Exceptional service in the national interest

FY16–FY20 Strategic Plan

Sandia National Laboratories
Welcome to our FY16–FY20 Strategic Plan, which both reflects our continued dedication to the work we do and reinforces the importance of the integrated Laboratories’ strategic framework to our future. This document is the result of the leadership team’s journey over the past few years in response to the needs of our nation. In an external environment that continues to change, sometimes in unexpected ways, it is critical that our mission areas and our foundation become increasingly synergistic, forming a whole whose parts are interdependent.

Why a New Plan?

Defining Sandia’s mission and capability space, our new Laboratories’ strategic framework has both led to a long-term strategic approach to our work and highlighted our major priorities. We fulfill our central responsibility of maintaining a safe, secure, and effective U.S. nuclear deterrent while bringing scientific and engineering solutions to broader national security challenges. Having forged a strategy to ensure our future, we anticipate the constantly changing landscape of the national security environment.

Furthermore, a highly dynamic international security, nuclear proliferation, and cyber environment (for example, changes in the United States’ relationship with Russia and science and technology challenges coming from China) has placed new demands on the Laboratories. The new strategic plan grew out of the realization that this was the right time to clarify the Laboratories’ direction, to simplify and integrate our strategic objectives. The plan does not intend to capture the totality of the work we do at the Labs. Its purpose is to give us long-term direction and strategy.

The New Plan

Three strategic objectives define that direction. As we’ve evolved as an institution, our nuclear weapons work and broader national security work have become organically intertwined. Strategic Objective 1 embodies that reality. Our work relies on the Labs’ Foundation with its full suite of capabilities embodied by our people, facilities and tools, and research. Strategic Objective 2 is devoted to the Labs’ Foundation. Finally, our achievements in service to the nation rely on an institutional environment conducive to success. Strategic Objective 3 is dedicated to that environment. The new plan promotes an integrated framework brought about, to a large extent, by such crosscutting elements as trusted partnerships and exceptional performance by the workforce across the Laboratories.

I believe that, as you read this plan, you will see Sandia’s ability to adapt to a rapidly changing internal and external environment. Pursuing the direction expressed in the plan requires the engagement of one and all. You, the people of the Laboratories who execute this plan, have committed your talent to pushing the frontiers of science and technology as far as they can go. I look forward to taking this journey with you as your director.

—Jill Hruby
Who We Are

Sandia is a member of the Department of Energy (DOE) laboratory system. The labs within this system have distinctive capabilities, as well as diverse and in-depth expertise in multiple disciplines. They are a vital sector of the science and innovation ecosystem of the United States. Among them, Sandia is a multi-mission national security laboratory.

Established on November 1, 1949, Sandia is now one of three National Nuclear Security Administration (NNSA) laboratories entrusted with responsibility for stockpile stewardship and annual assessment of the nation’s nuclear deterrent. While we have been fully committed to the nuclear weapons mission, beginning in the early 1960s, Sandia was asked to apply the skill set and capabilities developed for nuclear weapons to broader national security challenges. Four decades later, a dramatic change in the national security environment has resulted in an increased demand for our capabilities in nonproliferation, counterterrorism, cyber security, energy security, defense, and homeland security. There has been a consistent interdependence, indeed, a natural symbiotic relationship between our central nuclear weapons mission and our work in broader national security areas. The nuclear weapons mission enables these broader national security missions and is, in turn, enabled by them.

In the current, dynamic global environment, the science, technology, engineering, and business professional capabilities required to support the nuclear deterrent have positioned us to support broader national security aspects as well. In turn, capabilities developed for broader national security work enrich our portfolio of capabilities for nuclear weapons.

As a federally funded research and development center, we have a long-term relationship with NNSA, which is conducive to an environment that supports our fields of expertise and allows us to be familiar with our sponsor’s mission. We attract high-quality personnel, meet long-term research and development needs, and operate in the public interest objectively and independently, being free from organizational conflicts of interest. We provide long-term solutions to existing problems and emerging threats, as well as fast-response capabilities. As an objective, independent, and trusted advisor, we draw from our deep science and engineering experience to anticipate, innovate, create, and inform the policy debate for decision makers.

To deliver on our engineering applications, we rely on the fundamental understanding derived from integrating theory, experimentation, modeling, and analysis. We choose the research we perform based on what the mission requires. Hence, there is a compelling reason for the scientific discovery we pursue. We further scientific discovery by creating unique tools and facilities that contribute to advancing fundamental understanding. Our scientific knowledge and engineering skills enable us to anticipate emerging threats for national security. Sandia’s key technical capabilities have proved their uniqueness time and time again, through decades of delivering to customers.
Sandia at a Glance

People

Our unique work requires the collective minds of the nation’s top scientists, engineers, and business professionals. Each year, Sandians are recognized for developing a range of breakthrough technologies with commercial applications of global importance.

Locations

Sandia operates laboratories, testing facilities, and offices at several sites in the United States and participates in research collaborations around the world.

Sandia’s largest site is located in Albuquerque, New Mexico. Our second principal site is in Livermore, California. Although most of our more than 10,000 employees work at these two locations, Sandia employees also work at various other locations listed below.

Main Sites

Albuquerque, New Mexico
Livermore, California

Mission-Specific Locations

Tonopah Test Range, Tonopah, Nevada
Kauai Test Facility, Waimea, Hawaii
Carlsbad Programs Office, Carlsbad, New Mexico
Nevada Projects Team, Mercury, Nevada
Weapons Evaluation Test Laboratory, Amarillo, Texas
Sandia Washington Office, Washington D.C.
Atmospheric Radiation Measurement Facility, Barrow, Alaska
Computing Research Facility, Shoreview, Minnesota

Funding

Sandia’s multi-mission work is represented in a diverse funding portfolio.

FY14 Total Budget
$2.7 billion
Vision

On behalf of our nation, we anticipate and solve the most challenging problems that threaten security in the 21st century.

When we achieve this vision, we are widely recognized as a national leader in preventing technological surprise, anticipating threats, and providing innovative, science-based systems engineering solutions to our nation’s most challenging security problems.

The excitement and importance of our work, our exemplary work environment, our partnerships with academia, industry, government, and other partners, and our record of historic contributions, help us attract exceptional staff. Our employees are recognized by their professional peers for their outstanding contributions, and our institution is managed in a way that inspires confidence.

Mission

The synergy and interdependence between our nuclear deterrence mission and broader national security missions forge a robust capability base and empower us to solve complex national security problems.

As a multidisciplinary national security laboratory, Sandia supports nuclear deterrence, its central mission. Today, the synergistic and interdependent relationship between our nuclear deterrence mission and broader national security missions empowers us to conduct the Labs’ national security missions successfully. It creates a challenging, vigorous scientific and engineering environment that has helped us attract and retain the new talent we need. Indeed, this symbiotic relationship is largely responsible for Sandia’s consistent and efficient delivery on its commitments to the nuclear weapons program.

Our conceptual framework of the Labs’ missions, therefore, includes nuclear weapons at its basis and in symbiotic relationship with three other mission areas: pursue global nuclear assurance and security, defend and dominate in cyberspace, and maintain U.S. defense technological superiority through synergistic products. Another three mission areas—develop national security space innovations, reduce global biological and chemical dangers, and ensure a secure and sustainable energy future—are connected to nuclear weapons through the Labs’ foundation (for a detailed description of the Laboratories’ strategic framework, see Page 8).

Sandia accomplishes tasks integral to the mission and operation of our sponsoring agencies by

- Anticipating and resolving emerging national security challenges
- Innovating and discovering new technologies to strengthen the nation’s technological superiority
- Creating value through products and services that solve important national security challenges
- Informing the national debate for which technology policy is critical to preserving security and freedom throughout the world

We are widely recognized as a national leader in preventing technological surprise.

We fulfill our mission of solving national security challenges with commitment to “exceptional service in the national interest.”
Values
Sandia’s five core values inform our daily decisions, shape our performance, and enable us to achieve success as one lab.

**We serve the nation** by responding to our customers’ requests and by anticipating our country’s future needs. We fulfill our mission of solving national security challenges with commitment to “exceptional service in the national interest.”

**We team to deliver with excellence** by combining our individual talents to meet and exceed our commitments and by pursuing continuous improvement to advance the frontiers of science, engineering, and technology.

**We respect each other** by cherishing the intellect, skills, diversity, flexibility, and passion of our coworkers, by including one and all. We provide opportunities for the development of all members of our workforce and celebrate their world-class accomplishments, which enable Sandia’s mission.

**We act with integrity** by living within our principles, sharing our views, and doing what is right.

**We live safe and healthy lives** by using critical thinking to exercise sound judgment in our daily activities; demonstrating that safety and health come first; and striving to eliminate unsafe conditions, prevent injuries, and promote healthy, vibrant lives. We embrace safety and health in all our activities, at work and outside the workplace.
LABORATORIES’ STRATEGIC FRAMEWORK

Sandia continues to be engaged in the significant demands of the nation’s nuclear weapons modernization program while conducting a whole range of activities in broader national security. The Laboratories’ strategic framework (Figure 1) drives strategic decisions about the totality of our work and has positioned our institution for greater stability in our broad national security role. This framework is composed of two main parts: the mission areas (MAs) and the Laboratories’ foundation (Figures 2 and 3). The MAs are supported by a robust foundation that enables Sandia’s success as a 21st century national security laboratory. Our framework is fluid: As the nation’s security challenges change and evolve, so does our framework.

Mission Areas

The Laboratory Leadership Team (LLT) decided on a set of integrated MAs that best reflect Sandia’s mission based on three key characteristics: synergy with nuclear weapons capabilities, national security impact, and strategic value to the nation to ensure Sandia’s enduring impact. The MAs bring focus to the work we conduct in national security. The middle tier MAs (Figure 2) are strongly interdependent with and essential to the nuclear weapons MA. In turn, the nuclear weapons MA enables the broader national security missions shown on the middle tier, while allowing Sandia to leverage a broad work scope and thus provide unique value to the nation.
The MAs shown on the top tier of Figure 2 are critical to our national security, and they enhance our capabilities. Their synergy with the nuclear weapons MA results from connectivity in capabilities rather than products. However, these MAs have product connectivity to the MAs on the bottom and middle tiers of Figure 2. The mission statements of all MAs are also shown on Figure 2.

Together, all the MAs ensure that Sandia maintains its position as a national security laboratory that brings maximum value to the nation through impactful technical solutions.

Laboratories’ Foundation

Sandia’s ability to deliver on its national security missions is built on a strong foundation, which originated in the early days of the Laboratories’ nuclear weapons program. As we think about it today, the foundation with all its component parts (Figure 3) drives Sandia to achieve its mission strategy. We invest in our vital resources—people, research, and facilities and tools—to build a unique set of capabilities that enable mission delivery.

Capabilities—The resources just described are the quintessential elements that generate a unique set of technical, operational, and business competencies that we nurture and advance to provide an exceptional value to the nation.

People—A workforce of more than 10,000 highly trained engineers, scientists, business and operations professionals, managers, technicians, and administrative support staff make up the people of Sandia. We partner to deliver on Sandia’s mission. This partnership has become natural, organic to our definition of who we are. We bring our skills and knowledge in service to the nation. As we move forward, we continue to bring in new talent and instill in one and all an enduring sense of deep, personal connection to Sandia’s impactful mission. We also continue to promote critical thinking and continuous learning, which are central to successful delivery on future challenges.

Research—The research we conduct informs our work and differentiates it for our sponsors. We use a deep, discipline-based approach to research in critical areas, as well as selected areas of interdisciplinary focus. The decisions we make about research priorities directly support our mission. We promote a vibrant research environment that embraces mindful risk and stimulates innovation.

Facilities and Tools—Sandia’s mission strategy guides us in making decisions about facilities and tools. Those decisions reflect on our future success. We steward our unique facilities and assemble additional state-of-the-art and highly differentiated facilities, as needed for our mission. We also design, develop, procure, and maintain the scientific and engineering tools we need to enhance our capabilities.
**FY16–FY20 STRATEGY**

The LLT and director leadership teams have developed three strategic objectives and two crosscut areas of emphasis which provide the construct for Sandia’s continued contributions to national security. The objectives guide us in establishing long-term (~ 5 years) priorities that drive decisions for strategic resource allocations. The crosscuts are evident in shorter-term (~ 2 to 3 years) goals and (~ 1 year) milestones that align with each objective. Goals and milestones are established to ensure tangible progress in realizing our overarching strategic direction.

The strategic plan does not intend to capture the totality of the work we do at the Labs. Its purpose is to give us long-term direction and strategy for the Laboratory. Sandia’s LLT tracks performance of the objectives and goals and milestones through quarterly reviews. In addition, the NNSA’s Sandia Field Office monitors performance through the annual Performance Evaluation Measurement Plan (PEMP), which is aligned with our strategic plan. The next section will describe our strategic objectives and goals in detail.

**STRATEGIC OBJECTIVES AND GOALS**

**Strategic Objective 1: Amplify our national security impact**

Sandia passionately demonstrates leadership in solving the most complex national security challenges. We anticipate threats to our nation, inspire the innovation needed to mitigate those threats, deliver those innovations as engineered systems, and work to inform the public debate. The overarching mission of the Laboratories is strategic national security. An ethos of national service and stewardship, coupled with a passion for technical and operational excellence, allows talented teams to develop and deploy high-impact solutions for the nation and the world.

Nuclear weapons are and will remain central to our mission. We weaponize systems for the U.S. stockpile by providing overall system integration and development of nonnuclear components. We ensure that the nation’s nuclear weapons meet the highest standards for safety, security, and reliability to provide an assured nuclear deterrent. Sandia partners with its sister labs, the NNSA, and other federal agencies to evolve the nation’s nuclear deterrent so that it remains effective in a rapidly changing geopolitical environment. Even through international uncertainty, Sandia’s focus is clear: We provide unparalleled value in national security. Given our commitment to the nuclear weapons mission, we have a strong foundation to draw upon and enable our broader mission area efforts. Our work supports a focused, yet comprehensive, approach to our mission. Sandia uses its evolving Laboratories’ strategic framework to integrate and leverage work across the Laboratories. Our ability to support national security in all mission areas is critically dependent upon a suite of foundational capabilities. The natural, symbiotic relationship between our nuclear weapons mission area and our broader national security mission areas both challenges and nurtures our foundational capabilities. Our decisions and our sponsors’ actions reflect the true strategic intent of our interdependent Laboratories’ strategic framework and amplify our national security impact.

**Key Points**

- We will execute our nuclear weapons mission with excellence.
- We will lead the nation in solving the most complex national security challenges.
- We will use the Labs’ strategic framework to guide our decisions and investments.
- We will contribute strongly to the national security dialogue at the highest levels.
- We will form strategic partnerships around the world to amplify our mission impact.
- We will flexibly, safely, and securely execute our diverse mission areas.
We ensure that the nation’s nuclear weapons meet the highest standards for safety, security, and reliability to provide an assured nuclear deterrent.

We amplify our impact through effective strategic partnerships with universities, other institutions, and agencies. A solid foundation informs and differentiates work for our sponsors, both enabling mission delivery and advancing the frontiers of science and engineering.

We will operate under a new governance model that more effectively supports our role as the preeminent 21st century national security lab. Sponsors and stakeholders will view us as trusted advisors who provide objective insight and support. Our sponsors will freely share information about mission needs and commit to long-term program continuity, while we provide technical expertise, institutional memory, and capabilities needed to quickly respond to emerging sponsor needs. We will develop innovative approaches to improving efficiency while thoughtfully challenging norms and encouraging diversity of thought.

We will be internationally recognized as a national security laboratory that contributes to global security within multiple mission areas. Our ability to develop and deploy high-impact solutions for the nation will remain unparalleled. While we excel at anticipating future challenges, we will also respond rapidly to unforeseen changes in the security landscape.

Objective 1: Goals

Goal 1: Execute Sandia’s nuclear weapons mission with excellence.

Goal 2: Integrate Sandia’s nuclear weapons, nonproliferation, and intelligence capabilities to achieve nuclear strategic stability.

Goal 3: Anticipate strategic national security threats, innovate to mitigate those threats, and translate innovations into mission-proven engineered systems.

Goal 4: Integrate and manage Sandia through the application of the Laboratories’ strategic framework.

Goal 5: Strengthen our impact as a federally funded research and development center by using Sandia’s capabilities to inform the development of national security policies and programs.

Goal 6: Build trusted relationships with sponsors that result in enduring investment in the Laboratories’ foundation.
Strategic Objective 2: Strengthen our Laboratories’ foundation to maximize mission impact

Our Laboratories’ foundation gives our institution its vitality and uniqueness. Using advanced facilities and tools, our talented people build upon an enduring research base by advancing the frontiers of science and engineering. They create Sandia’s rich technical capabilities that give our institution its identity and uniqueness within the laboratory system. Deeply committed to national service, our people seek internal and external partnerships to achieve best results in service to the nation. Our facilities and tools foster and enable innovative thinking and outstanding operational expertise, which define Sandia’s own brand of mission delivery. Our broad, multidisciplinary research base is forward-looking, and it encourages bold technical outcomes that can qualitatively advance the Laboratories’ capabilities. With these resources, Sandia is well prepared to anticipate emerging threats to national security and apply deep scientific understanding to demonstrated engineering solutions.

Intentionally anticipatory and agile, our Laboratories’ foundation uses a successful framework, which enables focused decisions about capabilities. These decisions are driven by our mission area strategies and our responsibility to steward and sustain our competencies now and in the future. To fulfill this responsibility, we will elevate the practice of engineering through partnerships with universities, industry, other national labs, and other institutions. We will stimulate the growth of visionary, principle-based leaders who can assure exceptional operational performance and mission execution. With a workforce united in purpose, the integrated facets of our foundation will bring the full power of the Laboratories to solving our nation’s most-critical national security challenges.

Objective 2: Goals

Goal 1: Integrate the Labs’ foundation and mission areas to assure strategic priorities guide decisions and investments.

Goal 2: Enhance strategic focus and decision-making regarding our unique facilities and tools to effectively balance meeting current mission needs and enabling future agility to respond.

Goal 3: Attract and develop talent to fulfill our current and future national security missions.

Goal 4: Enable, through research, bold technical outcomes that can qualitatively advance the Labs’ capabilities.

Goal 5: Strengthen the science and engineering foundation of the Laboratories by building focused, strategic partnerships.

Key Points

- The elements of our Laboratories’ foundation create the rich technical capabilities that give Sandia its identity and uniqueness.
- We will use the Labs’ strategic framework to assure strategic priorities guide decisions and investments.
- We are committed to stewarding and sustaining our science and engineering capabilities.
- We will enhance our capabilities and elevate the practice of engineering through partnerships.
- We will communicate Sandia’s own brand of mission delivery and continue to attract talented people to the Labs.
Strategic Objective 3: Advance an exceptional work environment that enables and inspires our people in service to our nation

Sandia is committed to an exceptional work environment that engages and values the input of our workforce. We have a strong sense of identity and passion for our national security missions. We foster an environment of trust and teamwork, where employees feel respected and supported as individuals and as a community. We believe that, by working together, we can deliver impactful results.

We take mindful technical risks in our quest to deliver innovative solutions to our national security mission challenges. We lead with sound, purposeful judgment that is grounded in our corporate principles. We collaborate with our customers to enable exceptional performance. We strive for an operational simplicity that focuses on achievement and affords opportunities for our people to contribute, share, and connect.

We encourage time for innovative thought, professional growth, and hands-on experience to enable our people to reach their full potential. We model behaviors and mindsets that reinforce our culture of excellence, safety, well-being, and respect. We provide career development programs, volunteer involvement opportunities, and on-site amenities that help our people lead balanced lives and create a more vibrant community.

Objective 3: Goals

Goal 1: Instill a sense of pride and accomplishment in our people by communicating our mission impact and celebrating our Labs-wide and individual successes.

Goal 2: Empower individuals to think critically and use sound judgment as part of a simplified, principle-based culture.

Goal 3: Foster an environment where continuous learning, personal and professional development, and inclusion thrive.

Goal 4: Maximize the safety, health, security, and morale of our Sandia community.

Goal 5: Enable our leaders by creating the most efficient and effective operational environment.
CROSSCUTS

The strategic objectives detailed in this plan are interwoven with two crosscut areas: (1) trusted partnerships and (2) exceptional performance. These areas of emphasis are integral to the success of our objectives. The achievements we are seeking through our strategic objectives cannot be realized without deliberate, strategic partnerships and an added focus on delivering with excellence. The activities we will pursue in each area are detailed below and are represented in our strategic goals and milestones.

Trusted Partnerships
Strategic partnerships enrich diversity, stimulate ideas, and create opportunities—all integral to Sandia’s mission. At all levels, Sandia will continue to team with like-minded internal and external entities to amplify mission impact. Internally, we will increase mission area and foundation interconnectivity for greater multidisciplinary success. Externally, we will continue to partner with universities, industry, and other national laboratories to advance the frontiers of science and engineering and leverage leading-edge facilities and tools. We will expand our presence locally, nationally, and internationally to attract and retain the best and brightest. We will work closely with our governing bodies to increase efficiency and deliver desired results. We will engage with and invest in local communities to help create more vibrant places to live and work.

Exceptional Performance
It is Sandia’s strategic imperative to continue to anticipate and understand emerging security threats and supply innovative engineered solutions. The flexibility to examine, research, and inform in an environment of rapidly evolving challenges demands that Sandia maintain a core foundation of operational excellence. Across the Labs, we remain committed to safety, security, and efficiency, the backbones of successful mission performance. Sandia leadership, unified by our mission and vision, is committed to reducing unnecessary operational complexity to enable bold thinking and mindful risk management. Combined, our solid operational foundation and framework for agile decision-making enable us to deliver innovative results.
Alignment with DOE and NNSA Strategies

Sandia’s strategic planning process ensures integration and alignment with the Department of Energy (DOE), National Nuclear Security Administration (NNSA) Strategic Plans, and Sandia’s Strategic Performance Evaluation Measurement Plan (PEMP) goals. Sandia’s FY16 PEMP promotes a strategic governance and oversight framework based on prudent management of risk, accountability, transparency, and leadership. Table 1 illustrates the alignment of each of four strategic objectives and crosscuts with the DOE Strategic Plan¹ (2014–2018) and NNSA pillars and crosscuts². It also shows the alignment of the FY16 PEMP goals with Sandia’s FY16–FY20 strategic objectives and crosscuts.

Table 1. Sandia’s Alignment with DOE and NNSA Strategies

¹ Department of Energy Strategic Plan 2014–2018, March 2014
² The National Nuclear Security Administration Strategic Plan, August 2015
CONCLUSIONS

This plan is a living document and a guide for action. Sandia’s leadership reviews and modifies the strategic plan to align with our current customers and future national security needs. Each spring, Sandia establishes multiyear goals and annual milestones for the upcoming fiscal year, and, through line-of-sight mechanisms, communicates these to members of the workforce for their annual performance management. Each quarter, LLT reviews progress on objectives and goals and provides an annual status report to Lockheed Martin Corporation, DOE, and the NNSA.

As the previous plan allowed us to evolve the Labs’ strategic framework into well-articulated mission area strategies, this plan will turn the framework into a mechanism to guide strategic focus and investments. We will continuously improve this planning process and its products so that every Sandian can ensure mission success now and in the future.

ACKNOWLEDGMENTS

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Exceptional service in the national interest