

HONORING OUR VETERANS

See pages 6-7.

Unsung heroes of radiation detection

Sandia RAP team works behind the scenes to protect the public at major events

By Mollie Rappe

Richard Stump (6634) has been to five Super Bowls, and hasn't seen a single pass, run, or touchdown.

Richard works security — a very special kind of security — at large public events. He's a senior scientist on Sandia's Radiological Assistance Program (RAP) team. He, along with several other technical team members from across the Labs, make up this unique team. Sandia's RAP team is one of several DOE/ NNSA teams throughout nine US regions.

As sentries scanning the crowd at these events, RAP provides technical expertise to respond to radiological or nuclear threats. In fact, members of Sandia's RAP team recently supported the Republican and Democratic national conventions.

Preventive detection of radiological or nuclear materials is just part of their job. Team members also are first responders for large and small accidents

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SANDIA RADIOLOGICAL ASSISTANCE PROGRAM members (from left) Kevin Rolfe (6634), Chris Williams (4128-2), and Gary Baldonado (6634) scan a football stadium before a game. (Photo by Randy Montoya)



Local schoolkids take a trip to Mars See page 9

Exceptional service in the national interest

Sandia LabNews



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Marie Capitan honored with Blazing Flame Award from American Indian Science and Engineering Society



Lighting the Way

Lead with excellence, value integration, and know the challenges

Executive VP Steve Rottler's all-hands offers a Labs-wide snapshot of the Nuclear Weapon Mission Area status and future



By Cathy Ann Connelly

"It is an incredible time to be a part of the nuclear weapons program," Steve Rottler, Deputy Labs Director and Executive VP for National Security Programs told the nearly 1,000 Sandians participating in an Oct. 18 Labs-wide all-hands meeting for the Nuclear Weapons Mission Area.

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FROM ALBUQUERQUE to Afghanistan and back again — Neil Altomare's remarkable journey. Story on page 6.



EMPLOYEE DEATHS — Colleagues remember Suzie Bemis and Louis Nogales. Stories on page 10.

Make a Difference Month



Sandia volunteers lend a hand in the community

3 supported Urban 4-H's National Day of Science by teaching students about unmanned aerial flight



6 beautified East Gate Kids Learning Center by painting classrooms

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14 helped the Ronald McDonald House prepare for Family Bingo Night

4 cleaned out a garden space at Sunflower Hill special needs community in Livermore

That's that

Thirty years ago, when the holodeck, that virtual reality playground used for R&R by the Starship *Enterprise* crew, was introduced to the world in an episode of *Star Trek: The Next Generation* the technology seemed so fanciful that it could never exist outside the realm of science fiction. Even in the 24th century such a technology would be impossible, wouldn't it?

The holodeck was a fun way to introduce plot elements into a storyline in the same way that time travel is fun. Great fiction, but pure fantasy, right? Well, not quite. Once again, the sci-fi writers and dreamers are ahead of the curve. Heck, maybe somehow they're *defining* the curve. Whatever. The fantastical elements of science fiction seem to have a way of coming true – and way sooner than we would expect.

According to an entry in Wikipedia, key aspects of the holodeck experience will be available within the decade and some of the elements are available today in the form of VR goggles and the accompanying experiential software. Today's VR, which is likely the great granddaddy of what will become the holodeck, enables users to be planted in the middle of a real or imagined environment that gives every impression of being subjectively "real."

Schoolkids here in Albuquerque last month got a taste of the holodeck – a small taste, but a tantalizing one – when the Lockheed Martin Generation Beyond: Mars Experience Bus came to town.

The idea is pretty cool: Kids get into what looks like a regular school bus but when the "experience" starts, the windows go dark for a moment and the next thing you know, you're rolling along on the Martian surface, seeing the landscape change before you and feeling every bump and bounce in the terrain. By all accounts, the kids were all caught up in the experience, oohing and ah-hing right on cue. They left the bus after the 4-minute ride feeling like they'd really been to Mars, which is the essence of the holodeck, including the fact that it was a shared experience: All these kids went to Mars together. The Mars Experience Bus offers just a glimmer of the possibilities of well-implemented virtual reality.

Speaking of which, did you know that starting back in the early- to mid-1990s, Sandia was very involved in developing some of the technologies and conceptual underpinnings for what we now call virtual reality? Sandia's interest was in developing new ways to see, understand, and interact with complex information in ways that would not otherwise be possible. The technology was sophisticated enough and promising enough that it was spun off from the Labs into the private sector, where the company it fostered is still in business.

The fact that Sony and Microsoft and Google and Samsung and who knows who else are selling VR gear – clunky-looking goggles (for now) – tells me that the technology is reaching that critical point where it will really take off over the next few years and continue to be refined and enhanced. The VR experience will inexorably become increasingly indistinguishable from the "real" thing. You can "go" to Paris or London or Cairo – or Mars! – without leaving your desk. And that's exciting, but also a bit troubling.

Each advance in communications technology has been accompanied by a Greek chorus of doomsayers. The printing press, radio, television – each in its turn was seen as a harbinger of the end of civilization as we know it. And yet, here we still are, and, arguably, so is civilization. Is VR really that different from radio or TV or video games or just more of the same only bigger and better?

Based on my understanding of where VR is and where it's going – remember the holodeck – I think it *is* different qualitatively. I have enough imagination to understand what a powerful force for good the coming era of virtual reality can be. Just consider that Mars Experience bus ride, which is an intrinsically good thing. But I also see potential dark corners that scare me.

My sense is that the technology is uniquely seductive and as such could play havoc with flesh-and-blood human relationships. Will people increasingly opt for virtual experiences at the expense of the real thing? And does that matter? I don't know but I get a queasy feeling at the thought of it. I think I'll just pop on my VR headset and go to Tahiti for a couple of weeks to get my mind off things. And then maybe the Seychelles. And then – what the heck? – Mars.

See you sometime.

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

2017 Open Enrollment

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- Active Employees: Oct. 31-Nov. 17
- PreMedicare Retirees: Oct. 15-Nov. 18
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For info, check out hbe.sandia.gov.

Retiree deaths

Eldon Ritterbush (age 77)	August 19
David Hebron (75)	August 26
Alice Risse (72)	August 28
James Hopwood (84)	August 29
Andrew Frazier (76)	August 30
Charles Stanton (94)	September 1
Sedilla Loudon (66)	September 3
J. Gary Holmes (66)	September 4
Warren Brown (80)	September 5
Michael Neuman (70)	September 9
Dennis Martin (69)	September 10
Clayton Erickson (89)	September 11
Andrew Myers (77)	September 12
Antonio Trujillo (92)	September 13
Gerald Williams (80)	September 15
James Henry Porter (92)	September 15
Hugh Colvin (89)	September 15
Cleo Lee Gomel (99)	September 17
Darrell Christensen (84)	September 20
Jesus Maria Luna (93)	September 20
Ernestina Gelabert (87)	September 20
Paul Herrera (74)	September 23
Richard Corn (96)	September 30
Murl Moore (83)	October 8
M. Ann Freudendahl (73)	October 11
R. Stanley Howard (91)	October 22

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Bialystock team honored



IN THE SEPT. 30 *Lab News*, the wrong photo was inadvertently used for the Bialystock team, recipient of a 2016 Employee Recognition Award. Here's the correct photo. According to the ERA citation, the team applied advanced data analytical techniques to answer a national security question that remained unanswerable for at least the past 25 years. Team members pictured here are, back row, left to right, Jared Gearhart, John P. Franklin, Michael Gregson, and Nathanael Brown. Front row: Alisa Bandlow, Chris Frazier, Justin Durfee, and Jose Saloio. Not pictured are Linda Nozick, Andrew Collins, and Asael Sorensen.

URBAN SHIELD

Emergency responders participate in active shooter exercise

By Michael Padilla • Photos by Randy Wong

How do emergency responders react if a disgruntled former employee and two other unidentified subjects come on site, kill people, and take others hostage? That was the scenario used to test emergency responders during a recent exercise hosted by the Alameda County Sheriff's Office at Sandia/California.

Called "Urban Shield 2016," the 48-hour training exercise involved local, national, and international first responder agencies. Participants included the Alameda County Sheriff's Department, Livermore Police Department, Pleasanton Police Department, Urban Area Security Initiative, 32 Bay Area SWAT teams, Mexican Federal SWAT team, a SWAT team from Taiwan, and Las Vegas Tactical team.

The exercise tested Sandia's emergency response organization's liaison and coordination capability with local law enforcement during an active shooter barricade situation.



RESPONDERS participating in Urban Shield focus on ensuring they are ready to respond to threats as required.

The exercise, which took place in Bldg. 928 and the General Access Area event pad, was intended to ensure that external response partners can readily react to possible threats as required and that Sandia's emergency response organization can effectively engage with off-site responders.

John Norden (8511), emergency management coordinator at Sandia/California, says some 20 Sandia personnel participated in the event including representatives from Security Operations, Protective Force, Central Alarm Station, and Emergency Management. John gives special recognition to Chris Kunz (8126) and his wife Mona, Patrice Sanchez (8523), and Leticia Longoria (8515) for giving up their weekend to support the exercise.

"Hosting the event at Sandia provided a great chance to open the lines of communication between the site and the Livermore Police Department. As one officer stated, it 'took the mystique out of the Sandia facility,' meaning they have a better understanding of what we do," John says.

Throughout the exercise, teams were confronted with events averaging one hour or more in duration



URBAN SHIELD PARTICIPANTS prepare to move into location.



JOHN NORDEN AND BILL McALLISTER (both 8511) prepare for Urban Shield. (Photo courtesy of Urban Shield exercise)

and designed to test their training, preparation, and decision-making skills. Teams used technology provided to them during the scenarios. After each scenario, the teams provided feedback concerning the resources and technology used and discussed ways to better prepare for emergencies.

"The event allowed participating agencies a practical opportunity to evaluate their tactical team's level of



THE URBAN SHIELD EXERCISE gave participants near-real world experience in active shooter scenarios.

preparedness and ability to perform a variety of intricate first responder operations," John says. "Each agency also evaluated their own tactical capabilities while training with other entities."

To ensure that the event met the standardized unified response, the exercise was managed with the National Incident Management System and the Standardized Emergency Management System.

Sandia/California celebrates successes of Hydrogen and Fuel Cell program



Congratulations and cupcakes were in order at Sandia's National Hydrogen & Fuel Cell Celebration last month at Sandia/California. Colleagues came together to celebrate the success of Sandia's Hydrogen and Fuel Cell program in several areas including quantitative risk assessment, fuel cell membrane development, and innovative maritime applications of fuel cells. Of particular note, Sandia's Hydrogen Station Equipment Performance Device (HySTEP), led by Joe Pratt (8366) and Terry Johnson (8253), recently won recognition from the Federal Laboratory Consortium with an Outstanding Partnership Award, which was presented to Joe and Terry at the celebration. Sandia collaborated with industry partners and researchers at the National Renewable Energy Laboratory to develop HySTEP.



"This is a significant achievement," said Chris San Marchi (8367) from Sandia's Hydrogen and Fuel Cells program, as he presented plaques to the project leads. "The device is a key deliverable in the state of California for validating fueling protocols and rolling out hydrogen fueling stations."

Div. 8000 VP Marianne Walck joined the celebration to commend the team. Marianne said, "The breadth and the technical depth of the work Sandia is doing with hydrogen for the Fuel Cell Technologies Office really sets us apart. Congratulations to everyone who has been involved."

— Rebecca Brock



Rad detection

(Continued from page 1)

involving radiological material around the Southwest and train other first responders domestically and abroad.

Preventive detection at big events

Sandia's RAP team and partner teams at Los Alamos National Laboratory, the Waste Isolation Pilot Plant, and the Pantex Plant provide radiological detection support for large public events in Kansas, Oklahoma, Texas, New Mexico, and Arizona. They also help with major public events around the US, such as Super Bowls or visits from the pope.

Preventive radiological and nuclear detection is using the right detector systems and processes to prevent someone from using radioactive material as a weapon to hurt people or damage property, says Richard. "The last thing you want to have happen is somebody getting close enough to a stadium and manage to contaminate a lot of people. People exposed to even the smallest amount of radioactive material would be panic-stricken, even if they aren't hurt by the initial incident."

RAP team members can scan the crowd incognito with hand-held radiation detectors, or by circling the surrounding area with super-sensitive vehicle-mounted radiation detectors. Or they might sport nice logo hats and shirts, use traditional radiation detectors, and openly advertise their presence, depending on the threat level and desires of the event organizers.

Other events supported by the Sandia RAP team in the past include the Tucson Gem & Mineral Show, Albuquerque Balloon Fiesta, Oklahoma City Memorial Marathon, political conventions, presidential inaugurations, and many major sporting events.

Avoiding risk of misinterpretation

"Being able to provide that layer of security for these events, and provide a level of expertise in interpreting what's going on, is something that I have pride in. Anybody can get a radiation detector and take a measurement, but we can interpret what it means and advise on a response. Without us you would run the risk of things being misinterpreted as safe when they might not be, or vice versa," says Hans Oldewage (6634), who recently took over for Richard

as regional contractor response coordinator.

In addition to several planned events each year, RAP team members are on call as first responders to assist federal, state, tribal, and local governments for incidents involving radiological materials.

One day, they might be called out because someone finds an object with radioactive markings while cleaning out an attic; the next day they could be responding to an accident involving a vehicle transporting containers of radioactive material or safely unsticking a lethal radiation source at a national lab. Luckily, only a few of those happen each year, but they can happen at any time or anywhere in the five-state region.

"It takes a certain mindset to do emergency response and be on call 24 hours a day, seven days a week. Since you never know when you're going to get called out, we understand if sometimes somebody can't go. But over the years, I've seen people give up kids' graduations, Christmas, and birthday parties," Richard says. "Not once in the history of the program have we ever not been able to respond to an incident that we were called out for."

A willingness to drop everything to respond

His teammates' willingness to drop everything and respond fills Richard with pride. He's quick to add that he has the same respect for firefighters, police officers, and other traditional first responders who answer emergency calls every day. Most of the members of Sandia's 12-person RAP team are volunteers from across the Labs, including people from 1387, 4128, 4236, 6631, and 6634.

Richard says, "We have been so lucky at Sandia, the management from almost every organization has been more than willing to let their people volunteer and be on the team. We negotiate with their management and say 'We need 10 percent of this person's time who's volunteered for the team, is that OK with you?' That means

we may call them out when they're doing routine stuff at work, or they could be in the middle of a meeting with their management. If the pager goes off, we expect them to deploy."

In 1994, DOE asked Sandia's RAP team to put

together a standardized weeklong training program for all RAP responders nationwide.

In the two decades since, Sandia's RAP team, with assistance from other teams, has developed the Radiological Assistance Program Training Emergency Response (RAPTER) class and leads three or four trainings each year.



RICHARD STUMP monitors a football stadium with a super-sensitive vehicle-mounted radiation detector. (Photo by Randy Montoya)

The class started in Fort Chaffee, Arkansas, and later moved to Albuquerque.

RAPTER includes hands-on instruction on new equipment and small-scale drills. The week ends with an intense one-and-a-half day exercise where participants respond to complex scenarios throughout Albuquerque using non-hazardous materials.

A spin-off is the international RAPTER class, in which Sandia helps to train more than 1,000 first responders worldwide from China, South Africa, Djibouti, and more than 50 other countries. The training can be specialized for port and customs officials or for major public events, such as the Olympics or the World Cup.

Sandia's RAP team also trains local and state first responders how to use radiation detectors to locate and identify sources of radiation.

Between trainings, public events, and accidents, RAP team members miss a lot of weekends at home and can be away from work and family for weeks at a time. "The biggest thrill is when you get to the end of the event and nobody was hurt. They've enjoyed the Super Bowl or World Series and they're going home happy and you're going home happy because nothing bad has happened," says Richard. "But just the fact that we're out there and help ensure nothing happens, that is probably the most significant high point that you get."



Sandians making a difference in the community every day



AN IMPACTFUL MONTH — To mark Make a Difference Month, Sandia coordinated eight volunteer projects in Albuquerque and Livermore throughout October. One hundred twenty-six Sandia volunteers supported the activities, which included teaching students in the Urban 4-H program about unmanned aerial technology; taking students to Mars on the Lockheed Martin Generation Beyond virtual reality Mars Experience Bus (see photos and story on page 9); cheering on runners at Governor Bent Elementary School's annual pumpkin run; painting classrooms at East Gate Kids Learning Center; sorting food at Roadrunner Food Bank; beautifying indoor and outdoor spaces at the Ronald McDonald House; and building an outdoor learning space and installing refurbished computers at Technology Leadership High School.

In Livermore, volunteers spent a day picking tomatoes and cleaning out a garden space at Sunflower Hill, a sustainable special needs community. "I'm so impressed by the number of Sandians who come out every year to support our community through these projects. Their time and effort make a visible difference in the communities we live in," says Katrina Wagner (3652), the community relations specialist who organized the activities.

In the photo at left, Joyce Prescott (8005) picks tomatoes at Sunflower Hill in Livermore. Above, Jan Miller (3651) pitches in at Albuquerque's Roadrunner Food Bank. (Photos by Madeline Burchard and Katrina Wagner)

Make a Difference Month

Sandia volunteers lend a hand in the community

- 14 helped the Ronald McDonald House prepare for Family Bingo Night
- 4 cleaned out a garden space at Sunflower Hill special needs community in Livermore
- 50 staffed the 6 stations of the Lockheed Martin Mars Experience Bus
- 3 assisted 18 Tech Leadership High School students in creating benches for outdoor learning
- 7 built 8 laptops for the teachers at Tech Leadership High School
- 32 sorted produce at Roadrunner Food Bank
- 6 beautified East Gate Kids Learning Center by painting classrooms
- 7 helped Governor Bent Elementary School host their annual Pumpkin Run for 463 students
- 3 supported Urban 4-H's National Day of Science by teaching students about unmanned aerial flight

NW All-Hands meeting: ‘A lot of work going on at the Laboratories’

(Continued from page 1)

The NW program this year was near an all-time high for budget and full-time staff equivalents, he said, adding that, “You don’t have to use much imagination to translate that into a lot of work going on at the Laboratories, and it is an acknowledgement of the role you play in this very important national effort, which today is focused around modernizing the legacy stockpile.”

The two-hour meeting, held in New Mexico’s Steve Schiff Auditorium, was video-linked to Sandia sites in California; Carlsbad, New Mexico; Amarillo, Texas; and Washington, D.C., and a live desktop stream to all sites (Sandians can view a video link of this OOU meeting in the video library archive).

At the all-hands meeting, Steve praised key nuclear weapons program accomplishments from the past seven months, including integrated, science-based research contributions that are an essential part of this workload, matched with successfully met significant engineering and testing milestones.

Steve addressed the evolution of the mission area strategy, emphasizing values such as excellence and



“Don’t confuse leadership with management. Management is something that a subset of the laboratory does, but leadership is something that’s expected of every employee independent of your level, or independent of your role.”

— Executive VP Steve Rottler

leadership, program risks, and commitments he focuses on at his level, and with Rick Fellerhoff, director and chief operating officer of the Nuclear Weapons Program Management Unit, he outlined the nuclear weapons program budget and Sandia’s contributions to NNSA’s preparations for the upcoming administration change.

In addition, Steve highlighted Sandia’s world-class people — which he called his favorite topic — who have made it all happen. He also discussed numerous high-level dignitary visits that Sandia now hosts regularly, including the most recent by US Secretary of Defense Ashton B. Carter.

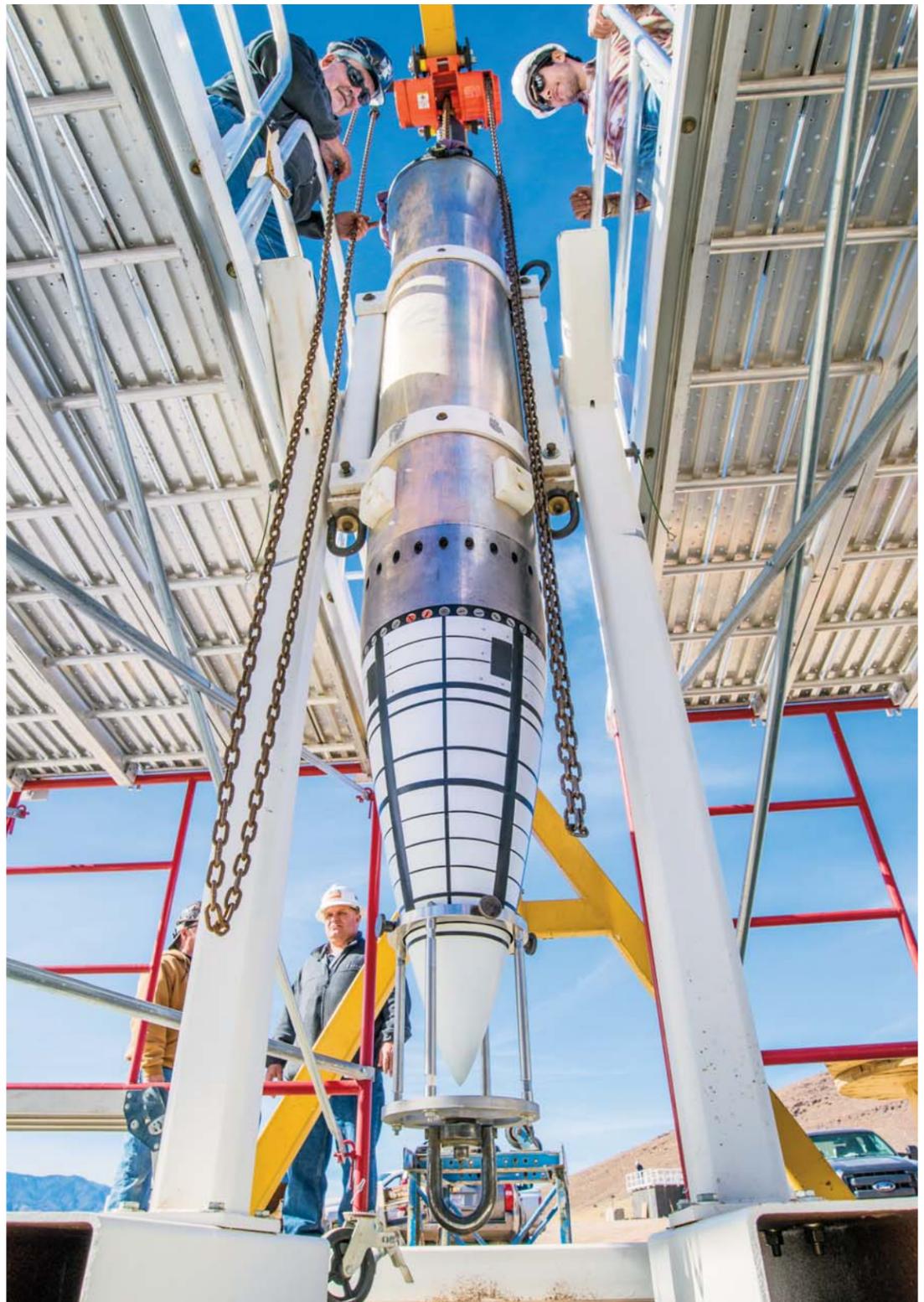
Evolution of NW mission area strategy — focus on ‘what we value’

Steve briefed the Labs in March about the NW Mission Area strategy, and said at this all hands that since then work has been focused on refining it as it is being implemented.

He said that in a way a bit unusual for the Labs, “our mission area strategy speaks at some length about things we value here at Sandia and that our leadership team views as being absolutely essential for the long-term success of this mission.”

He listed four values starting with, “Diversity and inclusion, which — if you remember from my prior comments on this — is each and every one of us, and everyone who works at Sandia, coming to work every day doing everything we can to create a work environment in which every other Sandian can bring the full measure of who they are to work and not have to leave a part of themselves at the gate.”

Steve said the second value is an emphasis on integration and partnership. “This laboratory is at its very best, and we do our best work, when we are integrated from top to bottom and side to side as an institution.” He emphasized that every example of mission progress



NOSE ASSEMBLY — The nose assembly of a mock B61-12, mounted on an aluminum tube to replicate the body of the bomb, sits in a stand awaiting movement to Sandia’s Davis gun, which fired the test assembly into a pool in one of a series of impact tests. The test was a part of the B61-12 Life Extension Program. (Photo by Randy Montoya)

he’d highlighted in his all hands was only possible with capabilities from across the entire laboratory.

Excellence, the third value, Steve said is born out of the fact that maybe the most important responsibility this lab has is to ensure that nuclear weapons are guaranteed to function as required with a probability of near 100 percent if ever called upon by the president of the United States — but also simultaneously assuring that under any other circumstances it is virtually impossible for that weapon to go off accidentally or intentionally. He said, “The only way that we can achieve that over the long term is with a focus on excellence.”

The fourth value is leadership. “The country expects leadership of us — and we should hold ourselves to a very high standard,” Steve said. “I view leadership as something that every employee at Sandia should be striving for. Don’t confuse leadership with management. Management is something that a subset of the laboratory does, but leadership is something that’s expected of every employee independent of your level, or independent of your role,” he said.

Effective budget planning

In his all-hands comments, Rick said that after several years of steep year-over-year nuclear weapons program revenue growth and staffing increases, the budget in FY17 is beginning to flatten out — at a high level, but flatten out.

This factor is something Sandia has planned for, Rick said, with government-supported revenue carry-overs from past years being applied over the next few years as shifts occur in the Labs’ major program activities.

Rick said current projections indicate the back side of the revenue curve will not be as steep as the front side, adding that resilience has been built into leadership’s ability to manage by using conservative

planning assumptions on revenue and cost, and in careful management of staffing.

Looking ahead

Steve closed out the all hands with an overview of nuclear weapons program commitments and risks from his high-level perspective.

He emphasized the importance of meeting Sandia’s FY17 program milestones for the B61-12 Life Extension Program (LEP), W88 Alteration 370, Mk21 Fuze, W80-4 LEP, and Mobile Guardian Transporter. Steve said he puts these five programs at the top of the list and it is absolutely essential that Sandia meet the FY17 milestones in each program.



RICK FELLERHOFF, director and chief operating officer of the NW Program Management Unit, noted that after several years of revenue growth, NW budgets are beginning to flatten out.

He included the Cycle 22 Annual Assessment. “It is a very important responsibility, because the life extension programs matter little if the legacy stockpile is not maintained until the modernization programs can carry to fruition.”

Yet even with such challenging work ahead, Steve ended where he began his all hands — recognizing and appreciating Sandia’s world-class people and acknowledging that together, Sandia is absolutely up to the challenges ahead.

A VETERAN'S JOURNEY

From Albuquerque to Afghanistan and back again



Neil Altomare finds niche in explosives group that helped developed technology used downrange

By Lindsey Kibler

Located between vastly dry desert terrain to one side and beautifully lush terrain — known as the “Green Zone” — to the other, a 20-year-old US Marine found himself in the town of Sangin, one of the deadliest places in Afghanistan.

Sangin was unlike any other region in the country. It was a key poppy seed producing area for the Taliban, who were supported by a majority of the locals, and it allowed immediate access to essential transit routes for drugs and insurgents. Laced with so many mines and improvised explosive devices (IEDs), Sangin was dubbed a “low-density minefield” by British and US forces. That is where Lance Cpl. Neil Altomare spent his days detecting and clearing mines and IEDs.

Neil served as a combat engineer attached to the 3rd Battalion, 7th Marine Regiment based out of Twentynine Palms, California. His mission was to detect and clear explosives so his fellow Marines would have a clear path of travel while on foot patrol. At the time, he was unaware the equipment he would rely on for his seven-month deployment would bring him back to his hometown of Albuquerque to work with the men who developed it.

College out, Corps in

Neil grew up on Albuquerque's East Side, where he played football and basketball at Eldorado High School.

“After I graduated, I tried the conventional route of going to college. After the first semester I realized school did not interest me. I didn't want to get a regular job, so I went down to the recruiter's office,” he says. “The recruiter tried to convince me to pursue a non-combative occupation, but I did not see the point in joining the Marines to have a ‘desk job.’ I knew what was at stake.”

Neil had officially enlisted in the Marine Corps the summer of 2010 and within a few months reported for basic training. One year later, he exited the doors of a C-17 only to be met by “bleak desert, intimidating mountain ranges, and intense heat.”

From beaches to bombs

At the height of the Taliban insurgency, a Marine Corps study found that “the IED threat in Sangin was monumental — greater than anywhere else in Afghanistan. . . . An estimated 1,200 IEDs were planted in the cultivated areas south of the Sangin district center — an area that is just one square kilometer.” It was believed there were at least another 1,200 planted in the town itself and to the north and east.

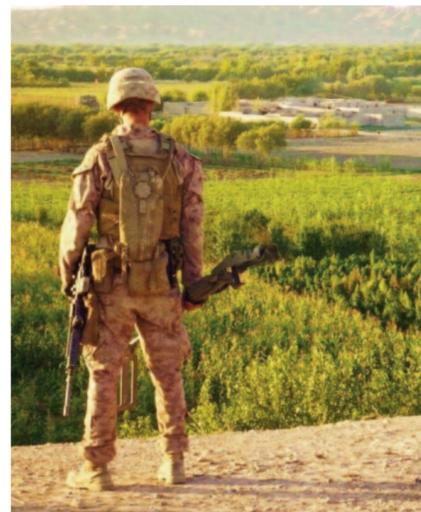
To ensure the safety of the Marines who went “outside the wire” — leaving the confines of their base to conduct patrols — Neil would go ahead of the men to look for anything that might indicate an IED has been placed. A freshly dug hole, dark loose dirt, and coils of wire were tell-tale signs that insurgents had recently placed devices intended to kill the men.

As one of only two combat engineers assigned to the 25-man platoon, Neil would foot patrol daily either on one six-hour patrol or two three-hour patrols each day.

On the patrols, they would carry the Advanced Personnel Obstacle Breaching System, APOBS, an improvised explosive device- and mine-clearing tool. This was when Neil was first introduced, albeit inadvertently, to the Explosive Engineering Operations (6649) group, which initially designed the device. At the time of its development, the equipment was known as the Small Projected Line Charge, or SAPLIC.

Safety never guaranteed

“Basically, [it's] a rope of explosives propelled with a small rocket, lying in a linear orientation. When detonated, it left a [clear] path for infantrymen to safely travel,” says Neil. The APOBS was an alternative to the World War II-era Bangalore Torpedo that was used to clear a path for dismounted infantry or engineer troops through barbed wire entanglements or anti-personnel/anti-tank minefields. The APOBS is still in use today.



LOOKOUT — Neil Altomare scans the countryside near Sangin, looking for a safe route back to the patrol base.

Neil led his battalion in clearing operations, finding 21 IEDs during his first few months in Sangin. However, safety was never guaranteed despite using the system when needed, along with other tools like metal detectors.

“Tools are great to have but we were finding that the insurgents were using wood in their IEDs so the metal detectors wouldn't work. We had to look for them and then dig them out with a knife,” Neil says.

A number of his friends were maimed by IEDs and required immediate medical evacuation (MEDEVAC). He often led these MEDEVACs because of his position in the patrol and his ability to detect the quickest and clearest route out.

Three months into his seven-month deployment, Neil again had to coordinate and lead an evacuation route. He remembers every minute of that day.

“It was like any other day, at first. It was 4 o'clock and one minute we were on a routine patrol and the next — boom — there was dirt and debris everywhere.”

Neil had stepped on an IED.

“I remember flying through the air, there was dust everywhere, and then landing on my head and shoulders. I was conscious the entire time and kept thinking how thirsty I was because my mouth was full of dirt. I didn't want to look down because I immediately knew what happened.”

He lost his right leg below the knee and suffered extensive damage to his left. Others were able to apply



NEIL ALTOMARE, wounded in combat in Afghanistan, reflects on the sacrifices by the nation's wounded combat veterans during a visit to the New Mexico Veterans' Memorial in Albuquerque. Neil came to work at Sandia in 2013, joining the Explosives Engineering Operations team. (Photo by Randy Montoya)

tourniquets to both legs in preparation for evacuation. As the men began down an alley to reach a helicopter, Neil directed them in another direction. It was a “gut feeling” that ended up saving all of the men that day. They later discovered the first route they took through the alley had five or six other IEDs placed along it.

Within 17 minutes, Neil was loaded onto a MEDEVAC helicopter piloted by the British Army. He was tended to by doctors at three different bases before departing Afghanistan for Landstuhl Regional Medical Center in Germany and then

Walter Reed National Military Medical Center. While still in the hospital, Neil was awarded the Purple Heart for injuries sustained during combat and presented the Navy Commendation Medal for coordinating and leading his own casualty evacuation route.

He underwent 33 surgeries in 31 days and was walking with a prosthetic less than two months after being injured. He was transferred to San Diego Naval Hospital to complete 11 months of intensive physical therapy before being medically retired from the Marine Corps in December 2012.

“When I entered the program, I told [the hiring staff] that I would like to continue working in explosives, as I did in the military, because that's where my experience and passion were,” he says. The program made certain to pair Neil with the most fitting position. He began working as an explosives technologist in September 2013 and, coincidentally, joined the Explosives Engineering Operations team.

“When I first started, I was talking with Gilbert Gonzalez about my experiences with explosives in the Marine Corps and he told me that our team was responsible for the initial development and testing of the SAPLIC that was later used in the APOBS I had used downrange.” Gilbert, an electromechanical technologist who joined the team in 1986, is one of the original members who worked on the SAPLIC project.

“You look at who has worked in this group before and who is working here now and you realize that these men are like the godfathers of explosives,” says Neil, making reference to retired Sandian Paul Cooper, one of the world's foremost explosives experts who still provides no-fee consultation to the group.

Three years after starting his Sandia career, Neil remains in the same explosives group that, he says, has some of the best explosives engineers and technologists in the business. “Sandia gave me an opportunity to succeed here,” he says. “Joining this group was exciting because, in a sense, it's as if I went full circle.”

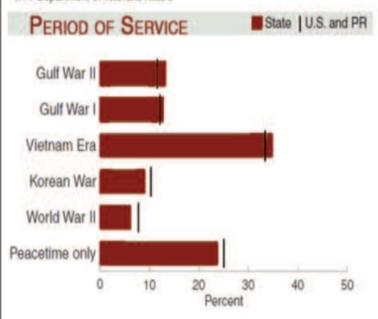


MAKING A FRIEND — Neil stops to talk with an Afghan child who loved US Marines and Skittles candy.

Veteran Statistics New Mexico

	New Mexico	United States
Veteran Population	172,717	21,369,602
Percent female	8.4	7.3
Unemployment rate for veterans	5.3	5.3
Number of homeless veterans	318	49,865
Median household income (In 2014 inflation-adjusted dollars)	\$59,352	\$61,884
Number of VA* facilities	22	1,356
Number of veteran-owned businesses	14,160	2,540,706

*VA = Department of Veterans Affairs



Organizations team to empower employers, veterans state wide

By Lindsey Kibler

Of the 21 million veterans in the US, New Mexico is home to 0.8 percent, less than 173,000, yet the state's unemployment rate for veterans mirrors that of the state's rate of 5.3 percent, according to United States Census Bureau data for 2015. That's higher than the nation's unemployment rate of 4.9 percent.

A statewide hiring initiative aims to improve those numbers, one veteran at a time. The initiative, Hire Veterans, is backed by more than 10 state and federal agencies with a common goal: employ America's veterans.

That may sound simple enough, but it's proved to be a bit more difficult, possibly because employers may not understand how military skills can transfer and be incorporated into their organization's environment, says senior manager and Chief Diversity Officer Esther Sandoval-Hernandez (3010).

Focusing on this issue, Esther and her team joined forces with Los Alamos National Laboratory and the New Mexico Department of Workforce Solutions to show why and how hiring veterans is a win-win for the company and the veteran. Educating businesses to the benefits of a veteran's unique skill sets and proven work ethic is essential to the success of both the organization and the veteran.

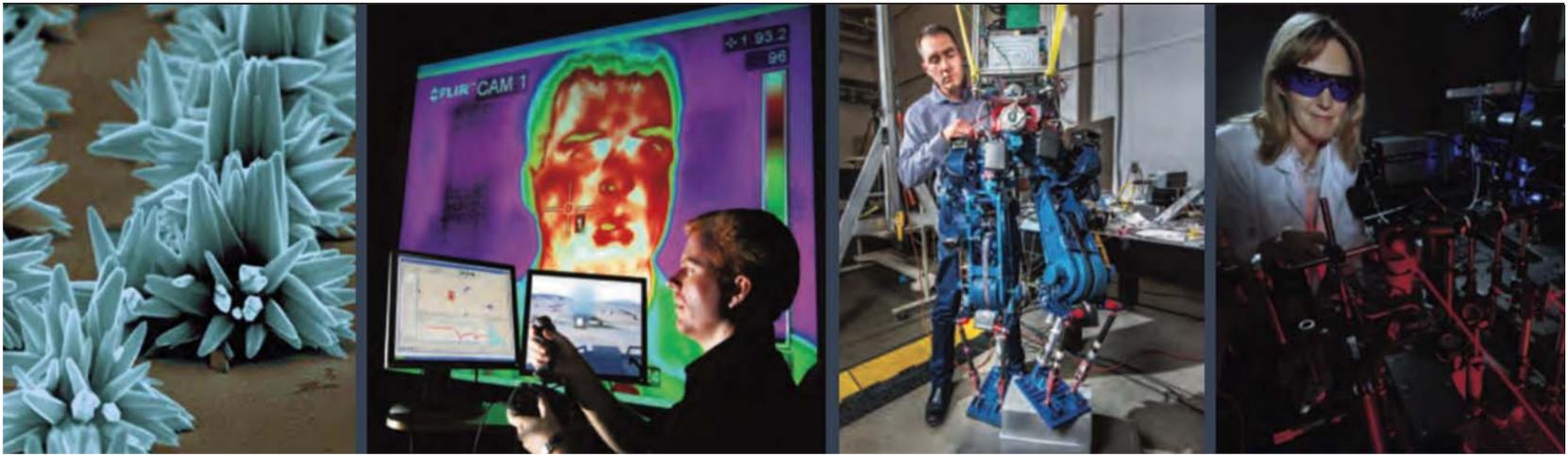
To do this, Hire Veterans was broken into two parts, the first being the Employer Summit held recently in Santa Fe. It drew more than 100 representatives from New Mexico small businesses and large corporations and featured panel discussions with some of the state's most veteran-friendly companies and a range of veteran employees. Break-out sessions covered topics like supporting and accommodating veteran needs, on-the-job training opportunities, and assistance to employers who hire veterans.

A “Best Practices for Hiring Veterans” session, led by Esther, highlighted Sandia's

Additional Hire Veterans Employer Summit partners

- The City of Santa Fe Veterans Advisory Board
- Lockheed Martin
- Los Alamos Commerce and Development Corporation
- New Mexico Department of Veterans Services
- New Mexico National Guard
- New Mexico Rural Veterans Coordination Program
- New Mexico Workforce Connection
- Society for Human Resource Management NM State Council
- US Department of Veterans Affairs

Call of the Wild: LDRD



By Nancy Salem

Jerry Simmons walked into Sandia Labs 26 years ago, hired for a program that didn't exist. His job was to take Sandia into nanoelectronics. Searching for a start, he proposed a Laboratory Directed Research and Development (LDRD) project on electronic interactions between closely spaced semiconductor quantum wells.

"That work grew into a wide range of activities, from single electron transistors to Coulomb drag to high-mobility molecular beam epitaxy growth," Jerry says.

Sound wild? It is. But that's what LDRD allows scientists to do. "You can take a chance on a crazy idea, which may end up being not so crazy after all," Jerry says. And, along the way, scientists get better.

Jerry is a rock star, one of four active Sandia Fellows whose lists of professional accomplishments fill pages, lifting them into the elite ranks of people who are figuring out how the natural world works. "LDRD has played a crucial role in my career, from day one to the present," Jerry says. "It's no overstatement to say it is the lifeblood of the laboratory."

LDRD was established by Congress in 1990 to fund forward-looking, high-risk, potentially high-payoff research at the national laboratories. The goal was to build a vital research environment that rewards innovation, builds skill, and produces breakthroughs, pushing the frontiers of science and technology. "LDRD infuses the laboratory culture with a reverence for curiosity and a respect for pioneering discovery," Jerry says. "This is how we take leadership in a field, by being the first to get into something no one else has bought into yet."

The investment pays off

At Sandia, LDRD is funded as a percentage of all the

Dawn of LDRD

WHEN AL NARATH stepped into the role of Sandia director on April 1, 1989, fundamental research was long-established at the national laboratory. Narath himself embodied the origins of that expertise, having arrived in 1959 as part of a cohort of PhD scientists hired to deepen the Labs' research base.

The first labs director selected from Sandia's ranks, Narath had a strong commitment to maintaining a vibrant research program. He pushed Sandia to define its core competencies and build its research foundations on them.

The Labs' future was uncertain in the early 1990s in the midst of political changes and budget cuts that came with the end of the Cold War. Narath and his management team shaped Sandia's strengths into forward-looking research programs, including Laboratory Directed Research and Development (LDRD) established by Congress in 1990.

Narath's focus on the program transformed LDRD from an ad hoc endeavor operated by volunteers into a permanent office with a dedicated manager overseeing a single process. LDRD was an explicit commitment to the exploration of new ideas based on the early Sandia belief in the need to pursue basic questions in support of creative solutions.

— Rebecca Ullrich

Crazy ideas help researchers grow... and that's not so crazy

programs that come into the Labs, and is at just under 6 percent, or \$155 million a year, for fiscal year 2016. The investment has paid off with important scientific advances across an array of disciplines from bioscience and computing to microsystems and geoscience. LDRD projects, awarded through a rigorous, highly competitive peer-review process, align with the Labs' core national security mission while taking science to new and extraordinary places.

"LDRD has played a crucial role in my career, from day one to the present. It's no overstatement to say it is the lifeblood of the laboratory."

—Sandia Fellow Jerry Simmons

LDRD-funded projects have contributed to every facet of Sandia's national security mission, including stockpile stewardship, high energy-density matter, computing and simulation, materials science, chemistry, biosecurity, cybersecurity, and energy. Many Sandia programs, such as radiation-hardened electronics and solid-state lighting, have roots in research that began in LDRD. Projects funded by the program have earned national recognition through awards, including many R&D 100 awards, papers, and patents.

Andy McIlroy, deputy chief technology officer and director of Sandia's Research Strategy and Partnerships Center, says LDRD helps Sandia and other national labs attract and keep the best scientists and engineers. "We hire exceptional people and we want to give them the opportunity to use their genius and creativity to find new ways to solve problems," he says. "The research freedom offered by LDRD can launch a scientist to another level of accomplishment."

The National Research Council of the National Academies says LDRD "is critical for attracting and retaining high-quality technical staff and thus for assuring long-term viability of the laboratories and their ability to carry out their mission in the future." The council went on to say that "the novel and innovative approaches supported by LDRD are essential to the nuclear weapons mission."

An early career boost

The LDRD program develops researchers in a variety of ways. From 2009 to 2016, one element invested in early careers and was used to help bring promising

young people to the Labs. "A manager would meet someone at a conference or hear a great student paper and think that's the kind of person we want," Andy says. "But they were looking for jobs right then and the manager didn't have funding for a position. Early Career LDRD gave managers the confidence to bring sharp people in before they took other jobs, and get them started."

More than 200 researchers participated in that program, which ended in 2016. The overall LDRD program continues to encourage support of early career researchers. "At the start of their professional life, they can have their own LDRD projects," Andy says. "And those projects lead to others, building momentum."

A 2015 report by the Secretary of Energy Task Force on Department of Energy National Laboratories said, "For the NNSA laboratories in particular, LDRD provides a way to maintain a pool of talented individuals whose work is aligned with the core mission of the laboratories. This finding is supported by evidence of the participation of early career staff and recently recruited staff in LDRD programs."

The program also builds leadership skills. "The principal investigator on an LDRD project must put together a team," Andy says. "They have both technical and leadership responsibility. Other people on the team also take on leadership roles." LDRD projects can involve a few people to 20 or more in a Grand Challenge, which is a larger LDRD project that focuses on bold, high-risk ideas with potential for significant national impact.

Problems nobody has thought of

"LDRD offers people an opportunity to grow," Andy says. "It goes back to creativity and innovation. It gives them another way to contribute to the scientific community and national security. LDRD plays a key role in building and sustaining Sandia's foundation."

Another piece of LDRD is the Truman Fellowship program for distinguished postdocs, named after President Harry S. Truman, who charged Sandia in 1949 with providing "exceptional service in the national interest." Sandia reaches out nationwide for applicants for the three-year fellowship, and extends offers based on mentorship and interviews by senior scientists. "We look for the rising stars, people who have just earned their doctorates and have the potential to change the world," Andy says. "We want to give them the opportunity to reach their potential while serving the nation." Sandia has had 22 Truman Fellows since the program began in 2005, many of whom still work at the labs.

And Sandia's four active Fellows — Jeff Brinker, Ed Cole, John Rowe, and Jerry — have LDRD funding they can use for their own research or to fund other people. "As mature and exceptional researchers, they can use these funds to seed critical advances for the Labs' future," Andy says. "They can identify new researchers, recognize high potential ideas, and they can fund their own ideas."

Jerry says his role as a mentor to young researchers through LDRD projects has kept him engaged in the wonder of discovery. "LDRD plays a multitude of roles throughout the career of a scientist," he says. "First it helps new people get a toehold and establish a research program. It's essential for recruiting and retention. Later, LDRD supports our most innovative and revolutionary ideas. And Grand Challenges let Sandia put together large interdisciplinary teams to tackle the biggest problems." Jerry says that in his more than two decades at Sandia he's seen "a lot of really innovative ideas grow from hallucinations to impactful technologies."

"LDRD is important for the long-term health of the institution if we are to transform the products we deliver to our national security customers," he says. "Without it, the Labs would be a different place. These crazy ideas don't always pay off, but when they do, it's fantastic — for everyone involved."



Mars Experience Bus takes students on a virtual tour of the Red Planet

By Valerie Larkin
Photos by Randy Montoya

Albuquerque students at four schools recently took an out-of-this-world field trip — to Mars.

The Lockheed Martin Generation Beyond: Mars Experience Bus, the first virtual reality vehicle for groups of participants, stopped in Albuquerque on a cross-country tour, giving students a chance to traverse the surface of Mars from inside a school bus. The bus visited Van Buren Middle School, Tomasita Elementary School, Kennedy Middle School, and Sandia Base Elementary School, and was open to the public at the National Museum of Nuclear Science and History on Oct. 29-30.

The Mars Experience Bus is a standard school bus retrofitted with virtual reality technology that replicates 200 square miles of the Martian landscape and displays it in the bus's windows, giving riders the sensation they are moving along the red planet's surface.

The Mars Experience is more than a bus ride. Before boarding the bus, participants design and print a custom mission patch; learn about NASA's Orion spacecraft, which is being developed to take humans to Mars in the 2030s; and snap and print a photo of themselves on Mars with the help of a green screen. Fifty Sandia volunteers and the schools' faculty led students through the various stations of the Mars Experience.

The bus is traveling across the United States as part of Lockheed Martin's Generation Beyond national educational program. The program, launched in April 2016, aims to inspire students to pursue science, technology, engineering, and math (STEM) studies, and to help them envision their role as future scientists, engineers, and innovators, and even the first people to visit Mars.

Terry Cooper, senior manager of Environmental Stewardship (4140), volunteered at the event at Kennedy Middle School and Tomasita Elementary School on Oct. 26. He had attended both schools and says he was excited to help bring this experience to nearly 500 students that day. Terry has seen firsthand the impact that STEM outreach programs can have on students' lives. As a middle school student, his daughter Zoe attended an outreach event hosted by Sandia wildlife biologist Steve Cox (4143) and former Sandian Ashli Gorbet. That interaction inspired her to pursue a STEM career and she's now a graduate student in wildlife management and ornithology at the University of Georgia.

"If you get students interested in STEM early on, in elementary and middle school, they're more likely to pick careers in those fields. The earlier the better," Terry says. "It's amazing how these outreach programs affect the students, especially the girls. We lose a lot of girls in STEM in middle school, but experiences like this keep them interested."



Employee deaths

For Louis Nogales retirement held no allure

54 years of service: March 19, 1962-Oct. 27, 2016

When Louis C. (Louie) Nogales started at Sandia, John F. Kennedy was president and the Cuban Missile Crisis hadn't yet happened. John Glenn had just orbited the Earth, Elvis was king, and it had only been 54 years since the Cubs had won the World Series.

Louie's extraordinary career spanned the tenure of 10 US presidents and 10 Sandia presidents, an arc of time that puts history in perspective for a man who had worked at the Labs for most of his life.

Louie, one of the Labs' most beloved employees, saw many changes at Sandia over the years. He was there as the Labs adapted and responded to the changing nature of the threats to the nation's security, from the height of the Cold War to the complexities of the Global War on Terror.

From his start in the mailroom to becoming the facility manager for Bldg. 820, Louie Nogales earned the admiration and respect of all who worked with him.

Louie, the subject of a *Lab News* story when he marked his 50th anniversary at the Labs in 2012, passed away peacefully at home on Oct. 27 at the age of 78 surrounded by his loved ones.

Colleagues at Sandia have nothing but kind words and fond memories of Louie.

'He'll always be No. 1 for us'

To the residents of Bldg. 820, he was an iconic figure. With more than 54 years of service he was No. 2 on the Sandia seniority list. Over the years, Louie was at the center of many anniversary celebrations that always included his and the department's favorite treats, Frontier sweet rolls, which were always enjoyed over great-tasting coffee that Louie would also make.

Louie was a hard worker who was shooting for being No. 1 on Sandia's seniority list. Sadly, his final illness prevented him from reaching that goal.



LOUIS C. NOGALES

"He was always there. He was special to us, he appreciated us, and it was the other way around, too."

— Josie Chavez

Josie Chavez, who knew Louie for decades, says that while Louie was "only" No. 2 on the seniority list "for us he was always No. 1." She recalls the many occasions when Louie out of the blue would show up with donuts and coffee for the security personnel pulling weekend duty. "He was always there," she says. "He was special to us, he appreciated us, and it was the other way around, too."

Louie will always be remembered for his quick wit and abundant sense of humor, his kind and gentle personality, generous nature, and being devoted to his extended family. He always knew what was going on in the local sports scene and could come up with a joke that could fit any situation.

Louie jokingly used to say, "If I retire, then I would have to start talking to my wife more often." This would fall in his Henny Youngman category of "the

secret of a happy marriage remains a secret."

Jerry Clark recalls many retirement conversations with Louie, whose response would always be, "Retirement schedule? I don't know my retirement schedule. Ask the coroner."

Jerry also warmly recalls Louie's generosity. "As a friend, I volunteered to work on Louie's vehicles, a 'vintage' 1983 Nissan Sentra, dubbed the Yellow Mercedes, and his truck. Even though I expected nothing in return, Louie would always leave a token of his appreciation on my desk . . . a McDonald's breakfast burrito, Hot Pockets sandwich, or a brand new can opener. This was just Louie. Always repaying in kind."

Steve Sanderson recalls Louie as a dedicated worker and sportsman.

"Louie and I go back all the way to the late 1970s where I watched him strike out his share of slow-pitch batters or outwit them into grounding out. Here at Sandia, he was on many safeguards projects, and for the past 20-plus years worked as our building safety inspector to ensure the safety and comfort of all of us.

'Half the Labs knew Louie'

"Louie scheduled maintenance groups regarding HVAC, building electrical power, machine shop, high-bay crane, building chemicals, our government vehicles, and any other building-related issues. He was also our building evacuation and shelter-in-place leader. He was the exact fit for these jobs because he genuinely cared for us all, the dozens of building occupants, custodians, visitors, engineers, and managers. I'm convinced that at least half of the Laboratory knew Louie Nogales."

There were always stories about his nine grandkids. Adorned on his cubicle walls were a myriad of his own and extended family photos. He always was an advocate for education, and was there to help each one of his grandchildren as they continued their schooling or graduated from college.

During Bring Your Daughters and Sons to Work Day events, kids would make sure to stop by Louie's cubicle so that they could get some snacks.

To have known Louie was a pleasure for all. He was a one-of-a-kind human being and an "amigo" to everyone.

Residents of Bldg. 820, visitors, and all others will sorely miss the tender soul who was a constant presence in all of our Sandia lives and careers.

— Ed Sikorski

From sports to computer servers, Suzie Bemis could do it all

Did you ever know one of those people who could seemingly do anything? That was Suzie Bemis (5569), who was "a goddess of sports," as a friend called her.



SUZIE BEMIS, at right, with sister Laura Bemis and brother Rick Bemis.

According to an obituary published in the *Albuquerque Journal* online, Suzie "hit the ground running" when she was born, and throughout her life she passionately engaged in any sport, academic, or athletic endeavor that caught her fancy.

A champion pickleball competitor, softball player, and downhill mountain bike racer, Suzie was like a force of nature.

And matching her prowess on the playing fields and mountain trails, she was wizard in the workplace, building and optimizing computer servers for the US Nuclear Detonation (NuDet) Detection System (USNDS).

For those who could keep up with her, and for those who only wished they could, Suzie was a constant inspiration. She died in late October at age 55 after a three-year battle with ovarian cancer.

Met every challenge head-on

Recalls her manager, Lilly Ingham-Hill (5569), "Suzie's special talent was elevating the people around her. Whether it was a team member needing help with a complex system problem, a family member working on a science fair project, or first baseman needing a relay throw, Suzie was on it. There was never a challenge that she didn't meet head-on or a person she didn't help with a smile.

"When the systems were misbehaving," Lilly says, "Suzie could quickly sort through symptoms and then devise and execute an elegant solution."

Suzie was definitely a go-to person when the stakes were high and the timelines tight. "Such knowledge!" exclaims a coworker. "For so many years, we would just call Suzie with an odd duck problem and she always figured it out."

Before joining Sandia in 2014, Suzie enjoyed a con-

sequential career at Raytheon, where she was recognized with their prestigious award of "Principal Engineer — with Honors." (Raytheon provided contract support to USNDS.)

A natural leader, Suzie was someone people just enjoyed being around. Recalls a colleague: "She had great timing in calling for a SWIFT team lunch. (SWIFT=Suzie Wants Indian Food TODAY!) Even team members who would normally pass on East Indian food would go to lunch just because the invite came from Suzie."

Another remembers Suzie's "mischievous smile," which she was said to have inherited from her mother.

That smile was contagious. "Suzie always had a happy face on," a friend says. "It was kinda impossible not to put one on around her, too."

Another adds that "We'll miss her in the team banter. She took teasing well; she was a Detroit Lions fan, so she had practice. But she could give as good as she got and it was all in good fun."

Noting that as a teenager, Suzie taught herself how to juggle, Lilly said, "I think she mastered almost every sport except the unicycle."

When Suzie died, her friend Doris Corrales, brother Rick Bemis, and sister Laura Bemis were at her side. Preceding her in death were her mother, Katherine Anna Soucek Bemis, and her father, Richard George Bemis, Sr.

Lilly says that about two weeks before she died, Suzie sent her a text in which she thanked her colleagues for their years of support and saying that she deeply appreciated the steady stream of cards, texts, flowers, food, and visits.

In one of her last wishes, she expressed her thanks to her healthcare workers for their unwavering persistent love and support.

— Bill Murphy

SANDIA CLASSIFIED ADS

MISCELLANEOUS

CAMPER SHELL, long bed, Ford, red, w/sliding windows, \$375. Schroeder, 505-917-4516.

CAMPER SHELL, will fit many trucks, 80" x 95", photos available, call or text. Hanks, 505-249-1931.

CONVERTIBLE CAR SEAT, Britax Marathon, \$65; Peg Perego Primo Viaggio infant car seat, w/base, \$25; first owner, excellent condition. Liang, 505-823-1695.

LEATHER SOFA, lt. tan, 86-in.; sleeper sofa, southwest print, fabric, 72-in.; both in good condition, can email photos, \$100 ea. Maloney, 299-4330, nmjoerita@gmail.com.

ACER NETBOOK, Aspire One D255, Windows 7 starter, 1 GB memory, 10.1 screen, \$50. Hall, 280-4344.

SCUBA, women's fully adjustable BC, \$350; GEO2 dive computer, watch-style, white, \$150; both like new condition. Schriener, 505-275-3312.

LAWN MOWER, w/rear grass catcher; Bissell heated water carpet cleaner, w/attachments, \$50 ea. Hale, 298-1545.

TODDLER SLEIGH BED, DaVinci, white, w/2 crib mattresses, great condition, \$75/all. Moreno, 440-8640.

ALFALFA HAY, good quality, not rained on. Casillas, 530-559-7698, mannycasillas@hotmail.com.

PATIO TABLE SETS, wrought iron, sturdy: 35" x 54" oval, w/6 rocker chairs; 42-in. round, w/4 chairs; w/cushions, \$450/all. Connell, 505-554-1696.

JUICE MAKER, Juiceman Jr., for details see: <http://www.wmstubblefield.com/sale-items/>, \$25. Stubblefield, 263-3468.

MICROWAVE, over-the-stove, Magic Chef, black, ~5 yrs. old, excellent condition, \$75 OBO. Montoya, 342-0043.

IGLOO DOG HOUSE, large, fits 100-lb. dog, you pick up, \$25. Lopez, 505-291-0010.

CHILD CAR SEATS, 3, \$75 ea.; microwave, \$50; assorted 80-90's football cards. Walkington, 505-235-1025.

MOVING BOXES, all sizes, free. Wilkening, 505-249-4069.

TIMESHARE, Scottsdale, AZ, 2-bdr., 2 bath, lockoff, sleeps 8, Dec. 26-Jan. 1, \$2,000/wk. Miller, 298-3815.

LAPTOP, Alienware R2 17, 1 TB HDD, 8 GB RAM, high-end gaming, lightly used, \$800 OBO. Penner, 505-554-9754.

FOUR-SKI RACK, Thule, universal flat top, w/locks & keys, \$100. Mauser, 681-0671, ask for Joe.

PURSES, 31, Coach, Guess, various colors, sizes, excellent condition, \$5-\$50. Eller, 505-417-4390.

INKJET CARTRIDGES, HP 940, unused, for Officejet Pro 8000, 8500 or 8500A, free. Inlow, 270-6910.

ARMOIRE & HUTCH, dark cherry, excellent condition, \$550/both. Hennessey, 505-269-6243.

VERTICAL FILE CABINET, locking, black, letter-size, 26-1/2"D, 4 drawers, paid \$225 in Aug., asking \$150 OBO. Smith, 505-903-0911.

WOMEN'S SHOES, 7-1/2N, several pair, almost new & new wedge sandals/shoes, best offer. Gutierrez, 505-340-4464.

BABY GEAR, UppaBaby stroller, \$250; Quinny stroller, \$65; bassinet, \$60; Moby baby carrier, \$10; Happy Heiny diapers, \$5 ea. Elmazi, 505-856-2197.

TREADMILL, Vision Fitness T9200, w/premier console, carpet pad, excellent condition, \$500 OBO. Mann, 505-401-0988.

YOUNG AT HEART "DICKENS CHRISTMAS", Nazarene Church, 8401 Paseo del Norte, Nov. 25-26, Dec. 2-3, 9 a.m.-6 p.m. Martin, 858-3009.

SNOWBOARD BOOTS, Burton, men's, size 8, good condition, \$65. Muhlberger, 362-8731.

X10 HOME ALARM SYSTEM, 23-pc., motion, door, window sensors, calls police, no monthly fee. Chabai, 505-228-0038.

AMERICAN GIRL DOLLS, \$75 ea.; furniture, clothing etc., very good condition, call or email for photos, list & prices. Coverdale, 286-2664, slave2a3@q.com.

FURNITURE, entertainment center, oak, TV stand, 2 bookcases, \$400; bedroom set: 2 dressers, night stand, headboard, \$300. Graham, 505-271-1337.

CHILD CARRIER, Dueter Kid Comfort II, excellent condition, brand new \$250, asking \$100. Pan, 505-823-1695.

SEWING MACHINE, Singer ZigZag Touch and Sew, w/cabinet, \$35; Konica Minolta Magicolor 5650DN, high speed printer, \$25. Graham, 505-238-3549.

HARLEY-DAVIDSON MOTORCYCLE ROCKING HORSE, pink, w/sound, like new, \$75; Little Tikes Gourmet Prep N' Service kitchen, pink, \$30; photos available. Vigil, 400-0639.

BABY GRAND PIANO, Samick, small, ebony finish, excellent condition, \$2,500. Aragon, 505-280-3916.

MAPLE TABLE LEGS, Classic Designs, five, 1-7/8" x 1-7/8" x 18", wood turning blocks, original wrapper, \$25. Johnson, 292-0677.

DINING ROOM TABLE, new, oak, double pedestal, 4-ft. wide, 8-ft. long, w/2 16-in. leaves, \$600, will consider offer. Amend, 505-453-4751.

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.

TRANSPORTATION

'08 KIA RIO LX, new tires, well maintained, 62K miles, excellent condition, \$4,300. Moreau, 505-235-8443.

'14 MUSTANG, V6 premium, loaded, private party, no damage, always garaged, 29.7K miles, excellent condition, \$16,800. Cala, 505-249-8605.

'41 CHEVY PICKUP, original condition, restorer's dream project, photos available, \$10,000 OBO. Jaramillo, 263-2153.

'03 COROLLA LE, beige, non-smoker, no collisions, bought in '05 certified used, 138K miles, \$3,000, located in Livermore, CA. Sankhagowit, 651-325-8439.

'05 HYUNDAI XG350L, luxury sedan, 3.5L, V6, black, w/tint, power everything, new tires, battery, 117K miles, \$3,500. Kemp, 505-263-0039.

'14 FORD FOCUS ST, stage 3 tune & modifications, stock parts included, 29K miles, \$17,800 OBO. Cordero, 505-803-1576.

'15 HONDA CRV EX, light blue, 1,450 miles, essentially new car, \$24,450. Skocypec, 822-1046.

'11 CHEVY TRAVERSE LT, AWD, 7-passenger family car, 60K miles, <book, \$14,500. Noe, 505-268-6620.

'94 DODGE DAKOTA, 3.9L, V6, 5-sp-d., RWD, <98K miles, runs perfect, \$1,850 OBO. Sarsfield, 294-2578.

'08 SATURN SKY, 4-cyl., 260+HPI, 5-sp-d. manual, metallic blue, 27K miles, like new, \$15,000 OBO. Witt, 991-1878.

'11 BMW 3 SERIES, convertible, 2-dr., 328i, sports pkg., white, 23K miles, excellent condition, \$25,000. Lucy, 505-797-3939.

'05 LEXUS ES330, 6-cyl., 3.3L, 142K miles, quiet smooth ride, \$5,995. Vigil, 505-553-9596.

'17 FORD EXPLORER, black, 3rd row seating, backup camera, under warranty, 2,500 miles, like new condition, \$31,000. Pacheco, 505-506-0290.

'10 CORVETTE, crystal red, 430-hp, 3LT pkg., DVD, navigation, Bluetooth, upgraded Borla ATAK exhaust, <12K miles, \$32,000. Richmond, 505-382-7477.

'11 JEEP WRANGLER SAHARA, 2-dr., 4x4, 6-cyl., 3.8 fuel injected, tan, excellent condition. Ramos, 972-951-0290.

'06 TOYOTA RAV4, AWD limited, fully loaded, all options, new tires, pearl white, tan leather, 104K miles, cosmetically & mechanically excellent, \$10,000. Dwyer, 505-249-6935.

'14 JEEP GRAND CHEROKEE, fully loaded, white, 27K miles, excellent condition, \$31,000. Wareham, 505-553-3771.

REAL ESTATE

4/5-BDR. HOME, 3,300+ sq. ft., on 1/3 acre, great backyard, 15 mins. from base. Fitzpatrick, 505-507-3422.

3-BDR. HOME, 2 baths, 2,050-sq. ft., updated, central H/C, new roof/warranted, new electrical w/surge protection, 1017 Jefferson St. SE, 87108, \$335,000. Abeyta, 505-573-8195.

2-BDR. CONDO, w/loft, 1,300-sq. ft., gated community, pool, kid's playground, near San Antonio & Louisiana, \$162,500. DelaTorre, 505-296-1500.

4-BDR. HOME, 2 baths, 2,093-sq. ft., 2-car garage, recently built, granite, new appliances, refrigerated air, owner financing, reasonable offer considered. Joseph, 505-515-5997.

3-BDR. HOME, 1-3/4 baths, Eubank/Candelaria, MLS#877582, \$175,000. Armijo, 227-8737.

3-BDR. HOME, w/office, 1-3/4 baths, 1,770-sq. ft., new water heater & Master Cool unit, well maintained, SE Heights neighborhood, mins. to Louisiana gate, MLS#873495, \$160,000. Chavez, 505-450-2739 or 249-7360.

WANTED

'DOWNTON ABBY' SEASON ONE, would like to borrow or purchase. Owens, 235-8671.

VOLUNTEER REFEREE FOR BASKETBALL, Dolores Gonzalez elementary, starting Jan. Wilhelm, 764-2020, ask for Kevin.

HOUSEKEEPER, references needed, single story, Westside home, near Ventana Ranch. Carrasco, 505-803-3831.

WEEKLY ALBUQUERQUE JOURNAL DELIVERY, to office in TA 1, Mon.-Thurs. Garcia, 505-235-7859.

SEAMSTRESS, for minor sewing repairs. Kaplan, 505-298-7953.

ROOMMATE(S), Volterra, 5 mins. to base, \$450/mo., utilities, Wi-Fi, no pets. Guillen, 505-385-8189.

RECREATION

BICYCLES, Raleigh Talus 4.0 mountain bike, \$60; Trek 820 mountain bike, \$25; Adams Trail-a-bike Folder, \$25. Stewart, 505-828-1251, ask for Jim.

'12 POLARIS RZR XP UTV, 900cc, 250 hrs., w/many accessories, excellent condition, \$10,000 OBO. Gibson, 505-977-3021.

'11 GIANT XTC 29ER, medium bike frame, \$250. Raether, 505-363-1631.

'05 HONDA CRF 450X DIRT BIKE, \$2,500. Mixon, 505-977-8281, ask for Debbie.

'I am born to the Water's Edge People clan and born for the Alaskan People'

(Continued from page 12)

"Being the first in my family to go to a university, I found myself charting my own way. Looking back, I didn't realize there were scholarship opportunities for college," Marie says. "I thought it was my sole responsibility to pay for school."

After working at the BIA in Washington, Marie transferred to the Albuquerque district of the BIA as a secretary and a federal police officer. She was the only woman police officer in the BIA Albuquerque district.

"What I enjoyed about law enforcement was the ability to protect people," Marie says.

Eventually she was recruited to work at the Albuquerque Police Department (APD). She served in the patrol, forensics, recruiting, and felony investigations divisions. Working while raising her son, Marie persevered, taking night classes at Central New Mexico Community College and completing her bachelor's degree in criminology at the University of New Mexico.

Recognized and sought after for her expertise

Following seven years with APD, Marie's investigative experience transferred to Sandia, where she accepted a position in Sandia's Equal Employment Opportunity office, 15 years ago.

Since then, Marie's work as a diversity workforce specialist has had a lasting impact on some 10,000 employees. She helped develop the Labs-wide Diversity and Inclusion programs with senior manager and chief diversity officer Esther Hernandez.

Esther says, "Marie is recognized and sought out for her subject matter expertise. She has made great strides in providing learning and awareness options for everyone at Sandia. Marie has a way of honorably using what she has learned in life and through her culture to help others."

In the community, Marie inspires local native middle

and high school students to pursue education and careers in STEM. For nearly 10 years she led Sandia's Dream Catcher Science Program, a hands-on learning outreach for students and their parents. She is also a member of Sandia's American Indian Outreach Committee.

An exemplary role model

"Marie has a true passion for diversity and inclusion, and we would like to extend our heartfelt congratulations," says Div. 3000 VP Melonie Parker. "Marie has served as an exemplary role model. Her many years of service and dedication to the community have made an impact by exposing underserved minority students to STEM education and careers," Melonie says.

Louis Papponi (10626-3), a business management professional who has teamed with Marie on multiple projects at Sandia, says, "It has been an honor to have worked and partnered with Marie. Her excellent commitment to customers, peers, and all members of the workforce is second to none. She has helped me grow and develop my own professional identity."

Marie has also mentored several business interns. Melanie Gallegos (3001), a human resource intern who worked with her, says, "Marie empowered me every day to work hard and provide exceptional impact to our organization. She is an inspiration to work with. She cares greatly about those around her, and will go out of her way for anyone in need."

Marie says the most rewarding aspect of her job at Sandia is creating space where people can ask questions and engage conversations — even the hard conversations. "Diversity and inclusion fosters input and ideas from all employees, which in turn helps our organization be competitive," says Marie.

Thinking again about the image of a blazing flame, Marie says, "My job is connecting people and creating that path; creating a light."



MARIE CAPITAN WITH HER DAUGHTER during her Kinaalda ceremony, a celebration of womanhood in the Navajo tradition.



MARIE CAPITAN HAS WON THE FIRST-EVER BLAZING FLAME AWARD from the American Indian Science and Engineering Society for blazing a path for Native Americans in science, technology, engineering, and math education and careers. Marie is a workforce diversity specialist at Sandia, where she has worked for the past 15 years. (Photo by Randy Montoya)

Lighting the way

Sandia diversity specialist wins inaugural award from AISES

By Rebecca Brock

Introducing the first honoree of the Blazing Flame Award from the American Indian Science and Engineering Society (AISES) requires a customary introduction. Translated from Navajo: “They call me Marie Capitan. I am Navajo and Alaskan. I am born to the Water’s Edge People clan and born for the Alaskan People,” says Marie.

A diversity workforce specialist at Sandia, Marie says such introductions serve multiple purposes like finding relatives and announcing clan and place of birth. Connecting people from wide-ranging backgrounds, religions, races, and cultures is Marie’s area of expertise. The programs she has developed at Sandia foster trust, teamwork, and productivity.

The Blazing Flame Award honors a professional who has blazed a path for Native Americans in science, technology, engineering, and math (STEM) education and careers. Marie is the eighth person from Sandia to be honored by AISES, a national nonprofit dedicated to increasing the representation of American Indians in

“They call me Marie Capitan. I am Navajo and Alaskan. I am born to the Water’s Edge People clan and born for the Alaskan People.”

STEM. She is one of five professionals from across the nation who will be honored at the 2016 AISES National Conference in Minneapolis this week.

A path to move forward

As the first person to receive this honor, Marie says she is incredibly humbled, and she never thinks about

to assimilate.

Marie’s grandmother, Frances Capitan, was her role model.

Despite her mom’s objections, Marie says her grandmother taught her Navajo traditions. She tutored Marie in language, storytelling, making fry bread and tortillas, hospitality, the role of women and men, and the importance of honoring elders.

“I am very grateful for her teachings because they have helped me throughout my life. I learned about leadership, compassion, generosity toward others, and courage to stand by your core,” says Marie.

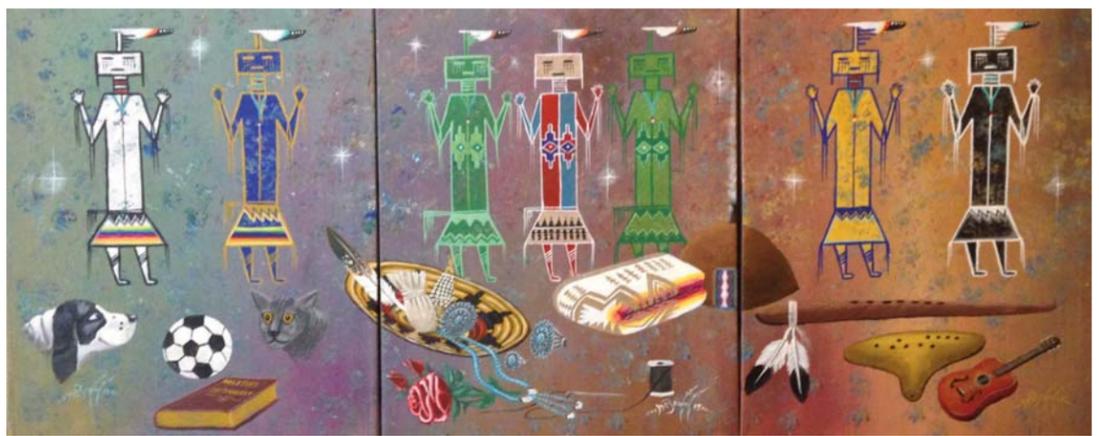
When Marie’s mother remarried, life got harder. Her stepfather was cruel. “He would say, ‘You’re not my daughter,’” Marie recalls, and he expected her to care for her half-sister. This meant that as a child, she was

About AISES



The American Indian Science and Engineering Society (AISES) is a national, nonprofit organization focused on substantially increasing the representation of American Indians, Alaska Natives, Native Hawaiians, Pacific Islanders, First Nations, and other indigenous peoples of North America in science, technology, engineering, and math (STEM) studies and careers.

Founded in 1977, with a rapidly expanding membership of more than 4,000 individual members, AISES sustains 189 chartered college and university chapters, 15 professional chapters, and 158 affiliated K-12 schools. AISES has awarded more than \$10.3 million in academic scholarships to American Indian STEM students. Through scholarships and internships, workforce development and career resources, national and regional conferences, science fairs, leadership development, and other STEM focused programming, AISES is the leader in STEM opportunity for American Indians.



MARIE’S PAST, PRESENT, AND FUTURE are represented in this personalized Navajo painting by her uncle, artist Wayne Begay. The symbols in the artwork are representations of her life and messages for her two children, Marie says.

winning awards. She says what speaks to her is the name’s meaning.

“The symbol of the blazing flame is powerful,” Marie says. “When I think of the mistreatment that happens in families, or when relationships become unproductive at work, people may feel like they are living in a dark shadow. The flame lights a path for us to move forward. For me, it’s the idea of reconciliation and healing.”

Marie was born to a single mother on the Navajo reservation in Utah. Her father, an Alaska Native, was killed in a motorcycle accident before her second birthday. Marie was shuttled back and forth from the reservation in Aneth, Utah, to Albuquerque. She settled in Albuquerque when her mother got her first position as a labor and delivery nurse.

Marie says her mother was part of a generation that was told to reject her native teachings, and was forced

responsible for cooking, cleaning, changing diapers, and washing clothes while her parents were out. Marie says, “I had to grow up very fast. Even though I resented it at the time, the great part of caring for my sister is that it taught me how to care for others.”

Excelled in science at school

Marie graduated from Eldorado High School in Albuquerque, where she excelled in the sciences. She says she loved physics, chemistry, and biology. She saved up enough money to pay for her first year of college, but when the money ran out, she seized an opportunity in Washington, D.C., with American Indian National Bank. A few months later she accepted a position with the Bureau of Indian Affairs (BIA).

(continued on page 11)