SANDIA LABNEWS
PUBLISHED SINCE 1949

Vol. 77, No. 11, June 12, 2025

Clean, green, safe with NM grounds crew
Page 17

SWC awards 19
Wellworks 20
Fun takes flight 22
Mileposts 22

EMPLOYEE RECOGNITION AWARDS 32ND ANNUAL

B61-13 first production unit completed ahead of schedule

By **Kenny Vigil**

The first production unit of the B61-13 gravity bomb has been completed about a year ahead of schedule, marking a major milestone for Sandia and the broader U.S. nuclear security enterprise.

Sandia serves as the lead systems integrator and the design agency for the B61-13's nonnuclear components. Much of the new system's configuration builds on the B61-12, which completed production in late 2024.

"The reason it was possible to move so quickly is the similitude between the two bombs, the B61-12 and the B61-13," said Lysle Serna, a manager who began working on the B61-12 in 2020.

— CONTINUED ON PAGE 4

RAPID DEVELOPMENT — Two technologists at Sandia place the final screws in a B61-13 high-fidelity unit. The B61-13 is one of the most rapidly developed and fielded weapons since the Cold War. **Photo by Craig Fritz**

Brain-based computing for ND solutions

THE HARDWARE BEHIND THE BRAIN — NERL Braunfels consists of three chassis, or frames, each capable of holding up to 18 boards with 48 chips on each board. **Photo by Craig Fritz**

New neuromorphic computing system arrives at Sandia

By **Shelby Owens**

As artificial intelligence-capable computing systems continue to evolve, so do challenges facing their deployment. Next-generation computing pushes the boundaries of power consumption and cooling, increasing urgency to develop energy-efficient hardware and algorithms. One approach is inspired by the brain, and Sandia is leading the way.

In close collaboration, Sandia's Neural Exploration and Research Lab and German startup SpiNNcloud have deployed a first-in-the-world, large-scale SpiNNaker2 neuromorphic system at Sandia. Named after a small town in Texas with German roots, NERL Braunfels arrived at the Labs in March. Researchers are eager to discover how powerful the system can be and its unique applications.

— CONTINUED ON PAGE 5

SANDIA LABNEWS
PUBLISHED SINCE 1949
Managed by NTESS LLC for the National Nuclear Security Administration

Sandia National Laboratories

Albuquerque, New Mexico 87185-1468
Livermore, California 94550-0969
Tonopah, Nevada | Kauai, Hawaii
Amarillo, Texas | Carlsbad, New Mexico | Washington, D.C.

Katherine Beherec, Editor kgbeher@sandia.gov
Ray Johnson, Production rbjohns@sandia.gov
Craig Fritz, Photographer cvfritz@sandia.gov
Michael Langley, California Contact mlangle@sandia.gov

CONTRIBUTORS

Michelle Fleming (milepost photos, 505-844-4902), **Neal Singer** (505-846-7078), **Kristen Meub** (505-845-7215), **Troy Rummler** (505-284-1056), **Meagan Brace** (505-844-0499), **Mollie Rappe** (505-288-6123), **Skyler Swezy** (505-850-2063), **Kim Vallez Quintana** (505-264-1886), **Kenneth Vigil** (505-537-1528), **Luke Frank** (505-844-2020), **Michael Baker** (505-284-1085) **Maggie Krajewski** (mkrajew@sandia.gov), **Valerie Alba** (vnalba@sandia.gov), **Lea Blevins** (lsblevi@sandia.gov)

Sandia National Laboratories is a multimission laboratory managed and operated by National Technology & Engineering Solutions of Sandia, LLC, a wholly owned subsidiary of Honeywell International Inc., for the U.S. Department of Energy's National Nuclear Security Administration under contract DE-NA0003525.

Published on alternate Thursdays by Internal, Digital and Executive Communications, MS 1468

LAB NEWS ONLINE: sandia.gov/LabNews

TABLE of CONTENTS

1 | B61-13 first production unit completed ahead of schedule
continued on page 4

1 | Brain-based computing for ND solutions
continued on page 5

2 | Soaring into STEM

6 | No achievement too small for Sandia's Employee Recognition Awards

17 | A crew for all seasons

19 | Sandia Women's Connection honors students in math and science

20 | Reengineering Sandia's health and well-being program

22 | Sky-high fun with Kirtland

22 | Mileposts and retirees

EDITOR'S NOTE: Please send your comments and suggestions for stories or for improving the paper. If you have a column (500-800 words) or an idea to submit, contact the Lab News editor at labnews@sandia.gov.

Soaring into STEM

Building education through solar high-altitude balloons

By **Kim Vallez Quintana**

POWERFUL EXPERIMENT — Sandia researcher Dan Small inflates a balloon made by middle schoolers out of painter's plastic, packaging tape and a hula hoop as part of the Science Heads high-altitude balloon program.
Photo by Kim Quintana

Under a bright midmorning sun, middle schoolers stand in the chilly air at Albuquerque's Balloon Fiesta Park, gathered around a balloon made of painter's plastic and packing tape. Built with their own hands, the balloon has the potential to fly to the edge of space and become their first taste of real scientific discovery.

"Give me a countdown from 10," calls out Dan Small, a Sandia researcher and the driving force behind the project.

"Ten, nine, eight…" the crowd chants, as students' eyes turn to the sky.

After waiting more than an hour for the winds to settle, their faces light up as they realize the launch is finally a go.

"Three, two, one — liftoff!" Students and teachers applaud and celebrate as they watch the balloon, built in a school gym, soar into the sky. Within moments, the attached payload begins transmitting scientific data from the upper atmosphere.

"It's cool to see it go into the sky because we're the ones who

built it," said Humberto Mendoza, a seventh grader at Truman Middle School.

For Dan, the moment was just as rewarding.

"This is the reason I'm doing what I'm doing," he said.

Bringing Science Heads to New Mexico

Dan, a distinguished member of the technical staff in Sandia's Uncrewed Aircraft System Aviation Operations Unit, launched the New Mexico chapter of Science Heads — a national nonprofit dedicated to improving science literacy — in 2024. The organization's ballooning program invites students to apply what they learn in the classroom to real-world experiments. Using simple materials, they build large solar-powered balloons equipped with sensors to collect scientific data from near-space altitudes.

Having spent the bulk of his career working on drones and robotics, Dan had a desire to work on high-altitude balloons himself, both as a personal passion and as a way to help young people discover the world of STEM.

"The reason I was attracted to this program was because it's a very low-cost way to introduce students to the upper and lower troposphere," Dan said. "You can build a balloon for about $50."

WORKING TO EDUCATE — Four Sandia volunteers help patch balloon envelope built by Cleveland Middle Schoolers before launch into the lower stratosphere. **Photo by Kim Quintana**

As part of the activity, students build the balloon's envelope using lightweight plastic sheeting and tape, then attach a hula hoop to the bottom to serve as the opening. On launch day, Sandia volunteers attach a payload, which includes atmospheric sensors, a GPS tracker and other instruments to document its journey and monitor conditions. Volunteers also assist with Federal Aviation Administration coordination and safety protocols.

SUCCESSFUL LAUNCH — SA balloon built by students at Bosque School successfully launches from Balloon Fiesta Park on May 9 with the help of Sandia volunteers. **Photo by Kim Quintana**

Support comes from both Sandia employees and retirees, including Erika Roesler, who works in atmospheric sciences. "I love ballooning in any capacity," Erika said. "I love the outreach because I hope to help the kids get as excited about ballooning as I am and about the atmosphere as well."

Matt Williams, a Sandia mechanical engineer, joined the effort after meeting Dan at Desert Ridge Middle School where both were volunteering with the robotics team.

"I knew nothing about solar balloons before Dan's presentation," he said. "It has been a neat experience for me too. It's outside my area, but my kids are into science and math, so to be part of this real-life science project like this has been great."

From launch to landing

The journey doesn't end with the launch.

Coated inside with charcoal powder to absorb heat from the sun, the balloons are designed to reach altitudes near 65,000 feet and stay aloft as long as they have sunlight. That means they can travel hundreds of miles in just a day.

"Last launch, I found myself in the Texas Panhandle past Amarillo," Dan said. "That turned into 13 hours of driving to retrieve the balloon."

The balloons launched on May 9. They landed south of Midland, Texas, and west of Roswell, New Mexico.

Once the payloads are recovered, students analyze the data collected along the flight. That often includes temperatures, pressure and carbon dioxide levels from the atmosphere where it traveled. This is an essential step in the learning process.

"I'm excited to see what data it sends back," said Jacob Garcia, a sixth grader at Cleveland Middle School. "We also want to see how far it goes and how high it goes."

For Erika, that's also where the science becomes more real for the students. "I have four kids, and I have always told them about my balloon builds at work, launches and retrievals, but I don't think they ever really got it," she said. "When they get to build the balloon and see the difficulty of launching with difficult weather conditions and then getting to track it, the project becomes theirs. That's when they really own it — where it becomes real for them."

Bigger things ahead

The May launch marked the seventh for Science Heads in New Mexico. This year, the chapter received $8,000 from the

National Technology and Engineering Solutions of Sandia grant program to support materials and supplies.

Dan hopes to expand the program to more schools, including those outside the metro area. Based on excitement expressed by student and teachers, finding interest won't be hard.

"Hands-on STEM experience is so critical for these kids," said Vanessa Gonzales, a science teacher at Cleveland Middle School who helped sixth graders build two balloon envelopes this year. "We had 40 students building these together in the school gym and collaborating. It puts so many opportunities in place for these students and teachers like me because it's so outside of our realm."

For Dan, seeing students' reactions during a successful launch remains the most rewarding part. "It's such a connective, experiential process," he said. "They get to see their effort in the build and learning process. They might wonder at first why we are launching balloons, but then we come out here and actually see the balloon rise into the sky. They track the balloon all day and remain involved in the process all the way. It's really a great experience, and it's the reason why I am doing what I am doing."

Other Sandians who have volunteered with Science Heads include Dave Novick, Noah Jackson, Ruth Frank, Bryn Whisenand, Jessica Lien, Tyler Stevens and Mike Fleigle. Retirees Wendy Amai, Gary Fenchel and Mark Soo Hoo also contributed, along with former Sandian Danny Bowman, now at Pacific Northwest National Laboratory, who helped launch the New Mexico program.

B61-13 FPU

CONTINUED FROM PAGE 1

"We were able to leverage a lot of B61-12 qualification data as well as the Pantex assembly and disassembly processes and procedures."

The first production unit was completed at the Pantex Plant in May, just 13 months after Congress approved funding for the program.

"We definitely would not have been able to go this fast had we not been leveraging a significant portion of the design and especially the qualification data from the B61-12 to ensure the weapon is safe and secure," said Arthur Gariety, the weapon systems lead for the B61-13. "Had those similarities not been there, we wouldn't have been able to achieve the first production unit as quickly as we did."

The team also used creativity and innovation in the nuclear deterrence product realization process to responsibly push boundaries for early delivery.

Many Sandia employees transitioned from the B61-12 program to the B61-13, bringing years of experience and expertise, along with tireless work ethic.

"I'm beyond proud of this team. This team has been working at double speed since 2018 to solve technical challenges. They always find a way to succeed," Lysle said. She added that the B61-13 program greatly benefited from strong collaboration across many Sandia organizations, as well as with partners at Los Alamos National Laboratory.

External collaboration

Early hardware deliveries from the Y-12 National Security Complex and the Kansas City National Security Campus also helped accelerate the schedule by ensuring critical components arrived at the Pantex Plant in time for assembly.

"It was a highly collaborative process across the nuclear security enterprise," Arthur said. "We worked across site boundaries to solve challenges together. When everyone gets on the same page, we can do great things to support the mission."

Although formal program funding authorization was received in April 2024, Sandia and its partners had started feasibility, cost and schedule studies as early as 2022, resulting in a head start to the program, with official activities starting in Phase 6.4, Production Engineering.

The B61-13 will offer increased yield compared to the B61-12, while retaining the modern safety, security and accuracy features of the B61-12.

The B61-13 will not increase the overall number of weapons in the U.S. stockpile.

EARLY DELIVERY — A B61-13 vibration fly around unit is prepared for testing on a shaker table at Sandia. Assembly of the first production unit was completed at the Pantex Plant in May, about a year ahead of schedule.

Photo by Craig Fritz

The number of B61-12 units manufactured was reduced by the planned B61-13 build quantity to hold the total combined build in line with original plans.

Completion of the B61-13 first production unit is the result of close collaboration among Sandia and Los Alamos national laboratories, the Kansas City National Security Campus, the Pantex Plant, Y-12 National Security Complex, Savannah River Site, NNSA and the U.S. Air Force.

The program now shifts focus to the Design Review and Acceptance Group and transitioning to full-rate production.

WATCH
A HIGH-FIDELITY B61-13 UNIT IS ASSEMBLED AT SANDIA.

NERL Braunfels

CONTINUED FROM PAGE 1

"Sandia is invested in solving complex, large-scale computing problems," said Srideep Musuvathy, manager of cognitive and emerging computing at Sandia. "The arrival of this SpiNNaker2 system allows us to explore solutions to these problems with real-world impact."

The brains behind the machine

Inspired by functionality and structure of the human brain, neuromorphic computing designs in both hardware and software mimic how biological neural networks process information.

Housing 175 million neurons, NERL Braunfels compares to the brain power of a small mammal. The system uses SpiNNcloud's SpiNNaker2 chips, which are 18-times more efficient than GPUs. Each chip has over 150 processing elements, or cores, designed for simulating neurons in a Spiking Neural Network, among other AI applications.

The SpiNNaker2 system hardware uses a dynamic approach that increases energy efficiency through hybrid architecture. Its ARM-based system allows for more conventional components that run AI algorithms with increased power and efficiency.

"We are excited about having our system at Sandia National Laboratories," said Hector Gonzalez, co-founder and CEO of SpiNNcloud. "This collaboration with Sandia reinforces the uniqueness of our brain-inspired approach at extreme scales."

There is great potential for neuromorphic computing to influence multiple computing fields, with AI and machine learning at the forefront. The applications include data analysis from scientific instruments, neural networks for remote sensing inference, which could enable physical security processing at the sensor, and physics-informed neural networks. In addition, there is also an advantage to non-cognitive applications, such as numerical computing.

A new frontier in enhancing national security

Funded through NNSA's Advanced Simulation and Computing program, NERL Braunfels will explore how neuromorphic computing can impact the nation's most critical nuclear deterrence missions.

UNBOXING BRAIN POWER — Brad Thielman, left, and Kevin Stroup unbox the newly received NERL Braunfels neuromorphic test bed on April 3. **Photo by Craig Fritz**

"As our programs use progressively more and more AI capabilities, we will need to simultaneously deliver more powerful and more energy efficient solutions," NNSA Advanced Computing Program Director Simon Hammond said. "Systems like NERL Braunfels will help us to explore potential solutions to these challenges, opening new opportunities for very demanding national security use cases."

NERL Braunfels joins Sandia's other advanced architecture test beds, which prepare applications and system software for a changing and disruptive computing environment. Test-bed systems also allow Sandia researchers to explore emerging capabilities in close collaboration with industry partners, such as SpiNNcloud.

Kevin Stroup, Sandia's test beds team lead, said, "We want to engage with partners early, so that we can inform their design decisions about the NNSA mission needs. This co-design process increases the chance of truly innovative results."

To explore the potential of NERL Braunfels, initial collaborations performed physics simulations. This included using random walks to calculate heat flow throughout a system, factoring in different materials and design geometry. This type of computation can be applied to a range of national security applications such as vehicle design, turbulence modeling, mathematical predictions and chemical reactions.

"With NERL Braunfels, Sandia is now equipped with two of the largest neuromorphic systems in the world," said Craig Vineyard, principal member of the technical staff at Sandia. "Our team has a track record for developing novel, neural-inspired algorithms. It is exciting to pursue what this system can do with the flexibility and processing capabilities of the SpiNNaker2 architecture."

The journey has just begun, and with NERL Braunfels, Sandia is not just imagining the future of computing, it is actively building it.

EMPLOYEE RECOGNITION AWARDS 32ND ANNUAL

No achievement too small for Sandia's Employee Recognition Awards

By **Kerri Dufault**

It's the small things. It's turning over rocks, and little by little, digging deeper and realizing that something can be done in a way that hadn't been considered before.

That's how Lori Belcher's team innovated and created a new approach for commercial procurements, earning the team one of five Lab Director's Awards at the Employee Recognition Awards event in New Mexico on May 28.

The Simplified Purchasing Pilot Team streamlined the existing procurement process, reducing purchase order placement time by about 50%, enhancing support for mission schedules. This demonstrates the team's commitment to identifying and implementing efficiencies.

"We do this regularly," said Lori, subcontract manager and team representative. "We continually evaluate how we can streamline our processes, enhance our efficiency, accelerate our operations and reduce costs."

And according to Lori, the team isn't done yet.

The Labs can expect to see even more from this team and many other individuals and teams honored as part of Sandia's 32nd annual Employee Recognitions Awards program.

On May 21, Sandia California held its celebration at Garré Vineyard, nestled near the Labs and among the Livermore Valley hills. It was the first year that Sandia California has held the event off-site.

"We're super excited to use this venue for the ERAs for the first time," Acting Associate Labs Director Trish Benguerel said. "We wanted to make the event even more personal, as these are incredible accomplishments."

Senior Manager Flo Prada emceed the awards, congratulating the winners as Labs Director Laura McGill distributed challenge coins.

"Today's event is special because we are celebrating outstanding employees who make Sandia's success possible and uphold the Labs' reputation for exceptional service to the nation," Flo said.

Both celebrations in California and New Mexico tried a new format this year based on feedback from past events. To provide honorees with a more personal experience and allow for more time for connection, division leadership distributed awards to their individual and team winners. In lieu of a formal sit-down lunch, honorees networked while enjoying appetizers and beverages.

The Employee Recognition Awards recognize individuals and teams across the Labs for going above and beyond expectations. Their contributions fuel Sandia's progress and shape the future of national security. Award

CHANGEMAKER — Labs Director Laura McGill, right, congratulates Melissa Flury on receiving a Labs Director's Award during the Employee Recognition Awards ceremony in New Mexico.

Photo by Craig Fritz

winners exemplify the dedication, expertise and teamwork that define Sandia and its culture of excellence.

Lab Director's Award winners

Each year, every division selects one of their Employee Recognition Award honorees and nominates them for the Lab Director's Award, which is the highest recognition in the award program. From there, the Labs Director reviews each nomination and chooses the winners based on their lasting impact. This year, recently retired Labs Director James Peery and current Labs Director Laura McGill reviewed the nominations together and chose five winners.

"These winners took on complex technical challenges, broke new ground, delivered under intense pressure and set a high bar for quality, performance and innovation," Laura said.

Melissa Flury won an individual award for her strong leadership and collaboration in helping Sandia and NNSA develop and roll out a new supplier assessment process across the nuclear security enterprise. This streamlined how suppliers are certified to provide "mark quality" material for Sandia's nuclear deterrence mission.

"I am honored to serve our nation and receive this award from Sandia," Melissa said. "The award embodies our Sandia values to serve the nation, respect each other, deliver with excellence and team together."

The Deploy New National Sensor System Technical Leadership Team won for helping the nation successfully deploy and transition two National Technical Means sensors into operation. They designed, built, deployed and validated a highly complex system on a short schedule. They also conducted an in-depth test and assessment of the newest national security sensor in the U.S., ensuring it works seamlessly with other systems and meets mission needs for the warfighters of the future.

"The caliber of work we do here at the national laboratories has always impressed me," team member Lisa Wilkening said. "It's one of the things that brings me here every day and why I've remained here for my entire professional career. The opportunity to contribute to national missions, to see our work recognized, is a wonderful achievement."

SOCIAL HOUR — Chris O'Gorman mingles with Sandians at the New Mexico Employee Recognition Awards ceremony on May 28. **Photo by Craig Fritz**

MEET AND GREET — Labs Director Laura McGill chats with Employee Health & Wellbeing staff members, from left, Gina Madison, Emily Rada, Joy MacPherson and Carole Brown during the California Employee Recognition Awards ceremony on May 21. **Photo by Randy Wong**

The SandiaAI Chat Team launched SandiaAI Chat — the first secure, cloud-based generative AI tool across the nuclear security enterprise. The tool gives employees an interactive chat assistant, similar to ChatGPT, designed for Sandia's unique needs. The team brought together experts in development, cybersecurity, data science, cloud, legal and communications to launch on time. Today, nearly two-thirds of the workforce uses SandiaAI Chat to focus more time on impactful national security work.

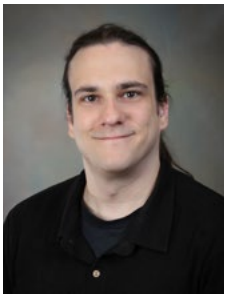
"It's amazing to see the other groups that won, and to be considered part of that at Sandia is just absolutely phenomenal," SandiaAI Chat team member Michael Vigil said.

The Simplified Purchasing Pilot Team piloted a new approach to commercial procurements for MESA and Hypersonics, streamlining pre-award practices and shortening lead times for subcontractor placement. As a result, simplified commercial purchasing policies have now been permanently adopted and are expected to improve mission support across many contract types, starting this year.

The Mk21 Arming and Fuzing Assembly QER/FPU Team delivered an acceptable quality engineering release and first production unit nearly 10 weeks ahead of schedule.

"It was an outstanding effort, and it was also a model for the entire organization — and I know it was because of the team," Laura said.

INDIVIDUAL HONOREES


Jesse Jones 1000

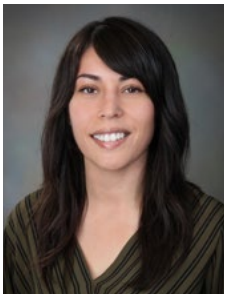

Christopher Laursen 1000


Taisuke Nagayama 1000

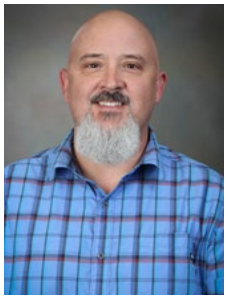

Prasad Padmanabha Iyer 1000


Craig Vineyard 1000

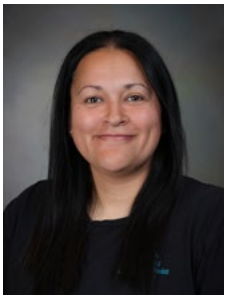

Timothy Vanderburg 2000


Kachina Ganz 4000


Charlotte McKernan 4000


Jeffrey Frank 5000


Isidro Garcia 5000

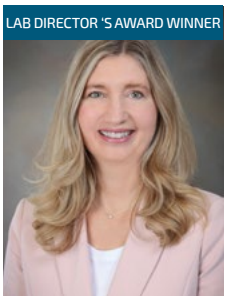

Ana Legarda 5000


Dawn Tarpley 5000


Tian Ma 6000


Nathaniel Spangler 6000


Kayla Blemel-Arnold 7000

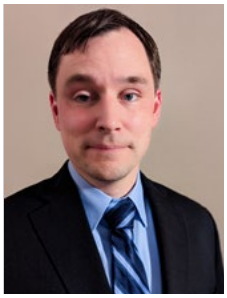


Melissa Flury 7000


Quincy Johnson 7000


Daniel Wesolowski 7000


Carole Brown 8000


Samuel Eaton 8000


Anastasia Ilgen 8000


Kelcey Tietjen 9000


Rebecca Ulrich 9000


Rebecca Jackson 11000

EMPLOYEE RECOGNITION **AWARDS**

TEAM HONOREES

NUCLEAR DETERRENCE

LAB DIRECTOR'S AWARD WINNER

Mk21 AFA QER/FPU Team

The Mk21 Arming and Fusing Assembly Fuze Modernization team released an acceptable quality engineering release and first production unit about 10 weeks ahead of schedule.

W76-0 Conditional Flight Body Team

The Conditional Flight Body Team successfully executed a feasibility study for the late-in-life W76-0 system. During these three months, the team was able to prove feasibility of a quick-turn, two-years-to-fly reentry body that would integrate with a D5LE to build confidence in the W76-0 system, as well as laid the groundwork for future quick-turn flight programs to build off of.

Digitally Realized and Enabled Agile Advanced Manufacturing Mission Campaign Team

The Digitally Realized and Enabled Agile Advanced Manufacturing team successfully developed and secured a $45 million mission campaign to streamline product realization and innovation through research in advanced manufacturing. The plan integrated feedback from dozens of mission and research stakeholders, identifying eight key research challenges to address over a seven-year period. These efforts resulted in Nuclear Deterrence Components and Production being awarded its first mission campaign, securing research funding to close knowledge gaps in modern manufacturing.

Electronic Part Program Heavy Ion Front End Assurance Screen Team

The Electronic Part Program has advanced understanding of radiation effects on commercial electronic parts by developing a groundbreaking heavy ion screening approach. This method enables Sandia to efficiently assess radiation susceptibility, significantly reducing the number of required tests. As a result, the program saves thousands of dollars per part, shortens project timelines and minimizes travel needs. Their commitment to enhancing the reliability of commercial electronic parts underscores the importance of research in ensuring their resilience in challenging environments.

Nuclear Deterrence System Electrical Testing Team

The Nuclear Deterrence System Electrical Testing Team delivered more testers and executed more system-level electrical tests than any prior years. These accomplishments provided critical data for design evaluation and qualification of the W87-1 and W80-4 Life Extension Programs, resulting in a vast amount of data for the next phase of design modifications and requirements validation.

System Safety Risk Analysis Model Team

The System Safety Risk Analysis Model team developed a novel capability that provides quantitative feedback on relative risk for a weapon system's response to an environmental threat. The interactive model takes considerably less time to develop compared to traditional fault analysis techniques. This new capability has been used to make safety architecture decisions and to determine environments for qualification. The capability has the potential to influence all lifecycle phases of nuclear weapons.

Telemetry Analysis and Visualization Suite 3.0 Team

Telemetry Analysis and Visualization Suite was developed to put telemetry data in a format that allows engineers to better understand flight tests and test data. TAVS aids engineers in the analysis of telemetry measurements by providing a powerful series of signal analysis processes and plotting features, and an output that provides meaningful analysis for multiple uses. The release of TAVS 3.0 further enables the critical testing capability of future ground and flight-testing efforts.

Thermal Battery Reusable Case Rapid Prototyping Team

A multidisciplinary team of engineers and technologists collaborated over 10 months to design, fabricate and demonstrate a novel reusable case for thermal battery discharge tests. This reduced the cost to build full-size test articles by over 50%, eliminating the need for costly long-lead piece parts and reducing timelines from six months to one day. Virtually any sized battery can be prototyped with this method, with better and more data collected than previously possible.

W80-4 Weapons Evaluation Test Laboratory Tester Team

The W80-4 Surveillance Team, with representatives from Nuclear Deterrence System Modernization, Nuclear Deterrence Systems, Weapon Stockpile Management and Lawrence Livermore National Labs, efficiently developed and completed a review of over 5,700 data-related and programmatic requirements for the laboratory surveillance program, enabling the tester product realization team to advance technical capabilities for enhanced data collection and streamline tester development. These efforts resulted in the successful completion of three formal requirement reviews and two major design reviews in fiscal year 2024.

W88 Alt 370 Anomaly Resolution Team

The W88 Alt 370 Anomaly Resolution Team collaborated with partners across the Labs, other weapon programs, and external stakeholders to address an observed production challenge, understand its scope, develop a containment plan and create a path forward acceptable to the NNSA and Navy. All of these aspects were achieved with a high level of collaboration between technical areas of expertise across the Labs, between other weapon programs, and external stakeholders and partners.

Electronics Assembly "A" Qualification and Portable Development Tester Innovation Team

Collaborative efforts of the Electronics Assembly "A" Qualification and Portable Development Tester teams significantly advanced the qualification knowledge base during product development. By strategically reducing the number of units tested, deploying innovative portable development testers, refining environmental tests and enhancing test rigor, the teams closed critical knowledge gaps. Their collaboration with the component product realization team has markedly improved testing efficiency and the quality of evidence, establishing a new benchmark for excellence in product development.

Missile Integration Test 3 Team 1 of 2

The Missile Integration Test Unit Revision 3 team responded to an urgent Air Force request for qualifying updated flight test hardware. The team delivered results 300% faster than typical, ensuring the continuity of the W80-1 flight test program. Their innovative thinking and swift action prevented a halt in testing, safeguarding critical assessments for the W80 Annual Assessment Report and the Sandia Labs director letter.

Polymer Lab / Telemetry Collaboration Team

Responding to a need to improve intergroup interactions between telemetry groups and the polymer lab, this collaboration successfully set up a new standard procedure for work request organization that decreased the complexity of paperwork to allow more focus on technical processes. The synergy of this collaboration is delivering ongoing improvement in executing mission deliverables, including one deliverable of production quality parts to our defense partners a week and a half ahead of schedule.

W87-1 Environmental Flight Test Unit Telemetry

As an early flight body, the Sentinel interface continued to evolve throughout telemetry development. Telemetry development drove discussions and decisions, enabling the delivery of flight units 18 months ahead of the flight test. The telemetry on the W87-1 Environmental Flight Test Unit will be used on early Sentinel flights to characterize the environments for the W87-1. As an early flight body, requirements were not well defined, and the Sentinel interface continued to evolve throughout telemetry development. Despite the tumultuous design parameters and uncertain schedules, the telemetry drove discussions and decisions, enabling the delivery of flight units 18 months ahead of the flight test.

EXECUTIVE SUPPORT DIVISION

75th Anniversary Planning and Deployment Team

Sandia's 75th Anniversary celebration, themed "Making History, Shaping the Future," consisted of a series of events, talks, exhibits, videos, web pages, social media posts, targeted communications and publications designed to engage the Sandia workforce in understanding the Labs' history as a foundation for their own current and future achievements. A well-integrated and collaborative effort across multiple divisions, including Labs director, deputy Labs director, Human Resources, Infrastructure

Operations, Integrated Security Solutions, Information and Security Engineering, Mission Services and Legal, generated well-attended, well-received and thoroughly enjoyed products throughout 2024.

Bold Talon NMO Lab Space Team

Bold Talon partnered with Kansas City National Security Campus New Mexico Operations to rapidly stand up a fully functional, classified system integration lab space in New Mexico. In four months, the team defined the space requirements, modeled the space, procured equipment and built up the space, which includes two fully networked classified 3D printers.

Technical Expert Networks Development Team

Faced with a rapidly evolving national security landscape and dynamic workforce, Sandians require rapid access to technical expertise. Sandia's Technical Expert Networks identify, develop and connect dedicated experts to project teams who deliver program-relevant solutions for Sandia's critical missions. In the last year, this team tripled the number of available TENs while creating streamlined tools and resources, connecting nearly 200 experts to project teams and ensuring Sandia delivered on its mission commitments.

DIVISION 1000

Asteroid Deflection at Z Team

Through experiments at Z machine, the team demonstrated the ability to deflect kilometer-scale asteroids by using a stand-off nuclear explosion before impact with Earth. The team conducted analysis and established the capability for further laboratory investigation without requiring space flight. The study published in Nature Physics has been reported around the world as a "breakthrough" in planetary defense by more than 170 media outlets, many of whom the team worked with to convey these results.

CSRI Internship Program Mentorship Team

The Mentorship Team of the Computer Science Research Institute Internship Program has enhanced the mentorship experience for students participating in the program, which hosts more than 100 interns, both remote and on-site, each summer. This grassroots initiative has successfully resulted in improved onboarding processes, a more informed mentorship community and a unified set of expectations for both the intern experience and the mentorship provided.

LDRD SAND Report System Champions

The innovation led by the Laboratory Directed Research and Development technical team, including Recorded Information Management, Knowledge Systems, and Data Architecture and Management, resulted in a new SAND Report System. This system enhances reporting for Principal Investigators, Investment Area Teams and the LDRD team by streamlining data entry and improving data integrity, effectively addressing past inefficiencies and ensuring compliance with regulatory standards.

Mach 14 Wind Tunnel Nozzle Install Team

The team of technologists and operations engineers developed and implemented procedures to install a new Mach 14 nozzle for Sandia's Hypersonic Wind Tunnel to replace the original from 1968. The nozzle was installed and integrated with existing control and measurement systems within a few weeks. The result is a modernized Mach 14 testing capability for Sandia's Hypersonic Wind Tunnel, impacting future flight vehicles within NW and DOD.

NanOporous Sorbents for Enhanced Breath Analysis Team

An integrated team of staff across two divisions used a combination of predictive modeling and experimental validation to design novel nanoporous materials that selectively capture organic biomarker molecules from exhaled breath. These volatile organic compounds result from metabolic processes in the body and offer information about the state of the body so they can be used for diagnostics. This work resulted in four publications and a U.S. patent application.

Resilient and Agile Deterrence Capstone Team

The team demonstrated a new paradigm for nuclear deterrence component design and qualification to evolving threat environments. This new paradigm couples multiphysics modeling, advanced materials development and manufacture, and functional demonstrators tested at relevant environments.

Saturn Recapitalization Phase I: Shutdown through Commissioning Team

The Saturn accelerator underwent a major renovation involving the entire center section and main gas switches. This included redesign, fabrication, installation and testing over the course of a year.

The team encountered many challenges, but Saturn was able to provide excellent performance by beginning operations on time for the first scheduled weapons customer.

Shock Enabled Superfuge Team

This innovative and novel test method demonstrates a new capability that reproduces combined normal flight vibration and inertial loads with explosively driven shock events. The project allows ground testing to replicate realistic flight conditions by coupling modeling and simulation and testing. The development and qualification activities for flight systems have been enhanced by using Sandia modeling and simulation codes CTH, Zapotec and Sierra to design a test structure based on mechanical response and creating a new test capability.

DIVISION 3000

Compensation System Transformation Team

The Compensation team, collaborating with human resources, IT and leadership, successfully implemented the Transformational and Enhanced Compensation System. This innovative initiative is part of a multiyear strategy aimed to attract and retain talent by providing competitive pay, career advancement and alignment with industry best practices. Key outcomes included geographic pay increases for 92% of employees, promotions for 5.6%, and a 1% reduction in Labs-wide attrition. The team's effort has been recognized by senior leadership for significant impact on workforce engagement and retention.

New Performance Engagement System Implementation Team

The team demonstrated transformative leadership during the implementation of the new performance engagement system. Their courage to address resistance and skepticism and leadership to chart a new path ignited a cultural change that resulted in a successful first year. These efforts set a benchmark for effective change management and fostered a culture of engagement and accountability, empowering leadership and employees to enhance their skills and effectiveness.

Wellworks For You Implementation Team

After a decade of underutilization of the Virgin Pulse wellness platform, which received feedback of being cumbersome and time-consuming, the team sought a more user-friendly solution. The team successfully launched the new platform, Wellworks For You, on Jan. 1, 2025, with the majority of implementation work completed in 2024. This innovative platform features a streamlined user interface, customizable programs and the ability to incorporate staff members' own health content and coaches.

DIVISION 4000

Construction of Gen 3 Particle Pilot Plant

Collaboration for the construction of a 175-foot-tall steel frame tower that supports the Generation 3 Particle Pilot Plant began at conception and continued throughout execution, involving Sandia teams and external partners for the successful completion. This effective collaboration resulted in a functional tower, completed under budget, enabling Sandia National Solar Thermal Testing Facility's G3P3 tower to advance its concentrating solar power technology.

Cybershock-24 Exercise Planning Team

A team of Sandians modeled exceptional teamwork and collaboration as they planned and executed a severe-event exercise, validating critical response capabilities needed for a high-consequence scenario that involved multiple response elements. Seventy-eight internal and external organizations participated in the exercise. This exercise provided Emergency Management with an opportunity to test and document the readiness of Sandia's emergency response and strengthen the emergency response framework.

Facilities and Infrastructure Unleashing Excellence R01 Team

The Facilities and Infrastructure Unleashing Excellence Initiative Recommendation #1 Team has fully embraced the Unleash Excellence vision and integrated it across its centers, cutting red tape and increasing efficiency across Facilities and Infrastructure functions. Over 90 improvements in 2024 led to $1.68 million saved for the Labs, and several cycle time reductions include space requests, office modifications, furniture orders and in-house design and construction projects.

GIS Utility Infrastructure Condition and Capacity Development Model Team

The team collaborated toward envisioning and developing a unifying Geographic Information System within the Environmental Services Research institute platform to visualize the state of health of Sandia's utilities. This innovative tool supports strategic planning, new construction efforts and the long-term sustainability of utilities systems.

In-House Design Team

As part of an initiative to become more agile, an in-house design team was created within Infrastructure Operations to deliver the smallest design projects quickly and efficiently. This full-service design team is composed of architects, engineers, interior designers and drafters, totaling 22 new staff. To date, the team has completed over 291 projects, eliminated the backlog of over 360 office modifications and saved the Labs an estimated 67% in design fees compared to external contractors.

Structural Apprenticeship Program Team

The structural apprenticeship program at Sandia was established to address the shortage of skilled trades professionals and ensure a steady pipeline of qualified workers. By developing an in-house program, Sandia maintains control over training quality and consistency. The program includes comprehensive safety training, welding and millwright instruction designed in collaboration with various stakeholders. With innovative tracking software and mentorship, the program offers cost savings of $2,700 per student, benefiting both Sandia and the local community.

DIVISION 5000

Attitude Control System Development Team

The team developed an innovative Attitude Control System that minimizes size, weight and power by integrating custom valves, controllers and toroidal pressure tanks. This new design enhances efficiency and reliability while significantly reducing costs and lead times through streamlined designs and innovative manufacturing approaches, making the system more capable and easier to package for transport.

Bosque Team

The Bosque team performed cyber research on cloud technologies and security. In 2024, the team developed a capability that resolved a notable gap for the mission sponsor.

CMOS8 Transistor Variability Improvement Team

For exceptional technical breakthroughs in improving the transistor variability and yield of MESA's 180-nm complementary metal oxide semiconductor microelectronic fabrication process. Using a model-based structured problem-solving methodology, this team diagnosed root cause yield limiters at the edge of scientific detectability and demonstrated a solution that increase yield by 10,000 times.

CPS First Hypersonic Strike Weapon System Development Team

The team developed and delivered a first-of-its-kind Hypersonic Weapon System, further exemplifying Sandia as a key leader in hypersonic technology and practical delivery to the DOD. This Sandia team went above and beyond expectations to conduct Stool Launch 2 and provide leadership to the national team for technical guidance, software, testing, missions and console operations for multiple tests culminating in the Dec. 12, 2024, first industry-built weapon system for U.S. warfighter.

Exploratory Signal Processing Platform Team

The Exploratory Signal Processing Platform is the first D5K Mission Motivator and is concluding its fifth and final year. The team has been successful in its technical accomplishments, maturing crucial technologies and customer building. Where ESPP shines is in its collaboration successes. The team partnered and delivered with numerous centers. In addition to ESPP's goals, the team supported and partnered with many projects, Laboratory Directed Research and Development and Mission Motivators. The team's deliveries, results and relationships will outlive the former ESPP program.

MESA MicroFAB Electron-Beam Lithography Installation Team

The team spearheaded the replacement of an outdated electron beam lithography system that contributed to downtime and hindered projects. Led by Kate Musick, the team completed the project ahead of schedule and under budget, achieving a cost of $3.2 million instead of the projected $12 million. The new system enhances capabilities, improves efficiency and frees cleanroom space for critical projects. The team built trust and effectively communicated to overcome challenges, demonstrating exceptional teamwork across multiple organizations.

Olympus

The Olympus team completed multiple high-priority vulnerability assessments on complex information systems and developed software analysis tools that filled critical gaps in sponsor capabilities. Their technical excellence and close collaboration with each other and various sponsor groups culminated in multiple high-profile successes for the U.S. government.

QSCOUT's Classical Control Hardware Team

The Quantum Scientific Computing Open User Testbed's classical control hardware team worked together to build an almost completely new framework for controlling the QSCOUT machine. Their effort has led to QSCOUT having the most featureful and flexible control hardware for a quantum processor to date.

Sandia Compartmented Innovation Technology Lockers Development Team

The Sandia Compartmented Innovation Technology Lockers is a new training facility at the SCI classification level. SCITL is a first-of-its-kind capability at Sandia. Operational security challenges limit the ability to share innovative success stories across the community. SCITL acts as a framework to safely collect operational and technical achievements and lessons learned while protecting sponsor equities to carry forward the organic knowledge of innovation and mission success for future generations.

Trident Smyth Team

Trident Smyth is an innovative solution that uses advanced data fusion techniques to improve situational awareness and operational effectiveness in command-and-control applications. Its features, including track ingestion and detection, track fusion, geometric track stitching and track projection, offer improved accuracy and predictive insights into object movements. By providing near real-time data fusion, Trident Smyth enables timely, actionable intelligence, enhances collaboration among military units and transforms military operations, establishing a new standard for integrated command-and-control capabilities.

Wood Chipper Development Team

The Wood Chipper team responded to a Four-Star General level priority, developing and integrating new architecture into the Sidetrack Family-of-Systems and providing urgent Indications and Warnings to the Warfighter. The team worked under high visibility on a quick reaction timeline with multiple government agencies to provide first-ever capability to the Sidetrack FoS, including Gauntlet and Mesa.

DIVISION 6000

LAB DIRECTOR'S AWARD WINNER

Deploy New National Sensor System through Consolidated OPIR Ground System and Mission System Engineering Technical Leadership Team 1 of 2

The Deploy New National Sensor System Technical Leadership Team won for helping the nation successfully deploy and transition two National Technical Means sensors into operation. They designed, built, deployed and validated a highly complex system on a short schedule. They also conducted an in-depth test and assessment of the newest national security sensor in the U.S., ensuring it works seamlessly with other systems and meets mission needs for the warfighters of the future.

Advanced Reactor Fuel Insult Study Team

A multidisciplinary, multiorganizational team created a capability that tests advanced nuclear reactor fuels' response to insult across a range of Design Basis Threat-informed pressures on a novel test platform. The testing method reveals critical information about how fuels react to insult, including airborne release fraction, respirable fraction and damage ratio. The results help fill critical knowledge gaps for incidents involving nuclear fuels and inform risk reduction strategies associated with health effects, contamination and cost.

Caerus Development Team

The Caerus Development Team worked with Idaho National Labs, DOD, industry partners and Lawrence Livermore National Labs to deliver the DOE Command Control and Display Equipment system to qualification testing. Caerus will safeguard some of the most sensitive facilities in the U.S., allowing operators to control access to and address alarms. Caerus provides a crucial technical refresh to the existing system.

Delivery of first GBD IIIF payloads to the Space Force Team 1 of 2

In 2024, the Sandia Global Burst Detector team delivered the first two instances of the next generation of space-based nuclear detonation detecting payloads to the Space Force. Even when confronted with extraordinary technical challenges, the subsystem teams were able to stay flexible and implement novel approaches to maintain the required level of qualification while holding schedule. These payloads will be integrated onto GPS satellites and launched in 2027.

Global Security Program Management and Operations Team

The Global Security and Operations team made groundbreaking advancements in the organization's ability to monitor, manage and communicate its operational health. By establishing the Global Security Rhythm and creating the Operating Management Report Dashboard with detailed performance indicators, they both improved cross-team coordination and equipped senior leadership with essential management tools. These tools provide a comprehensive view of division risks, products and deliverables, aligning perfectly with Sandia's corporate annual cycle.

IAEA IPPAS Mission Team

The second ever International Atomic Energy Agency International Physical Protection Advisory Service Mission to the U.S. occurred Feb. 25 to March 8, 2024. The IPPAS team specifically reviewed two areas: the DOE and NNSA regulatory framework and security measures implemented at the Sandia Pulsed Reactor Facility – Critical Experiments nuclear facility. The preparation for this mission took almost an entire year and involved representatives from Sandia, DOE and NNSA.

DIVISION 8000

75th Anniversary Commemorative Mural Team

Inspired by Sandia's 75th anniversary theme of "Making History, Shaping the Future," two creative designers made history of their own by designing and painting the Sandia California site's first outdoor mural. This vibrant masterpiece, located near the badge office, features people from a wide variety of fields and backgrounds, reflects Sandia's rich history and mission, and inspires future generations to dream big.

ASGARD Development Team

The Advanced Solar Generation and Resiliency Deployment Development Team, which spans six centers and several diverse areas of operations and expertise, collaborated to design a novel system that will provide reliable and resilient power for Sandia and Kirtland Air Force Base. In addition to integrating a complex hybrid design, the team worked with Sandia leadership, the NNSA Sandia Field Office, Kirtland Air Force Base and other stakeholders to address critical issues pertaining to real estate, infrastructure and environmental impacts.

California Cyber Security CrowdStrike Response Team

The Sandia California Cyber Security team, both in New Mexico and California, rapidly mobilized to assist the recovery effort for thousands of systems affected by the 2024 CrowdStrike outage. By working closely with IT partners, they identified remediation solutions, manually restored systems, implemented technical solutions and developed mitigation strategies, significantly minimizing downtime and bolstering operational resilience across Sandia.

CrowdStrike End-User Support Team

Following the CrowdStrike incident that impacted more than 15,000 computer systems company-wide, many dedicated Sandians focused on the laboratory's rapid recovery. They worked tirelessly to repair systems at Swift IT bars and temporary stations, even going out of their way to assist colleagues across sites. Remarkably, in just four days, the "All-Clear" was announced with a significant majority of Windows systems restored.

Glacius Fawkes Technical Team

The Glacius Fawkes team pioneered the development of agile analytic methods for law enforcement investigation through nimble software architectures and a novel approach to analytics development in which data scientists and law enforcement agents and analysts collaborate on live investigations. This approach has dramatically improved outcomes and is revolutionizing tradecraft.

Nuclear Security by Design Team

As an unprecedented surge in advanced reactor designs come to market, it is critical that designs are both secure and economically viable. This team has led the development of processes and exemplars of nuclear security by design that enable reactor security, including Nuclear Regulatory Commission regulatory guides, nuclear safety requirements, defensive security architectures, implementation guides and modeling and simulation tools to demonstrate the security benefit of the new designs, including wireless communications for nuclear safety functions.

Sandia California Family Day Team 1 of 2

Family Day in Livermore celebrated the vital work of Sandians, welcoming approximately 2,700 employees, friends and families to the site on Sept. 21. This event, held for the first time since the pandemic and in conjunction with Sandia's 75th anniversary, showcased a revitalized campus with new facilities and landscaping, dedicated Kids Zones, multiple food trucks and nearly 60 activities across campus.

DIVISION 9000

LAB DIRECTOR'S AWARD WINNER

SandiaAI Chat Team

The SandiaAI team launched SandiaAI Chat, the first Labswide, secure cloud-based generative AI tool in the nuclear security enterprise that provides an interactive chat assistant equivalent to ChatGPT. The team, comprised of experts in development, cloud, cybersecurity, data science, communications and legal advisors, faced significant challenges, including a steep learning curve and tight deadlines. Nearly two-thirds of the workforce have adopted the tool for daily use, allowing employees to focus on impactful national security work.

CrowdStrike Recovery Engineering Team

The CrowdStrike Recovery Engineering Team demonstrated exceptional problem-solving skills by developing innovative recovery solutions. Using Sandia AI and their expertise, they created a custom USB boot disk that facilitated the rapid resolution and recovery of more than 15,000 Windows machines in a few days, resulting in a cost avoidance of $4.48 million.

Cyber Security CrowdStrike Response Team

The Sandia Cyber Security team rapidly mobilized with IT partners to resolve and recover more than 15,000 Windows machines impacted by the 2024 CrowdStrike outage within just a few days. Through close collaboration, they identified remediation solutions, manually restored systems, implemented technical fixes and developed mitigation strategies, significantly minimizing downtime and enhancing operational resilience across Sandia.

IPPAS Mission: Module 2 Execution Team

The International Atomic Energy Agency International Physical Protection Advisory Service Mission, held Feb. 26 to March 8, 2024, was comprised of two modules: a review of the DOE/NNSA regulatory framework (Module 1) and a review of security measures implemented at a Sandia nuclear facility (Module 2). In preparing for Module 2 from August 2023 to February 2024, over 50 Sandians collaborated internally and included partnered externally with IAEA, DOE and NNSA representatives.

Safeguards and Security Support of Thermotron Chamber

Individuals in Safeguards and Security applied security enhancements to reduce extensive Pro Force and mission test team manpower required during classified tests conducted of full-scale weapons systems at the Thermotron Walk-in chamber. This enabled critical mission work in a manner compliant with policy and resulted in annual costs savings of about $1.95 million. It also reduced wait times by several months for multiple weapon-related projects.

75th Anniversary SUPER WIN Super Food Drive Team

Sandia's SUPER Workplace Improvement Network and Community Involvement collaborated to address food insecurity among New Mexico children while celebrating the Labs' 75th anniversary, exemplifying Sandia's values of We Team and We Care. The team exceeded its goal of $7,500 by raising $12,460, with Sandia contributing an additional $7,500 to support the cause, tripling the target amount. Seventy-five workforce members and their families volunteered their time to sort food at Roadrunner Food Bank, demonstrating a strong commitment to Sandia's aspirational culture.

DIVISION 10000

LAB DIRECTOR'S AWARD WINNER

Simplified Purchasing Pilot Team

The Simplified Purchasing Pilot team executed a pilot for commercial products or services, firm fixed priced procurements, for MESA and Hypersonics. Under this pilot, supply chain pre-award practices were substantially streamlined, shortening subcontract placement lead times. This successful pilot led to the permanent implementation of simplified commercial purchasing policies and practices that are anticipated to improve mission support in 2025 and beyond for many contract types.

Agile Processes and Technologies Team

Agile Processes and Technologies, an NA-115 demonstrator program that involved all nuclear security enterprise sites, concluded the three-and-a-half-year project in March 2024 with a final assembly at Pantex. APT showed how intelligent risk-taking and innovation is critical to nuclear deterrence by pioneering Lean and Agile techniques, set-based concurrent engineering, enterprise-wide product data management, site-spanning teams and classified desktop videoconferencing. APT embraced failure to advance key technologies at multiple sites and proved the viability of Lean and Agile techniques.

Supply Chain 1st BOT Development Team

The team successfully developed iBOT-IT, an innovative Robotic Process Automation BOT that automates the Advanced Shipment Notice process, significantly enhancing efficiency in generating invoices for Just In Time purchases in Oracle. Previously, this manual process required three full-time employees to spend 39 hours per week on invoice uploads. iBOT-IT is the first BOT implemented in Supply Chain, streamlining operations and freeing up employees to spend their valuable time on more strategic tasks.

MESA CORE Implementation Team

The MESA Comprehensive Operational Resource Environment Team implemented a fully integrated Enterprise Resource Planning System to significantly improve cost transparency, cost fidelity, demand planning, production planning and inventory control, while also consolidating disparate systems and processes into consistent tools and processes across the organization. The effort required extensive collaboration across nine centers and five divisions, reflecting hallmarks in teamwork, collaboration and delivery excellence.

Mk21 AFA and Systems Project Management Team

The Mk21 Arming and Fusing Assembly and Systems Fuze Modernization Project Management team successfully supported the release of an acceptable quality engineering release and first production unit about 10 weeks ahead of baseline schedule.

Machine Learning and Data Analytics Risk Mitigation Team

The Risk Analytics team significantly advanced Sandia's operational excellence and analytical capabilities by pioneering machine learning solutions and data analytics techniques. By developing innovative models for Cost Transfer monitoring and developing and deploying data analytic-focused dashboards, the team has enhanced accuracy and proactively mitigated risk exposure for the Labs. This first-of-its-kind innovative deployment, robust frameworks and anomaly detection methodologies have set new standards in financial operations, demonstrating a commitment to continuous improvement.

SIPP Concurrent Processing Team

The Sandia Strategic Intelligence Partnership Program Team implemented official review and approval party Concurrent Processing, reducing the average processing time for SIPP agreements by 3.1 days in fiscal year 2024, from 18 days in fiscal year 2023 to 14.9 days. SIPP accounted for 34% of the total Strategic Partnership Program budget, totaling about $476 million across 385 projects, supporting Sandia's mission. Furthermore, Sandia's SIPP Concurrent Process is set to be implemented by other DOE laboratories.

A crew for all seasons

By **James Stewart**

Infrastructure doesn't stop at buildings or power lines. It grows, it blows in on the wind, and, sometimes, it freezes overnight.

Managing Sandia's living, shifting environment is the job of Rudy Sanchez, team lead for Infrastructure Operations' Grounds and Roads crew. His team of 20, supported by other Facilities groups, maintains more than 30,000 acres of land — from manicured turf to remote roads deep in the foothills. Their mission is constant, complex and critical.

"Most people think of landscaping as just mowing grass," Rudy said. "But this is full-scale operations work. Irrigation systems, fire mitigation, storm prep, debris cleanup — it's every season, every zone, every detail."

Landscapes and locations

Rudy runs the team with precision. Sandia's New Mexico site is divided into four geographic sectors, each with its own environmental profile.

SPACE TO RESET — Gardener Deborah Rickert, member of Sandia's Grounds and Roads crew, plants flowers inside a flower bed outside a building in Tech Area I in Albuquerque. Grounds and Roads provides all season, year-round maintenance covering more than 30,000 acres of land. It's a large area to cover and each tech area presents different challenges. In this area, which is a tightly packed urban core, Deborah creates spaces where Sandians can rest and recharge before heading back to world-class research and development.. **Photo by James Stewart**

"Tech Area I is like a dense city core: highly landscaped, tightly packed," he said. "Tech Areas II and IV are more suburban, with space between buildings. And Tech Areas III and V, plus the remotes. They're rural, with open land, native vegetation and tumbleweeds."

Those differences dictate the work. Some areas require delicate pruning and precise irrigation. Others call for tractors to clear fence lines and manage windblown debris. No two teams work the same, but they operate with shared structure and clear expectations.

"Each four-person team owns their zone," Rudy said. "They know the trees, the irrigation systems, the turf conditions. They take pride in it."

On any given week, crews respond to a flood of work orders, from trimming low-hanging branches to maintaining fire breaks. Tech Area III and the remotes span 13,000 acres.

"I have a handful of guys," Rudy said. "What we can't do with labor, we make up for with equipment."

Equipment includes skid steers, 6-foot mowing decks, walk-behind sweepers, utility vehicles and herbicide sprayers. Some tools are specialized, like the rotary brooms used in winter or the deck mowers designed to mulch tumbleweeds in place.

SAFER WALKWAYS — Grounds and Roads team member and gardener Dimas Silva sweeps debris from steps outside a building located in Tech Area I in Albuquerque. Dimas and his 19 teammates maintain Sandia's New Mexico campus. Clearing debris from walking pathways helps prevents slips, trips and falls, which are a leading cause of injuries in the workplace. **Photo by James Stewart**

"Shredding does more than clean up," Rudy said. "It prevents regrowth by blocking sunlight and air. We're not just reacting; we're managing the land."

Every season has a job

Each season signals a shift in operations. In spring, the team moves from snow response to pruning and dethatching. Summer brings irrigation monitoring and repairs. Fall is for leaf cleanup and applying weed control.

"There's never a quiet season," Rudy said. "The work changes and stays constant."

Though much of the work is green and growing, its consequences are rooted in safety. Debris buildup increases fire risk. Loose gravel and cluttered paths create trip hazards. Stressed trees become vulnerable to pests and disease.

"There's a direct connection between what we do and how safely people can move around," Rudy said. "If you walk from one building to another, we're thinking about that pathway the slope, the ground cover, the visibility. All of it."

The team also plays a key role in wildfire prevention, clearing brush and maintaining fire roads throughout the site.

"We've had small fires out there," Rudy said. "We support the Air Force when they respond, but the best response is prevention. We make sure it never gets close."

Research and relaxation

While safety and function drive the Grounds and Roads team, the benefits of a well-managed outdoor environment go beyond logistics.

When employees are focused on high-stakes national security work, the opportunity to step outside, even briefly, can offer a necessary mental reset. Rudy and his team take that role seriously.

PREVENTING FIRES — Gardener and Grounds and Roads team member Milledge Powell clears tumbleweeds stuck inside a culvert in Tech Area V in Albuquerque. Tumbleweeds are a fire hazard because they pile up next to buildings and ignite very easily. Grounds and Roads constantly clears tumbleweeds around the Labs' 30,000-acre New Mexico site. It's critical work that protects Sandia's buildings, people and national security research. **Photo by James Stewart**

"People need to step outside," he said. "Breathe some fresh air or sit under a tree. That's necessary."

From shaded courtyards to walkable green spaces, the team maintains environments that promote well-being alongside safety. Trees, flowers and turf receive the same care and attention as fire breaks or drainage paths. Both visual comfort and hazard prevention are essential.

"A good outdoor space lets people clear their head, take a break and get through a tough day," Rudy said. "Even if they're just walking from one building to another, we want that space to feel good."

The result is a campus that does more than support world-class research. It creates space for people to work, recharge and return with focus.

A seamless system

Whether they are pruning branches, repairing irrigation or mulching windblown debris, the Grounds and Roads crew works with a clear purpose: keep Sandia's living landscape aligned with its mission.

Their work supports movement, safety and continuity across a vast and varied site. Season by season, zone by zone, they turn natural elements into something structured, dependable and an environment as intentionally maintained as the science it surrounds.

Sandia Women's Connection honors students in math and science

High school juniors earn awards for leadership and enthusiasm in STEM

By **Lea Blevins**

Nine years ago, Alyse Coonce earned an award for her outstanding achievement in math, given to her by the Sandia Women's Connection employee resource group. This year, Alyse stood in front of the organization again — but this time as a member and keynote speaker at their 34th annual Math & Science Awards.

"The Sandia Women's Connection holds a special place in my heart, and this is truly a full-circle moment for me," said Alyse, who spent a year and a half as an intern and then became a full-time systems engineer two years ago at Sandia. "Nine years ago, I was in your exact same position — excited, proud and more than a little nervous, not fully understanding the magnitude of this award. It was the validating experience that gave me that final push, and I walked out of the ceremony with a newfound drive and confidence."

This outcome is exactly what the committee's members envision for each recipient: to harness their love of math and science and use it to take their education and their future careers to great places.

"We're celebrating not only your amazing accomplishments, but we're also going to applaud your potential to shape our future," Acting Associate Labs Director Trish Benguerel said. "It's no mystery that science, technology, engineering and math are the universal keys to unlocking what seems impossible. Every day we are enjoying the benefits of the many things that come from those fields of study."

Not failing, but falling forward

This year's event honored 48 students from 28 high schools in Alameda, Contra Costa and San Joaquin counties. Sandia Women's Connection Director Champion Craig Tewell said he is excited every year for this event, and he encouraged awardees to give themselves permission to fail.

"This is your time to stretch, to try — and maybe don't think about it as failing but as falling forward," Craig said. "When you fail, you dare to push your limits. It tells you a lot about yourself. It's how we learn, it's how we discover, and it's how we take risks into the future."

He cheered them on to take risks such as enrolling in a hard class, asking questions that may feel intimidating and volunteering for things they may not be fully sure they're ready to do yet.

"I promise you that not everything will go perfectly, but that's exactly the point," Craig said. "When things don't go perfectly, that means you're doing the right thing because you're stretching yourself, you're growing — and that's fun. It's where you will find out what you're truly capable of, and based on what your teachers see in you, you are capable of a lot."

Sandia Women's Connection Co-Chairs Pam Lober, Janelle Bottom and Kimberly MacDonald shared some of the nomination statements provided by teachers and school administrators that emphasized awardees' enthusiasm for math and science.

"What unites all these students — the quality that was present in every single nomination — was not only the student's exceptional dedication to their studies, but also the impact on their peers and the community," Janelle said. "These students foster an environment of exploration and collaboration. They embody resilience and ambition, pursuing their passions with determination while showing a remarkable ability to encourage their classmates to excel."

MENTOR MOMENT — Sandia Women's Connection Co-Chair Janelle Bottom, left, talks with science awardee Risha Patel during the mentoring session. **Photo by Spencer Toy**

Students of STEM — and of life

The awards ceremony was held at Las Positas College in Livermore for the first time, which gave honorees a chance to invite more family and friends to the celebration in the large theater, drawing more than 150 attendees.

Representing Las Positas College was Nan Ho, vice president of Academic Services. She thanked Sandia for its leadership in science education and the long history of partnership with the college, which has been the location for the DOE California Regional Science Bowl.

"During those events, I got to meet many Sandians volunteering their time to encourage young people in math and science," she said. "Sandia has also been a generous donor for scholarships for Las Positas College students. They've hired our students as interns and hired our alumni as employees."

While honorees met with Sandia Women's Connection mentors prior to the awards ceremony, their parents joined a presentation by Mariaelena Marcano, who leads Sandia California's Student Intern Programs.

"We invest in our interns," Mariaelena said, encouraging students to keep Sandia in mind for future internships. "We give you real work, real projects and opportunities to make mistakes, challenge theories and bring your own opinions and expertise. This underscores the value of hands-on experience in professional development and not only promotes learning, but also encourages innovation and critical thinking."

And as a former intern, keynote speaker Alyse emphasized her experiences at Sandia that have helped propel her career.

"I truly believe Sandia is the best of the best. Never have I met a more dedicated and intelligent community. I've had incredible mentors every step of the way. My coworkers have been generous in sharing their expertise for my growth and understanding. They've encouraged me to advocate for myself and taught me how to do great work," Alyse said. "I'm very lucky to have found a job that I love. My hope is this award is everything to you as it was to me."

FULL 'STEM' AHEAD — Sandia Women's Connection Math & Science Awards recipients with some of their nominators. **Photo by Spencer Toy**

Reengineering Sandia's health and well-being program

Wellworks For You is a digital success for Sandia

By **Greg Archuleta and Karyn Scott**

Innovation arrived in the form of a simplified Employee Health & Wellbeing program in fiscal year 2025.

For the past 10 years, employees and spouses enrolled in a Sandia Health Plan could manage their well-being and earn up to $500 annually toward their Health Reimbursement Account or Health Savings Account by participating in a variety of wellness activities on the platform and accumulating points.

Despite the digital wellness provider's best efforts, the platform was underused. Employee feedback reported that the platform was overly complicated and time-consuming to use. As a result, 40% of eligible participants regularly engaged, and 30% earned their entire $500 reward. Additionally, the platform didn't incorporate Sandia services or content from health coaches.

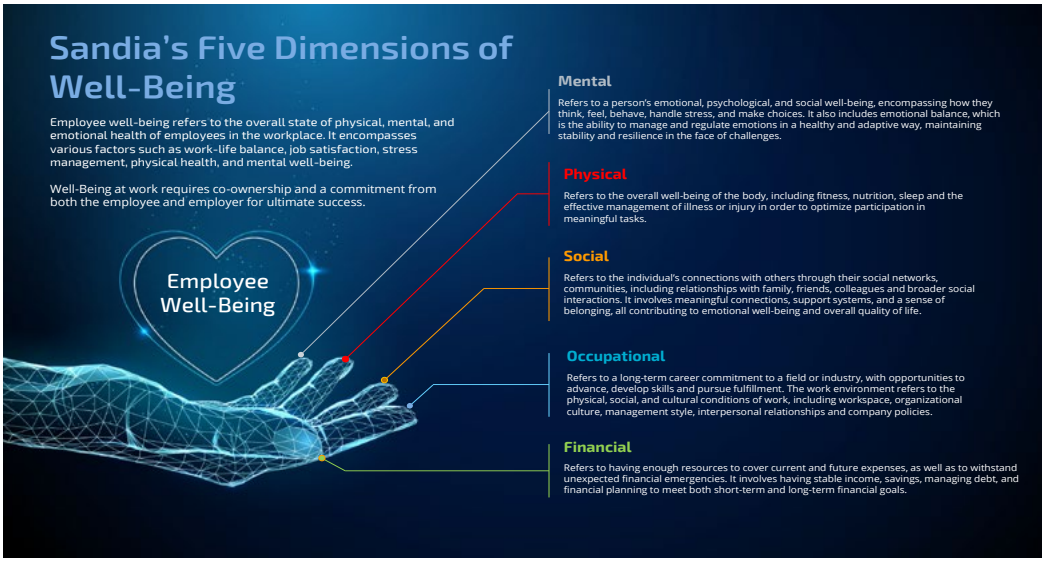
Not satisfied with the status quo, Employee Health

FRESH AIR — Benjamin Juba and Kristin Chuchwa walk during lunch at least once a week, choosing a walk in the shade at Hardin Field over the sunny track on June 3. Sandia Employee Health & Wellbeing has introduced a new program that rewards staff for prioritizing their well-being. **Photo by Craig Fritz**

& Wellbeing looked for a new, simpler digital platform provider that would offer employees the same health dollars toward Health Reimbursement Accounts and Health Savings Accounts, allow for more customization of wellness programs and feature valuable content developed by Sandia coaches. In short, the team felt the platform should support health education, not work apart from it.

Enter Wellworks For You.

"We chose Wellworks because it is easier to use and has a simple three-step process for earning incentive dollars," Health Care and Medical Clinic manager Johanna Grassham said. "It includes a health assessment developed in-house, guiding users to our services, and allows us to take advantage of our health coaches by posting their educational materials on the platform."



INTEGRATED HEALTH — Employee Health & Wellbeing's transition to Wellworks aligns the program mission to educate, guide and provide resources for Sandians, aligning more closely with Sandia's Five Dimensions of Well-Being. **Infographic by Creative Services**

Johanna, health educator Angelique Crandall and registered dietitian Lisa Teves spearheaded the switch to Wellworks, which furthers Employee Health & Wellbeing's mission to educate, guide and provide resources for Sandians. The move aligned with emphasis on Sandia's Five Dimensions of Well-Being.

Now, rather than having to use a complex, quarterly points system for financial reward, employees can earn the same $500 toward their health accounts in three easy steps throughout the year: watching the Wellworks for You navigation video, filling out a health assessment and completing a Health Action Plan on the platform.

Additionally, staff who may not have been focused on their well-being for the full year can still earn their full health account dollars before the end of the fiscal year. Users can also continue to track steps, sleep, eating habits and more, but they aren't required to track that data for financial reward.

Wellworks gives Sandians a much easier platform to navigate and features the extensive well-being information that Employee Health & Wellbeing has created. The team estimates the move to Wellworks will save Sandia nearly $1 million in its first year, even with platform implementation fees.

TEAMING FOR WELLNESS — Employee Health & Wellness team members, from left, Val Warner, Angela Moreno, Gavin Stanley, Johanna Grassham, Angelique Crandoll, Rene Yoder, and, not pictured, Gregory Archuleta, Erin Chandler, Joy MacPherson, Celeste Miller, Ramanathapuram Narayanan, Leslie Palma, Jon Pier and Lisa Teves ushered in Wellworks, a simplified well-being program for the Labs. **Photo by Lonnie Anderson**

Transforming into a well-being organization

In 2024, Sandia introduced several new and enhanced employee benefits. First, the Labs introduced two new floating holidays. All eligible employees receive two floating holidays, a total of 16 hours, at the beginning of the calendar year. Part-time employees receive prorated hours based on their standard hours.

Last year, Sandia increased employees' vacation time by revising its accrual schedule. Now, employees' accrual rates will increase at the start of their third, fifth, 10th, 15th and 20th service years. The accrual frequency also increased from 24 to 26 times per year.

The Labs also introduced a new $1,500 employer-sponsored childcare fund to assist employees with childcare costs during business hours. The fund provides $1,500 to each eligible employee in an after-tax account at the start of each calendar year.

Sandia expanded eligible expenses for the Lifestyle Spending Account. Now, the account covers additional eligible expenses, such as music subscriptions, meditation apps and salon and barber services.

Lastly, the Labs enhanced the 401(k) plan by introducing a student loan debt match program. Now, eligible student loan payments qualify for matching contributions in Sandia's 401(k) plan, up to the maximum of 66.667 cents of every dollar, up to the first 6% of the employee's eligible compensation. This includes the employee's own student loans, as well as cosigned or parent loans.

Represented employees should refer to their collective bargaining agreement to verify their benefit options.

Sky-high fun with Kirtland

AIR FIESTA — Crowds gather below the Lockheed C-5 Galaxy during the Kirtland Air Force Base Air Fiesta on May 31. The C-5 Galaxy, visiting from Dover Air Force Base, is one of the largest military aircrafts in the world. Behind it on the right, a HH-60 Jolly Green II from Kirtland's 58 Special Operations Wing takes flight. More than 30,000 visitors, including many Sandians, attended events held on May 31 and June 1. **Photo by Craig Fritz**

Mileposts

Caroline David 20

Ben Mar 20

Aaron Williams 20

Recent Retirees

Amy Tapia 36

Jeff Mitchell 12