



### Wounded Warrior Women at Sandia

Sandia recently added the first two women veterans into its Wounded Warrior Career Development Program, a staffing platform that specializes in hiring combat-injured veterans into positions at the Laboratories. Read about them in a story on page 5.

# Snap shot

## World's fastest multiframe digital X-ray camera developed at Sandia

By Neal Singer

An adversary who steps inside a boxer's sense of rhythm may land a punch the boxer never saw coming.

A similar problem faces physicists struggling to achieve laboratory-scale nuclear fusion: A rogue event occurring between successively monitored images may knock an otherwise promising experiment off-kilter without anyone seeing the problem.

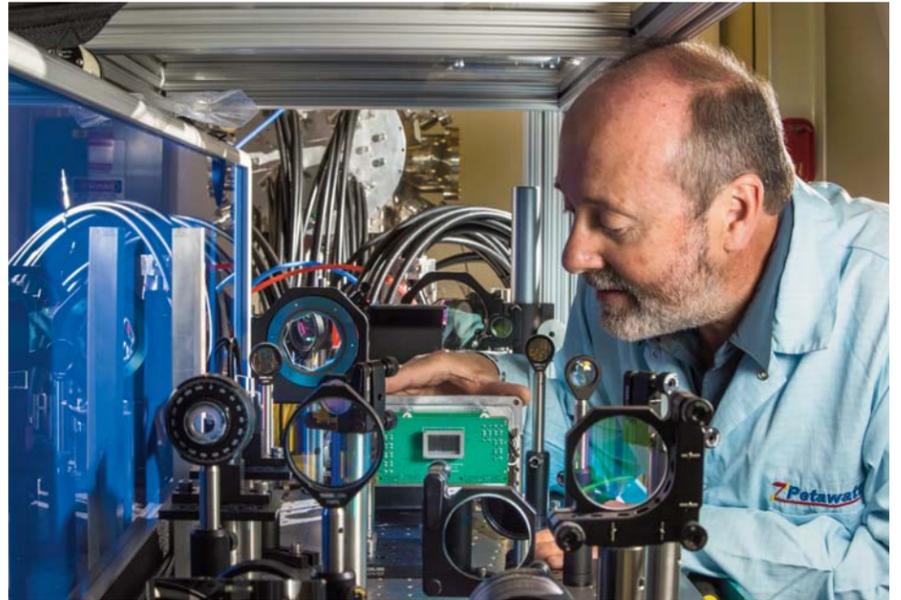
To narrow that unexamined patch of time, Sandia researchers have put together the fastest multi-frame digital X-ray camera in the world, called the ultra-fast X-ray imager (UXI). The camera takes images with an exposure time of only 1.5 nanoseconds — 25 times faster than the best digital cameras.

"People are captivated by movies," says Sandia physicist and manager John Porter (1682). "We just want to make sure there are no surprises between the frames."

John conceived and led the 10-year effort to capture plasma images more rapidly in the massive pulsed-power facility known as Z, a leading contender in the worldwide effort to achieve controlled nuclear fusion.

Denser groupings of observations at shorter time intervals are essential to more accurate numerical modeling, he says: "There have been experiments where the best models predicted ignition, but it didn't happen. There are too many ways a model unmoored from sufficient data can go from start point to end point. We need to feed simulations more data to ensure more accuracy."

A team of national experts have concurred, selecting further improvements to the camera as a top priority for accelerated development of next-generation diagnostics for high-energy



WITH A CARE ALMOST PATERNAL, Sandia physicist John Porter carefully sets in place an ultra-fast multi-frame digital X-ray camera — the fastest in the world — in Sandia's Z-beamlet laser facility. (Photo by Randy Montoya)

density and inertial confinement fusion experiments.

The experts, representing a coalition called the National Diagnostic Plan (NDP), includes researchers from Sandia, Los Alamos and Lawrence Livermore (LLNL) national labs, the Naval Research Laboratory, the University of Rochester, and representatives from other university and industry labs.

Says Mike Holmes (1753), manager of the Sandia team that developed the camera sensor, "For technical and financial reasons, bringing the highly accurate, relatively inexpensive UXI online was declared a leading transformational diagnostic for future high-energy-density

(Continued on page 4)



### Next-gen cyber defenders

Sandia instructional designer and Wounded Warrior Tony Lona and a team of Sandia cyber researchers recently led a group of high school students at Espanola Valley High School through an intensive day of hands-on cyber training. Story and photos on pages 6-7.



## Sandia rated 'outstanding' in annual Performance Evaluation Report

Sandia's overall performance during the 2015 fiscal year was outstanding, with top ratings in half of the rated criteria, NNSA announced recently in publishing the Labs' annual Performance Evaluation Report, or PER.

"Taken as a whole, it was a positive and fair assessment," said Sandia President and Laboratories Director Jill Hruby. "Throughout the document, many of NNSA's comments recognize the sustained efforts and dedication of Sandia staff."

The report was completed in November, but not posted publicly on the agency's website until May 13. Jill thanked employees in a January memo for the hard work that led to the positive NNSA review.

"This rating is a result of your sustained efforts throughout the year," Jill wrote of the 34-page, detailed evaluation. "While it is rewarding to see our hard work recognized, the PER also provides a good overview of our accomplishments and areas for continued improvement."

Sandia received "Excellent" ratings in three of the six Performance Objectives: Reduce Global Nuclear Security Threats, DOE and Strategic Partnership Projects, and Science, Technology, and Engineering, as well as "Very Good" ratings in Manage the Nuclear Weapons Mission and in Operations and Infrastructure. The Labs' scores were higher than the FY2014 ratings in Operations and Infrastructure and in Reduce Global Nuclear Security Threats.

In the sixth objective, Leadership, Sandia earned a "Satisfactory" rating. NNSA qualified that score by pointing to the "posi-



tive work of Sandia leadership in the majority of the performance objective," but added, "This performance objective would have received a higher adjectival rating except for the results of the DOJ investigation" into allegations of improper use of government funds for lobbying activities between 2008 and 2011.

The Leadership discussion in the PER contained the only sharply critical language in the document, including the declaration, "Sandia fell short of meeting the high standards for business integrity required of FFRDCs and damaged the reputation of Sandia National Laboratories and its parent company."

Another focus of the PER spotlight was the increased number of major security incidents during FY15. Failures to follow classification review policy, plus operational errors and oversights, were among the issues that led to the increase, NNSA said. However, NNSA acknowledged that significant increases in weapons work and the resulting "environment of expanded classified operations" contributed to the number of incidents.

On the other hand, NNSA recognized Sandia's "leadership attention and initiatives" to raise awareness of security require-

ments and common mistakes and to expand its internal lessons learned program and recognized the Labs' overall "concerted effort to improve information protection."

NNSA also praised Sandia's increased transparency, improvements in its self-assessments and assurance systems, and continued enhancements of its overall safety culture.

In the detailed, seven-page evaluation of the nuclear weapons mission, NNSA pointed specifically to the technical achievements gained through Z machine experiments in support of stockpile stewardship goals, successful full-system flight tests for the B61-12, and the way Sandia effectively "managed issues that arose during B61-12 Life Extension Program (LEP) development activities without impacting the baseline plan."

The PER summarized that work: "Sandia exceeded many expectations and performed outstanding work in managing the nuclear weapons mission."

In giving the "Excellent" rating to Sandia's nuclear security threats mission, Sandia was lauded for work that helped identify, protect, and secure nuclear material and aided in preventing the spread of nuclear and radiological material or other Weapons of Mass Destruction (WMD) technology."

And in the DOE and Strategic Partnership Project Mission, Sandia exceeded expectations "by performing work within scope, budget, costs, schedule, and identifying and managing risks in order to provide timely and quality products and deliverables."



### Asian/Pacific Festival

Almost 700 people turned out this year for the annual Asian Pacific Islander American Heritage Festival held May 14 at the National Museum of Nuclear Science and History in conjunction with Asian Pacific American Heritage Month. See page 12.

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### Explosives Group

Sandia's Explosives Engineering Operations team is the go-to group for technical expertise in some of the nation's most critical and sensitive investigations. Story on page 8.



## That's that

DOE has released its official Request for Proposal for the management and operating contract for Sandia. Lockheed Martin has held the contract – with numerous extensions – since 1993. DOE signaled some time ago its intention to rebid the contract this year; the release of the official RFP sets the formal bid process in motion.

No one knows at this point how the competition will go but according to a former NNSA lawyer quoted in the *Albuquerque Journal*, “My review of the list [of potential bidders] tells me that there is a good likelihood that NNSA will enjoy robust competition for the Sandia contract.”

Labs Director Jill Hruby has emphasized that the main goal of her leadership team is “to make sure the competition goes as smoothly as possible, at least so far as it concerns us, and to minimize the disruption of our work and our people.”

I came to Sandia right after Lockheed Martin assumed management of the Labs so I wasn't here during the bid process at that time; folks who were here have told me the disruptions were minimal and the transition from AT&T's long tenure went pretty smoothly. I expect that for the vast majority of us that will be the case this time around, too, but if you have questions, there's a Sandia Contract Competition website on Techweb that has everything you need to know.

\* \* \*

If you ever get up to the northwest corner of New Mexico, a detour over to the Four Corners monument on the Navajo Nation is a must and a photo of your kids straddling four states – Utah, Arizona, Colorado, and New Mexico – well, that's obligatory. Of all the great photo locations in the country, Four Corners may take the cake as the one that generates the most goofy grins and extreme body contortions. To be in four states at one time is, let's face it, just cool.

But Four Corners, interesting as it is for geography buffs and for folks who keep score of all the states they've visited, doesn't compare to the most amazing piece of temporal/geographic convergence I've ever heard of. It's like Four-Corners-cool raised to the 10th power.

My mother-in-law, whose boundless curiosity and ability to delight in stuff like I'm about to pass along to you, has kept her young at heart well into her ninth decade. She came across this item online and sent it to me, knowing me well enough to recognize that I'd have the same “wow” response she did. Here is the story, which you can find in various forms on the web. It appears to be true:

The passenger steamer *SS Warrimoo* was quietly knifing its way through the waters of the mid-Pacific on its way from Vancouver to Australia. The navigator had just finished working out a star fix and brought Capt. John Phillips the result. The *Warrimoo's* position was spotted at about latitude 0 degrees 30' N and longitude 179 degrees 30' W. The date was Dec. 30, 1899.

First Mate Daylon broke in, “Captain, do you know what this means? We're only a few miles from the intersection of the equator and the International Date Line!”

Capt. Phillips knew exactly what it meant, and he was prankish enough to take full advantage of the opportunity for achieving the navigation freak of a lifetime.

An ordinary crossing of the date line is confusing enough to passengers, but the possibilities he had before him were sure to confound them for the rest of their lives. The captain immediately called four more navigators to the bridge to check and double-check the ship's position every few minutes. He changed course slightly so as to bear directly on his mark. Then he carefully adjusted engine speed so that he would strike it just at the right moment. The calm weather, the clear night, and the eager cooperation of his entire crew worked successfully in his favor. At exactly midnight, local time, the *Warrimoo* lay exactly on the equator at exactly the point where it crosses the International Date Line.

The consequences of this bizarre position were many and varied. The forward part of the ship was in the Southern Hemisphere and the middle of summer. The stern was in the Northern Hemisphere and the middle of winter. The date in the aft part of the ship was Dec. 30, 1899. Forward it was Jan. 1, 1900. The ship was therefore not only in two different days, two different months, two different seasons, and two different years, but in different centuries – all at the same time. Moreover, the passengers were cheated out of a New Year's Eve celebration, and one entire day: For them, Dec. 31, 1899, disappeared from their lives for all time.

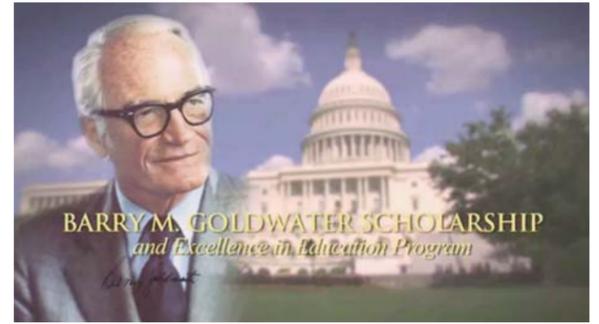
Hey, that lost day ain't so bad! There are a few New Year's Eves in my past – I should emphasize *distant* past – that I wouldn't mind “losing.” There are probably even a couple I “lost” without any help from Capt. Phillips' navigational hijinks.

See you next time.

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

## Two Sandia student interns named Goldwater Scholars

By Neal Singer



Sandia student interns Hattie Schunk (1816) and Julian A. Vigil (6124) have been named 2016 Goldwater Scholars.

The undergraduate scholarship, established on a national basis by Congress in 1986 to honor former senator Barry Goldwater, annually pays tuition, fees, books, and room and board for 250 college sophomores and juniors pursuing research careers in mathematics, the natural sciences, or engineering.

### Hattie Schunk

A chemical engineering major at Texas Tech University, Hattie plans to earn a doctorate in bioengineering with the ultimate intent of improving medical diagnostic capabilities, devices and therapies.



HATTIE SCHUNK

She worked last summer under the mentorship of Sandia researcher Hongyou Fan (1815) to assemble functional nanoparticles, on which she co-authored a peer-reviewed publication, “Nanomaterials under stress: a new opportunity for nanomaterials synthesis and engineering,” with Hongyou last November in the *Materials Research Society Bulletin*. Her projects were funded through Sandia's Laboratory Directed Research and Development (LDRD) program and the DOE's Basic Energy Science office. Her current work researches methods to control nanoparticle structure and composition, the intended subject of another technical article to be completed during the 2016-17 school year. She'll return to Sandia this summer to work further with Hongyou.

### Julian Vigil

Julian, a student at the University of New Mexico majoring in chemical engineering, conducts research on electrochemical catalysis relating to energy conversion and storage under the supervision of Timothy Lambert (6124), with whom he has co-authored six peer-reviewed publications, including three as first author. His latest, “Cobalt phosphide-based nanoparticles as bifunctional electrocatalysts for alkaline water splitting,” appearing in 2016 in the *Journal of Materials Chemistry A*, was about development of nanoparticle bi-functional electrocatalysts that can split water into hydrogen and oxygen. But the prolific student scholar has another in preparation and in fact has been contributing since he was in high school, says Tim, mentor of Julian since the summer following his junior year when he enrolled in Sandia's STAR program. Julian's Sandia work has been funded by LDRD, and he ultimately intends to perform research and teach at the university level.



JULIAN A. VIGIL

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LOCKHEED MARTIN

# Livermore educators win Sandia Excellence in Teaching awards

A recent knock on the classroom doors of three Livermore teachers brought a welcome surprise — the news that Heather Dion, Donna Lee, and Amanda Johnston had won the Sandia National Laboratories Excellence in Teaching Award.

Presented annually to teachers in the Livermore Valley Joint Unified School District (LVJUSD) for extraordinary dedication in science, technology, engineering, and math (STEM) subjects, the honor comes with a \$500 cash award to each teacher.

“Innovation in bringing new and engaging ideas into their classrooms was a theme among the winners,” says Madeline Burchard (8521), Sandia community relations officer. “So we decided to be a bit innovative by surprising the teachers in their classrooms before they were officially recognized at a Livermore School Board meeting.”

The school district’s Public Relations Officer, Sam Tobis, STEM coordinator Regina Brinker, and Livermore Valley Education Foundation (LVEF) trustee Sue Ackerman joined Madeline in notifying the winning teachers.

## Amanda Johnston — no task too big

Johnston, a Livermore High School (LHS) science teacher, has taken on challenges usually reserved for more senior staff. Within her first two years, she was already teaching multiple subjects.

“She has done a great job with many classes including our Green Engineering Academy’s most demanding course, engineering physics, which combines physics, mechanical engineering, electrical engineering, software engineering, and robotics,” says Mike Waltz, a teacher in the LHS Green Engineering Academy. “I don’t think there is another new teacher who could handle this breadth of rigorous STEM subject material all while learning the skills of classroom management.”

Outside the classroom, Johnston attended Project Lead-the-Way training and seminars to learn about new technology for the engineering curriculum. She also galvanized her entire Engineering Physics class to compete in the school district’s Science Odyssey and coached the LHS girls water polo team.

## Donna Lee — quiet dedication

Lee, a science teacher at Junction Avenue K-8 School, was nominated for bringing progressive STEM curriculum to her students and her passion for ensuring access to educational opportunities for all, regardless of economic background.

Lee has completed extensive teacher training, including Lawrence Livermore National Laboratory’s Teacher Research Academy, the Exploratorium Teacher Institute, and Project Lead-the-Way summer. She helped her students participate in Expanding Your Horizons by arranging for transportation and securing scholarships that paid registration fees.

## Heather Dion — sharing the world in her classroom

Dion, a transitional kindergarten teacher at Jackson Avenue Elementary School, was recognized for her innovative use of technology to make classroom material come alive, including Skype videocalls with scientists in Antarctica and a veterinarian at a turtle hospital. She challenged her 4- and 5-year-old students to program spherical robots through mazes and a variety of other challenges.

“Failure is not a bad thing in Ms. Dion’s classroom. It is a way to learn,” says Julie Janzen, the district’s elementary technology specialist. “It is amazing. Even during free time her students continue to ‘play’ with scientific concepts.”

## STEM education a priority for Sandia

In 2007, Sandia established an endowment with LVEF to fund the Excellence in Teaching Award. Principals and staff members can nominate teachers for the award, and parents and students are encouraged to submit suggestions for potential nominees to principals. LVEF organizes and leads the selection committee, which includes its representatives and those from the school district, Sandia, and the community.

The Excellence in Teaching award is just one way that Sandia supports STEM education in the community. Other programs include Family Science Night, the DOE Science Bowl, Expanding Your Horizons, and the Math and Science Awards. Through employee volunteers and donations from the Lockheed Martin Gifts and Grants program, Sandia also supports MathCounts and numerous science fairs and STEM competitions.



TRANSITIONAL KINDERGARTEN teacher Heather Dion received a Sandia National Laboratories Excellence in Teaching Award for her innovative use of technology in her classroom. (Photo courtesy of Livermore Valley Joint Unified School District)



THE STUDENTS IN THE TRANSITION KINDERGARTEN class of Heather Dion, second from left, help celebrate her Excellence in Teaching Award. Livermore Valley Education Foundation board member Sue Ackerman, far left, Madeline Burchard (8521), center, Jackson Avenue school principal Shari Johnston, right, and representatives from the Livermore School District surprised Dion and the other two recipients in their classrooms with news of the awards. (Photo courtesy of Livermore Valley Joint Unified School District)

## Overachievers under Forty

By Stephanie Holinka

Sandians Katie Esquibel (10653), Kenny Armijo (6123), and Rafael Gonzalez (1747) were recipients of the *Albuquerque Business First's* 40 under Forty award, which honors the state's top young professionals each year. They were selected from more than 350 nominees from all over the state.



### Katie Esquibel . . .

. . . is a project controller supporting RF & Electronics Systems Center 5300. Previously she worked as a technical business development specialist in the same group.

Katie earned a bachelor's in elementary education and special education, with a minor in history, from the University of New Mexico (UNM).

After completing her student teaching work in a kindergarten inclusion class, she decided to get involved in more policy work, and went on to get her MBA at UNM with a concentration in policy and planning with an emphasis in nonprofit management. She worked in the nonprofit sector before coming to Sandia.

She also was a ballet dancer for more than 20 years, and continues to stay involved in the arts through board work with dance organizations. Katie says the discipline and practice of dance helped her develop her leadership abilities.

Above all, she strives to make New Mexico a good place for her and for her family.

"I am a new mom so I want to ensure that Albuquerque is a better place for my daughter to grow up in. My husband and I both were born and raised in Albuquerque and one of our shared passions is education," says Katie.

### Kenneth Armijo . . .

. . . is a senior member of the technical staff who previously worked at Sandia as a postdoc, an intern, and as a participant in the Sandia Summer Institute at Sandia/California. He's been at the Labs for four years.

The selection committee chose Kenneth for this honor, not only on his background, which includes patents, high-impact publications, three startup companies, and research that has been featured on CNN, *Discovery* magazine, and PBS, but for his significant impacts across New Mexico and the local community with contributions through education,

professional development, and economic outreach.

His work at Sandia has spanned several areas of research within the Solar Photovoltaics, MEMS, and Concentrating Solar Thermal Energy Technologies departments, as well as with several New Mexico Small Business Assistance, DOE Small Business Vouchers,

and Laboratory Directed Research and Development projects.

The outreach programs he has helped to start have impacted children and parents in low-income areas, where he and his colleagues have pushed to not only educate students about the importance of STEM education careers, but also to educate the parents to encourage their kids to do so and perhaps also go back and finish their education.

His work with local New Mexico-based companies in Sandia's NMSBA program, which has previously benefitted his family's chile farm, has enabled many companies to innovate technically and business-wise so they can enter new markets with new products, says Kenneth.

Kenneth holds a PhD in mechanical engineering from the University of California, Berkeley, with minors in energy and resources, and business credentials in Management of Technology from Berkeley's Haas School of Business. Kenneth also received a master's degree in science in mechanical engineering from Berkeley.

### Rafael Antonio Gonzalez . . .

. . . has been at Sandia for just eight months as a MESA Fab operations manager but he brings a breadth of industry experience and a unique perspective from his previous career at Intel Corp.

He is already widely recognized by his peers as an outstanding engineer and leader in the semiconductor industry in the country and the world, as well as a subject matter expert in lithography, metrology, and semiconductor fabrication. He was nominated by his peers to serve as the 2016 president-elect for the New Mexico Society of Professional Engineers.



FAST COMPANY — Kenneth Armijo, left, Katie Esquibel, and Rafael Antonio Gonzalez have been named to *Albuquerque Business First's* annual 40 Under Forty list.

(Photo by Randy Montoya)

Rafael volunteers for many STEM initiatives across the state such as Noche de Ciencias. He also volunteers in other Sandia-supported STEM activities such as the Dream Builders program, RoboRAVE, and he recently gave a MESA Fab tour for the White House initiative My Brother Keepers. He was selected to join the Hispanic Philanthropic Society council through United Way, which places him among the most influential Hispanic leaders in the state.

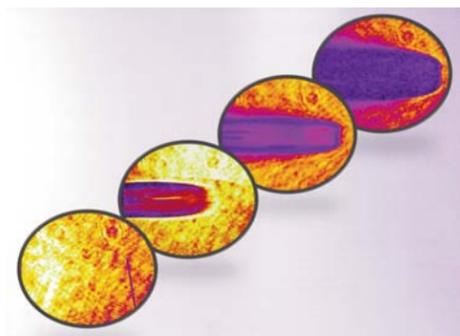
Outside of work, he enjoys spending time with his wife and two daughters, traveling, learning about ancient civilizations, and investing. Rafael also enjoys spending time to improve his community, especially in areas related to STEM education and economic development.

"My passion is empowering the Hispanic community to realize its fullest potential and to impact the world through STEM awareness, access, support, and development where Hispanics are highly valued and influential as leading innovators, scientists, engineers, and entrepreneurs," Rafael says.

The honorees will celebrate at the *Albuquerque Business First* black and white-themed awards event June 16 at Sandia Resort & Casino.

## Ultra-fast camera

(Continued from page 1)



FOUR IMAGES taken at two-nanosecond intervals by two UXI cameras show the evolution of a blast wave in laser-heated gas. The images were taken to help understand the laser preheating phase of an experimental technique at Z called Magnetized Liner Inertial Fusion (MagLIF).

physics experiments within the NDP."

The camera has already been used successfully in hundreds of experiments at Sandia's Z-Beamlet Laser facility and at LLNL's National Ignition Facility.

"Z camera-capability needs are different from any out there," says Greg Rochau (1683), program manager of the Sandia effort. "There are CCD (charge-coupled device) cameras that can take a single frame faster than UXI, but none that can take multiple images at a 1.5 nanosecond temporal resolution."

"This project is important," continues Greg, "because there are dynamics happening during the stagnation phase [when the fuel is at maximum compression] that we are unable to simulate with the best computational models because we don't know what physics we're missing. We think what's happening is at a spatial and temporal level that is smaller than we can currently observe. UXI enables diagnostics with better spatial and temporal resolution than we've ever had. Anytime you can measure something better than you could before, you learn something new."

### Technology available for licensing

Without UXI, several expensive, radiation-hardened CCD cameras coupled to microchannel plates — each with high-voltage power supplies and a bulky, expensive support system — would be needed to record data to this precision. A single such camera might be used in successive experiments, with the camera programmed to fire a little later each time, but since no two experiments are exactly alike, it's hard to be sure how many nanoseconds into the second, third, and fourth experiment the camera should capture. Then there's the expense of running the same experiment over and over.

The Sandia technology is available for licensing at significantly less cost, and could be of interest to government labs, industry, and universities whose research could prosper from a new ability to view a succession of chemical, nuclear, or biological reactions that occur in nanoseconds.

The sensor, developed in partnership with Z at Sandia's Microsystems and Engineering Sciences Applications (MESA) center, consists of a radiation-hardened integrated circuit bonded to a silicon photodiode array. The bonding of these two integrated circuits joins two wafers, like two pancakes stitched together, into a monolithic hybrid structure.

"To date, we have created three generations of hybrid sensor cameras, each of which improves on its predecessor," says MESA team lead Marcos Sanchez.

The current sensor arrangement used at Z and NIF is a ½-megapixel camera, with two frames of image storage per pixel.

Subsequent sensors added the ability to capture more frames by turning on rows of pixels at different times, and by increasing the number of storage frames per pixel.

"Another unique feature of our sensors is the ability for a user to adjust both the shutter-time and the time between subsequent shutter openings," says Marcos.

Each sensor's shutter speed and inter-frame time can be set from 1.5 to 19.0 nanoseconds, making the sensors highly configurable to match the parameters of the experiment.

Almost all sensor development was accomplished at the MESA facility. "Having a silicon integrated circuit foundry as well as a compound semiconductor fab, and co-located testing, integration, and packaging facilities enables the development of unique products such as UXI," says Marcos.

### Next goal: 20-picoseconds

Work in progress with General Atomics in San Diego promises to shorten the image time to the 20-picosecond range within a year by coupling a UXI sensor to an innovative "pulse-dilation" tube developed by researchers at General Atomics and LLNL. The development of the UXI camera to date has been a cooperative effort within Sandia and with its partners.

"At first it wasn't that clear that the concept would work or was possible," says John, who identified and encouraged the collaborations with NIF and with General Atomics. "Engineering design tools are not always capable of simulating full-system performance. It was a daunting question as to whether the system could handle being put into the harsh radiation, shock, and electrical noise environments of Z and NIF.

"I believed in the team through multiple design challenges and encouraged them to try and find creative solutions to something that had not been attempted before, because if you don't believe something works, it's easy to convince yourself it doesn't.

"Things seem easy to do after you know they can be done," John concludes.

The ultimate goal is to close in on the fundamentals of fusion enough to create data useful for national defense, and then take it further to high-yield and, eventually, energy production.

Says John, "It sounds like a headache, all the steps, I know. Some of us love that, I don't know why. It's the nature of fusion. It's a multigenerational project, and it still captures peoples' imagination." A technical article was published in SPIE last summer on the circuitry of the device. More articles are expected out for review this summer, says John.

# WARRIOR WOMEN

## First women join Sandia hiring program for combat-injured veterans

By Rebecca Brock

**W**hen we consider US service members in combat, putting their lives on the line, what are the first images that come to mind?

“When my husband and I are out, people assume that he is the veteran, and I’m the Army wife,” says Gabrielle Holcomb (10222), a quality assurance specialist at Sandia and an Iraq war veteran. “It is so common now that I am used to it. Most people expect that if someone is a veteran, they are a man.”

Sandia recently added the first two women veterans into its Wounded Warrior Career Development Program (WWCDP), a staffing platform that specializes in hiring combat-injured veterans into positions at the Laboratories. Gabrielle was the first woman to join, followed by Lindsey Kibler (3654), an emergency public information coordinator and a veteran of the Afghanistan and Iraq wars. WWCDP offers injured veterans opportunities to acquire practical skills through job training and executive-level mentoring at Sandia. The goal is to facilitate a smooth and successful transition from military to civilian careers. Veterans typically are hired for limited term employment of one to three years and are expected to pursue advanced-level college degrees.

Organizers of Sandia’s WWCDP say they are excited about the new trend they are seeing of more women veterans in the hiring program.

“We really want to recruit more women,” says WWCDP co-lead H.E. Walter II (4254), an Air Force veteran and an information security specialist at Sandia who helped launch the program in 2010. “It is important that women veterans know this opportunity is available to them.”

According to the US Department of Veterans Affairs, 9 percent of American veterans are women, making up about 2 million of the nation’s 21.9 million veterans.

Sandia’s Wounded Warrior Career Development Program is the only staffing initiative of its kind among the 17 DOE laboratories. “I think we are leading the way for other national labs to consider doing these kinds of programs,” says H.E.

“These individuals have sacrificed so much for our nation. They bring leadership, integrity, and that mentality of national security and national service that contributes to the missions at Sandia. This is one way we can show our combat-injured veterans, if you are willing to work for us, there are programs that can assist you,” says H.E.

WWCDP has 26 participants with many more applicants waiting to be hired into positions across the Labs. The big challenges, organizers say, are increasing manager awareness about the program and identifying existing positions at Sandia to bring on more veterans.

“The key for this program continuing to succeed is for hiring managers at Sandia knowing about it, and being willing to sponsor combat-injured veterans. Right now we have at least 35 people on the waiting list. We need more managers to say, I am willing to do this,” says H.E.

### WARRIOR GABRIELLE HOLCOMB

Gabrielle “Gabby” Holcomb joined the Army Reserves at 17. She moved around a lot growing up, and she says she learned about disabilities early because both her mother and father are handicapped. An eager student and the eldest child, she felt a military career offered a solid support system. “I knew I was going to need a job right out of high school where I could support myself and continue my education,” she says.

Gabrielle entered the Army as a civil affairs sergeant, where, she says, “I was intrigued to have an opportunity to make a difference and to help people.”

Gabrielle spent nearly 18 months in Sadr City, Iraq, from 2005-2006, where she helped create a women’s shelter. “We offered counseling and a place for local women to go if they needed help, or to get away. Our services were there to gain the trust of the Iraqi people.”

She worked in a combat role in the 448th Civil Affairs Battalion, which fell under a Special Forces group operating out of Baghdad. Gabrielle says, “Women bring a lot of skills to the military. There are fewer of us, but we are still a force to be reckoned with.”



COMBAT VETERANS Lindsey Kibler (3654) and Gabrielle Holcomb (10222) hold photographs from their service in the US Army at the New Mexico Veterans’ Memorial Park in Albuquerque. Lindsey and Gabrielle are the first two women to participate in Sandia’s hiring program for combat-injured veterans. (Photo by Randy Montoya)

While in combat, Gabrielle suffered multiple head injuries. Three were close encounters with explosives. “Each time I was hit in the head by various objects, I received a concussion. I experienced several concussions in a short period of time, leading to a traumatic brain injury.”

The disabilities she has learned to cope with since then include speech issues, memory loss, extreme anxiety, and headaches.

Gabrielle received an Employee Recognition Award for her exceptional work in the counterfeit program.

“Having disabilities does not mean that I will not be an outstanding employee,” Gabrielle says. “I work hard to prove myself and I always strive to do the best job possible.”

Gabrielle says the Wounded Warrior Career Development Program has set her up for career success. “The mentors I work with have really helped guide me along the way.”

Gabrielle holds a bachelor’s degree in business administration and project management from Colorado Technical University. She plans to pursue a master’s degree in business administration and is considering a degree in engineering. She and her husband Travis have a 5-year-old son, Tyler, and a baby girl due in June.

### WARRIOR LINDSEY KIBLER

Albuquerque native Lindsey Kibler is a single mom to son Azrael, age 8, and a veteran of two wars. She served as an Army public affairs specialist for nine years with combat deployments to Iraq (2009-2010) and Afghanistan (2011-2012). She was awarded the Purple Heart for injuries sustained during her second deployment while embedded with a battalion from the 25th Infantry Division.

“People call it your alive day,” she explains, recalling her ill-fated day in Afghanistan. “It’s the day you should have died, but you didn’t. Mine was Oct. 24, 2011.”

Lindsey was working near a combat outpost in a volatile area of southern Afghanistan when an 82 millimeter mortar shell, launched from a shoulder-fired weapon, landed less than 10 feet in front of her. The blast whipped her backwards, resulting in a traumatic brain injury and ruptured discs.

Lindsey now lives with numerous invisible disabilities, including brain and spinal injuries, PTSD, and debilitating migraines.

She says that despite everything she went through in war,

“I really loved my job in the military. I joined because I wanted to be able to say, I have served my country. There is never going to be a brotherhood or sisterhood quite like there is in the service.”

One week after separating from the military with honors including the Meritorious Service Medal, Lindsey was hired by Sandia as an emergency public information coordinator.

“The transition I had from military to civilian life was honestly really hard,” she says. “But to come to an organization that emphasizes health and wellness, national service, and teamwork, I don’t think I could have found a better or more supportive place to work straight out of the military.”

Lindsey says while looking for employment, she didn’t find any better fit than the position she has at Sandia. With experience in crisis communications, the job in emergency public information was a near-perfect match.

Today she is a strong advocate for veterans, a member of Sandia’s Military Support Committee, and a participant in Sandia’s Wounded Warrior Career Development Program.

“Here is an organization that accepts us — wounded warriors — just as we are. There are so many benefits to this program. The biggest one for me is knowing that I have other people who can understand some of the things that I have been through,” Lindsey says.

“From my mentors and managers at Sandia, I am reassured that people here believe in me, and want me to succeed.”

Lindsey holds a bachelor’s degree in psychology and cultural anthropology from St. Martin’s University. Looking ahead, she is considering pursuing a master’s degree in public relations or corporate communications.

### Hiring managers needed

The Wounded Warrior Career Development Program is looking Labs-wide for hiring managers who will sponsor a combat-injured veteran to fill existing job positions. Hiring managers and those interested in volunteering with the program can contact H.E. Walter. Wounded veterans interested in working at Sandia can go to the [woundedwarrior.sandia.gov](http://woundedwarrior.sandia.gov) website, click on “View All Jobs” and enter the keyword “Wounded.” That will bring up current Wounded Warrior job openings.



# Next-gen cyber defenders *Former Marine comes home to mentor Española Valley High School students*

**Story by Valerie Larkin  
Photos by Randy Montoya**

**O**n April 28, instructional designer Tony Lona (3523) visited his hometown in northern New Mexico, taking with him a daylong cyber workshop for Española Valley High School (EVHS) students and a dedication to helping the community through educational outreach.

Thirty students — freshmen through seniors — participated in the workshop Tony and a team of Sandia cyber researchers designed and implemented. The day was filled with hands-on activities including a Python programming session, a disc and network forensics lesson, and an online capture-the-flag game.

### From Marine to mentor

Tony joined the US Marine Corps after graduating from EVHS in 1997. When the gunnery sergeant and combat veteran

retired in 2014 he knew he wanted to give back to his hometown. He joined Sandia later that year through the Wounded Warrior Career Development Program and saw an opportunity to use his instructional design skills to develop curricula that would engage New Mexico kids in STEM and put them on a path to meaningful and challenging careers.

"I wish I'd had a program like this when I was young. Growing up in Española Valley, we never heard about anything like this. I want to show these students the opportunities available to them in science, technology, engineering, and math fields and what it takes to be successful in those fields," Tony says.

### Tracer FIRE for high school students

The workshop's curriculum was based on the Tracer FIRE program, a Sandia-developed cybersecurity training exercise for college students, which was scaled to a high school level.

"What we want to do is energize and motivate the students,"

said Kevin Nauer (9312), Tracer FIRE founder and workshop volunteer. "We realize we can't make anyone an expert in a particular area in a day, week, or even a month, but we want them to realize they can apply what they're learning in school."

### A dedicated team of volunteers

In addition to Kevin, cybersecurity researchers Seanmichael Galvin (9312) and Cedric Carter (5621) instructed the students and also shared personal stories about their career paths and what they find rewarding about their work. Tony's high school friends Jessica Montoya-Valerio (10590), a business management professional, and Diego Lopez, a New Mexico filmmaker, spent the day at the workshop, sharing their perspectives as EVHS alumni and encouraging the students to continue their educations.

"We're hoping that this workshop will help the kids get into these fields in college, and I believe that with this foundation, they can be our next cyber warriors," Jessica says.

The school's teachers helped too. A week before the workshop, a group of EVHS math, science, and English teachers visited Sandia to become acquainted with the curriculum and the Tracer FIRE program so they could help facilitate the workshop. "These students are 100 percent engaged," says Nenette Juarez, an EVHS math teacher. "They don't even mind not knowing the answers to the questions because they have the tools available to them to find those answers."

At the end of the workshop, Tony encouraged the students to continue the learning and collaboration they had kick-started that day, and to start a cybersecurity club at EVHS. He's already planning his next outreach project, a programming workshop for elementary students he'll take to Española this fall.

THIRTY STUDENTS ATTENDED the full-day cyber workshop presented by Tony Lona and a team of Sandia cybersecurity researchers. In the photo directly above, a student listens during a session on cyber forensics. In the photo at top left on the opposite page, Jessica Montoya-Valerio (10590) speaks with a local news reporter about the importance of the program. Cedric Carter (5621), in photo at top right, shares his passion for cyber research with EVHS students. In the center group of photos, Seanmichael Galvin (9312) helps students work through a problem. At right, Tony Lona (3523) looks on as students apply the new skills they developed that day.



THE DAY TONY LONA VISITED EVHS to present a cybersecurity workshop to the school's students, his mother Sylvia Garcia was there to cheer him on. Garcia has brightened the halls of EVHS with her warm smile for 19 years as a member of the school's custodial staff.





ELECTROMECHANICAL TECHNOLOGIST Gilbert Gonzalez and mechanical engineer Megan Tribble, both in Explosives Engineering Operations Dept. 5439, test configurations for the Explosive Destruction System, or EDS. The Sandia-designed system was developed in the 1990s and is the only successful technology that doesn't use incineration to destroy munitions. Over the years, the basic operation of EDS has remained the same. At its core is a leak-tight vessel in which

munitions are placed. An explosive shaped charge opens the metal shell, exposing the chemical agent and burster, a small explosive that disperses the agent. The burster explodes or deflagrates safely inside the vessel. A reagent is then pumped into the chamber to neutralize the chemical agent. The chamber is heated and rotated to mix the chemicals and speed the reaction.

(Photo by Randy Montoya)

# Movin' and groovin'

**Explosives group has developed, tested technology in support of national defense for more than five decades**

By Lindsey Kibler

Last year the US Army began safely destroying stockpile chemical weapons using the Sandia-designed Explosive Destruction System, or EDS, at the Pueblo Chemical Agent-Destruction Pilot Plant (PCAPP). The PCAPP is located at the Army's Pueblo Chemical Depot, near Pueblo, Colorado, and houses 8 percent of the nation's chemical weapon stockpile, according to the US Army Chemical Materials Activity.

The EDS was the result of a more than 20-year project, developed and tested by the Explosive Engineering Operations Dept. 5439, in response to the need to destroy the US cache of recovered, non-stockpile chemical munitions. The success of EDS in non-stockpile operations has led to its use to address the broader problem of stockpile chemical weapons, including more than 780,000 munitions containing mustard agent that have been stored at the depot since the 1950s.

In February, the PCAPP EDS successfully concluded its first campaign, destroying 560 previously over packed problematic munitions, all of which were considered to pose critical safety concerns. Jerry Stoffeth, an electrical engineer who has worked in the group since 1985 and is the primary explosive system designer for the EDS, says, "There were a few operational issues that were solved quickly by the integrated Sandia Labs and [pilot plant] team."

The second phase of the operation is scheduled to start in early 2017. Jerry and his colleagues have continued to work on upgrades to the existing EDS and a new, retrofitted system will be sent to PCAPP in the coming months to support destruction operations.

Beginning in July, the EDS will be used to begin destruction of more than 200 munitions dug out of the ground in Tooele, Utah.

"We are moving and grooving to prepare an EDS for this series of 'one-off' operations. Some of these munitions are in a particularly challenging state because they are bent or dirt-crustured," Jerry says. Tooele is home to the Tooele Army

Depot, the DoD's western region conventional ammunition hub. Operations at Tooele are responsible for the demilitarization of conventional ammunition deemed obsolete in the DoD stockpile or identified as unstable in storage.

## 20 years of Z

The EDS isn't the only project that has kept the group busy. The team is working on improving a key component for the Z machine — an ultra-fast explosive closure valve (UCV).

"In recent years, the machine has reached a point where the performance requirements are exceeding what the UCV is capable of providing. We were asked about three years ago to look at the current valve to try to fully quantify it and understand what its performance aspects were. That led to us supporting a new design that we've been working on for 18 months," mechanical engineer Venner Saul (5439) says.

Venner says the design has led to a series of parametric studies to quantify what the group worked to accomplish with the valve and what the performance requirements were. The valve has been put through at least 150 tests over the past year and, in the past six months the group has started the next-generation UCV design that will culminate in a new fielded design in about two years.

## Small group, vast experience

With just 10 members, Explosives Engineering Operations may seem small but the group has more than 200 years of combined experience at Sandia alone. Members have brought additional years of experience outside the Labs in areas like chemical and mechanical engineering, military operations, and carpentry, heavy equipment operations, and fabrication.

The group also routinely consults with Sandia retiree Paul Cooper, one of the world's foremost explosives experts. Paul, now a no-fee consultant for Sandia, retired in 1997 after a 32-year career. He started working in explosive components in 1965 and that eventually led him to the arming and firing group in 1977. Over the years, the arming and firing

group, coupled with Paul's desire to apply robust explosives engineering to nuclear underground testing, became part of today's Explosive Engineering Operations group. In the past decade, the Arming & Firing Systems (5433) and Explosives R&D (5438) departments were combined with 5439 to form one large department under Explosive Systems & Technologies (5430).

Even the group's facility has been around for decades. It was constructed in 1961 and used as a bunker, storage closet, and armory, among other things, before becoming the group's permanent home.

"This is the only field testing explosive group at Sandia that has been continuous," says Neil Altomare, one of the group's more recent hires. Coincidentally, Neil was first introduced, albeit inadvertently, to the group on a battlefield in Afghanistan. It was there that he used the Advanced Personnel Obstacle Breaching System, an improvised explosive device- and mine-clearing tool initially designed by many of the same people still in 5439. At the time of development, the equipment was known as the Small Projected Line Charge.

## 'Nuclear terror' helps build solid reputation

The device is only one on a long list of technologies developed for or in support of the military. In 1979, Paul and other members of the group joined the national Nuclear Emergency Search Team (NEST), and served as weapons disablement experts.

"The arming and firing guys took a good part of the responsibility [of NEST]. They were put together because we were worried about foreign terrorists building improvised nuclear devices and fielding them here. So they picked up all of the arming and firing work for NEST and that also led to the analysis of how the bombs work and how you take them apart and all of the explosive tools for doing that," says Paul. Because of the amount of work NEST generated, it became a large part of the group's work at that time.

(Continued on next page)

## Movin' and groovin'

(Continued from preceding page)

By the mid-1990s, the group transitioned into an advisory and training role for NEST while the military took the lead.

"That was really a transition for us," says Jerry. "The NEST program allowed us to transition and to develop more competencies, more capabilities, and more customers, mostly based on reputation."

It's that reputation that has brought the group national recognition and praise — and more projects.

### Customer-driven

With no shortage of work, the department considers itself to be self-supporting.

"Customers come to us and tell us what it is they want. From there, we characterize what the request is and we get to work. There have been a few occasions where a customer approaches us with their problem on a Thursday and by Monday or Tuesday we've built, tested, and re-tested the problem and have a solution," says Gilbert Gonzalez, an electromechanical technologist who joined the team in 1986.

This was the case, following the Sept. 11 attacks, when a passenger was threatening to bring down an airplane with liquid explosives. The Department of Homeland Security asked the FBI to investigate how many ounces of liquid a passenger should be allowed to carry without posing a security risk. The FBI, in turn, got in touch with Sandia's Systems Research Center (5900) which, on a Thursday, got in touch with Jerry. The group immediately got to work over the weekend, building shells of airplanes and testing the damage that could be done with various amounts of liquids. Following the testing, the end result was 3 ounces, which continues to be enforced today at airports across the country.

This work led to the formation of the National Center of Excellence for Explosives, led by Sandia with participation from Los Alamos and Lawrence Livermore national laboratories. The Department of Homeland Security funded the work for several years following initial testing.

### Reputation built on trust, hard work, creativity

The group relies heavily on customer requests and takes pride in the fact it will "never say no" to a project. "Not only will we do it but we will do it better than anyone on the planet," says Jerry.

The group has won a NOVA award, the highest honor given by Lockheed Martin, and received the Diplomatic Security Service Appreciation Award from the Department of State. "It's not just the attitude of everybody here — the 'can do' philosophy, self-motivation, and desire to learn new things — it's that fact that we can all work together. There's not one person here who I don't consider a friend. If you can't get along with someone, no matter how smart or competent they are, it's going to be hard to work with them," says Jerry.

With all of the hazards the group is faced with on a daily basis, Gilbert says it's imperative to believe the person to your left or right is doing the right thing. "To some degree you're putting your life in someone else's hands," he says, and he's done just that thousands of times. Of the 10,000 shots fired by the group, Gilbert has pushed the button on 90 percent of them.

Jerry says the group has been successful because the members trust and respect each other, adding that it helps that everyone in the group is a perfectionist. "It's not that everyone has an aptitude, it's that the group itself has an aptitude. It all comes down to doing good work, building a reputation, and having people come around and recognize



SANDIA'S EXPERT ANALYSIS of the 1989 USS *Iowa* gun turret explosion concluded that the explanation for the tragedy that killed 47 sailors put forth by the US Navy was flawed. Sandia's investigation determined the explosion was likely caused by a significant overram of the powder bags into the gun as it was being loaded. Sandia also found the physical evidence did not support the Navy's theory that an electronic or chemical detonator had been used to initiate the explosion. (Image credit: US Navy)

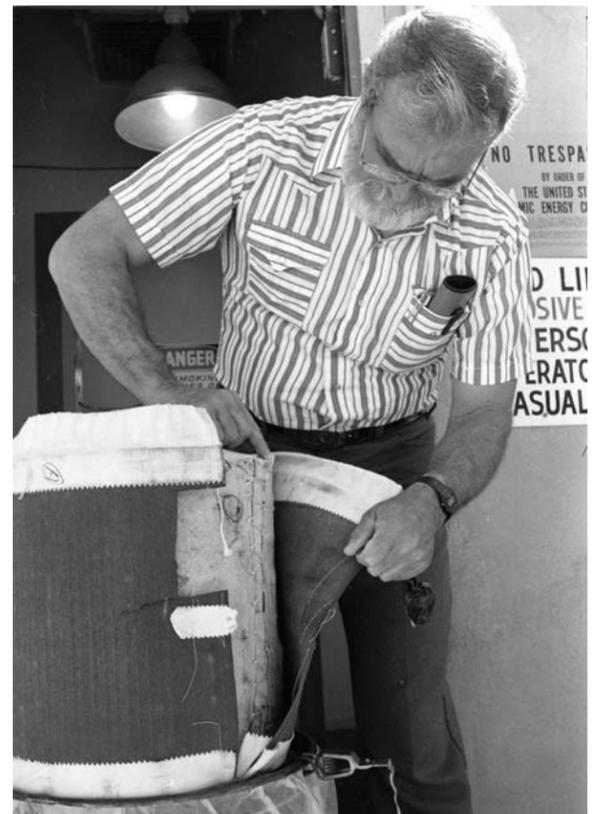
Explosive Engineering Operations has supported numerous investigations and projects. Here's a small sampling of those done in support of national security.

#### Investigations

- The April 19, 1989, gun turret explosion on the USS *Iowa*
- October 1991— United Nations/International Atomic Energy Agency inspection team sent to Iraq to look for evidence of weapons of mass destruction
- The April 19, 1995, Oklahoma City Bombing
- The July 17, 1996, TWA Flight 800 explosion over the Atlantic Ocean
- The June 9, 1998, DeBruce grain elevator explosion near Haysville, Kansas
- Critical infrastructure blast vulnerability analysis following the 9/11 attacks
- The 2005 rocket motor fires at Umatilla Chemical Depot in Oregon
- The 2011 Fukushima Daiichi nuclear power plant reactor failure in Japan

#### Projects

- Flight Termination System for the US Army's Advanced Hypersonic Weapon (AHW)
- Kinetic Energy Projectile (KEP) warheads in response to the Gulf War
- Improvements to the Individual Body Armor (IBA) used by troops in Iraq and Afghanistan
- Advanced Medium-Range Air-to-Air Missile (AMRAAM) warhead evaluation and modification
- Fuel-air weapons development
- Multiple national security community projects in support of the DoD and DOE



KARL SCHULER (1522) looks at a propellant bag of the type involved in the USS *Iowa* incident. The dark material is a wear-saving cover; the lighter, laced bag inside is the silk propellant bag. (Photo by Randy Montoya, June 15, 1990, *Lab News*)

that you are a national resource," he says.

For Paul, it's easy to see why the group continues to thrive, five decades after its launch.

"The guys here are very creative and this group meshes

engineers and researchers and developers to make a cohesive group. It's a group full of good people who are talented, creative, and hardworking. That combination is why they have been so successful."



THE OKLAHOMA CITY NATIONAL MEMORIAL honors the victims, survivors, rescuers, and all who were affected by the Oklahoma City bombing on April 19, 1995. The memorial is located in downtown Oklahoma City on the former site of the Alfred P. Murrah Federal Building, which

was destroyed in the 1995 bombing. Sandia's Explosive Engineering Operations group was involved in the forensic investigation of the bombing, which killed 168 people and injured almost 700 more. (Photo by Mark Pellegrini/Wikimedia Commons)

# Mileposts



New Mexico photos by Michelle Fleming



Doug Brown  
40 9312

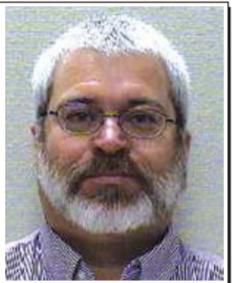


Ron Hartwig  
40 2200

# Recent Retiree



New Mexico photos by Michelle Fleming



William Cook  
33 9530



Wil Martin  
40 2996



Jim Muntz  
40 9329



Christi Leigh  
35 6932



Dave Morrison  
35 256



Paul Taylor  
35 5421



Doug Bickel  
30 5344



Tom Dickman  
30 2728



Deborah Jensen  
30 2622



David Cain  
25 4255



Ron Farmer  
25 200



Mark Olona  
25 3653



Calvin King  
20 5785



John McGlinchey  
20 5525



David Moran  
20 2131



Nathan Sommer  
20 10621



Tina Aiello  
15 10653



Peggy Aragon  
15 1355



Nicole Ballard  
15 9343



Teresa Bennett  
15 10667



Pat Cleland  
15 5752



Steven Fattor  
15 4850



Catherine Green  
15 4020



Richard Schick  
15 1355



Anne Grillet  
15 1513



Tom Gurrieri  
15 1757



Magdalana Heise  
15 2958



Janet Lovato  
15 10500



Deanna Montoya  
15 5964



Robert Morris  
15 5322



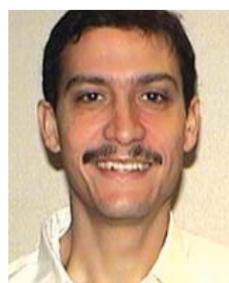
Joe Mulkern  
15 5784



Jeff Salk  
15 6925



Rene Sells  
15 1931



Daniel Villa  
15 6926

# WILD IN CALIFORNIA



**BE AWARE** — With recent El Niño rains and above-normal seasonal temperatures, wildlife around Sandia/California is rather active, says Robert Holland (8516) who recently was called to relocate a snake that made its way to Bldg. 912. Robert's advice for employees is to keep a distance from the wildlife, never feed them or attempt to capture or touch them. (CA photo)

## SANDIA CLASSIFIED ADS

## MISCELLANEOUS

MULTI-FAMILY YARD SALE, May 27-29, clothes, kitchen appliances, etc., 613 Burma Drive NE, 87123. Myers, 505-217-5812.

DINING ROOM TABLE, side board, 8 chairs, Thomasville, originally >\$5,000, asking \$2,500 OBO. Homeijer, 505-220-6823.

WOOD PLANER, Delta, model 22-580, 13-in., 2-spd., used rarely, located in Albuquerque. Copland, 510-292-5032.

KITCHEN APPLIANCES, Whirlpool electric stove, white, \$200; Whirlpool above-stove microwave, white, \$100; Whirlpool dishwasher, black, \$80. Lippert, 299-6594.

QUARTZ SLAB, new, 60" x 67" x 1.125" thick, diamond white, \$650. Lohkamp, 821-5757.

AIR MATTRESS, California king, Comfort Select, oak frame, headboard, 6-drawer pedestal, excellent condition. Wolf, 856-8539.

GIUITAR, Yamaha FG401, full-size acoustic, gently used, \$175. Pino, 720-6504.

BOWFLEX XTL POWER PRO, w/all accessories, top of the line, lightly used, photos available, \$500. Pryor, 505-340-6241.

SNOWBLOWER, Craftsman, 26-in., like new, \$300. Holle, 281-7460.

GIRL'S BEDROOM SET, \$275; bunk bed w/desk, \$220; convertible crib/toddler bed, \$125; call for photos, sale benefits breast cancer research. Good, 505-259-9034.

ARMOIRE & HUTCH, dark cherry finish, \$600/both. Hennessey, 505-269-6243.

ARMOIRE & MATCHING DRESSER, beautiful, Southwest, solid wood, well cared for, photo available, \$350. Mares, 505-980-5438.

WASHER & DRYER, Maytag, excellent condition, \$220/set. Reeder, 505-553-4786.

ANTIQUÉ BABY STROLLER, 1950's Italian, chrome frame, white rubber wheels, carriage has white folding top, nice, \$80. Marchi, 256-0551.

PATIO FURNITURE, 4 high-back swivel/rock chairs, lounge, rain resistant, white, 48-in. glass table, new winter covers, like new, \$550/set. Hagerman, 505-401-1402.

BOOKCASES, 5, Mexico, wash light red & green, 37"W x 10"D x 36"H, paid \$150, asking \$75. Jennings, 878-0828.

FARM FRESH CHICKEN & DUCK EGGS, chicken, \$4/dz.; duck, \$5/dz. Brandon, 505-977-1823.

COLLECTOR'S ITEM, stereo player, excellent condition, classical & easy listening albums, will sell together or separate, make offer. Joseph, 505-822-0536, after 7 p.m.

DESK, L-shaped, black/cherry, 31" x 60" x 60", like new condition, \$200. Oselio, 980-3271, ask for Mike.

WOOD-BURNING STOVE, free-standing, Scandia 808, w/rear venting, 4 legs, \$250. Walsh, 259-9180, ask for Liza.

WEIGHT SET, metal, 350-lb., w/4 ea. 45-lb. plates w/stand, \$175. Schwartz, 220-6301, call or text.

PIANO, Kohler-Campbell, spinet, needs tuning, Wyoming/Comanche area, you haul, free. Heintzleman, 294-1284.

COFFEE TABLE, wrought iron frame, faux crocodile wood pattern, under glass top, photos available, \$200. Villegas, 505-480-6290, ask for Pam.

TABLE SAW, Hitachi, 10-in. blade, complete, custom built cover, cross cut & angle cut attachment, new condition, \$550. Hill, 205-1496.

PASSIVE SOLAR WATER HEATERS, Gulf Thermal progressive tube, 41-gal., \$300; heat pipe, 55+-gal., \$500 OBO. Martinez, 440-7348.

## 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.

PATIO TABLE, 48-in. round, 28-in. high, tempered glass top, beige frame, very good condition, photo available, \$75 OBO. Malcomb, 294-6975.

## TRANSPORTATION

'06 INFINITI G35, 6-spd. manual, charcoal, premium sport pkg., 103K miles, \$8,900. Beals, 238-0528.

'05 LEXUS RX330, AWD, fully loaded, bamboo pearl, gray leather interior, original owner, 92K miles, \$12,975. Chacon, 292-1494, ask for Tony.

'99 JEEP GRAND CHEROKEE LAREDO, 4WD, 112K miles, very good condition, \$3,100 OBO. Connell, 505-554-1696.

'03 HONDA S2000, black, 1 owner, upgraded audio, clean title, 76K miles, \$13,500 OBO. Wilson, 505-750-0013, s2k.riley@gmail.com.

'15 AUDI Q5 2.0T, premium plus model, AWD, technology pkg., 17K miles, \$38,000. Dye, 505-903-9310.

'02 HONDA CRV, manual transmission, AC, 4WD, brown, tan leather, 1 owner, 111,706 miles, good condition, \$4,500 OBO. Keese, 505-459-5593.

'08 ACURA RDX, tech pkg., 1 owner, garage kept, 51K miles, like new, \$16,800 OBO. Pulliam, 362-7931, ask for Dana.

'02 GMC YUKON XL SLT, autoride, 4WD, leather, garaged, original owner, 155,250 miles, \$6,500 OBO. Sears, 440-9959.

## RECREATION

'08 JAYCO 1006 POP-UP CAMPER, excellent condition, everything works, no leaks, \$6,500 OBO. Abbott, 850-5269.

'07 BMW R1200R, hard bags, windshield, highway pegs, recent service & rear tire, 17.5K miles, \$6,500. Castillo, 505-269-1705.

BOAT, Seaswirl, 17-ft., open bow, 88-hp outboard, built-in marine radio, extra plumbed-in fuel tanks, \$6,000 OBO. Barnard, 771-4620.

KID'S TRICYCLE & SCOOTER, nice condition: rugged Kettler trike, w/push handle, \$60; Taxi scooter, \$20. Richards, 331-1542.

'07 POLARIS SPORTSMAN ATV, 800EFI, w/plow, trailer, 500cc motor, 424 miles, great condition, \$6,500. Abraham, 310-498-4466.

'16 FLAGSTAFF MAC 176 LTD POP-UP CAMPER, 17.6-ft., garage kept, used once, \$7,900. Walker, 863-441-3861.

'11 DUTCHMEN AEROLITE TRAVEL TRAILER, 215BHKS, king/bunks, slide out, Cummins Onan P3200ie generator, new condition, \$14,000. Muller, 505-836-9687.

## REAL ESTATE

4-BDR. HOME, 2 baths, 1,740-sq. ft., large den w/fireplace, corner lot, backyard access, Eu-bank/Constitution area, 10 mins. to base, \$198,000 OBO. Sanchez, 505-515-5997.

3-BDR. HOME, 1,618-sq. ft., Holiday Park home, 11800 Golden Gate Ave. NE, 87111, \$215,000. Dyer, 505-433-4325.

4-BDR. CUSTOM HOME, 3 baths, 3,047-sq. ft., 2.5 acres, East Mountains, 15 mins. from Sandia, \$430,000. Manzanares, 505-385-6265.

## WANTED

HOME TO RENT, recent hire needs 3-4 bdr. home, 2 baths, garage, allow cats, July-August timeframe, can assist w/maintenance & upkeep. OMahony, 505-382-4179.

TUTOR, fluent Spanish-speaker to play in Spanish w/8 & 6 yr. olds, send email. Bernstein, 275-8220, elurnemx@yahoo.com.

TOYOTA 4RUNNER, 1996-2000, w/o moon roof, <200K miles. Stromberg, 505-331-8745.

BAND SAW, 12-or 14-in., any condition. Waddoups, 865-7952.

## Sandia recognized for its support of Guard and Reserve members



Sandia was recently recognized as a nominee for the Freedom Award by the New Mexico office of the Employee Support of the Guard and Reserve (ESGR) organization. The award recognizes employers for the exceptional support they provide to members of the Guard and Reserve. Sandia was nominated by several Sandia Guard and Reserve members of the workforce. The Labs has a proactive Military Support Committee that works to support and engage veterans, active military personnel, Guardsmen, and Reservists along with non-military employees who have family members deployed. The committee seeks to engage all levels of the workforce to create and foster a military-friendly community and culture that supports the mission of the Labs. The Freedom Award is the highest award given to companies from the Department of Defense. Sandia has been a semifinalist for the award several times in the past five years but has not yet won the national-level award. For more information, go to: <http://www.freedomaward.mil/>

SUPPORT SYSTEM — The New Mexico office of the Employer Support of the Guard and Reserve organization recently honored Sandia for its track record in support of guard and reserve members and veterans of the Armed Forces. Pictured here accepting the award are, from left, Chris Schiano, Samantha Flores, Lisa Kaneshiro, Rob Kim, the Hon. Charles Cragin (former assistant secretary of Defense for Reserve Affairs), Dustin Gabbert, H.E. Walter II, Raymond Battaglini (New Mexico ESGR state chairman), and Brig. Gen. Juan Griego (assistant adjutant general for the New Mexico Army National Guard).



# Asian Pacific Islander American Heritage Festival

Photos by Lonnie Anderson

Almost 700 people turned out this year for the annual Asian Pacific Islander American Heritage Festival at the National Museum of Nuclear Science and History. The festival was held May 14 in conjunction with Asian Pacific American Heritage Month, which is observed across the nation each May. This year's festival, which featured dances, drumming, lectures, demonstrations, and food sampling, was sponsored by Sandia's Asian Leadership and Outreach Committee, Talin Market, and Lin's Chinese Restaurant and Buffet. According to ALOC chairwoman Tammy Strickland (9512), the attendance this year set a record for the event, which has been gaining in popularity since it was launched some 20 years ago. Tammy says planning for this year's event began in earnest several months ago, and on the day of the event all of the activities went off without a hitch and were very well received. Sandia HR and Communications Div. 3000 VP Melonie Parker was on hand to open the festivities and museum Director Jim Walther welcomed attendees to the venue.

Sandia's ALOC organization works to support the Labs in achieving and maintaining an equitable hiring of Asian Americans; support Asian-American employees in their career development and growth; support Sandia in achieving and maintaining an equitable representation of Asian Americans at all levels of the Labs; and ensure that key issues and concerns affecting Asian American employees are discussed, defined, and brought to the attention of Sandia management. Additionally, ALOC strives to promote awareness of Asian cultures, values, accomplishments, and activities to the general Sandia population and the community at large. Members of the ALOC planning committee for the event included co-chairs Tammy and Lili Xiao (2668), and Tian Ma (5521), Ung Tae Jeong (9518), Chui Fan Cheng (2660), and Lynda Talton (5523).

