kickoff of the fall recruiting season signals a call to action for hiring managers.

"We are asking managers to post their jobs and internships now, while our recruiters are on campuses attending recruiting events. When we go out and see these students, we want to point them to actual jobs that are listed so they will apply online. And when campus recruits apply to your requisitions, act quickly. Review, screen, and interview them. The new WebEx virtual interviewing capability is available to help with those steps."



TRADITIONAL OPTICAL ZOOM changes magnification by adjusting the positions of the lenses along the optical axis. Adaptive zoom takes a different approach: this technology, much like the human eye, changes the focal lengths of two or more lenses by varying the curvature of the lenses' surfaces to provide optical zoom without changing their overall positions relative to one another.

Innovative riflescope 'could save lives,' expert says

(Continued from page 1)

gies are now being considered for other applications where speed, size, weight, and power count. Applications include medical imaging, binoculars for the entire range of users from the military to birdwatchers, hunters' scopes, and cell phone cameras where optical zoom is needed to avoid the pixelated images associated with digital zoom.

Adaptive zoom is Sandia's answer to DoD call for riflescope

Brett began work on RAZAR in 2006 responding to DoD interest in a compact zoom riflescope that could rapidly toggle between magnifications. Early work had been funded by Sandia's Laboratory Directed Research and Development program.

Brett found no commercial products or components that would enable the riflescope to meet military requirements, so his team had to design and build the first RAZAR from scratch and develop a manufacturing process.

The RAZAR prototype uses a patented active optical zoom system called "adaptive zoom," which was invented by David Wick (1932), who was working as an optical engineer at the time.

Traditional optical zoom changes magnification by adjusting the positions of the lenses along the optical axis. For example, a 35-mm camera mechanically moves the lenses as you zoom in on or out from a subject.

Adaptive zoom changes the focal lengths of two or more lenses by varying the curvature of the lenses' surfaces to provide optical zoom without changing their overall positions relative to one another, allowing the user to view either a wide-angle image or zoom in on an area of interest with a compact, low-power system, David says.

The invention, Brett says, means "this is the first time in a long time that there has been a new technology that a direct-view optical designer can take advantage of."

Three core technologies make adaptive zoom work for RAZAR:

- A polymer lens core has two flexible, hermetically sealed membranes, which encapsulate a polymer fluid. The three-quarter-inch lenses are aligned with glass lenses to complete the optical design.

- A piezoelectric actuator electromechanically changes the flex of the lenses, achieving the correct position within 250 milliseconds to an accuracy of 100 nanometers, about 1/100th the thickness of a human hair. These actuators operate similar to the way the muscles of the human eye change the curvature of the eye's lens to focus far away or up close.

- Variable-focal length system design tools had to be developed from scratch, including analytical expressions and computer models that trace rays of light through optical systems.

Riflescope's peak optical quality half a light wave

Variable optical lenses were first developed in the late 1800s but had few applications because of the limitations of materials. Adaptive zoom accomplishes true optical zoom (as opposed to digital zoom) by changing the focal length of two or more lenses in concert, without the normal mechanical motion, reducing the size and power requirements of the zoom lens, David says.

The theory that underlies zoom scopes hadn't changed significantly since the 1960s, until the adaptive zoom technology came along. Using adaptive zoom, Sandia's team worked for 18 months to achieve an optical quality of about half a wavelength of light.

Manufacturing process developed to guarantee lens quality

Sandia had to perfect the manufacturing process of the lenses so the quality of the prototype could be replicated. When the polymer is sealed, no air bubbles or specks of dust could remain in the lenses or on the surrounding rings, Brett says.

Freddie Santiago (5331), a doctoral candidate in

physics at the University of New Mexico who is part of Sandia's Student Internship Program, developed the process for making the lenses.

"You have to start from the basics: How do we make the polymer? How do we stretch the polymer and make it an optical surface? We had to understand the process, from mixing the polymer all the way to the final product and we had to do it in a systematic way," Freddie says. This systematic approach was aided by his Lean Six-Sigma training, for which he earned a Black Belt.

Small business tapped to design actuator

While many of the technologies and designs that make up the riflescope came from mechanical engineers, robotics experts, chemists, and other Sandia experts, Brett went outside the Labs for the actuator to flex the lenses, seeking help from Dynamic Structures and Materials, LLC, a small business in Franklin, Tenn.

Matthew Stefanick, the company's lead engineer on the project, says the team used an ultrasonic piezo motor to actuate the flex in the lenses. A voltage is applied at an ultrasonic frequency to vibrate and move a rotor and lead screw, which causes the lens to flex.

Stefanick says the decision to use an ultrasonic motor provided a key feature, a "zero-power hold," which maintains the last selected focus, even if power is lost.

The feature allows users to complete 10,000 actuations on two AA batteries, Brett says.

Meeting the power usage, speed, and accuracy specifications required by the military took years. "As an engineer, I was impressed with our progress," Brett says. "But as an operator, I was constantly dissatisfied. We had to make it smaller. We had to make it lighter. It's got to toggle faster."

Ex-sergeant says riflescope could save lives

From 2010-2012, the team also ensured the rifle-scope would be reliable in the field by conducting shock, vibration, and temperature testing, Brett says.

By 2010, Brett began demonstrating it to the military and, in late 2012, tested it with representatives from US Special Operations Command at Camp Atterbury Joint Maneuver Training Center near Edinburgh, Ind. When he handed the rifles to military personnel to test them, he realized that Sandia had developed a concept that would benefit the military.

"The guys picked it up and when they pushed the button and it zoomed, and then instantly zoomed back out, they were like kids at Christmas. There was this look of astonishment and pleasure," he says. "That's very gratifying. Here's this grizzled veteran looking at me like I've just created magic."

Michael Squire, then-sergeant first class with Special Operations Research Support Element, says the ability to zoom between near and far targets within seconds without taking his hand off the weapon is "game-changing."

"The difference that can make, especially with somebody shooting back, could mean life or death," he says.

Feedback from ex-military personnel and soldiers who have tried RAZAR has motivated Brett. He is now working to develop night vision systems and recently demonstrated adaptive zoom in thermal infrared.

"It's an opportunity for me to take my technical expertise and give back to people I really care about," he says.



RETIRED SPECIAL FORCES SGT. MICHAEL SQUIRE says the RAZAR scope is "a game changer" that could mean the difference between life and death in combat. To view a video about the RAZAR adaptive zoom riflescope, scan the QR code with a smartphone scanning app.

Make a difference Day

By Stephanie Holinka

Photos by Patty Zamora

Each October, more than 200 members of the workforce and their families join with other community volunteers to complete projects at local nonprofit organizations as part of Make a Difference Day, the nation's largest volunteering event, which happens every year on the fourth Friday and Saturday of October.

This year, members of the workforce and their families donated their time and expertise to a wide variety of projects.

The Labs provided IT equipment and expertise, rebuilt 15 desktop computers and 15 laptops donated from Reapplication by Sandia, replacing hard drives, installing software, and assembling a small local network to improve science, technology, engineering and math (STEM) technology for many educational initiatives at the National Hispanic Cultural Center.

"I like the challenging projects. I let Patty [Zamora, (3652) Sandia Serves volunteer coordinator] pick the harder events that other companies won't pick up because of complexity; things like building, remodeling, and repainting. The computers will be perfect for a classroom-type environment for kids to do homework, research, computer related training, and apply for jobs," says Stan Hall (9342), the lead on the cultural center project.

At Inez Elementary School, volunteers removed weeds, installed tree stump stools, and spread mulch in a 1,300 square foot area to create an outdoor classroom.

Volunteers assisted the many dental and community volunteers who offered a free two-day dental clinic at Santa Ana Star Center for New Mexicans in need.

In the National Museum of Nuclear Science & History's Heritage Park, volunteers built and installed covered benches, which will give visitors a much-needed place to rest in the shade while enjoying the rich history displayed at the museum.

Others repaired and updated a school parking lot drop-off zone barricade and signs for the safety and security of the students at Sandia Base Elementary School.

In multiple shifts over two days, volunteers also sorted and packaged food for Roadrunner Food Bank. The largest food bank in the state, Roadrunner distributes more than 26 million pounds of food to hundreds of partner agencies and four regional food banks that feed people across New Mexico.

A special group of Sandians, many of whom also reg-



WORKING WITH KAFB QUILTS, volunteers braided fleece blankets intended for newborns of military personnel.

ularly volunteer with Project Linus, worked with KAFB Quilts to braid fleece blankets for newborns of servicemen and women who are experiencing trauma.

"It's a good feeling to see the difference it makes in the lives of kids who are hurting," says Jeana Brosseau (11000), who worked with other volunteers from Project Linus on the KAFB Quilts project.

Make a Difference Day is celebrated in nearly every city and state across the country, and last year, more than 3 million Americans joined in the spirit of service. Sandia partners with several businesses in Albuquerque to help, and this year, more than 2,000 people are expected to participate in Albuquerque and the surrounding area.

"Fun projects such as these serve the community while allowing us to connect with coworkers and family," says Patty.

Volunteers for Make a Difference Day and other volunteer activities can log their hours with Sandia Serves. at <http://tiny.sandia.gov/w6rkk>. Employees who log more than 100 hours of service will be qualified to receive the President's Volunteer Service Award.



AT INEZ ELEMENTARY School, volunteers removed weeds, installed tree stump stools, and spread mulch to create an outdoor classroom.



VOLUNTEERS sorted and packaged food for Roadrunner Food Bank.



WITH ARCHITECTURE, Construction, and Engineering (ACE) Leadership High School students, volunteers installed new countertops, and cabinets in Shandiin Child Development Center's kitchen.



IN THE NATIONAL MUSEUM of Nuclear Science & History's Heritage Park, volunteers built and installed covered benches.



OTHERS REPAIRED AND UPDATED a school parking lot drop-off zone barricade and signs for the safety and security of the students at Sandia Base Elementary School.



VOLUNTEERS STAFFED INFORMATION BOOTHS and other family activities during the Valle del Oro Open House.



VOLUNTEERS CREATED A COMPUTER LAB for science, technology, engineering, and math (STEM) education at the National Hispanic Cultural Center.

One group, five veterans

Each branch of the military has a face in a single nuclear weapons department

By Nancy Salem

In 2012 two veterans, one Army and one Coast Guard, joined a fledgling Sandia department. Soon veterans of the Air Force and Navy were on the team. "I thought, wow, this is so unusual in one department to have veterans from four different branches of the military," says John Bowers, Coast Guard veteran and manager of Weapon Program Management and Analysis Dept. 2216. "One more and we would have all five."

A group of technologists joined 2216 a year ago. Among them was a Marine Corps combat veteran. "That did it," John says.

Of the 17 people in the department, five represent each branch of the military: Todd Kustra, Air Force; Paul Kuehne, Army; Dave Geene, Marines; Phil Cruz, Navy; and John, Coast Guard.

"It's a novelty, and we take a lot of ribbing," John says. "The non-veterans will joke and say not to expect any special treatment on Veterans' Day. We kid around a lot. It's all in fun. We have a great department."

John Bowers, Coast Guard
Plenty of high seas

Growing up in Cooperstown, N.Y., John dreamed of being in the military. The dream came true when he got into the Coast Guard Academy in Connecticut. "It was a great way to go to college," he says. John graduated with a degree in civil engineering and stayed in the Guard five years.

He served on a Coast Guard cutter in Portland, Maine. "We patrolled the North Atlantic and did all the traditional missions such as search and rescue and law enforcement," he says. "The North Atlantic is pretty wicked. There were plenty of high seas."

John transferred to the Guard's civil engineering branch at district headquarters in Boston where he finished his service. He went to work for an electronics manufacturing company in upstate New York that had Sandia as a customer. And he went back to school for master's degrees in industrial engineering and business economics from the State University of New York.

"I visited KCP [NSA National Security Campus in Kansas City] and Sandia many times as a supplier and got familiar with the nuclear security enterprise," he says. "After 21 years, I wanted to change careers. One winter night my wife and I were home in upstate New York watching a horrible snowstorm. The snow was literally blowing sideways. My wife turned to me and said, 'What about Sandia?' The next day I called and asked if there were any job openings."

John was hired 11 years ago.



CIRCLE OF SERVICE — The five veterans of Dept. 2216 stand at the monument to the five branches of the US Armed Forces at the New Mexico Veterans' Memorial in Albuquerque. Each veteran is in front of the pillar dedicated to his service branch. The pillars feature in bronze the uniform, including shoes and hat, of each branch. Clockwise from lower left, Phil Cruz, Navy; Paul Kuehne, Army; John Bowers, Coast Guard; Todd Kustra, Air Force; and Dave Geene, Marines. (Photo by Randy Montoya)

cued Russell Sherman, a 1971 Harvard graduate turned fisherman. Our entire crew was exuberant, and cheers were heard throughout the ship. This is why we had joined the Coast Guard. The search for the fifth fisherman continued through the day before being abandoned the next night. Sadly, he was lost at sea."

Todd Kustra, Air Force
The glass cockpit

Todd, a native of Cleveland, Ohio, graduated in 1991 from the Air Force Academy in Colorado Springs. He served nearly 22 years.

Todd was first stationed at the Air Force Research Laboratory at Wright Patterson Air Force Base in Dayton, Ohio, working in the systems engineering behind aircraft development. "We did cockpit controls, displays, and decision aids," he says. "Back then it was called the glass cockpit. Not every plane had electronic displays. At that time it was new."

He earned a master's degree in industrial and systems engineering from Wright State University and a master's in management information systems from the University of Central Florida. He went on to the Air War College, earning a master's equivalent in public policy, and worked his way into program management. "There was lots going on," he says. "It was fast and furious."

Todd retired out of the Kirtland Air Force Base Space Development and Test Directorate on a Friday in 2013 and started at Sandia in the B61-12 Life Extension Program (LEP) the following Monday. He says his veteran colleagues have a lot of fun. "We share stories and gang up," he says. With a smile to veteran Phil, he says, "most of the jokes are about the Navy."

"My most treasured memories of almost 22 years in the Air Force are of the people I met along the way. They were from all walks of life, skilled in many disciplines, and all dedicated to the same purpose. The common tie to the mission was the defining characteristic of everyday life in the military. It made you part of a family. People sacrificed their personal time, agendas, and interests, put aside disagreements, and pushed through difficulties, all to further the mission. I think there is an underlying need in each person to be a part of something greater than ourselves and the Air Force helped me achieve that. I will always remember my fellow airmen with great admiration. Aim high ... fly, fight, win!"

Paul Kuehne, Army
Actions speak louder than words

Paul enlisted in 1970 and spent his first six years as a Pershing missile crew member and an electronic warfare technician. The next 14 were as a commissioned officer in missile maintenance, air defense, and operations research.

He did two tours in Germany, in Neu Ulm and Nuremberg, and was stationed stateside at White Sands Missile Range, N.M.; Fort Bliss, Texas; and Kirtland Air Force Base.

Along the way, Paul, a Minnesota native, earned a master's degree in human resource management from Web-

ster University and a master's in industrial engineering from New Mexico State University. "I left the Army in 1990 after 20 years of service," he says. "It's a period in my life I am very proud of."

Paul joined Sandia in 1993 and works on the B61-12 LEP. He says there is camaraderie among the veterans in his group. "Some service-related jokes go back and forth," he says. "We have a common background."

"Throughout my 20 years of proud military service, nothing compared to my time as an Air Defense Battery commander. I had the opportunity to impact the lives of many young men and women. I experienced great satisfaction working alongside those enlisted members and demonstrating that while a chain-of-command is essential, success is the product of all individual contributions. Actions speak far louder than words, and nowhere is that better demonstrated than in the military. A guiding principle for me then and now is, do nothing from rivalry or conceit, but in humility count others more significant than yourselves."

Dave Geene, Marines
Two tours and a crash

Dave is a Vietnam War combat veteran who joined the Marines when he was 19. He was stationed at Camp Lejeune, N.C., in an artillery battery; the Charleston (S.C.) Naval Weapons Annex in the security force for Polaris (Continued on next page)



JOHN BOWERS, left, served on a cutter in Portland, Maine, early in his Coast Guard career.

"In November 1977, the fishing vessel Sea Breeze with five men aboard sank in 40-degree water in a North Atlantic gale. The captain was able to make a mayday call to the Coast Guard. A helicopter rescued two of the fisherman that night, and the Coast Guard Cutter Duane, on which I served, searched for the other three. The next morning, one of the fishermen was found dead in a life raft. It was the first time that I and many of the younger crew members had seen a deceased person. His body was retrieved by a CG helicopter and taken ashore. We res-



DAVE GEENE'S 14 years in the Marines included combat duty in Vietnam and assignments across the United States.

(Continued from preceding page)

missile assembly; and the Naval Training Center in Memphis, Tenn.

A Passaic, N.J., native, Dave studied aviation electronics and worked in an A4E squadron at Cherry Point, N.C. He did two tours in Vietnam, in 1967 and 1970. Other assignments were at Beaufort, S.C.; Mare Island Naval Base, Calif.; Marine Corps helicopter station at Tustin, Calif.; and the Naval Air Station outside Chicago.

Dave left the Marines in 1974 after 14 years of service and enrolled at DeVry University in Downers Grove, Ill. "At the time Sandia did a lot of hiring of technologists from DeVry," he says. "I was one of them."

Dave joined the Labs in 1976 and has worked at the California site, the Tonopah Test Range, and the Nevada Test Site. He worked in underground testing until 1990 then transferred to Albuquerque in the B90 program. He now does land management for the classified weapons network.

"On the 25th of March, 1968, I volunteered for a recovery mission of a downed helicopter. It was shot down earlier that day during a troop insertion. I was on a team of five to prepare the helicopter to be airlifted back to base. Upon landing in the zone we realized there was too much small-arms fire to complete the mission and were ordered back to base. We boarded another helicopter and took off immediately; we came under intense ground fire and were hit by a rocket that downed our helicopter and wounded me. After the crash, the team and crew tried to get back to the zone but were unable. We did secure a position on a hill above the zone, where we spent the night. We were rescued the next day and returned to base."

Phil Cruz, Navy Six years at sea

Albuquerque native Phil joined the Navy to see the world, and that he did. In 23 years of service, he saw all of Europe and Asia among many other stops. "I went all around the world on a submarine," he says. "I sailed more than a hundred thousand miles and spent over six years at sea."



WHILE IN THE NAVY, Phil Cruz spent long stretches at sea in a submarine between visits with his family.

Phil enlisted in 1988 after graduating from Del Norte High School and went to boot camp in Orlando, Fla. From there he joined the submarine service. He got an ROTC scholarship in 1991 and earned a mechanical engineering degree from the University of Oklahoma.

Phil went back to the Navy as an officer in the submarine community. "Submarines were my career," he says. "I served on both fast attack and ballistic missile submarines and got my start in nuclear weapons. I worked with nuclear power and weapons for 90 percent of my Naval career."

His final duty was at the Defense Threat Reduction Agency. He retired in 2011 and joined Sandia, where he does integrated risk management for the B61-12 LEP. "I work with high-quality people who put time and effort into getting it right," Phil says. "We veterans share a common bond. Sure, we give each other a hard time, but in the end we all understand where we were and what we were doing."

"My fondest memories of submarine life are of those I served with. We all worked, played, and took care of one another. A submarine at sea never sleeps, so although you may not be on watch you are still on call and dependent on the rest of the crew for your safety. After an extended period at sea, there was always a buzz in the air as the submarine came into port. Once there, the liberty of the crew was based on what was broken and what was needed to get under way again. Then came the excitement of being able to call home and listen to my family's voices. A Submariner's life is tough both mentally and physically but looking back, the Navy pushed me outside my comfort zone and in turn I grew as a person. God bless and fair winds to all my fellow Submariners past and present."

Veteran communicator

By Stephanie Holinka

People who have worked with Patty Guyer-Stevens know that she's the kind of cool-under-pressure person that you want to have working with you during stressful times. But not everybody knows that she got that way serving her country.

"I wanted to join the Navy to earn the GI Bill and pay for college. Since I was only 18, my dad had to sign for me," Patty says.

Despite being a veteran of World War II, her dad said he wasn't sure.

"My dad told me, 'You don't want to do this.' But he signed, and he wrote to me every day. I was the only one in Company 8 who got mail every day for 10 weeks," Patty says.

Patty completed her basic training at Bainbridge, Md., in the days before co-ed basic training was the norm, so she graduated from an all-female company.

Women's enlistment at that time was three years; men had to serve four. Patty completed one enlistment, as a radioman (RM); advancing to an RM3 when discharged (Petty Officer 3rd class, or E4, and in the radioman rating). This RM rating doesn't exist now.

During the Vietnam era Patty was stationed at Naval Communication Station in Wahiawa, Hawaii, but was assigned to Naval Communication Station Pearl Harbor, fondly referred to as "Message Center Pearl" in the Pearl Harbor Naval Shipyard.

"When ships came into port, they shut down radio communications and transferred communication responsibility to us," Patty says.

When she was first stationed there, the message center used teletypes.

"I could read the teletype tapes by touch . . . sort of like Braille," Patty says.

Her fondest memory is of something that happened late one night while on duty.

"It was 2 or 3 a.m., and I had gone across the street to perform a routine check on our backup generators. I was always sort of scared at night and I started running back to the message center. I remember looking down at my feet as I was running and saw my less-than-shiny, black, standard issue, uniform shoes. And it hit me that I was a servicewoman in the United States Navy, and, for the first time, I felt proud to be that person. I hadn't joined the Navy feeling the need 'to serve.' I had joined for the GI Bill and college. But that night, I understood what it meant to serve, and I felt pride as I had never known it. I still feel that today," Patty says.

After her service, Patty went to college with her accumulated savings, a monthly check from the VA to pay for classes, and something more.

"Inside I was changed forever. . . . The military does that. I had pride in my experience and confidence in my abilities. I knew that I was way ahead of most of my college classmates. My trajectory hadn't changed. My goal was school. And I started that journey immediately," Patty says.

Patty has been at Sandia for 24 years, seven as a contractor and 17 as a Sandian.

Always a technical communicator, Patty worked in Severe Accident Phenomenology (nuclear reactor research); Creative Arts; supercomputing (the ASCII Program Office); Military Liaison twice; Audits and Ethics (LOVED it); the executive offices; and she'll retire from Navy Programs.

"I am grateful, beyond words, really, for this experience. 'Exceptional service' translates to exceptional challenge and exceptional demand. I am honored to be part of a community of men and women who daily rise to every challenge and never give up meeting the demands of the work we do. I am a far, far better person for having known and worked with these people,"



Patty Guyer-Stevens, seen here holding her training graduation photo, is a US Navy veteran who served as a radio operator based in Hawaii during the Vietnam war. (Photo by Randy Montoya)

Patty says.

Outside of her work at Sandia, Patty has volunteered in the Albuquerque schools for about 12 years. She's recently returned to school, studying toward a teaching license, intending to teach in underserved communities.

"I'm also a closet musician," she admits, ". . . practicing violin in the closet, so I don't bother the husband."

She performed with a local orchestra in 2011 and 2012 for its performances at the KiMo Theatre during the annual Albuquerque Tango Festival.

Patty retires from Sandia this month, but advises us to "Embrace the challenge, and prepare to grow."



VETERANS DAY EVENT

Welcoming Guest of Honor and Speaker

Dr. Roy Hawthorne

Navajo Code Talker
Corporal U.S. Marine Corps
Sergeant U.S. Army

November 10, 2014
Steve Schiff Auditorium

Info Fair: 11:30 am – 1:30 pm
Guest Speaker Event: 12:00 pm

See Techweb for further information

Sponsored by the Military Support Committee









NNSA Defense Programs Awards of Excellence



Two individuals and 16 teams were selected to receive NNSA Defense Programs Awards of Excellence, recognizing work accomplished during calendar year 2013. The special guest speaker at this year's award ceremony was Don Cook NNSA's deputy administrator for Defense Programs. The Defense Programs Awards of Excellence were created in the early 1980s to give special recognition to those at the laboratories and plants directly associated with the stockpile modernization program. Today, the awards honor exceptional contributions to the stewardship and management of the stockpile.

16MA Pu Experiment on Z Team

For safely conducting a very high current plutonium experiment at the Z facility



Team Representatives: Aaron Edens, Marcus D. Knudson, Thomas Mattsson, and G. Randall McKee. Members: James H. Aubert, Albert O. Bendure, Eric Wayne Breden, Justin Brown, Randolph J. Castillo, Matthew David Christison, Kyle Cochrane, Stephen A. Coffing, Devon Dalton, Jean-Paul Davis, Michael P. Desjarlais, Richard A. Dramer, James R. Duncan, Aaron Edens, James Elliott, Michael Enghauser, David Epp, David R. Farrar, Dawn G. Flicker, Sean Donovan Fournier, Gerald R. Gallegos, Thomas Anthony Gardiner, Jeffrey Gluth, Sarah Hayes Goke, Michael Ryan Greutman, Heath L. Hanshaw, Christina Beth Hanson, Roger L. Harmon, Stanley Haynes, Mark Herrmann, Deidre Hirschfeld, Chad E. Hjorth, Lisa Z. Hooper, Jeffrey F. Jarry, Michael Jones, Peter Andrew Jones, Matthew Doyle Kernaghan, Mark L. Kiefer, Alice C. Kilgo, Gabriel G. King, Marcus D. Knudson, Maryann Krauss, Amy Renee Laspe, Raymond W. Lemke, Scot Armstrong Lewis, Finis W. Long, Mike R. Lopez, Elaine T. Marshall, Matthew Martin, G. Randall McKee, Charles Meyer, Robert Miltenberger, Darlene R. Moore, David G. Moore, Kathleen Moore, Thomas D. Mulville, Ciji L. Nelson, Ronald Alan O'Hara, James A. Ohlhausen, Albert Owen, Lloyd R. Payne, Nina Poppelsdorf, John L. Porter, Rose T. Preston, Jeffrey E. Reich, Darell M. Rogers, Kevin D. Rolfe, Dustin Heinz Romero, Stephen E. Rosenthal, Dean C. Rovang, W. Saul, Mark E. Savage, Kelly Gene Seals, Decker Charles Spencer, Michael T. Spoerner, Richard H. Steele, Brian Stoltzfus, William A. Stygar, Michael Alex Sullivan, Donald F. Susan, James Thompson, Peter Eric Wakeland, Nicole Dawn Zayas, Joseph Zigmund. External Members: Anthony Romero, Everett Beckner, Brady Donald, Franz Freibert, Stephen Guidice, Betty Jo Humphrey, Jose Munoz, Lance Baldwin, Rick Martineau, Paula Crawford, Paulo Rigg, Eric Smith, John Stichman, Heather Trumble, Veronica Martinez.

B61-12 LEP Hardware & Assembly Team

For exceptional teamwork and performance to support and advance the development of the B61-12.



Team Representatives: Robert Brandhuber, Ronald A. Maes. Members: Terry Barber, Gary Daniel Calhoun, Amy Thea Danoff, Linda Gloria Dobbin, Walter B. English, Raymond Griego, Charles T. Hill, Suzette B. Howey, Franklin F. Johnson Jr, John J. Leon, Jeffrey Alan Meador, Jeff Mitchell, Robin Lynn Perini, Bolivar Javier Ramos, Robert Preston Rivera, Christine Lynn Romero, Richard Allan Ross, F. Michael Saavedra, Robert L. Shirey, John D. Wharton, Matthew J. Wingle, Andrew Zeitler. External Members: Elizabeth Hughes, Lindy Madrid-Smith, Malu Gawthrop, David Waters.

B61-12 Radar Drop Test Team

For successful execution of two radar drop tests in support of the B61-12 Life Extension Program.



Team Representatives: Roman G. Martinez, Brandon James Moore, Richard M. Scarine, William Colucci. Members: Brian Adkins, Daniel Kevin Anderson, Gerald M. Boyd, Gary Daniel Calhoun, Adam Croker, Richard Crowder, Erick Diaz, Jeffrey Farrow, Ray Gabaldon, Jim Galli, Lee Goodrich, Trish Gray, Vern Hermansen, Karl Hess, Todd Houchens, Michael J. Hurst, Matthew C. Johnson, John Kelly, Nicola Jean Kinzie, Jeffrey Alan Meador, Steve Ohrt, Aaron E. Otzenberger, Jeffrey Pankonin, James Rini, Shelly Ann Sanchez, Rick Scarine, Robert L. Shirey, Joe Simile, Mark Skobel, Roger Smith, Daniel C. Sprauer, Steve Terwilliger, Gabriel A. Velasquez, Stephen Warner, Glen Watts, Andrew Zeitler. External Members: Keith Barrett, Jason Trabert.

B61-12 System Mechanical ME1a Test Team

For the successful completion of the first full-system B61-12 mechanical environment test



(Continued on next page)



GARY MCGOVNEY

Gary McGovney was recognized for his technical excellence as the software lead of the Validating Information Processor known as the "VIPr" coded switch. Gary drove ingenious architectural improvements to the safety and security of the B61-12, and developed the security architecture and requirements for the Common Authentication Module Application-Specific Integrated Circuit used in the VIPr. Gary single-handedly implemented the entire Boot Read-Only Memory software package, which worked flawlessly and achieved first-pass success on schedule and within budget.

Gary was also responsible for developing the preliminary VIPr software package used to support the B61-12 Group 1 system integration testing, which successfully demonstrated full functionality of all component interfaces in the B61-12 surety system.

Gary's design approach not only allowed the B61-12 to stay on schedule, but resulted in a much more secure and reliable design that could be fully analyzed and verified by the independent assessment teams.

Mark Meyer was honored with an individual NNSA DP Award for his outstanding performance in supporting the nation's Nuclear Security Enterprise.

In 2013, Mark performed flawlessly as the lead field engineer for the W87 and backup field engineer for the W78. He served as training coordinator and was directly responsible for the Sandia Weapon Display Area. As the lead W87 and backup W78 field engineer, Mark provided timely and invaluable support to warfighters in US Strategic Command and Air Force Global Strike Command.

Mark led a team of technical experts to troubleshoot and repair a critical high fidelity Joint Test Assembly reentry vehicle. His efforts kept the ICBM Joint Flight Test program on schedule and resulted in the first-ever successful launch on Minuteman III.

As the training coordinator, Mark executed an ambitious schedule to provide technical nuclear stockpile instruction across the Nuclear Enterprise. He provided more than 30 nuclear stockpile training classes at Sandia and at field locations for more than 670 students.



MARK MEYER

2 individuals, 16 teams honored in prestigious annual awards for nuclear weapons work

(Continued from preceding page)

Team Representatives: Merlin K. Decker, Jacky R. Martinez, Davinia Rizzo, Jake Scarborough. Members: Michael Arviso, Melissa K. C de Baca, Gary Daniel Calhoun, Jerome S. Cap, Jeffery L. Cherry, Ronald G. Coleman, Kevin Rhyne Cross, Jeffrey Dougan, Walter B. English, Anthony J. Gomez, William Mark Halliburton, Patrick Hunter, Franklin F. Johnson Jr, Dominic V. Martinez, Randall L. Mayes, Jeffrey Alan Meador, Jeff Mitchell, Richard Allan Ross, Tyler Franklin Schoenherr, Robert L. Shirey, Troy J. Skousen, Thomas C. Togami, James Rokwel Wade, Fabian Vigil.

B83 ALT353 Gas Transfer System Product Realization Team

In recognition of exemplary teamwork and achieving project success during scope conversion.

Team Representatives: Benjamin Makrel, Joe Novajosky, Jeannie Sarver. Members: Young Min Ahn, Dorian K. Balch, Bradley Luis Bon, Radoslav Bozinovski, Robert C. Brandt, Jeffery M. Chames, Joe Y. Chiu, Antonio J. de Sousa, Dean C. Dibble, Stephen Eisenbies, Shawn Allen English, Michael James Gherini, Michael A. Gutzler, Darin Jurado, Michael C. Maguire, Bernice E. Mills, Brian E. Oden, Yuki Ohashi, Mark Reece, Christopher W. , San Marchi, Danielle Stephenson, Linh Thai, Dusty Vance Wilde, Mason Jess Winters. External Members: Mark Adams, Bruce Alquist, Tim Argie, Bob Blanton, Shawn Breckenridge, Eric Byer, Calvin Clamp, Mickey Craig, Jeremy Davis, Terry Davis, Tonya Dominguez, Pat Dorr, Chad Ellison, Jerry Faulkner, Tracey Franklin, Phil French, Mary Grant, Larry Hancock, Paul Hern, Bob Hoye, Eric Jamieson, Carol Kestin, Gerald Levi, Tom Livengood, Greg McGee, Scott McGee, Jack McGrath, Bob Metzler, Charlie Miller, Scott Napier, Tony Nguyen, Sam Otto, Marcia Penyoock, Steve Penyoock, Jack Radeck, Jennifer Rice, David Rickard, Dustin Robinson, Lane Rogers, Cindy Smith, Taylor Smith, Todd Snider, Carolyn Stone, Chad Sweeney, Maurice Thomas, Joya Trottie, Scott West, Travis Wilkins.

Code Management System (CMS) Software Upgrades Team

In recognition of the delivery of CMS software products and training materials to Pantex and the DoD.

Team Representative: Marianna E. Mauritz. Members: Gabriela Aragon, Mario Joseph Chavez, Juan Espinoza, Wilbur R. Johnson, Elizabeth Lopez, Mabel J. Pecos, Steven L. Rezac, Alice E. Starcher, Melissa R. Wilson.

Enterprise Maximo

In recognition of creating an innovative information system supporting weapons mission deliverables.

Team Representative: David M. Skousen. Members: Maria E. Armendariz, Nicolette C. Bauer, Michael K. Bencoe, Sylvan A. Benjamin, Steven Benner, Sabine A. Boruff, Leonard J. Buchholz, Susan Byrnes, Divina J. Calderon, Corey A. Cruz, John Dykes, Rhonda Lea Fraser, Bernard J. Gomez, Mark Lee Graham, Mary K. Hatfield, Sean Lee Hendrickson, Gary D. Jones, Lisa Kegler, Lori A. Kozlowski, Heather R. Kraemer, Norma L. Lauben, Amy B. Leyba-Essary, Patrick B. Milligan, Seth Moore, Tammie L. Muniz, Rene Ramirez, Cheryl Rivera, Colin L. Smithpeter, Marguerite Sorensen, Steven G. Spinhirne, Mark A. Spoonamore, Todd M. Sterk, Ronald G. Thomas, Caryn E. White. External Members: Keith Moore, Kent Nix, Keith Pittman, Christie Smith.

First Integrated Magnetized Liner Inertial Fusion Experiments on Z

For successfully designing and executing the first magnetized liner inertial fusion Z experiments.



Team Representative: Matthew R. Gomez. Members: Jeffrey Argo, Thomas James Awe, John Curtis Bellum, Gordon A. Chandler, Michael E. Cuneo, Ella Suzanne Field, Matthias Geissel, Jeffrey K. Georgeson, Kelly Hahn, Stephanie B. Hansen, Eric Harding, Roger L. Harmon, Adam J. Harvey-Thompson, Mark Harry Hess, Christopher Jennings, Marc Ronald Lee Jobe, Owen Johns, Drew Johnson, Michael Jones, Ronald J. Kaye, Jeffrey W. Kellogg, Damon E. Kletecka, Patrick Knapp, Derek C. Lamppa, Joel S. Lash, Finis W. Long, Mike R. Lopez, Larry Martin Lucero, Matthew Martin, Ryan D. McBride, G. Randall McKee, John McKenney, Albert Owen, Kyle Peterson, John L. Porter, Shawn Radovich, Grafton Kincannon Robertson, Gregory A. Rochau, Dean C. Rovang, Carlos L. Ruiz, Paul Schmit, Adam B. Sefkow, Jonathon Shores, Daniel Sinars, Stephen A. Slutz, Ian C. Smith, Christopher Speas, Roger A. Vesey. External Members: Brent Blue, Gary Cooper, Diana Schroen, Robert Stamm, Kurt Tomlinson.

Hostile X-Ray Radiation Environment Assessment Team

For demonstrating exceptional dedication to the hostile radiation qualification of the W87 SFENG.



Team Representative: Darren G. Talley. Members: David Ampleford, Carla C. Busick, Gary Chantler, Randy M. Clarin, Brian C. Franke, James I. Greenwool, V. Harper-Slaboszewicz, John Holland, Brent M. Jones, Scott C. Jones, Ronald P. Kensek, Richard S. Klingler, Derek Koida, Matthew Neidigk, John C. Nguyen, Richard A. Plass, Jason D. Serrano, Patricia St. John, D. Gregory Tipton, Leland Herder, Michael Lynch, Patrick Rose, Tom Stringer, George Williams, Layne Zee.

Joint Integrated Lifecycle Surety (JILS) Core Team



In recognition of fulfilling the "Defense Programs Getting the Job Done in FY2013."
The JILS team consists of many contributors from both the Sandia/California and Sandia/New Mexico sites.



Joint Radar Module (JRM)

In recognition of a Joint Radar Module design in support of the B61-12, W88 ALT370, and Mk21.



Team Representative: Jeffrey Pankonin. Members: Keith Burton Albers, Jesse Baldwin, Keith Richard Barkley, Denise Borrego, Thomas G. Brown, Mario L. Chavez, Kurt Conover, Emily R. Crespin, Peter Deng, Michael Matthew Elsbury, Christopher L. Gibson, Bruce Edwin Guffey Jr, Terry Hardin, Clinton Lloyd Haslett, Vincent C. Hindman, Lung-Hwa Hsieh, Nicola Jean Kinzie, Richard T. Knudson, Garth Kraus, Johnson Liu, Matthew Thomas Martinez, Roman G. Martinez, Richard McClanahan, Glenn Omdahl, Joseph H. Perry, Kenneth A. Peterson, Kenneth D. Reaves, Perry J. Robertson, Christopher T. Rodenbeck, Charles E. Sandoval, Troy Satterthwait, George R. Sloan, David A. Smith, Frank Reginald Smith, Matthew Samuel Starosta, Jeremy James Stearns, Larissa C. Velasquez, Gregg A. Wouters, Mandy S. Younger. External Members: David Bonds, Damian Brandenberg, Ryan Challacombe, Jeffrey Dimsdle, John Dokos, Sean Garrison, Michael Girardi, Randy Hamm, John Harder, David Jarrell, Nadeem Khan, Daniel Lopez-Couto, Zachary Page, Troy Parks, Audrey Seybert, Tyler Whetstone.

Nuclear Explosive Safety

In recognition of outstanding dedication to the nuclear explosive safety program in support of NNSA's nuclear weapons program.

Team Representative: Daniel Bruns. Members: Robert Adamski, Carlos Avalle, Mike Butner, Angela Chambers, John Darby, Alton Donnell, Jim Fingerlos, Harry Flaugh, Robert Fong, Joan Harris, Tom Jones, Randy Kamm, Nazir Khalil, Corey Knapp, Milt Levenson, Larry Luna, Joe Martinez, Doug Miller, Tommy Morris, Tim Neal, Jay O'Brien, Paul Pederson, Andrea Rainer, Chris Robbins, Kathleen Rogers, Jess Squires, Robert Stroud, Stacie Swan, Fred Trussell, Kyle Watson, Chris Whipple, David Windsor, Les Winfield.

Sandia Enterprise Project Management (sEPM) Team

In recognition of developing an Earned Value Management System for the nuclear weapons LEPs



Team Representatives: Thomas Cuyler, Sandra Lynn Ryan. Members: Mathew Anderson, William R. Bivens, Lora A. Bonano, William Brett Brizze, Karen S. Current, Jeremy D. Dencklau, Rosemary M. Dunivan, Vicki L. Frahm, Bernadette Susianne Gallegos-McCrea, Cotye S. Julian, Kathleen Elizabeth Lane, Jim J. Locklin, Rebecca Ann Lopez, Marlo M. Maxson, Jeremy R. Plake, Sebastian Rael, Sean Evan Rhodes, Peggy S. Schroeder, John Damon Shaw, Debra Ann Tabor. External Members: Wendy Collins, Thomas Eytcheson, Elaine Krazer, Eli Robert Lopez, Michael Staples.

Sandia Nuclear Facility Operations Quality Leadership Team

For demonstrated leadership of Sandia's Nuclear Facility Operations Quality Management System.



Team Representative: Michael Kenneth Black. Members: Philip J. Cooper, Julieanne Charlene Coriz, Michael James Doty, John T. Ford, Stanley Haynes, Shawn Cameron Howry, Debra Sue Kirschner, Allison Delo Miller, Richard James Pratt, Marlena Taylor, Thomas E. Vanderbeek. External Members: Michael Brown, Dan Dilley, Roger D. Freeman, Kevin Gray, Mark Hamilton, Erwin Hoo, Nate Morley, Jose Munoz, Michael Ortega, Allen Tate.

Tritium Readiness

For implementing and exceeding new production of tritium requirements.

Team Representative: Curtis Chambellan. Members: James Chapman, Maureen Holloway, Jeff McGuire, Thomas Schwarz, David Senor, Dan Stout, Cheryl Thornhill.

Z Warm X-Ray Source Development Team

For dramatically enhancing X-ray yields above 10 keV for radiation effects sciences on Z.



Team Representative: Brent M. Jones. Members: David Ampleford, Peggy Jo Christenson, Michael E. Cuneo, Timothy McGuire Flanagan, Stephanie B. Hansen, Adam James Harvey-Thompson, Christopher Jennings, Marc Ronald Lee Jobe, Owen Johns, Derek C. Lamppa, Larry Martin Lucero, Joseph Reneker, Roger A. Vesey. External Members: Brent Blue, Randy Holt, Diana Schroen, Gary Smith, Robert Stamm, Jerry Taylor, Kurt Tomlinson.

'Small business is HUGE' When companies call Sandia, they get a person

By Nancy Salem

Danny Ruiz was surprised when he called Sandia for business information and heard a live voice. "You don't normally get that with federal agencies," he says. "It was awesome to have someone to talk to and figure out how to work together and do business with Sandia."

The person who picked up the phone was Ann Riley (10222), a member of the Small Business Utilization team and Sandia's Business Point of Contact (BPOC).

"This is about helping our supplier community, especially our small businesses, figure out this huge entity called Sandia National Laboratories and alleviating the fear. We want them to start out on the right foot because we know that with nearly half of our annual dollars spent in procurements, we could not be successful without our suppliers."

— Ann Riley
Sandia Business Point of Contact

The BPOC fields all calls from people who want to become Sandia suppliers. "It's about providing great customer service," Ann says. "Most of the callers are small companies, and we're here to help them."

Ruiz, of Mazda Computing in the Sandia Science and Technology Park, ultimately won a Sandia contract. He credits in part the personal service he received. "It works very well," he says. "And it doesn't end with the contract. Ann still calls every now and then to see how we're doing. The process is great."

The BPOC was launched five years ago to help people who wanted to do business with the Labs but didn't know how. "People would try to find somebody, anybody, they could talk to," Ann says. "We didn't want to create a system where an automated voice said, 'Press one, press two, press three.' Everyone knows how frustrating that is."

The BPOC is designed to connect businesses to a person who can answer questions and solve problems in a single phone call. "Before the BPOC people became

very frustrated," says Don Devoti, manager of Small Business Utilization Dept. 10222. People complained about how difficult it was to do business with Sandia. "Now callers get to the right person every time."

The BPOC phone number (800-765-1678) and email address (supplier@sandia.gov) are on Sandia's external website. In addition to the dialog with the BPOC, each person who calls receives a letter with detailed instructions on what to do next as an interested supplier. Ann also walks them through the Business Opportunities website, which lists Sandia contracting opportunities.

If the caller is associated with a small business with serious potential to be a Sandia supplier, he or she is referred to a Sandia small business advocate, who follows up. "Small business is huge at Sandia," says Ann, a former small-business owner. The Labs spend about \$500 million a year with small companies, more than half of them in New Mexico.

An honest assessment

Krista Smith, senior manager of Policy, Assurance, and Outreach Dept. 10220, says, "Our goal is to give suppliers an honest assessment of whether or not their products or services match Sandia's needs. We also want to let them know the rigor involved in working with Sandia, like our stringent safety and quality requirements. We know that it is expensive for suppliers to pursue new business, so we aim to make their first inquiry as informative and efficient as possible."

If there does not appear to be an opportunity for a supplier at Sandia, the BPOC may refer the company to contracting agencies such as Kirtland Air Force Base, local governments, or other federal labs.

In fiscal year 2014 Sandia's BPOC responded to 2,161 calls and 3,892 emails from all over the world. Ann sets the tone by making the caller feel comfortable.



ANN RILEY'S (10222) IS THE FIRST VOICE many business people hear when they reach out to Sandia as potential suppliers. "If they say Ms. Riley, I say, 'Call me Ann.' We become friends," Ann says. "They are absolutely blown away that Sandia provides such a service. They can't believe a company this size has a real person to talk to." (Photo by Randy Montoya)

"If they say Ms. Riley, I say, 'Call me Ann.' We become friends," she says. "They are absolutely blown away that Sandia provides such a service. They can't believe a company this size has a real person to talk to. I get that over and over again."

"This is about helping our supplier community, especially our small businesses, figure out this huge entity called Sandia National Laboratories and alleviating the fear. We want them to start out on the right foot because we know that with nearly half of our annual dollars spent in procurements, we could not be successful without our suppliers."

Ann says it's important that internal Sandia organizations also refer calls from outside businesses to Supply Chain and the BPOC. "We

don't want companies to start shopping for business within Sandia using an ad-hoc approach," she says. "They will get frustrated and we don't want to give the impression that's how the system works. We strive to offer a consistent message and avenue to our prospective suppliers."

Theresa Carson, manager of Information Systems and Science, Technology, and Research Procurement Dept. 10244, says the BPOC is an important service to Sandia suppliers. "Having the opportunity to speak to someone who can answer questions about how to do business with Sandia and provide guidance is a valuable benefit," she says.

Feedback indicates that having the BPOC role enhances Sandia's image in the business community. "It adds to our credibility, and is another piece of the puzzle to achieving mission success," Ann says. "And that's what it's all about."

ANN RILEY, Sandia's Business Point of Contact, can be reached at supplier@sandia.gov or 1-800-765-1678.

Sandia releases interface to help standardize HPC power and energy systems

By Neal Singer

To help moderate the energy needs of increasingly power-hungry supercomputers, researchers at Sandia have released an application programming interface with the goal of standardizing measurement and control of power- and energy-relevant features for high performance computing (HPC) systems.

The specification, still open to collaborators for future development, works for any vendor (that is, it's vendor-neutral) and has been vetted through external reviews by other laboratories, universities, and commercial collaborators.

"While the bulk of improvements in energy efficiency will no doubt come from hardware advances, software will play a critical role in maximizing the benefits of new hardware capabilities," says Sandia researcher Jim Laros (1422), who leads the specification development effort.

The High Performance Computing - Power Application Programming Interface Specification developed by Jim's team standardizes relevant measurement and control interfaces for a comprehensive range of HPC roles. These range from the hardware level to application interfaces. For example, standardizing how the workload manager interfaces with the HPC system will enable features like energy-aware scheduling. This can minimize power usage during the hours in which utility companies often charge higher rates.

"Because future architectures might not be able to operate all components at full capability for a variety of reasons, including temperature considerations or power delivery limitations," says Jim, "our specification defines standard interfaces to facilitate appropriate choices in allocating the available power budget

among many, sometimes conflicting and often site-specific, considerations.

"The specification we have developed provides multiple levels of abstractions to satisfy the requirements of multiple types of users or roles," says Jim.

The Power API specification was developed after a joint investigation by Sandia and the National Renewable Energy Laboratory (NREL). The work was based on almost a decade of prior research at Sandia, aided by numerous industry and community relationships that developed over the same period.

"A face-to-face review in July 2014 included representatives from Cray, Adaptive, Penguin Computing, AMD, IBM, Intel, and NREL," Jim says. "Other university and laboratory collaborators, such as the University of New Mexico, Oak Ridge National Laboratory, the Energy Efficient High Performance Computing working group, and Los Alamos National Laboratory have also provided written feedback."

Following the open release of version 1.0 an international audience conducted a review in Denver, Colo., in September.

"Feedback from both reviews as well as our continued collaborations with the HPC community will strengthen future releases of the specification," says Jim.

The first production implementation of the Power API specification will be on the Trinity supercomputer, the first of the new Advanced Technology Platforms funded by NNSA's Advanced Simulation and Computing program.

The specification, as well as other information can be found at <http://powerapi.sandia.gov>.

Jim and his team are available for questions regarding Sandia's power API at jhlaros@sandia.gov. "We welcome feedback and collaboration with anyone who is interested," he says.



Sandia Classified Ads Sandia Classified Ads Sandia Classified Ads Sandia Classified Ads

MISCELLANEOUS

POKER TABLE, wood, octagonal, felt-covered, w/4 folding chairs, like new, \$150. Blankenship, 505-856-0406.

CHINA, Mikassa Parchment, 45-pc. set, new, unused, proceeds go to non-profit Lap Dog Rescue, \$150 OBO. Hoffman, 505-280-0554.

FURNITURE, Harrison, solid oak, dresser, w/mirror, nightstand, \$200; Drexel coffee table w/2 end tables, \$50. Jensen, 917-4950.

DALLAS COWBOYS TICKETS, 2, sec. 454, row 3, seats 1 & 2, vs. Arizona, Nov. 2, vs. Indianapolis, Dec. 21, \$125 ea. McCandless, 553-5281.

ELLIPTICAL, IronMan 220E, display shows: elapsed time, heart rate, calories burned, distance traveled, \$100 OBO. Karasz, 858-0557.

RECLINER, brown leather, photos at <http://bit.ly/1syjTsx>, \$125. Steele, 505-803-4186.

KING MATTRESS, box springs, Sealy Posturepedic, 5 yrs. old, good shape, \$100 OBO. Mosley, 505-350-0928.

FILL DIRT, clean, ~3-cu. yards, you load. Stevens, 293-5704.

QUEEN BDR. SET: Ashley Timberline, mirror, dresser, chest, nightstand, headboard, no bedframe, used, excellent condition, <http://goo.gl/zPG1id>, \$750. Skulavik, 816-217-6256.

DOG CRATE, metal, Midwest LifeStages, double door, folding, 42"L x 28"W x 31"H, used <1 wk., switched to plastic crate, \$60. Knarr, 505-492-0990.

ENTERTAINMENT CENTER, oak, \$350; surround sound system: receiver, speakers, wires, \$500; excellent condition, \$750/all. Hartman, 296-7924.

CHINA CABINET, glass door, mid-century, walnut finish, beautiful, clean lines, excellent condition, \$175. Keese, 459-5593.

HUNTING/CAMPING GEAR. Plumb, 681-1846.

WOOD FRAMES, blonde, w/glass, 49-1/2" x 29-1/2", \$40; mahogany color, w/glass, 49-1/2" x 29-1/2", \$40. Anderson, 232-2167, smander37@gmail.com.

ASBURY CHRISTMAS BAZAAR, Saturday, Nov. 1, 1 block east of Eubank. Sparling, 281-7267.

SNOW SKIS, Dynastar, 6-ft., Salomon bindings, \$15; ski boots, Salomon, size 10, \$10. Bentz, 857-0728.

TIMESHARE/CONDO RENTAL, 2 or more nights, 1-2-bdrs., Durango, Pagosa, Las Vegas, \$100-\$200/night, call for availability. Fernandez, 505-238-4722.

ENTERTAINMENT/LIVING ROOM SET, 5-pc., Southwestern-style, sturdy construction, need to sell quickly, \$300 OBO. Lesperance, 328-3143.

SLEIGH BED, full size, wrought iron, headboard, foot board, frame, mattress, box springs, complete comforter set, pillows, photos available, \$300. Stephens, 292-6515.

SKI RACK, for SUV, w/roof rails, \$50; cross bar, for Lexus roof rails, \$50. Gough, 822-0090.

JEANS, juniors, size 0, several pair, Pac-Son, etc.; shoes, heels size 6 & 6.5; junior clothing, small/med. Velasquez, 610-3672.

PRE-LIT CHRISTMAS TREE, 7-ft., Aster Pine, 550 multicolor lights, 1,004 tips, used only twice, \$100 OBO. Roesch, 281-9751.

CORK UNDERLAYMENT, for tile/wood floor installation, insulation R-value 82, Widgetco.com, 400-sq. ft., new, \$185 OBO. Clark, 890-8108.

ART/CRAFT HOLIDAY SALE, fabric/patterns, Bernina 1530, Cricut, more, Nov. 1, 8 a.m.-2 p.m., 8645 Harwood NE. Wallace, 505-294-2870.

SWIVEL RECLINER ROCKERS, 2, La-Z-Boy, brick red, w/spare arm, headrest covers, gently used, \$200/both. Thompson, 292-2877.

ELECTRIC BLANKETS, king size, \$20 ea., regular size, \$15; nailer/stapler, 18-gauge, new, \$20; 2-drawer, brown filing cabinet, \$20. Garcia, 280-5815.

HUTCH, w/glass doors, \$40; wooden dresser & stand, \$60; queen bed, w/frame, \$75; photos available. Allen, 850-3163.

MATTRESS, Tempur-Pedic, new, Weightless Supreme, full size, paid, \$2,250, asking \$1,300. Nissen, 299-9305, leave message.

FOUR-POSTER CANOPY BED FRAME, king-size, black wrought iron, excellent condition, \$450. Goldheim, 296-0404, ask for Dale.

ENGLISH ARMOIRE, 1903, oak, hand-made, w/glass inserts in doors, 84" x 50" x 14", photos available, \$250. Burfeindt, 505-897-0179.

BMX/MOTORCYCLING PANTS, young men's, size 28, \$45; chest protector jersey (Ballistic), long sleeve, young adult, size small, \$85, negotiable. Brewster, 238-4704.

WOOD PELLET GAS STOVE, Kozi Hearth Products XL, \$600 OBO. Sedillo-Cafferty, 505-750-0844, ask for Danielle.

FURNITURE, grandfather clock; china cabinet; coffee table; end table; full mattress/box springs; vintage bassinet; more. Gibson, 294-6831.

GARAGE SALE, furniture, shelves, loom, misc. Oct. 30-Nov. 1, 10 a.m.-2 p.m., 3019 Carolina St NE. Phelps, 505-508-7331.

How to submit classified ads
DEADLINE: Friday noon before week of publication unless changed by holiday. Submit by one of these methods:
 • EMAIL: Michelle Fleming (classads@sandia.gov)
 • FAX: 844-0645
 • MAIL: MS 1468 (Dept. 3651)
 • INTERNAL WEB: On internal web homepage, click on News Center, then on Lab News link, and then on the very top of Lab News homepage "Submit a Classified Ad." If you have questions, call Michelle at 844-4902. Because of space constraints, ads will be printed on a first-come basis.

Ad rules

1. Limit 18 words, including last name and home phone (If you include a web or e-mail address, it will count as two or three words, depending on length of the address.)
2. Include organization and full name with the ad submission.
3. Submit ad in writing. No phone-ins.
4. Type or print ad legibly; use accepted abbreviations.
5. One ad per issue.
6. We will not run the same ad more than twice.
7. No "for rent" ads except for employees on temporary assignment.
8. No commercial ads.
9. For active Sandia members of the workforce, retired Sandians, and DOE employees.
10. Housing listed for sale is available without regard to race, creed, color, or national origin.
11. Work Wanted ads limited to student-aged children of employees.
12. We reserve the right not to publish any ad that may be considered offensive or in bad taste.

JUNIOR GOLF SET, XPC Future Tour, left-handed, ages 8-11, driver, 2 irons, 2 putters, bag, like new, \$25. Cocain, 281-2282.

VINTAGE KITCHEN TABLE & CHAIRS, white & gray, w/black wrought iron frame & legs, \$340. Langwell, 350-1313.

TRANSPORTATION

'06 FORD F350, crew cab, LWB, Lariat diesel, 49,195 miles, dual rear wheels, great condition, \$22,000. Ambabo, 505-717-5686.

'00 VOLKSWAGEN PASSAT, standard transmission, white, 105K miles, excellent condition, \$4,000. Groom, 505-288-1852.

'08 FORD EDGE LIMITED, V6, Sync, vista roof, 65K miles, very good condition, \$15,500 OBO. Graham, 293-7302.

'99 CHRYSLER TOWN & COUNTRY LIMITED, burgundy, leather, needs paint, headliner, 156K miles, runs well, \$2,000. Lebien, 505-459-4074.

'12 NISSAN ROGUE, tons of extras, <10K miles, perfect condition, \$17,500. Owens, 839-4286 or 980-6769, ask for Norman.

'04 DODGE DAKOTA, quad cab, 2WD, V8, hardtop-bed cover, bed liner, tires <9K miles, 98K miles, \$8,200. Burford, 916-0405.

'02 FORD F150 XLT, SuperCrew, 4WD, 90K miles, asking <KBB, \$9,200. Briggs, 967-7916.

'05 HYUNDAI SONATA, GL Sedan, 4-dr., 2.4L, DOHC 16V, PL, PW, 1 owner, 113K miles, \$2,500 OBO. Venuk, 803-7100.

'06 TOYOTA HIGHLANDER, 4-cyl., 2WD, 95K miles, new Michelins, 1 owner, all service records, \$9,800. Stoffels, 505-228-5523.

RECREATION

'05 LAREDO 5TH WHEEL, model 29RL, slide, central vac, ducted furnace, walk around queen bed, \$14,500. Ashworth, 281-2824.

'09 HONDA CRF450R DIRT BIKE, well maintained, low hours, never raced, many aftermarket upgrades, \$3,750. Horton, 280-4202.

GIRL'S TREK BIKE, age 4-6, always garaged, like new, DVD, Float capability, retails, \$200, asking \$100. Czuchlewski, 359-8241.

'08 SUZUKI 250 ATV, w/Cooler packs, \$2,100 OBO; '08 KYMCO Mon-goose 300 ATV, \$1,100 OBO; both well maintained, garage-kept, clean title in hand. Pankratz, 505-903-3071.

REAL ESTATE

3-BDR. HOME, 2 baths, 2,860-sq. ft., 2-car garage, on 0.9 acres, off South 14, near Oak Flats, \$199,000. Woodstra, 281-2967.

4-BDR. HOME, 3 baths, 2-car garage, 2,700-sq. ft., built in '13, 2.9 miles to Sandia, Volterra, \$279,000. Sweetser, 970-222-5803.

DOUBLEWIDE, Edgewood, fenced acre, new laminate floors, new toilets, own well. Saenz, 505-281-1911.

3-BDR. HOME, 1 mile from Eubank gate, next to Manzano Elementary, 1028 Los Padres, find on Zillow, \$290,000. Schoenherr, 920-227-5283.

3-BDR. HOME, 1-3/4 baths, 1,305-sq. ft., open floor plan, landscaped, move-in ready, 4613 Delamar Ave. 87110, MLS#826302, \$167,000. Ledwith, 505-980-9456.

4-BDR. HOME, 2 baths, 2,050-sq. ft., large cul-de-sac, 1008 Matia Ct. NE 87123, east of Tramway, between Lomas & Copper, motivated seller, \$256,900, negotiable. Dwyer, 661-350-8942.

4-BDR. HOME, 2-1/2 baths, 2-story, 2,700-sq. ft., loft, formal dining & living, family rm., premium lot, hot tub, Westside, \$200,000. Maestas, 331-6949.

3-BDR. HOME, 2 baths, 1,841-sq. ft., updated home, new cooler & stucco, kitchen w/double oven, MLS#826367, \$250,000. Jaramillo, 505-228-0636.

4-BDR. HOME, 3 baths, 4,280-sq. ft., Four Hills, 817 Lamp Post Circle SE, \$439,900, negotiable. Ramos, 505-220-5201.

2 & 4 ACRE HOME SITES, Sandia Park, level, fenced, not rocky, electricity/phone, ready-to-build, mountain views, new road, \$105,000 easy contract terms. Mihalik, 281-1306.

WANTED

HOUSEMATE, Albuquerque, 3-bdr. home, 2 baths, near Balloon Fiesta Park, 15-20 min. to KAFB, must be OK w/dogs, \$500/mo. includes utilities & WiFi. Ortiz, 505-977-4296, ask for Josh.

SADDLE BAGS, for Harley-Davidson Sportster 883. Salazar, 379-9612.

OLD CAR TO BORROW/RENT, Nov.-Jan., for international visitor, has international driver's license. Bettin, 617-803-2739, ask for Georgia.

SOMEONE WHO HAS OR KNOWS SOMEONE, w/a '98 Ford Ranger. Forsythe, 505-515-6602.

BOB DOUBLE STROLLER. Hunter, 505-559-0269.

HOUSESITTER, Dec. 13-Jan. 1, far East Mountains, 2 friendly cats. Finrock, 286-6458.

CLASSICAL GUITAR, for student, full size, Alhambra 4P/5P cedar top or similar price & quality. Weber, 573-8965.

Kirtland AFB Working to Balance Traffic Flows, Need for Security

By Valerie Smith

Most Sandians in Albuquerque experience a few days a week where they sit patiently or not so patiently in their cars and wonder why traffic is backed up at the Eubank entrance to Kirtland Air Force Base (KAFB).

The answer varies. Sometimes, the butterfly effect with wheels could be to blame. In this case, instead of the movement of a butterfly's wings causing chaos with the atmosphere, a wreck away from the base can cause a traffic surge at the base once the accident is cleared.

"When an accident in the city causes backups, it's a safe bet the gates will be impacted once the backup is cleared in the city. Traffic that would normally be spread out is now coming to the base en masse," says Philip Q. Barela, assistant operations officer at KAFB.

Accidents off base aren't the primary cause, however. The leading cause is directly related to working on a US Air Force Base that has security as its primary mission.

Specifically, base alarms contribute more than any other factor to delays, Barela says. When a base alarm requires Kirtland forces to shut down or inhibit entry at the gates until security can be assured, the results can be felt long afterwards.

"A five-minute closure can take up to an hour to clear because of the backup of traffic," he says.

Sheer numbers also are working against smooth sailing through the gates. Security Forces processes more than 27,000 vehicles onto the base every weekday, with 9,200 of those coming in through the Eubank entrance. Of the 9,200, 3,350 vehicles on average come in between the hours of 6 and 9 a.m. — the busiest times for all of the base gates. Tuesdays and Thursdays are the



busiest days.

Eubank traffic has increased by about 21 percent since 2008, a surge likely driven by the growth in housing in the vicinity that occurred during that time, as well as a 7 percent increase in Sandia employment from 2008 to 2013. It is the busiest of all gates, followed in order by Gibson, Wyoming, Truman, Carlisle, and South Valley.

Numbers aside, other than taking up vehicular Zen meditation or rocking out to some tunes, what can employees do to lessen the frustration or avoid waits? Barela has a few suggestions:

- Employees should use gates other than Eubank when it makes sense from a commuting perspective. If Wyoming is an option, there is a third lane open from 6-9 a.m.

- If biking, employees should use the Sandia bike / pedestrian gate located just south of the Sandia Contractor Gate. To process through that gate, employees just swipe their ID card.

- Drivers can help prevent delays by having their identification cards ready, detached from any card holders.

- Employees should consider car pools or public transportation.

- Rolling car windows completely down — especially with heavily tinted windows — quickens the identification process.

Those are tips employees can use, but Barela says a common question is what Kirtland can do to help prevent backups, specifically, why not assign more Installation Entry Controllers (IECs) — that is, security personnel — at the gate?

"Besides a shortage of personnel, the answer is that more people staffing the gate doesn't equate to decreased wait times," Barela says. "In fact, we have found that you can actually hinder traffic flow by assigning too many people or by having them spaced incorrectly when two or more IECs are in the same traffic lane."

Kirtland is training its IECs to process vehicles within four to eight seconds, with most experienced IECs in the four- to five-second range. A difference of even two seconds can be significant, allowing the gates to process 900 cars per hour instead of 600. Put another way, for every 10 cars in front of a driver, the driver should count on a minute of wait time if the traffic is flowing ideally.

"When the process flows normally, traffic flows well. Put a wrinkle into it, and the wait time grows exponentially," Barela says.



HISPANIC HERITAGE MONTH

Photos by Randy Montoya

Sandia and Kirtland Air Force Base (KAFB) observed Hispanic Heritage Month (Sept. 15-Oct. 15) with dynamic activities highlighting this year's national theme: "A legacy of history, a present of action, and a future of success."

Sandia's Hispanic Leadership Outreach Committee (HLOC) partnered with KAFB and DOE/NNSA to host the monthlong series of events. The organizers focused on employee development and youth outreach activities.

Sandia's KAFB partners kicked off the month on Sept. 17 with a breakfast featuring Cheo Torres, VP for Student Affairs at the University of New Mexico, Tierra Adentro of New Mexico flamenco dancers, and music by Cielito Lindo Family Folk group.

On Sept. 30, HLOC Chair Juan Torres hosted a Hispanic leadership panel as part of a Diversity Day celebration. "This is the first time we've brought together the Hispanic executive leadership at Sandia and KAFB to share learnings and insights from their illustrious careers with the workforce," Juan says. The panel included Bonnie Apodaca, Sandia Chief Financial Officer and VP of Business Operations Div. 10000; Joseph Oder, Executive Director of the Air Force Nuclear Weapons Center; Jim Chavez, Director of Monitoring Systems Center 5700; Anthony Medina, Director of Energetics Components Center 2500; and Sid Gutierrez, Director of Radiation Protection, Waste Management, & ES&H Center 4100.

Other activities during the month included a foods contest, Latin Night dance lessons, a youth art contest, and an activity in which ideas about diversity were explored in an interactive setting.

The final diversity celebration was a tremendous success with approximately 500 attendees. Keynote speaker, Brig. Gen. Judy Griego from the New Mexico National Guard, spoke about her roots and asked attendees to reflect on how we gained strength in our lives and who helped us get to where we are today. She encouraged attendees to give back to others to ensure our youth are successful in the future. As part of the celebration, art contest winners from area schools were recognized for their tremendous creations.

Student Art Contest Winners

High School

- 1st place: Dianna Rodriguez, South Valley Academy
- 2nd place: Viviana Martinez, South Valley Academy
- 3rd place: Itzel Diaz, Tierra Adentro of New Mexico

Middle School

- 1st place: Megan Garcia, Tierra Adentro of New Mexico
- 2nd place: Lillian Keovilay, Albuquerque School of Excellence
- 3rd place: Daniel Ward, Kings Highway Homeschool

Elementary School

- 1st place: Reagan Madonia, Albuquerque, School of Excellence
- 2nd place: Melody Mohammad Zadeh, Albuquerque School of Excellence
- 3rd place (tie)
 - Emilie Del Curto, Albuquerque School of Excellence
 - Angel Martinez, Our Lady of Annunciation

Hispanic Foods Contest Winners

- Salsa - (1st) Richard Valerio; (2nd) Rubel Martinez; (3rd) Vaughn Halford
- Green chile - (1st) Jessica Montoya; (2nd) Renee Urquidez
- Red chile - (1st) Matthew Martinez; (2nd) Lily Marquez; (3rd) Allen Herring
- Dessert - (1st) Deborah Montoya; (2nd) Kathryn Lott; (3rd) Victoria Sanchez
- Otra Comida - (1st) Deborah Montoya; (2nd) Bob Ramos; (3rd) Victoria Sanchez