Replacing your everyday gas guzzler with a hydrogen fueled car could drastically reduce your carbon footprint. So why don’t we all make the switch?

One of the major barriers to mass market acceptance of hydrogen fueled vehicles is the expensive platinum catalyst required to operate hydrogen fuel cells efficiently. In an effort to bring down the cost of hydrogen fuel cells, research led by Sandia and the University of California, Merced used a dirt-cheap compound to create a “flowering” hydrogen catalyst far cheaper than platinum and reasonably close in efficiency.

(NOT ORGANIC) These inorganic “flowers” (color added) were created by Sandia researcher Stanley Chou and UC Merced colleague Vincent Tung in a spray printing process that uses molybdenum disulfide (MoS2) to create a “flowering” hydrogen catalyst far cheaper than platinum and reasonably close in efficiency.

(Continued on page 5)
That’s that

It’s our own origin story: In 1949, President Harry Truman wrote that famous letter to American Telephone & Telegraph Company President Lorin Wilson, encouraging the company to manage what was then called Sandia Laboratory, AT&T’s Bell Labs, at the time the nation’s preeminent industrial R&D enterprise, was deemed by the Atomic Energy Commission to be a key part of national security. When we came to work for the Laboratories, that sense of mission became, and along with the statement of our core purpose as articulated by Labs Director Steve Younger — Sandia develops advanced technologies to ensure global peace — helps inspire what I hope you have here an opportunity to render an exceptional service in the national interest.

From its very earliest days, Sandia embraced that phrase — “exceptional service in the national interest” — as its motto and a key expression of its highest principle. Likewise, when we come to work for the Laboratories, that sense becomes, and along with the statement of our core purpose as articulated by Labs Director Steve Younger — Sandia develops advanced technologies to ensure global peace — helps inspire what I hope you have here an opportunity to render an exceptional service in the national interest.

I got to thinking about “exceptional service” when I was considering the meaning of Veterans Day. Those of us who never served owe a debt of gratitude to those who did. But for us at Sandia, I think our appreciation runs deeper than simple gratitude. We know what “exceptional service” means and we know, too, that our veteran colleagues were providing “exceptional service” long before they were hired at Sandia. Where we have devoted our careers to that high ideal, our Sandia veterans put their very lives on the line for the nation, which means for all of us.

In Twelfth Night, William Shakespeare wrote, “Some are born great, some achieve greatness, and some have greatness thrust upon them.” I think the Bard left out one other possibility: our veterans chose greatness. They chose as part of something bigger than themselves, and not for material reward or accolades but because they heard the call and answered.

Our Armed Forces veterans embody commitment, teamwork, self-sacrifice, and courage. They are the living exemplars of “exceptional service in the national interest” and we at Sandia are privileged to count among our ranks many of these heroes. With their values and experience, they make us a better, stronger, and braver institution.

Speaking of veterans, I came across something the other day that astonished me.

The last American World War I veteran died in 2011 and we are losing our World War II veterans at an accelerating rate. According to The National WWII Museum, just 558,000 of the 16 million Americans who served in uniform in World War II were still alive at the beginning of 2017. Indeed, there are just 3,800 WWII vets now but those veterans are dying each day.

While the members of the Greatest Generation are passing into history, their offspring still number in the 18s of millions. Those of us whose fathers or mothers served in World War II will still be around for decades — to even a younger generation — to share what’s to be expected. But here’s what I didn’t expect: There are still children of Civil War veterans living among us, at least as of 2015, the most recent data I can find. Apparently some veterans of the War Between the States took young brides well into the 20th century and their offspring are in their 80s or 90s now but there are still a few around, along with probably the generation of great grandchildren to whom.

As time goes by, we see the 20th Century not as “news” or “current events,” but as history. The 19th Century? Well, that’s ancient history. But the War Between the States really it reaches out and touches us every day. Think about it: That elderly lady or gentleman you saw a couple of years back in the rest home lobby might possibly, just possibly, have been the child of someone who fought at Gettysburg. And that astonishes me.

See you next time.

— Bill Murphy (M2 1468, 505-844-0845, wtmurphy@sandia.gov)
Anthony Trimble continues service to the nation at Sandia

By Madeline Burchard

Sandia Emergency Planner Anthony Trimble says the reality between military branches gives rise to great deal of friendly smack talk. "You can imagine that this kind of joking happens a lot in my family, because my siblings and I have all served in different branches," Anthony says. Two of his brothers served in the US Army and his sister served in the US Air Force. Despite the teasing, he says their shared military experience has only made them closer.

Anthony Trimble has a steep learning curve with little room for mistakes,” he says. “However, there are many rewards. I loved seeing young Marines take on challenges and succeed with limited resources. They had energy and enthusiasm while adapting to and overcoming challenges.”

Anthony says his own service in the Marine Corps, and its long-standing reputation for training the best of the best, is a constant source of pride in the Trimble family. “I have had the honor of serving in a variety of Marine Corps units, each of which taught me critical skills,” says Sandia emergency planner Anthony Trimble.

Anthony started with the backbone of the Corps — the Marine infantry. Working with the 3rd Battalion, 23rd Marines showed him how the infantry supports operations across multiple companies and platoons. During his first three years in the Marines, he was the weapons company radio chief. Being assigned to a company removed from headquarters required flexibility and creativity, he says.

After his time with the infantry, he spent several years at the Marine Aircraft Wing Headquarters as the communications platoon sergeant. “Managing people has a steep learning curve with little room for mistakes,” he says. “However, there are many rewards. I loved seeing young Marines take on challenges and succeed with limited resources. They had energy and enthusiasm while adapting to and overcoming challenges.”

Once a Marine, always a Marine

He says that he now finds this same energy at Sandia, where challenging problems are tackled every single day.

Doing his part for the country is bigger than just putting on a uniform, Anthony says, adding that he’s a Marine 24 hours a day, seven days a week.

“As part of continuing his public service, he helps coordinate the Toys for Tots program at Sandia/California. "Being involved with this campaign has been as rewarding as any of my military service experiences. The Sandia community is incredibly generous and supportive of the effort to provide underprivileged children with a great Christmas." Sandia has donated more than 500 toys annually for the past several years. Last year’s campaign ended at a critical moment.

“As we were pulling into the local Toys for Tots distribution center to unload 543 collected toys, we found volunteers anxiously waiting for us,” he says. "The center had run out of toys minutes before we arrived. They were about send volunteers home because they could no longer fill the needs from local nonprofits. Toys from Sandia helped save the day and provide children with a special Christmas.”

The goal this year at the California site is to surpass last year’s contributions. "We are confident that the site will help us meet that goal, and will continue to support this effort for years to come," he says.

Given Back — Anthony Trimble helps coordinate the Toys for Tots program at Sandia/California.

Sandia supports First Production Unit of W80-1 Alt 369

By Michael Padilla

Sandia Labs was an integral part of NNSA’s completion of the First Production Unit (FPU) of the W80-1 Alteration 369. Sandia’s System Engineering team was present during the FPU build to observe the execution of the new procedures, verifying that procedures are correctly performed and meet requirements to yield a quality product.

“The team was present to resolve any technical issues that might arise during the build,” says Michael Forman, manager for the Sandia program. “In this instance, the timely completion of documentation and resolution of two technical issues by the Systems Engineering team were critical to the early completion of the FPU.”

During the W80-1 Alteration 369 FPU build, Jim Berg and Al Ver Berkmoes observed and documented the results of the nuclear explosives operations in engineering evaluation release tests (EER) to ensure that the process met requirements. Upon successful completion of the build, the EER and qualification engineering release were signed, completing the FPU build and allowing full production of W80-1 Alt 369 respectively.

Sandia team members critical to the aggressive push to deliver FPU by Sept. 30 included: Jim, Al, and Robert Kinzel from system engineering; Don Bender and Cary Pratt from quality engineering, and Jennifer Hidalgo, Charles Lloyd, Carmen Lucero, and Debbie Stephens from Document Control.

According to NNSA, this accomplishment is an important step toward maintaining nuclear capabilities that will help deter attacks on the United States and its allies.

“NNSA can now successfully kick off fiscal year 2018 by entering full production for the W80-1 Alt 369. Such modernization efforts are key to maintaining the safety, security, and effectiveness of the nation’s nuclear weapons stockpile,” said Brig. Gen. Michael Lutton, NNSA’s principal assistant deputy administrator for military application.

The W80-1, a warhead carried by the air-launched cruise missile, was introduced to the stockpile in 1982. An alteration is a change to a component that does not alter the weapon’s operational capability. The Alt 369 replaces Limited Life Components in the warhead.

The W80-1 Alt 369, scheduled to run through December 2020, will remain operational until the transition to the life-extended W80-4, supporting NNSA’s strategy to ensure the American nuclear arsenal continues to be safe, secure, and effective.

Consolidated Nuclear Security LLC performed FPU assembly operations at the Pantex Plant in Amarillo, Texas, supported by Sandia/California, and Lawrence Livermore National Laboratory.
A desire to serve

Sandia’s Susan Berlin-Sanders remembers a sister who loved adventure and her country, and lost her life in the line of duty in Afghanistan

By Nancy Salem

Phyllis Pelky was teaching high school in Rio Rancho when she invited an Air Force recruiter to speak to her class. She wanted the students to think about the many career options life has to offer. They listened, but the person who ended up being recruited was Phyllis herself.

Phyllis volunteered to be deployed and was sent to Kabul, Afghanistan, where she died on Oct. 11, 2015, at age 45, in the line of duty. “It was a huge loss. We were devastated,” Susan says. “She was a great person, a kind, capable, and gifted person.”

The loss is particularly painful on Veterans Day, which falls not long after the anniversary of Phyllis’s death. “I think about the sacrifices people make so we can be free,” Susan says. “We honor all the people who have served in the military, and my sister was one of them.”

It means a lot to me,” Susan says. “She had huge blue eyes and was very mischievous. All the kids have different stories about Phyllis. One I remember clearly is the time she drew a big picture of mountains on a wall in our house and signed my name to it. I, of course, got in trouble.”

Susan says Phyllis had a strong moral compass and stood up for kids who were bullied. “She confronted him and got in his face so she gave him a piece and sent him home crying,” Susan laughs, recalling the scene. “She was eight years old. She wanted to get the other kids out of the line of fire. She knew the right thing to do in every situation.”

At Cibola High School, Phyllis developed a love of languages and travel — she biked across Europe with friends after high school — and thought about becoming an interpreter. “She wanted to do adventurous things,” Susan says.

Phyllis studied French and German at the University of New Mexico and graduated with a degree in education. She also started a family, marrying David Pelky and having two sons in her early 20s.

She had taught German, French, and humanities for seven years at Rio Rancho High when the Air Force recruiter changed her life. “She passed a physical fitness test, acing the physical training. ‘She was always in great condition,’ worked out all the time,” Susan says.

“She tested at the level of a 25-year-old man.” And because she had a college degree, Phyllis entered Officer Training School. “She was commissioned as a second lieutenant in June 2004.”

Susan’s sister was a Personnel Specialist for the 9th Reconnaissance Wing at Beale Air Force Base in California. “We were very close,” Susan says. “She called and told me she was joining the Air Force and I said, ‘Seriously? You’re 33 years old?’ says Susan Berlin-Sanders, Phyllis’s sister and a Sandia computer server administrator. “I was so happy for her.”

Susan says she used to be one of those Sandians who generally took a helicopter to work. On this trip, it was a morning meeting and they were on their way back when the helicopter went down.”

She led the Equal Opportunity Office at Kadena Air Base in Japan for four years then went to Montreal, Canada, to earn a master’s degree at McGill University. She was then assigned to the Air Force Academy, where she taught languages for four years before being tapped as aide de camp to Superintendent Gen. Michelle Johnson. “She and her family, who followed her to her various posts, loved Colorado Springs, and talked about retiring there,” Susan says.

A terrible day

But first came a one-year deployment to Afghanistan in support of NATO-led Operation Freedom’s Sentinel. “We worried about her when she told us where she was going,” Susan says. “It seemed like a dangerous place to be.”

Phyllis served as a personnel specialist training Afghans to organize their air force. Four months into her deployment, Phyllis was on a helicopter crossing the air base when it crashed. “She went to meetings all the time across the base and it was unsafe to walk so they generally took a helicopter,” Susan says. “On this trip, it was a morning meeting and they were on their way back when the helicopter went down.”

Free of the 10 people aboard died on impact, all sitting on the same side of the aircraft. Susan’s phone began ringing a few hours later. “Everyone was calling,” she says. “It was a terrible, terrible day.”

She had last heard from Phyllis about three weeks before the accident when she wrote in the family newsletter about her experiences in Afghanistan and what her family was up to. “One of her sons and his wife were expecting a baby, and Phyllis was looking forward to being a grandmother. ‘Three weeks later, she was gone,’ Susan says.

In February 2015, Phyllis invited Susan and another sister to speak on her birthday with her in Colorado Springs. “We spent a whole weekend with her and had a really fun time,” Susan says. “When we all lived in Albuquerque we would have girls’ nights out. We got to do that again. I’ll never forget that weekend.”

ON DEPLOYMENT — Phyllis, right, served in Afghanistan four months before her fatal helicopter ride.

Remembered by hundreds

About 400 people attended Phyllis’s military funeral on Oct. 26, 2015, at the Air Force Academy in Colorado Springs, where she is buried. She was saluted for three miles along the route as she left Peterson Air Force Base following her dignified transfer. “Everyone was there from the academy, lots of students. She made great friends there,” Susan says. “Generals and commanders spoke. They all loved her. It was very touching.”

Phyllis’s younger son, Zachary Pelky, followed her footsteps into the Air Force and is a second lieutenant in pilot school in Texas. Her older son, Alex Pelky, lives in Colorado Springs with his wife Brandi and their young daughter. Her widower Dave also lives in Colorado Springs.

Susan says she still goes to grief meetings and credits the organization TAPS (Tragedy Assistance Program for Survivors) — which offers support groups, mentor, retreats, and social events to people who have lost a military family member — with helping her come to terms with her sister’s death.

She says she used to be one of those Sandians who kept walking when the national anthem played at 5 p.m. on Kirkland Air Force Base. But no more. “When my sister passed away, it gave me a renewed feeling of why we play the anthem, what patriotism is all about. It changed my whole mindset,” Susan says. “Now I stop and give Phyllis a moment of silence at the end of my day.”
Hydrogen catalyst
(Continued from page 1)

to create an uneven surface that resembles a plant's leaves. The extra surface area helps catalyze hydrogen almost as well as platinum does.

Lead researchers, Sandia materials scientist Stanley Chou and UC Merced's Vincent Tung have applied for a joint patent for the spray-printing process, which uses inexpensive molybdenum disulfide (MoS2). The increased surface area of the rippling "leaf" creates three times as many catalytic contact points as other MoS2 structures, and the new creation can handle higher temperatures than platinum without sintering and crumbling up the cell.

The work is part of an effort to more cheaply power hydrogen-fueled cars, desirable because they emit water rather than carbon monoxide or carbon dioxide.

Nature as an ally

The production method uses nature as an ally rather than a hindrance, Stanley says. "In traditional thinking, forces such as gravity, viscosity, and surface tension must be overcome to achieve the manufactured shapes you desire. We thought, instead of thinking of these forces as limitations, why not use them to do something useful? So, we did."

Tung says the method uses natural processes to produce materials for extremely innovative cell terminals to liberate hydrogen. "The printing process also allows for continued deposition, with the ability to scale for industry," he says. The team mixed MoS2 with water and used the printing process to expel micron-sized droplets into an enclosed area about 2 feet high. As they dropped, the droplets first separated into flat, nanoscopic subunits. These dried further as they fell, their shrinking volume producing an uneven 3-D surface much like the leaves of plants, with tiny ridges, hills, canals, caves, and tunnels. Landing on a substrate and on each other, the "leaves" were still moist enough to bond as though attached at critical points by tiny droplets of glue. Thus, the nanostructures did not lose their individuality but instead, by maintaining their identities, created tiny tunnels within and between them that permitted extraordinary access for atoms of hydrogen to seek their freedom from chemical bonds.

The inspiration for creating a bio-inspired 3-D form arose from studying the cuticle folding process, a mechanism used by plants for controlling diffusion and permeability on leaf surfaces, Stanley says. "We see our catalyst as an inorganic material acting like a plant. The nanostructures, like leaves, are varied in shape, with tiny ridges and falls," he says. "The structures take in an external material to produce hydrogen rather than oxygen, and one day may be powered by sunlight." Right now, very low-voltage electricity does the job.

Doubts about the strength of the structure formed in such a serendipitous manner, Tung recounts, were settled when a 170-pound student unwittingly trod upon one of the first MoS2-catalyst creations when it accidentally fell to the floor. A few hundred nanometers thick, it rested upon a centimeter-square carbon substrate but was otherwise unprotected. Elecromicroscopic investigation showed the tiny structure to be undamaged. The "leaves" also have proved to be long lasting, continuing to produce hydrogen for six months.

The work is the subject of a technical article published online Oct. 12 in the journal Advanced Materials. Researchers from King Abdullah University of Science and Technology, Lawrence Berkeley National Laboratory, and Yale University also contributed to the article.

The work at Sandia was funded by DOE’s Office of Science. Work at UC Merced was supported by a university startup fund.
Nov. 15 is America Recycles Day, and the news this year is that Sandia is focused on smart recycling.

Everyone knows the drill: Each year, Sandians, like other Americans, are asked to recycle more, and we have. But international market changes underway may impact how and where those recyclables are processed.

China drives recycling market changes

For many years, China has been the largest importer of US recyclables and has become the world’s largest processor of recyclables. But that industry has come with a cost. Over time, China claims, the quality of recyclables being imported into China has gone down, resulting in sorting, cleaning, and disposal expenses for waste within the recyclables supply chain. This drives down margins in an already thin-margined industry, and raises Chinese disposal costs.

Add to that the rise of China’s middle class and consumer culture, and it’s led to China making industry changes that have large implications for American organizations and municipalities that generate recycling for export.

“There are other markets, but China is the big one,” says Sam McCord from Sandia’s Materials Sustainability & Pollution Prevention (MSP2) program. “Changes made by China are driving changes in the entire industry and in recycling practices.”

Since 2013, China’s Operation Green Fence has sought to improve the quality of recyclables being brought into China for processing. More recently, China’s Operation National Sword has tightened importing rules intended to help Chinese processors avoid some of the waste problems that come from recyclables contaminated with pollutants like food and trash, and their own increasing recycling amounts. The standards are tightening, and the results will be felt by Americans.

“In the US, some municipalities are concerned their recyclables won’t be accepted by China any more, and those municipalities have to find other processing partners or make the difficult decision to landfill the materials they can’t offload,” says Sam.

How/what Sandia recycles

MSP2 team member Ralph Wrons says about 120,000 to 130,000 pounds of white paper annually is shipped in locked semi-trailers to a domestic paper recycling mill, where a Sandian witnesses the paper being unloaded onto a conveyor and into a pulping vat.

“The end product actually becomes materials for the copy paper production process, and Sandia buys its copy paper from one of the paper mills that processes Sandia’s recycled white paper,” Ralph says.

The process for plastics and mixed paper is a little different.

Sam says Sandia annually sends more than 60,000 pounds of rigid plastics and more than 150,000 pounds of mixed paper to a local processor/broker that also processes the city of Albuquerque’s recyclables.

Each time a load of plastic or mixed paper is ready, the broker puts it out for bid on the secondary materials market, and will sell it to the highest bidder. That highest bidder may or may not be domestic.

Keep Sandia’s recyclables supply chain clean

Sandia and many other large members of the New Mexico Recycling Coalition are taking action to increase participation and decrease contamination, Sam says.

Here are some ways to keep Sandia’s recyclables clean and contamination-free:

• Only recycle clean, rigid plastics in the plastics recycle bins
• Keep mixed paper bins free of trash and other non-paper recyclables
• Recycle white paper only in white paper bins

New “Zero Waste by 2025” signs on recycling bins will include recycling guidance.
By Jennifer Sawaya

Sandia will soon become a bigger player in solar energy research with the installation of a new 500 kW transformer at the Photovoltaic Systems Evaluation Laboratory (PSEL). Located near North Taos, the transformer will increase the amount of photovoltaic (PV) energy generated at PSEL to the equivalent of up to 100 large residential pv systems.

“Currently, we have more PV deployment than our electrical infrastructure,” says photovoltaic and solar energy research champion Bruce attic. “This will increase the amount of photovoltaic (PV) energy research at Sandia.

The transformer will lead to additional PV research and serve the dual purpose of enabling the deployment of more onsite renewable energy at Sandia. It will also allow the laboratory to examine more research and development opportunities for the Labs. According to Bruce, these additional opportunities will enable Sandia to increase its ability to study and test PV systems beyond the panels themselves.

“Today full-size systems, we have to be able to study the energy they generate somehow,” Bruccy says. “What better place than on the grid where it can be used? This new transformer will allow us to harvest the energy generated while we study new technology designed to boost the efficiency and reliability of PV panels.

Operating since the late 1970s, PSEL conducts DOE-funded research in photovoltaic technology, performance, and system design with the goal to develop more sustainable solutions for the nation’s energy infrastructure. The site also provides a dedicated platform for PV manufacturers to validate how well they work under different environmental conditions. It is anticipated to support greater collaboration and sharing of data among manufacturers.

“The use of renewables such as solar energy is a key part of Sandia’s sustainability goals. The use of renewables such as solar energy is a key part of Sandia’s sustainability goals. Thanks to the installation of the new transformer, Sandia is on its way to achieving this objective.”

Note: The Classified Ad deadline for the Nov. 24 issue of the Lab News will be Thursday, Nov. 16 at noon instead of Friday, Nov. 17. This deadline change applies to this issue only.

SAMANTHA LAB NEWS • November 30, 2017 • Page 7
A passion for exploring
A peek into Associate Labs Director Doug Bruder’s life and travels

By Mollie Rappe

FAMILY MATTERS – Doug, bottom left, and his parents and siblings.

When Doug Bruder was a little boy, August was for road trips.

His father taught geology at the junior college in Grand Rapids, Michigan, and every August the family would pack up and drive across the US, camping along the way. Doug’s father would point out interesting geological features and took more photos of mountains than of the family. By the time Doug was 15, he’d been to all 48 contiguous states. It would take decades for him to hit Hawaii and Alaska.

As Doug grew up, running around his suburban dead-end street barefoot, collecting grasshoppers and bees for a “zoo,” and competing with his neighbors at tree-climbing and hedge-hurdling became working at a sporting goods store after school, hiking and fishing, and participating in a table-tennis league.

By the time Doug was 16, he was in charge of opening the sporting goods store by himself on Saturdays. He’d answer questions on a wide variety of sports and gear, sell fishing and hunting gear, and even rent out cross-country skis. He made $2 per hour and got an employee discount on the fishing and hunting gear. He says, “Looking back at it, it’s amazing to me how much authority I was given as a high school kid.”

Technical work with a touch of exploration

His dad’s impromptu geology lessons sparked Doug’s interest in all things technical. He’d always been good at math so when he learned about engineering in high school, he thought that would be something he could succeed at.

However, engineering wasn’t a passion for Doug. If he could do it all over again, and finances weren’t a concern, he would probably go into anthropology. It’s still technical work, but it involves exploring and is primarily outside — two of his passions. Of course, Doug admits, there’s plenty of exploring the unknown in research and his current position.

After his wedding day, and the days his children were born, the happiest day of Doug’s life was the day he got his first engineering position. Even though he had a master’s degree in civil engineering from the University of Michigan, it was very hard to find a job due to the recession in the early 80s. His last semester, Doug received 50 or 60 rejection letters and his roommate, another engineering student, received about the same number.

Doug recalls, “My roommate and I would put our rejection letters up on the wall of our bedroom. It was a race to see who could get around the whole wall first. I was at about 3½ walls when I finally got my first offer. When I got that first offer, it was a huge deal.”

That’s when Doug moved from small-town Michigan to bustling Washington, D.C.

“Let’s Go Blue!”

After the move, it took Doug about a decade to accept the Washington Redskins as a preferred team along with his life-long favorite, the Detroit Lions. Now he says the two teams are equal in his favor. It doesn’t hurt, Doug admits, that the Lions have been “consistently the most mediocre team in the last 40 years.”

As a University of Michigan alumnus, Doug is a Wolverines fan. He rather enjoys the banter that goes on between scientists and engineers comparing their alma mater’s football teams, though he finds it a bit peculiar too.

Not only is Doug a football fan on weekends, but he also uses a lot of football analogies during the week.

Doug says, “I’m constantly using sports analogies to describe work because I think sports are a great analogue to real life in many, many ways. People better get used to me using a lot of football analogies.”

Family across half the globe

Doug met his wife Linda on the same suburban, dead-end street he grew up on. She moved into the neighborhood during high school and they met while they were both babysitting his sister’s children. By this time Doug had moved about a mile away, but the proximity allowed the then-high school kids to get to know her during low-risk activities like walks to the nearby park.

As of this September, Doug and Linda have been married for 34 years. They have three children — one son and two daughters. Their eldest daughter is expecting her second child and their second grandchild — and lives in Virginia. Their son recently moved to Hawaii for a job at the Pacific Command. Their youngest daughter is going to college in Munich, Germany. With such a far-flung family, Doug and Linda Skype regularly and fly out to visit whenever they can.

DOUG BRUDER, at right, with wife Linda, their three children on a family vacation.

LET’S GO BLUE – Doug, left, with wife Linda, their three children, Steve, Allison, and Katherine, and son-in-law, Jerry.

DOUG AND HIS GRANDDAUGHTER, Virginia, Doug wearing an Albuquerque Isotopes cap

DOUG AND LINDA at a Washington Nationals game in 2015.

ASSOCIATE LABS DIRECTOR DOUG BRUDER leads Sandia’s Defense Nuclear Nonproliferation Div. 6000. In that capacity, he manages everything from cooperative international programs to robotics research. (Photo by Randy Montoya)

New adventure in Albuquerque

When their children could support themselves, Doug decided to retire from his government job. “We suddenly felt like life was open,” he says.

About a year after his retirement as the director of research and development for the Defense Threat Reduction Agency, the position to help manage Sandia opened up.

Linda had never visited Albuquerque before, but she embraced the adventure and moved sight unseen. So far it’s been a good move for them, Doug says. They’re enjoying getting to know the Southwestern architectural style and getting to redecorate their house to fit. However, they’re not big green chile fans. Doug says, “I like the taste of green chile, but it’s just too hot. We just did not grow up with it.”

At Sandia, Doug hopes to continue to enhance the Labs’ reputation among both the scientific community and national security community. When he’s ready to retire again, he wants to leave the Labs strong, full of excellent people and unique capabilities.

He is most proud when the people under him accomplish great things without him even being aware of them beforehand. Doug adds, “That just means that you have set the culture and the conditions so the people are succeeding without you even having to be involved in the details.

Weekend road trips

Another thing about Sandia Doug has enjoyed is the Labs’ 5/10 schedule. At first he was hesitant, as he wasn’t used to it, but now he loves it and how it supports a healthy work-life balance.

Doug says, “Weekend getaways are a big deal for us right now. After 34 years of living in the D.C. area we had kind of run out of places to visit.”

So far Doug and Linda have hiked a little bit around Albuquerque, walked around Santa Fe, and visited Durango, Colorado. They like Durango quite a bit and have ridden the train on the Durango and Silverton narrow-gauge railroad.

They plan to visit Carlsbad Caverns National Park and other nearby national parks. They also want to hike Sandia Peak and visit some pub burgers to feast on the rich heritage of their home town. “We’re not just looking forward to exploring the mountains and the beauty, but also the people and the culture,” says Doug.

For trips further afield, visiting their children in Hawaii and Germany is high on Doug and Linda’s list. Also, Doug would love to experience Europe with Linda. He’s seen quite a bit of Europe on business travel but she has only made limited trips, mostly to visit their daughter in particular, he’d like for them to get the chance to explore southern Europe — especially Italy and Greece — and perhaps even take a Mediterranean cruise.

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They plan to visit Carlsbad Caverns National Park and other nearby national parks. They also want to hike Sandia Peak and visit some pub burgers to feast on the rich heritage of their home town. “We’re not just looking forward to exploring the mountains and the beauty, but also the people and the culture,” says Doug.

For trips further afield, visiting their children in Hawaii and Germany is high on Doug and Linda’s list. Also, Doug would love to experience Europe with Linda. He’s seen quite a bit of Europe on business travel but she has only made limited trips, mostly to visit their daughter in particular, he’d like for them to get the chance to explore southern Europe — especially Italy and Greece — and perhaps even take a Mediterranean cruise.

This August, Doug finally visited Alaska as part of his retirement package. At first he was hesitant, as he wasn’t used to it, but now he loves it and how it supports a healthy work-life balance. Doug says, “Weekend getaways are a big deal for us right now. After 34 years of living in the D.C. area we had kind of run out of places to visit.”