



GIVE ME SHELTER — Sandia is offering, free of charge, the design and complete instruction manual for building a low-cost, drive-up outdoor shelter that shields health care workers conducting COVID-19 testing.

Photo by Randy Montoya

Portable shelters protect medical workers, save PPE

Sandia shares free instructions for building outdoor COVID-19 testing booths

By **Kristen Meub**

Sandia is offering, free of charge, the design and complete instruction manual for building a low-cost, drive-up outdoor shelter that shields health care workers conducting COVID-19 testing. The information is available for download on the Labs' [Licensing and Technology Transfer](#) website.

Dr. Cody Saxton of Sandia's medical team said that when a patient is swabbed for COVID-19, the swab must be inserted to the back of the nasal passage. When that happens, she said, a patient's initial reaction is to sneeze or cough, potentially spraying thousands of infectious viral particles.

To help protect medical workers taking samples, Sandia designed and built a clear protective shelter that the workers can stand inside while testing patients.

Cody submitted the idea in mid-March when Sandia's leadership team sent out an open call for ideas for rapid projects to help fight COVID-19.

"I was concerned about the pending personal protective equipment shortage, the continued safety of patients and health care workers, and also wanted to minimize waste from testing," Cody said. "Testing personnel run a high risk of exposure. The booth design provides safe testing conditions for both the tester and the patient, even if PPE resources dwindle."

In just four days, a team of engineers from Sandia's Advanced Materials Laboratory, led by Michael Gallegos and Derek Reinholtz, ordered materials and designed, constructed, tested and completed two shelters.

The enclosures are made of aluminum frames and acrylic panels, with voice-activated radios and arm-length rubber gloves that enable a healthcare worker to swab a patient while standing inside the shelter. The unit also has a ventilation system that maintains positive pressure inside the box to further protect the worker.

"I think this project really demonstrates the team's commitment to mission and the innovative spirit to really make something happen," said James Carney, Advanced Materials Laboratory manager. "I'm exceptionally proud of them and can share that they were excited to be able to contribute and make this process safer for nurses and technicians."

Sandia is currently working on more than 50 projects to help fight COVID-19. These projects include research and development in engineering, biological sciences, high-performance computing and computer modeling, materials science, nanoscience, technology transfer and other disciplines. To learn more, visit Sandia's [COVID-19 research](#) website.

Researchers use public data to forecast new COVID-19 cases

Short-term predictions match outbreak data

By **Michael Ellis Langley**

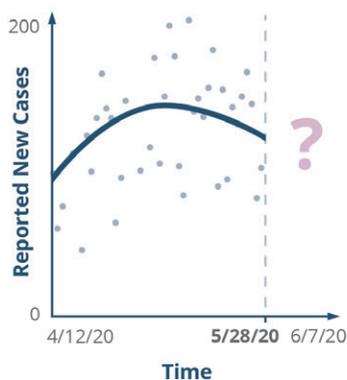
Global data networks that connect people through their devices have made it possible to create accurate short-term forecasts of new COVID-19 cases using a method pioneered by Jaideep Ray and Cosmin Safta.

Jaideep and Cosmin used a model developed more than a decade ago to track plague epidemics using statistics. For COVID-19, the two also drew upon the advice of their Sandia co-workers with expertise in modeling, mathematics and software engineering.

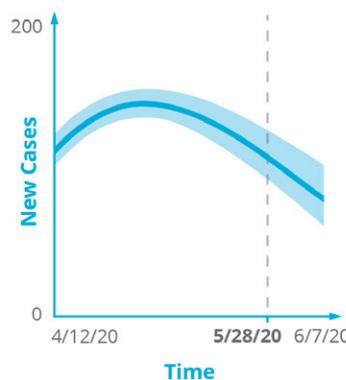
"I first started using this method in 2008-09. Cosmin and I adapted it in 2010 to track influenza-like illnesses," Jaideep said. "When COVID-19 began to spread so rapidly, we knew we could use the same method to help forecast the outbreak."

He and Cosmin use publicly available data from the Centers for Disease Control and Prevention, the New York Times Data Repository, Johns Hopkins University and various state departments of health. Within minutes, and without the need for high-performance computing resources, the researchers can forecast new cases in a region or nationally for the next seven to 10 days. Since

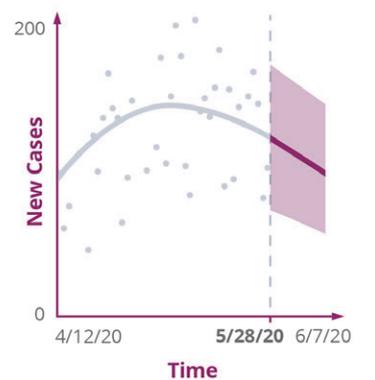
01 Record
New COVID-19 cases per day



02 Calculate
Infection rate of COVID-19



03 Forecast
Future COVID-19 cases per day



DETAILS IN THE DATA — Jaideep Ray and Cosmin Safta use **recorded data** and a calculated **infection rate** to predict **future cases** of the coronavirus. This example is based on data for New Mexico from April 12 to May 28, which was then used to forecast new COVID-19 cases between May 28 and June 7.

Illustration by Sydney Spruiell

April, the number of new cases has roughly followed the trends predicted by the team.

"This method is a relatively easy and inexpensive way to get short-term forecasts about new coronavirus cases that decision-makers can use to allocate health care resources and response," Cosmin said. "This method is much easier and cheaper to do than methods that require more robust computers and manpower."

Accuracy over time

The range of accuracy for the predictions varies with the number of days out the researchers are

trying to forecast. So, while the number of cases has generally followed the trends predicted in the model within a week or so, the method is not useful to predict more than 10 days out.

"The forecasts come with a range within which users can expect reality to lie," Jaideep said. "The range changes daily depending on the data, but the model ensures that the user can have 95% confidence that reality will fall within the range."

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 LABNEWS Notes

Acceptance and advocacy for LGBTQ+

By **Susan Seestrom**,
Associate Labs Director

During the Pride month of June, the U.S. Supreme Court issued a **major ruling affecting LGBTQ+ employees** in the case of *Bostock v. Clayton County, Georgia*. In an opinion authored by Justice Neil Gorsuch, the Supreme Court stated that the ban against discrimination on the basis of sex in Title VII of the Civil Rights Act of 1964 protects gay, lesbian, bisexual and transgender workers from employment discrimination.

The question came to the court based on three different lawsuits. Donald Zarda and Gerald Bostock are gay men who were terminated after their employers learned of their sexual orientation. Aimee Stephens was terminated from her job at a funeral home following her announcement that she was transitioning her gender.

The court found that in each of these cases, the termination was unlawful under the non-discrimination requirements of Title VII. Below is an excerpt from the ruling:

“Today, we must decide whether an employer can fire someone simply for being homosexual or transgender. The answer is clear. An employer who fires an individual for being homosexual or transgender fires that person for traits or actions it would not have questioned in members of a different sex. Sex plays a necessary and undisguisable role in the decision; exactly what Title VII forbids.”

Sandia protects its employees from discrimination based on gender identity and sexual orientation, but fewer than half of the 50 U.S. states have had similar protections. This federal ruling now extends such protection to employees in all 50 states. The precedent set by this case will likely



BETTER TOGETHER — Associate Labs Director Susan Seestrom is an LGBTQ+ ally and executive champion for the Sandia Pride Alliance Network.

Photo by Lonnie Anderson

have far-reaching impacts beyond Title VII and beyond the Civil Rights Act.

Community support, training

While this ruling is a promising development for LGBTQ+ rights, there are still areas where work is required. Along with issues of discrimination, the LGBTQ+ community continues to face homelessness, unemployment, addiction and suicide at higher rates than the population at large.

Several great organizations in our community are working to lift up our LGBTQ+ communities, including the **Transgender Resources Center of New Mexico** and **Casa Q**, which provide advocacy, education, resources and other safe living

and knowledgeable manner. It made a difference to our family.

It breaks my heart to think of a young person who might not find support from their family in a similar situation. About one-third of SPAN's membership are allies like me, people who have friends and family in the LGBTQ+ community or just want to be supportive.

Please be aware of how much your attitude can make a difference — to the way in which our Sandia LGBTQ+ family feels included and to the way in which we can be allies to our friends and families. We are all better together. 

support for community members and allies.

The TGRCNM is an organization that has assisted many Sandia employees and is particularly significant for me. The co-founder, Adrien Lawyer, has provided Trans 101 training at Sandia several times in the past few years. A recorded livestream of the training is available on the **Sandia Pride Alliance Network** internal website.

I personally learned a tremendous amount from this training, and from my involvement with SPAN over the past three years. My grandchild came out as transgender a year and a half ago. When our daughter told us about her child's new name and pronouns, she was very worried about a potential negative reaction from the family. Because of SPAN and the Trans 101 training, I was able to react in a supportive

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LAB NEWS ONLINE: sandia.gov/LabNews

 LABNEWS Notes

EDITOR'S NOTE: Lab News welcomes guest columnists who wish to tell their own “Sandia story” or offer their observations on life at the Labs or on science and technology in the news. If you have a column (500-800 words) or an idea to submit, contact Lab News editor Tim Deshler at tadeshl@sandia.gov.

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Call me Daisy

My story of coming out at Sandia

By **Daisy Sophia Hollman**

NOTE: Every LGBTQ+ person's experience is different, and transgender people, in particular, have a broad spectrum of needs and experiences. In my personal story that follows, I share my experience coming out at Sandia. However, please don't project my experience on others, including LGBTQ+ Sandians. I hope my story provides a useful starting point, but that is no substitute for taking time to get to know people as individuals and learning how to best be an ally on a case-by-case basis.

I am transgender.

It's been a long, long time in coming. I spent decades fighting it, grasping at straws, pretending there was going to be some world in which this didn't end with me going through the long, hard, expensive and painful process of social and medical gender transition.

I knew for a very long time that I wanted to transition, to show the world who I really am inside. But I was terrified of everything I knew I would lose, from little things like the ability to walk alone at night or roll out of bed and be at my desk at work 15 minutes later, to big things like the loss of my family, some of my long-time friends, or the implicit presumption of competence in a professional setting by colleagues who refuse to address their subconscious biases.

In the seven months since I started coming out to friends, and particularly in the past two months since I came out publicly, I have lost many of these things. But what I've gained — the ability to live openly and honestly as myself — is so much more valuable and rewarding than I ever imagined. Even in the process of coping with some profound and difficult losses in my life that have come as a result of my transition, I am deeply and unimaginably happy. I'm happy in ways that I didn't even know happiness could feel like until now.

Sense of safety

Fortunately, one loss that I never had to worry about was my employment. And for that, I am immensely grateful to Sandia and everyone at the Labs who has worked hard to create an environment where I feel that way. It's difficult to fully disentangle the set of factors that made me feel this sense of safety, but there are a few that are probably worth calling out explicitly.

One factor that readily stands out is the annual harassment-free workplace training. I know we all complain about having yet another cheesy slide show to click through each year, but it's hard to describe how comforting it is to be in a marginalized group and then see an explicit statement of support for your safety in a training course that everyone is required to take.

When I came to Sandia, these corporate trainings were one of the first times I had heard someone say that I couldn't be harassed or discriminated against based on my gender expression. When that training

was altered (probably by someone with good intentions) at some point later to collapse "gender identity and expression" into just "gender identity," I noticed. When "gender expression" returned a few years later, I also noticed. It's a really small thing, but it went a long way toward me feeling comfortable being myself at work.

It's worth re-emphasizing that every transgender person's experience is different. For me, gender expression was a critical aspect of coping with my gender dysphoria and a big part of what helped me get to where I am today. "Gender dysphoria" is the medical term used when a person feels distress due to a mismatch between their gender identity and the sex assigned to them at birth.

It's important to note that not every gender non-conforming individual has gender dysphoria, nor does everyone with gender dysphoria think of it as a medical disorder. Personally, though, I needed to be able to think of it as a medical diagnosis and work with medical professionals throughout the process. I spent a long time poking my toes or "leaking" out of the closet in the form of feminine gender expression before I got to the point where I was comfortable admitting I needed professional help. I am grateful that for me, Sandia was the accepting environment that allowed me to do that.

Support of allies

There are many people I have to thank for fostering the acceptance I have felt at Sandia, but I particularly want to mention how supported I've felt by administrative staff. We often underappreciate how our office administrators act as friends, sounding boards and informal therapists to the staff in their departments.

During the four or so years where my gender expression leaked out of the closet before I was ready to be honest with myself and others about my gender identity, they always seemed to know the right things to say, from the office management assistant who complimented my nail polish and comforted me after the Orlando night club shooting, to another administrative staff member who was so consistently encouraging and complimentary of my gender expression that I would walk across the California site — often in heels — to visit her after her office moved, to my current office administrator who printed out a replacement nameplate with my new name and left it on my desk with a post-it note saying "whenever you're ready :-)."

There are so many stories I wish I had the space to tell here. While many of my technical colleagues felt uncomfortable voicing the unspoken question of "why are you wearing a dress?" that was obviously on their minds, I am grateful for the administrative staff (and several technical colleagues) who dared to risk awkwardness and treat me like any other woman.

I am also grateful for the women in management and other leadership positions at Sandia who have shown me through their actions and careers that expressing my true gender doesn't have to limit my



FOSTERING ACCEPTANCE — Sandia computer scientist Daisy Sophia Hollman reflects on her personal experience coming out as transgender at Sandia.

Photo courtesy of Daisy Sophia Hollman

professional potential. Particularly over the past two months, these women have welcomed me with open arms into their professional organizations as enthusiastically as they do any other woman. As someone who has benefited from male privilege my whole life until now, the enthusiasm with which these women have welcomed me into their professional circles has been an enormously positive and frankly unexpected experience.

Finally, specifically to my other transgender and LGBTQ+ colleagues at Sandia — both closeted and varying degrees of out — I am here for you. Please reach out to me if you need to talk or just want a friend. I cannot say enough about how hard this would have been without the transgender women in my life who reached out to me to make sure everything was okay and who shared so freely from their own experiences. I owe them an enormous debt of gratitude. To anyone questioning out there: you don't have to do this alone. [fb](#)

Forecasting COVID-19

CONTINUED FROM PAGE 1

The project, funded through Sandia's **Laboratory Directed Research and Development** program, provided national results to the **National Virtual Biotechnology Laboratory** team for publication on a DOE-run dashboard (funded by the DOE Office of Science) for federal decision-makers. Specific results also were provided to the New Mexico Department of Health, to guide regional responses throughout the state.

The data revealed by the forecasts can also gauge the impact of interventions over time. Both

researchers say responding quickly to provide data on emerging outbreaks would not have been possible even five years ago.

"Since we are so connected today, it's possible to get an accurate number of COVID-19 cases in a day and get it to everyone in the world within a 24-hour period," Jaideep said. "Ten years ago, even five years ago, you could not get this data. In 2015, with the Ebola outbreak, by the time they got data, it was pointless to try and make a forecast because it was already out of date and useless to decision-makers."

"For the current COVID-19 situation, having more sources of data dramatically assists our ability to create short-term forecasts to inform public health decisions," Cosmin said. [fb](#)



Jaideep Ray

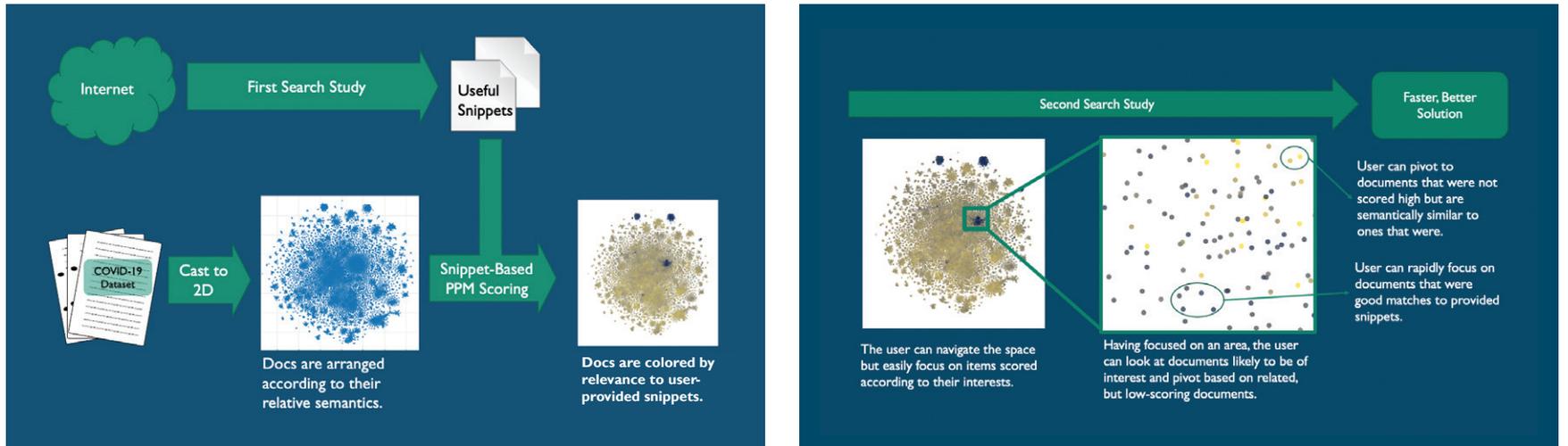


Cosmin Safta

Photos courtesy of Sandia National Laboratories

Finding COVID-19 needles in a coronavirus haystack

Sandia researchers conduct desktop data mining to rapidly narrow searches to most relevant results



FAST FILTERING — Sandia computer scientist Travis Bauer and a team of researchers have combined data mining, machine-learning algorithms and compression-based analytics to rapidly search thousands of studies at a time, whittling the list in a matter of minutes to identify the studies most relevant to experts' research parameters. **Images by Travis Bauer**

By **Luke Frank**

COVID-19 researchers the world over face a daunting task of sifting through tens of thousands of existing coronavirus studies, looking for commonalities or data that might help in their urgent biomedical investigations.

To accelerate the filtering of relevant information, Sandia has assembled a combination of data mining, machine-learning algorithms and compression-based analytics to bring the most useful data to the fore on an office computer. In their initial effort, investigators were able to whittle down 29,000-plus published coronavirus studies to 87 papers by identifying language and character similarities in a matter of 10 minutes. That's rapid-response data science.

"Medical and epidemiological experts can have near-immediate access to existing pertinent research without being data scientists," Sandia computer scientist Travis Bauer said. "With some refinement, this new process can clarify questions our public health experts need answered to fast-track COVID-19 research, particularly as new studies quickly emerge."

The nature of rapid-response science is to quickly generate reliable results. In a seven-day effort, Sandia scientists conceived, configured, analyzed, tested and re-analyzed an experiment helping biosecurity and public health experts isolate key coronavirus documents to rapidly access the most relevant information for defeating the COVID-19 virus.

Travis and a team of data scientists, engineers, a human-factors expert and experts in virology, genetics, public health, biosecurity and biodefense developed and ran two different search studies — one with two experts and one with three. The experts studied "Stability of SARS-CoV-2 in aerosol droplets and other matrices," drawn from the March 18 U.S. Department of Homeland Security master question list, intended to quickly present the current state of available information to government decision-makers and encourage scientific discussions across the federal government.

Data used in the project was provided as part of a federal call to action to the technical community on a "New Machine-Readable COVID-19" dataset that, at the time, contained 29,315 research documents full of topics relevant to coronavirus. In a bid to accelerate experts' ability to study a specific question, Sandia's research — funded initially through the Labs' royalty income and then through Sandia's [Laboratory Directed Research and Development](#) program — was conducted in several stages.

Algorithms and compression data

In the initial stage, the study's virology, genetics, public health, biosecurity and biodefense

experts indexed the research papers and plotted that information in a two-dimensional graph using natural-language-processing techniques based on document content. The documents were converted into a searchable natural-language matrix and indexed or scored for searchability and relevance.

Three commonly used visualization algorithms were tested on the 29,000-document set to see which would best arrange the documents into useful clusters, Travis said.

The Singular Value Decomposition algorithm uncovers latent information in relationships among document terms. Travis said that for the purposes of this study, the algorithm didn't provide enough differentiation for a user to explore, so it was not chosen.

The Uniform Manifold Approximation and Projection algorithm is a popular method used to broadly arrange data in two dimensions for visualization. However, for this study, UMAP as tested did not provide enough differentiation in the documents for experts to be able to take a deep dive into a specific COVID-19 topic; however, the team believed that additional tuning of the algorithm could make it more useful for this dataset.

The T-distributed Stochastic Neighbor Embedding algorithm is a machine-learning tool that can batch similar or relevant data. The algorithm produced clearly defined collections of related information that enabled experts to explore specific COVID-19 topics. Travis's team determined that this algorithm could be fine-tuned to produce even better, more usable results.

Search for stability

Also in the initial phase, the same experts were asked to search for articles relevant to "Stability of SARS-CoV-2 in aerosol droplets and other matrices" using the search system or engine of their choice, according to Sandia researchers who conducted the user studies.

The study experts captured what they considered relevant or interesting information helpful in answering their COVID-19 question and pasted it into a Microsoft Word document. The document containing the information provided the snippets used to create scores for articles based on how well they answered the experts' questions.

The snippets chosen included COVID-19 and coronavirus stability, case studies, test matrices and other topics. Results were plotted as points on a two-dimensional graph indicating clusters of relevant and irrelevant articles.

An analysis algorithm in the Prediction by Partial Matching data-compression technique then scored all COVID-19 documents based on the snippets. These scores were used to color the

documents on the two-dimensional graph, providing clusters of color that show the experts where the relevant information can be found. About 87 clustered documents were deemed highly relevant on the graph; more than 23,000 of the documents were deemed irrelevant.

Effectively categorizing results

Following a 30-minute session, the study experts were asked to explain their search terms, how they decided which articles to view, and what content they were looking for in each article.

The experts interactively explored the contrasting colored clusters that stood out as batched COVID-19-related documents. They could study any of the documents to determine whether they were batched appropriately according to relevance or pivot to new snippets.

The same experts who examined the results said that the documents were accurately batched according to relevance and offered suggestions on further refining the interface by displaying information about title, authors, year, journal and abstract. They said they saw a lot of potential with this tool.

"Even on my office laptop computer, we can sort millions of documents and make them available to the user," Travis said. He acknowledged that some algorithms used provided more differentiation and visual clustering, but that tuning the algorithms will improve performance.

"Technologically, it's possible to rapidly research and adapt to experts' needs as they work through a data set," he said. "The agility and speed with which the user interface can be developed with the right team on desktop computer systems can provide an ability to respond to specific queries quickly and adapt with the changing needs of the user."

Sandia seeks coding collaborators

Sandia is seeking input and collaboration from a larger community of researchers and developers in extending and applying the code to further refine its algorithm and user interface for sifting through existing coronavirus studies to find the most relevant. The search studies in this project were conducted through Galen-view, which is available on GitHub at github.com/sandialabs/galen-view.

Saltzstein featured on DOE Women in STEM site

By **Sarah Johnson**

Sandia manager Sylvia Saltzstein has been recognized by DOE's **Women @ Energy: STEM Rising** website, which honors women in STEM fields throughout the DOE complex.

Sylvia is the manager of spent nuclear fuel storage, transportation and security research and development at Sandia, and previously served as the acting senior manager for nuclear energy safety and security. She has been at Sandia for 26 years, and has spent the past seven years helping set and implement the national research agenda for the safe and secure storage and transportation of spent nuclear fuel and safeguards for potential reprocessing of used nuclear fuel.

In her role as an expert on nuclear energy transportation safety research, Sylvia has shared her expertise with critical stakeholders all over the world, including DOE, the U.S. Nuclear Regulatory Commission, the U.S. Electric Power Research Institute, the United Nations International Atomic Energy Agency, the German Federation of Materials Science, the Korean Atomic Energy Research Institute and the Korean Radioactive Waste Association.

She led two DOE teams that earned consecutive **Secretary of Energy Achievement Awards** in 2017 and 2018, and was recently honored with an **Albuquerque Business First Women of Influence** award for her leadership in Sandia's nuclear energy groups and the Albuquerque community.

Sylvia was interviewed recently for her feature spot on the DOE Women @ Energy website.

Q What inspired you to work in STEM?

After undergraduate school, I worked at Lawrence Berkeley National Laboratory on the superconducting supercollider, and then was a graduate intern at Lawrence Livermore National Laboratory. This was a wonderful introduction into the national laboratories.

Prior to my work at Sandia, I was an Earth science and biology middle and high school teacher. I still have a passion for middle and high school science education and communication, even in my work at Sandia. I view my role as communicating the big picture and connecting people of different backgrounds to create high-performing teams.

Q What excites you about your work at the Energy Department?

Nuclear energy safety and security is a difficult topic. There's a huge amount of emotion around it, even in professional conversations. It is not a topic many people in the world think about, but I think about it every day and help influence the research path and engineering solutions the United States and other countries put in place to develop permanent solutions for the disposition of radioactive and toxic material and to help provide tools that do their part to ensure that our nuclear energy and fuel is always managed in a safe manner.

Because America has the largest inventory of spent nuclear fuel in the world, understanding our risk in this area is important for the nation, as well as all the other countries who have nuclear power.

Q How can our country engage more women, girls and other underrepresented groups in STEM?

I think the value of outreach programs in elementary and middle school cannot be



STEM STAR — Sylvia Saltzstein loves her job as an expert on nuclear safety transportation research at Sandia.

Photo by Vince Gasparich

overlooked. Any engagement these girls receive in kindergarten through 12th grade can give them access to interactive displays on engineering, research and aspects of science, and it ultimately gets girls thinking, "I can do this as a career. I can go to college for this."

I have worked with the Future Cities program and Crosslinks, as well as programs with the University of New Mexico. It's so important to provide girls and boys the knowledge that engineering is a career and show them that you can go to school for this. Those of us in the STEM community take for granted that kids know what an engineer is — most kids think an engineer drives a train.

I think once women get to the workforce, they need female role models in prominent leadership positions and visibility of women and minorities in science and engineering fields. When women and minorities come to Sandia, we have many resources for them to find a group and become involved. We have the Sandia Women's Action Network and Society of Women Engineers — these outlets and daily news engagements and meetings help connect people.

The networks that women have, starting in high school and college, have been shown to be more important to them than the "good old boys" network for men. Women typically provide each other with more support and information within these networks, including job leads from their extended network of friends and colleagues.

Q Do you have tips for someone looking to enter your field of work?

Read as much of the work that your colleagues have done as you possibly can. Never underestimate the power of reading. Even if you can't understand the detail, you may gain something from reading the concepts and body of work. This takes effort — you must do your homework, and that means reading nights and weekends — reading all the papers and articles you can get your hands on.

Second, I would say getting involved in corporate teams and groups is vital to success. It can be an intramural sport, professional organizations or any group that can build your network outside of your immediate technical area. I think women tend to be outstanding at organizing people and developing teams. We should learn to capitalize on this and not be afraid to be the person who



Sylvia Saltzstein

Photo courtesy of Brian's Photography for Albuquerque Business First

organizes — whether it be a club, sport or a technical team. There is a lot of power in establishing diverse teams, as opposed to just focusing on technical knowledge.

Finally, don't burn bridges. Technical communities can be small. You will work with everyone again sometime in the future, so keeping positive relationships is vital to success.

Q What are some of your hobbies?

Well, it's certainly not a hobby, but raising my three wonderful daughters is what I love, and it's what I choose to do in my free time. I also enjoy running, biking, hiking, skiing, gardening and cooking. Oh, and I love to travel! 📷

Cub Scouts say thank you

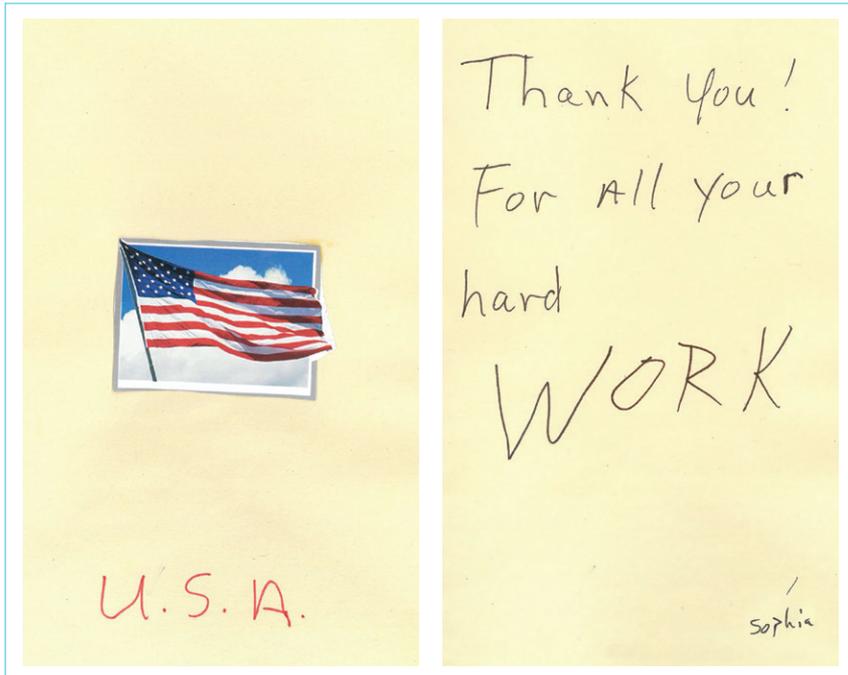
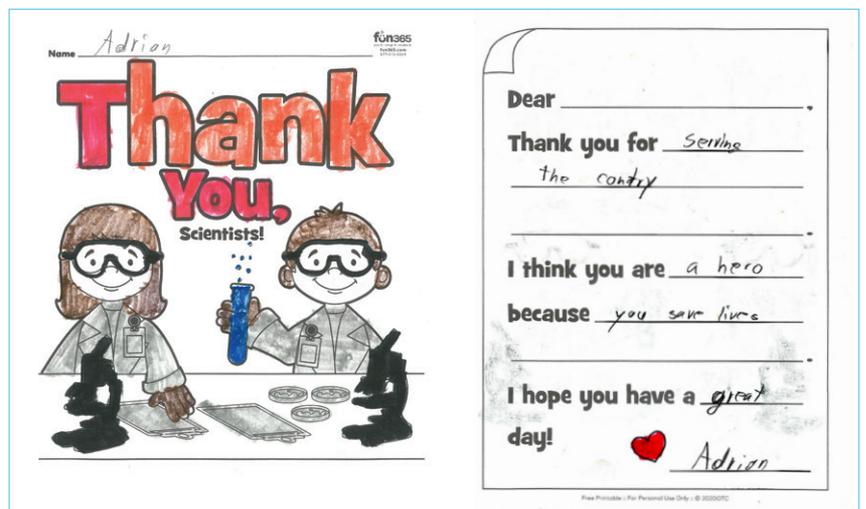
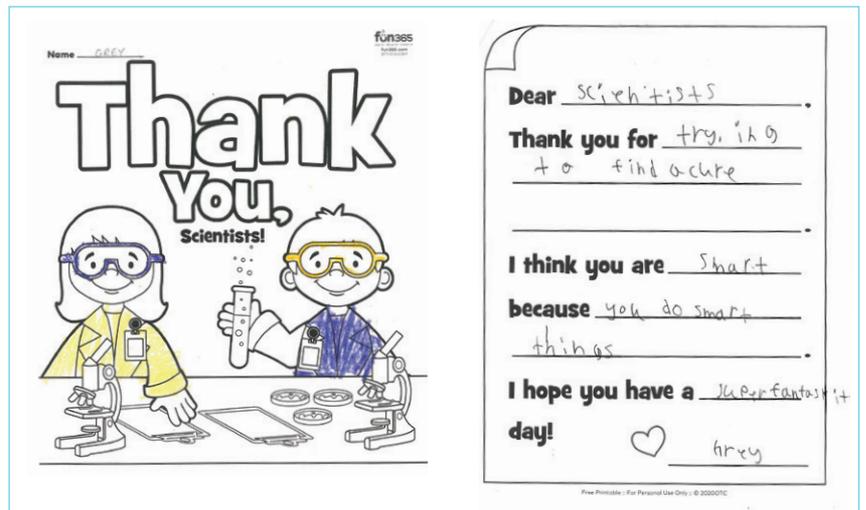
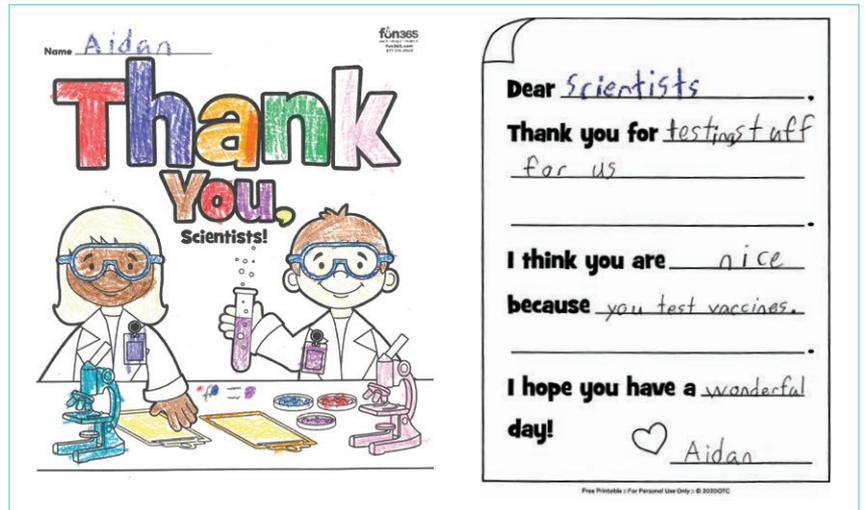
By Rebecca Ullrich

The Cub Scouts are grateful to you, Sandia scientists and engineers, for all that you are doing to protect us from COVID-19.

Sandian Mark Dietrich is an assistant Cubmaster for a pack of Cub Scouts in the Albuquerque area. As the pandemic flared through the United States and New Mexico entered a stay-at-home period, the pack had to adapt their service projects. They had planned to get together to plant trees for the community. Instead, they decided to serve their community by expressing gratitude.

From their homes, the Cub Scouts wrote thank-you notes to firefighters, doctors, nurses, police officers, military personnel, scientists and others helping confront and solve the problems created by this new disease. Their list included the Sandia scientists and engineers who are working on multiple projects to understand and address the COVID-19 threat.

Since Mark works at Sandia, he volunteered to find a way to share the notes with all of you. Sophia, Aidan, Grey and Adrian thank you for all of your hard work, for “testing stuff” and for serving the country. Keep on doing smart things, Sandia — the youth of America are counting on you! 🇺🇸



GRATITUDE IN ACTION — When COVID-19 caused statewide stay-at-home orders, an Albuquerque-area Cub Scout pack got creative with their community service project, writing thank-you notes to Sandia scientists who are working to understand and address the disease. Images courtesy of Mark Dietrich

SANDIA CLASSIFIED ADS

NOTE: The classified ad deadline for the July 17 Lab News is noon Friday, July 10.

AD SUBMISSION GUIDELINES

AD SUBMISSION DEADLINE: Friday noon before the week of publication unless changed by holiday.

Questions to Michelle Fleming at 505-844-4902.

Submit by one of the following methods:

- **EMAIL:** Michelle Fleming (classads@sandia.gov)
- **FAX:** 505-844-0645
- **MAIL:** MS1468 (Dept. 3651)

- **INTERNAL WEB:** Click on the News Tab at the top of the Techweb homepage. At the bottom of the NewsCenter page, click the "Submit a Classified Ad" button and complete the form.

Due to space constraints, ads will be printed on a first-come, first-served basis.

MISCELLANEOUS

BASKETBALL HOOP, expandable, \$60. Maestas, 505-720-8089, ask for Michael.

BBQ GRILL, does not include propane tank, \$75. Maestas, 505-720-9232, ask for Anthony.

PATIO CHAIRS, 2, wrought iron, w/small table, \$100; 2 patio umbrellas, w/crank, \$10 ea.; golf cart organizer, metal, \$65; large lamps, set of 2, \$60. Brewster, 505-238-4704.

FULL MATTRESS, Sealy, 2 yrs. old, barely used, box spring, frame, & linens, \$300 OBO; solid oak L-shaped desk & hutch, \$200 OBO. Burns, 505-697-0684.

WHEELS, set of 4, '19 Ford F150, 18-in. factory, Michelin tires (275/65R18), <1K miles on them, \$1,000 OBO. Zamora, 505-506-6862.

WOMEN'S PANTSUITS, assorted brands (Calvin/Anne Klein, Tahari, Kasper, Nine West), colors & sizes 4-10, \$30 ea. Mills, 505-515-8270.

QUEEN BED FRAME, headboard, box spring & mattress, \$300 OBO; will sell individually. Jones, 505-306-7412.

SCANNER, Epson ES-400, almost new, \$250; desk chairs, \$10 ea.; Sanyo 40-in. FW40D36F, hardly used, \$180. Chung, 812-870-2551.

MISC/CARVIN PA SYSTEM, 8-channel head, 2 15-in. speakers, w/stands & cables, like new, half price, \$400. Marquez, 505-899-0629.

MASSAGE TABLE, Master portable, blue, 28" x 78", w/carrying case, bolster, cupping set, like new, photos available, \$175. Tribble, 505-604-1312.

BASKETBALL HOOP, full size, adjustable, Lifetime hoop, used, good condition, free. Potter, 505-292-5224.

SKI BOOTS, men's, Lange XT 130 LV (2017-18), size 27.5, \$50; text for photos. Hall, 505-280-4344.

GAS DRYER, LG DL-G7101W, 7.3-cu. ft., white, barely used, like new, transferable extended protection plan, \$525. Serna, 505-730-7028.

DRAIN PIPE, PVC, 10-ft., white, square opening, \$5 ea.; food processor, w/ attachments, never used, \$20. Lewis, 505-323-7268, ask for Barbara.

TRANSPORTATION

'04 TOYOTA TACOMA PRERUNNER, regular maintenance, 177,200 miles, good condition, runs great, \$7,999. Larson, 505-228-1731.

'02 ACURA MDX, lots of recent work, 178K miles, \$3,250. Headley, 720-724-0961.

'04 TOYOTA TACOMA, crew cab, 4-dr., 4WD, TRD, V6, AT, red, new head/running lights, 108K miles, \$12,000. Golden, 505-823-9656.

RECREATION

'19 WILDWOOD X-LITE 263BHXL, sleeps 8, w/ outdoor kitchen, used only twice, located in Elephant Butte, photos available. Collins, 505-249-6982 or 505-235-4413.

EBIKES, 2, Daymak EC-1, carbon fiber, 34-lbs., 1 RWD, 1 FWD, \$800 ea. Chavez, 505-710-4519.

'10 FLAGSTAFF/FOREST RIVER M-228, MAC TENT CAMPER, fully self-contained, used 4 times, excellent condition, \$8,000. Martin, 505-280-6924.

LADIES BIKE, Schwinn Trailway, 3/7-spd., black/pink trim, like new, \$275 cash. Record, 505-480-2808, ask for Gerry.

'92 BMW K75, w/panniers, windscreen, Clymer manual, various maintenance items, 92K miles, excellent shape, \$2,500. Backus, 505-504-6609.

PUBLIC DUTCH-STYLE BIKE, front & rear racks, medium deep green, 7-spd., towed detachable enclosed pet carrier, \$500. Duis, 775-830-6266.

REAL ESTATE

BUILDING LOTS, Sandia Park, 2 acres residential + adjoining 1.5 acres residential/commercial, well w/pump, electricity, natural gas, cable, septic, \$160,000, easy terms. Mihalik, 505-507-1306.

AD RULES

1. Limit 18 words, including last name and home phone (web or email address counts as two or three words, depending on length).
2. Include organization and full name with 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. The same ad may not run 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 and retired Sandians only.
10. Housing listed for sale is available without regard to race, creed, color or national origin.
11. Work wanted ads are limited to student-aged children of employees.
12. We reserve the right not to publish any ad that may be considered offensive or in poor taste.

Making Sandia inclusive for all

Dalton Bradley named a 2020 Employee of the Year by CAREERS & the disABLED Magazine

By **Michael Ellis Langley**

Born with spastic cerebral palsy, Sandia project controller Dalton Bradley didn't walk on his own until age five. Today he's helping Sandia make strides toward greater inclusion of people with unique abilities.

Dalton has been with Sandia for six years. He started as an intern and now serves as a project controller with the W80-4 life extension program. But Dalton's mind is firmly on also making sure Sandia is inclusive for all people. He does this through his work as a co-chair of **Abilities Champions of Sandia**, one of the Labs' employee resource groups. The ACS supports individuals with disabilities and unique abilities.

In recognition of his work with the ACS, Dalton was named a 2020 Employee of the Year by **CAREERS & the disABLED Magazine** — one of only 10 individuals globally to receive the honor.

Dalton's journey of living a life with spastic cerebral palsy gives him a deep connection to the work he does with ACS.

"My brain didn't fully develop in the womb," Dalton said. "The right side of my body has a lot less function, and my muscles and joints are a lot weaker. I tell people to imagine doing something they do multiple times a day — like unscrewing the top of a travel coffee mug — but trying to do it with only one hand."

Helping his peers understand the importance of valuing those around them and finding strength in every individual's unique abilities is important to Dalton.

Not defined by disability

While his first 18 years of life growing up in Albuquerque, New Mexico, were marked by pain, surgeries and constant physical therapy, Dalton refused to let those things define him.

"A lot of my childhood memories are me in the hospital," he said. "It had a mental impact; I can't deny that. But I want all the things in life that everyone wants. So, I committed myself to working harder to achieve that goal."

While at New Mexico Highlands University Business School in 2014, Dalton started his internship at Sandia. In May of 2018, Dalton made the decision to leave behind the people and community he had known all his life to move to the Labs' Livermore, California, site.

"I wanted to make a personal change and live somewhere new," Dalton said about his decision. "To make a move like that, leaving my entire family and all my friends in Albuquerque, was definitely difficult. My infrastructure was there but my experience with my disability really aided me. When you live life with a disability such as mine, there are things you have to live with — and a mindset that you're not going to be held back."

Dalton also doesn't hold back when it comes to advocating for people with disabilities and equality for everyone. He actively encourages Sandians to practice inclusion and celebrate our uniqueness.

"Sandia is on the right path toward inclusion, but we still have a ways to go," he said. "Everyone that works here is very intelligent, hard-working and wants to do a good job. If we can get Sandia to a place where everyone is doing their best to include everyone on their team, the amount of work and quality of work we can do is endless, in my opinion."

Creating opportunities for empathy

As part of his work with the ACS, he and co-chair Victoria Newton host roadshows in which they create opportunities for staff and leadership to imagine what life might look like with a disability.

"It's our job to make sure people are seeing their value," Dalton said. "It's a very vulnerable position, talking about your health situation. What we



ABILITIES CHAMPION — Sandia project controller Dalton Bradley has been named a 2020 Employee of the Year by CAREERS & the disABLED Magazine for his efforts to ensure that Sandia is inclusive for all people.

Photo courtesy of Sandia National Laboratories

try to teach — we talk a lot about being open and empathetic, creating meaningful connections; being open to the differences."

Dalton believes that most of Sandia's workforce members are good people who just need more understanding about those around them.

"We work with some of the most intelligent people this country has ever seen," Dalton said. "It's hard to stay consciously in the moment, and aware of how your tone and words can affect the people around you when your mind is going 100 miles a minute on your project. We just want to expose people to the empathy they have within them. Then think about all we can achieve when everyone is included and valued."

On-site health checks



CLEARED FOR WORK — Melisa Martinez checks Kyu Paek's temperature outside Sandia's Employee Health Services building. Individuals working on-site at any Sandia location are required to complete a daily health check prior to entering the site, to help prevent the spread of COVID-19. Those who do not have access to the **Health Check mobile or desktop app** can visit an in-person **Health Check location** to have their temperature checked using an infrared contactless thermometer.



MASKED COMMUTER — Frank Fahy wears a protective face mask as he commutes to work at Sandia's Albuquerque campus on his scooter. **Photos by Randy Montoya**

Mileposts



New Mexico photos by Michelle Fleming
California photos by Randy Wong



Mark Johnson 30



Pavel Bochev 20



Sylvia Gomez 20



Dorit Tesfay 20

Deployed to combat COVID-19

Labs employee and National Guard member gets called to active duty to help with NM virus response

By Meagan Brace

On March 11, Governor Michelle Lujan Grisham declared a State of Public Health Emergency after the first confirmed cases of COVID-19 were reported in New Mexico. For many Sandians, it meant that telecommuting, stocking food and toilet paper and adjusting to school and daycare closures would soon follow. For Staff Sgt. Tawnya Jones and other members of the New Mexico National Guard, it meant stepping away from a civilian job and responding to a no-notice military deployment to support the state's battle against the virus.

Called to duty

After the executive order was signed, Maj. Gen. Kenneth Nava, the adjutant general of the Department of Military Affairs, ordered the U.S. Army and Air National Guards into service to support the COVID-19 response efforts at the governor's discretion. Tawnya volunteered to serve; she started her duty two weeks after the order was stood up in Santa Fe.

"Our mission was to support the adjutant general and the governor by establishing and maintaining the Joint Operations Center, which coordinated and advised the adjutant general on all humanitarian relief efforts and other assistance to civil authorities," Tawnya said.

Tawnya started in the logistics section of the center where she tracked vehicle mileage, supplies and meals for the state active duty orders. Within a week, she moved to the intelligence section that briefed Maj. Gen. Nava each morning before he reported to the governor.

Tawnya gathered data on weather patterns that could impact ground or air operations, national and state case counts, hospitalizations, intensive care unit bed and ventilator availability, personal protective equipment supplies, case projections and significant activities nationwide that could affect how the National Guard responded to relief efforts, including the possibility of food shortages and riots or protests as stay-at-home orders were extended.

Some of the projection data came from the Joint Forces Epidemic Intelligence Team, which included two other National Guard members from Sandia: computer scientist Simon Hammond and computer scientist Tim Wilcox, a contractor from Hewlett Packard Enterprise.

"They were on orders from the Army side, and they did all our modeling of what they expected the peak to be in New Mexico for cases of COVID, when we would see our downfall, and PPE projections to better plan for how much PPE the team would have to deliver in the future," Tawnya said. "It was really neat to see lower ranked soldiers using their civilian-side knowledge to apply to the mission."

Although some volunteers used the same skillset from their civilian jobs, Tawnya had to learn logistics and intelligence quickly. She also enjoyed seeing a diverse set of backgrounds and perspectives come together in the JOC.

"It was a rewarding experience to help our citizens in their time of need. It was also interesting working side-by-side with the Army and experiencing the many differences between Army/Air culture," she said. "The team effort with all of us — just the morale of the whole group — was really good. Even though we were in an office-type environment, sort of fast-paced, we would still make time to call for pushups or squats randomly throughout the day, and we'd all do pushups together as a group."

Celebrating graduation

The COVID-19 pandemic presented Tawnya with another challenge during her deployment. Earlier this year, she earned a master's degree in public administration with an emphasis in government and policy from Grand Canyon University. Although she completed her coursework online, she had planned to walk across the stage in Phoenix to accept her diploma during an official graduation ceremony.

"I was planning to go in May, but when the pandemic hit and they restricted numbers in large gatherings, they canceled that," she said. However, Director of Joint Staff Col. Jamison Herrera ensured she would still be able to have a memorable experience.

"They were really motivated to be able to do a mock graduation ceremony. At first, there were a lot of jokes and they wanted to wear robes — they called them wizard suits — and all the different things so they could make it similar to what my graduation ceremony would have been. I'm glad it turned out to be a simple presentation of my diploma instead," she said. Col. Herrera presented Tawnya with her diploma and invited other airmen and soldiers in the mission to attend.

Tawnya said the mission is still ongoing, and she expects that it will continue through the fall as they anticipate another wave of the virus. After the pandemic, the team will wrap up with lessons learned and an action report to apply to future activations and missions for the state.

Back at Sandia

Tawnya has been with the Air National Guard since 2013 and spends two days a month planning exercises, completing inspections, building checklists and conducting trainings. She started at Sandia last July in the business continuity program and recently became an emergency planner. When the orders were called by the adjutant general, she volunteered to serve for six weeks under military leave from the Labs.

"I feel like there's a lot of retired military personnel at Sandia, and I've been lucky enough to have managers and staff that understand the guard



WELL WISHES — Joint Operations Center Battle Captain 1st Lt. Araceli Saunders, right, presents Staff Sgt. Tawnya Jones with a certificate of congratulations for completing her master's degree, signed by airmen and soldiers on orders in Santa Fe. Tawnya designed the COVID-19 patch seen in the background for the mission. **Photos courtesy of Tawnya Jones**



MASTER'S CEREMONY — Director of Joint Staff Col. Jamison Herrera, left, presents Staff Sgt. Tawnya Jones with her diploma for completing her master's degree in public administration from Grand Canyon University.

and military requirements, so it's been really easy to go back and forth between doing some days with the guard and balancing that with Sandia," Tawnya said. "I'm really thankful for the military leave and all the HR (Human Resources) folks and managers and team staff members who were able to assist during this."

Now that she is back at Sandia, Tawnya hopes others will take this opportunity to be aware of their distance from others and stay clean.

"It's a good situation for the community to see how we can all work together and lessons learned for being cognizant of each other's space, washing your hands, and just being aware of when you go out when you're sick, how many people you can affect. The awareness of when people say, 'you're sick, stay home and take advantage of your sick leave' — it's not just something we say, it's something that should be taken seriously." 