

# Lab Agenda

## Simultaneous Excellence

---

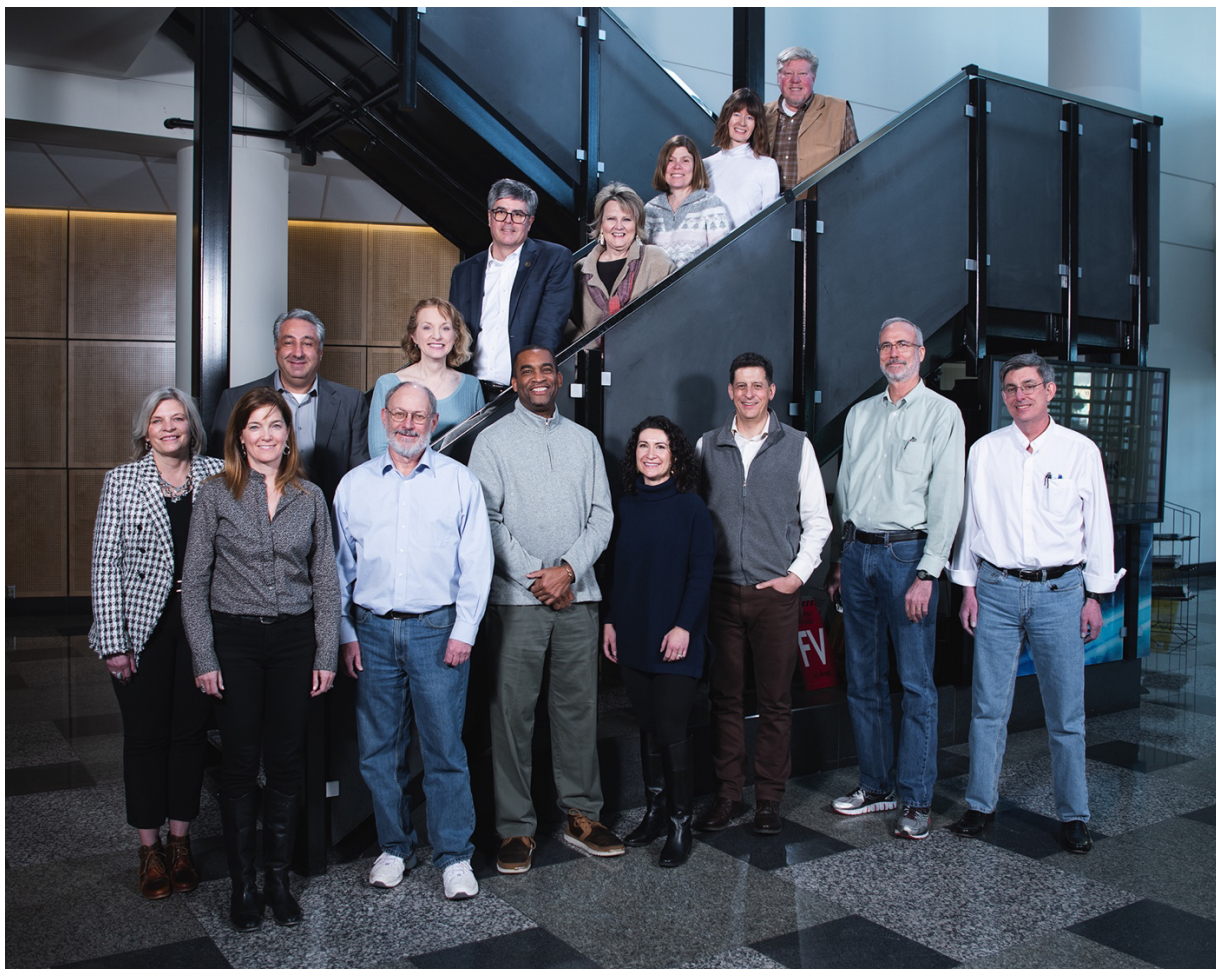
2023 Update





## Commitment Statement

The Leadership Team is fully committed to enabling the Laboratory's mission while supporting its people, further enhancing the culture, and meeting the goals outlined in the Agenda.



**Top of staircase down:** Kelly Beierschmitt, Frances Chadwick, Angela Mielke, LeAnne Stribley, Thom Mason, Nancy Jo Nicholas, James Owen, Laurie Monfiletto

**Bottom (left to right)** Ellen Cerreta, Bob Webster, Steven Coleman, Unica Viramontes, Charlie Nakhleh, Pat Fitch, John Sarrao

**Not pictured:** Irene Qualters, John Benner, Mark Anthony, Dave Teter, and Bret Simpkins



## Contents

|                                   |          |
|-----------------------------------|----------|
| <b>Introduction .....</b>         | <b>3</b> |
| <b>Strategic Objectives .....</b> | <b>3</b> |
| <b>Snapshot.....</b>              | <b>4</b> |
| <b>Roadmap.....</b>               | <b>5</b> |
| <b>Critical Outcomes .....</b>    | <b>6</b> |
| Pit Production .....              | 7        |
| Non-Nuclear Production .....      | 8        |
| Computational Breakthroughs ..... | 9        |
| Experimental Advances.....        | 10       |
| Integrated Deterrence .....       | 11       |
| Technology Modernization .....    | 12       |
| Threat Response.....              | 13       |
| Quantum Leadership.....           | 14       |
| Climate and Clean Energy .....    | 15       |
| Biosecurity Preparedness.....     | 16       |
| Culture Enhancements.....         | 17       |
| Operational Capacity.....         | 18       |
| Force for Good .....              | 19       |
| Acronyms & Definitions.....       | 20       |

## Introduction

The United States of America and our allies depend on Los Alamos National Laboratory's (LANL's) capabilities to support the security of our nation and world. We are charged with effectively leading and coordinating efforts within LANL and across partnering institutions and communities to fulfill the responsibilities entrusted to us. Our scientific and operational strengths are vital for managing the risks facing our nation and world. As the global environment changes, so the Laboratory must be ready to meet new challenges while delivering on the current programs and deliverables. LANL is committed to its partnership with the National Nuclear Security Agency (NNSA), Department of Defense (DOD), Congress, and other institutions central to our mission.

## Strategic Objectives

- **Nuclear Deterrent.** Lead the nation in evaluating, developing, and ensuring effectiveness of our nuclear deterrent, including the design, production, and certification of current and future nuclear weapons.
- **Threat Reduction.** Anticipate persistent and emerging threats to global security; develop and deploy revolutionary tools to detect, deter, and respond proactively.
- **Technical Leadership.** Deliver scientific discoveries and technical breakthroughs to advance relevant research frontiers and anticipate emerging national security risks.
- **Trustworthy Operations.** Consistently demonstrate and be recognized by diverse stakeholders for trusted and trustworthy operations.



# Lab Agenda Snapshot

2023 Update

The Laboratory Agenda provides a structured framework that identifies the strategic objectives, critical outcomes, near-term R&D, and production and mission-support activities needed to accomplish our mission.

## Strategic Objectives

### Nuclear Deterrent

Lead the nation in evaluating, developing, and ensuring effectiveness of our nuclear deterrent, including the design, production, and certification of current and future nuclear weapons.

### Threat Reduction

Anticipate persistent and emerging threats to global security; develop and deploy revolutionary tools to detect, deter, and respond proactively.

### Technical Leadership

Deliver scientific discoveries and technical breakthroughs to advance relevant research frontiers and anticipate emerging national security risks.

### Trustworthy Operations

Consistently demonstrate and be recognized by diverse stakeholders for trusted and trustworthy operations.

## Critical Outcomes

### Pit Production

Reconstitute optimized rate production of pits leveraging the nation's Plutonium Center of Excellence (Pu CoE) to support deterrence.

### Computational Breakthroughs

Research, develop, and routinely apply world-leading computational methods, approaches, applications, and technologies to solve Los Alamos' most computationally challenging science and security problems.

### Integrated Deterrence

Develop, and demonstrate capabilities to strengthen U.S. deterrence across the competition-conflict spectrum.

### Threat Response

Develop and deploy technical solutions supporting future nonproliferation, counterproliferation, and counter-terrorism strategies.

### Climate & Clean Energy

Enable regional and national achievement of Administration 2030/2050 climate and clean energy objectives through scientific, technological, and partnership innovations that build on established LANL capabilities.

### Culture Enhancements

Champion enhancements to our work environment that support inclusive staff engagement, respectful behaviors, and learning opportunities that are the foundation for safe, secure, compliant, and quality performance of our missions.

### Non-Nuclear Production

Develop targeted non-nuclear production capabilities to address gaps in the national Nuclear Security Enterprise (NSE).

### Experimental Advances

Advance LANL's experimental characterization tools in conjunction with our computational advances to underwrite stockpile assessment without the need for a nuclear test.

### Technology Modernization

Optimize and apply advanced technologies to enable modernization of the deterrent and its nuclear warheads.

### Quantum Leadership

Assert LANL leadership in the National Quantum Initiative; enable emergent scientific and national security needs by advancing quantum-relevant capabilities in materials, algorithms, simulation, and devices.

### Biosecurity Preparedness

Enable national preparedness and response to infectious diseases and biosecurity threats by harnessing life sciences along with other innovative scientific approaches.

### Operational Capacity

Meet the capacity requirements necessary to perform current and future mission.

### Force for Good

Be recognized as a force for good by Northern New Mexico communities and trusted by stakeholders to perform missions with minimal operational issues.

# Lab Agenda Roadmap

## 2023 Update

The Laboratory Agenda provides a structured framework that identifies the strategic objectives, critical outcomes, near-term R&D, and production and mission-support activities needed to accomplish our mission.



## Simultaneous Excellence

- Nuclear Security
- Mission-Focused Science, Technology, and Engineering
- Mission Operations
- Community Relations

## Strategic Objectives

### Nuclear Deterrent

Lead the nation in evaluating, developing, and ensuring effectiveness of our nuclear deterrent, including the design, production, and certification of current and future nuclear weapons.

### Threat Reduction

Anticipate persistent and emerging threats to global security; develop and deploy revolutionary tools to detect, deter, and respond proactively.

### Technical Leadership

Deliver scientific discoveries and technical breakthroughs to advance relevant research frontiers and anticipate emerging national security risks.

### Trustworthy Operations

Consistently demonstrate and be recognized by diverse stakeholders for trusted and trustworthy operations.

## Deliverables

|                                                             |                                                                                      |                                                             |                              |  |  |  |                                                                                         |                                                       |
|-------------------------------------------------------------|--------------------------------------------------------------------------------------|-------------------------------------------------------------|------------------------------|--|--|--|-----------------------------------------------------------------------------------------|-------------------------------------------------------|
|                                                             | WCRR operational                                                                     |                                                             |                              |  |  |  |                                                                                         |                                                       |
|                                                             | CD-1, LAMP                                                                           |                                                             |                              |  |  |  |                                                                                         |                                                       |
|                                                             | CD-2,3 LAP4 30R                                                                      |                                                             |                              |  |  |  |                                                                                         |                                                       |
|                                                             | Achieve first pit production unit                                                    |                                                             |                              |  |  |  | Low-level waste disposal facilities in service                                          |                                                       |
|                                                             | 1st experiment Pu at pRad                                                            |                                                             |                              |  |  |  | ECSE accelerator project complete                                                       |                                                       |
| CD-0, LAMP                                                  | Deliver a technically mature & manufacturable initiation system (2023-2024)          |                                                             |                              |  |  |  | Next generation HPC facility and infrastructure to meet ASC ATS-7 deployment timeframes |                                                       |
| CD-0, RACR                                                  | Demonstrate the capabilities of the Lab's next-generation code project on El Capitan |                                                             |                              |  |  |  | Alternate materials level 1 milestone                                                   | Scorpius experiments to support stewardship           |
| CD-1, EPCU                                                  | Start delivery of two USNDS GBD-IIIF payloads per year                               |                                                             |                              |  |  |  | CD-2,3, LAMP                                                                            | Pajarito corridor infrastructure investments complete |
| CD-2,3, CMRR PEI2                                           | Reach NASA/RPS milestone of 10-15 fueled clad sources per year                       |                                                             |                              |  |  |  | CD-4, TLW                                                                               | CD-4, LAMP                                            |
| Procure & deploy Venado                                     |                                                                                      | Advanced understanding of primaries/aging level 1 milestone | CD-4, TLW by the end of FY26 |  |  |  |                                                                                         | CD-4, EPCU                                            |
| Develop manufacturing & supporting technologies for DU & EU |                                                                                      |                                                             |                              |  |  |  |                                                                                         |                                                       |
| CINT triennial review                                       |                                                                                      |                                                             |                              |  |  |  |                                                                                         |                                                       |

2023 2024 2025 2026 2027 2028 2030 →

Culture Enhancement | Force for Good | Operational Capacity

### Mission

To solve national security challenges through simultaneous excellence.

### Vision

To be trusted by our nation, emulated by our peers, and respected by the world.

### Culture

How we do our work is as important as what we do.

## Our Values

### Service

Serving our nation, our partners, our community, and each other.

### Integrity

Demonstrating honesty, ethical conduct, accountable stewardship, and individual responsibility.

### Teamwork

Achieving our best by respecting diverse opinions and backgrounds, exploring alternatives, and collaborating with colleagues and partners.

### Excellence

Ensuring safe and secure mission delivery in nuclear security; science, technology, and engineering; operations; and community relations.



## Critical Outcomes

**Pit Production.** Reconstitute optimized rate production of pits leveraging the nation's Plutonium Center of Excellence (Pu CoE) to support deterrence.

**Non-Nuclear Production.** Develop targeted non-nuclear production capabilities to address gaps in the Nuclear Security Enterprise (NSE).

**Computational Breakthroughs.** Research, develop, and routinely apply world-leading computational methods, approaches, applications, and technologies to solve Los Alamos' most computationally challenging science and security problems.

**Experimental Advances.** Advance LANL's experimental characterization tools in conjunction with our computational advances to underwrite stockpile assessment without the need for a nuclear test.

**Integrated Deterrence.** Develop and demonstrate capabilities to strengthen U.S. deterrence across the competition-conflict spectrum.

**Technology Modernization.** Optimize and apply advanced technologies to enable modernization of the deterrent and its nuclear warheads.

**Threat Response.** Develop and deploy technical solutions supporting future nonproliferation, counterproliferation, and counter-terrorism strategies.

**Quantum Leadership.** Assert LANL leadership in the National Quantum Initiative; enable emergent scientific and national security needs by advancing quantum-relevant capabilities in materials, algorithms, simulation, and devices.

**Climate and Clean Energy.** Enable regional and national achievement of Administration 2030/2050 climate and clean energy objectives through scientific, technological, and partnership innovations that build on established LANL capabilities.

**Biosecurity Preparedness.** Enable national preparedness and response to infectious diseases and biosecurity threats by harnessing life sciences along with other innovative scientific approaches.

**Culture Enhancements.** Champion enhancements to our work environment that support inclusive staff engagement, respectful behaviors, and learning opportunities that are the foundation for safe, secure, compliant, and quality performance of our missions.

**Operational Capacity.** Meet the capacity requirements necessary to perform current and future mission.

**Force for Good.** Be recognized as a force for good by Northern New Mexico communities and trusted by stakeholders to perform missions with minimal operational issues.





## **Pit Production**

Reconstitute optimized rate production of pits, leveraging the nation's Plutonium Center of Excellence (Pu CoE) to support deterrence.

### **Initiatives**

1. Achieve First Production Unit in 2024 and optimize rate production in accordance with NNSA milestones.
2. Install the Tier 1 planned components of the MIE (Major Item of Equipment) projects needed for reliable and modernized pit production operations in accordance with NNSA pit production milestones.
3. Complete the Chemistry and Metallurgy Research Replacement (CMRR) project in accordance with the approved baseline.
4. Complete the Los Alamos Pu Pit Production Project (LAP4) in accordance with the approved baseline.
5. Install and certify the Modern Manufacturing System (MMS) required to support rate production and electronic generation of the war reserve quality packages.
6. Implement nuclear materials control and accountability (NMCA) solutions to improve pit manufacturing operational time.
7. Achieve CD-4 Transuranic Liquid Waste Facility (TLWF) by the end of FY 2026.
8. Bring Waste Characterization, Reduction and Repackaging Facility (WCRRF) online in 2024. Place Low-level Waste Disposal Facilities in service in 2027.
9. Develop and execute a comprehensive plan for human capital that includes retention, recruitment, and training of all necessary skill sets to support the Pu CoE, including pit production to support 30 PPY and other plutonium missions and construction execution.
10. Develop and effectively execute a robust supply chain system for procurement and inventory management and storage of quality-controlled supplies to support operations and project execution.
11. Effectively manage and balance NA-10 and NA-20 scope within PF-4 with concurrence of our federal partners.
12. Assure Nuclear Criticality Safety (NCS) organizational capability and capacity to meet rate production and facility modernization targets.

## **Non-Nuclear Production**

Develop targeted non-nuclear production capabilities to address gaps in the national Nuclear Security Enterprise (NSE) and DOE.

### **Initiatives**

1. Assess and document current and future NSE and DOE needs that will require LANL execution; develop a strategy to obtain necessary infrastructure and personnel to meet these needs.
2. Improve and document production facility planning and execution of Mission/Program-assigned scopes of work.
3. Assess and document personnel, facility, and equipment capability needed to execute technology maturation.
4. Inform and obtain stakeholder support for the strategy.



## Computational Breakthroughs

Research, develop, and routinely apply world-leading computational methods, approaches, applications, and technologies to solve Los Alamos's most computationally challenging science and security problems.

### Initiatives

1. Develop and gain approval for a decadal plan to ensure competitive, robust, and sustainable energy and facilities infrastructure to meet ATS-5 and ATS-7 deployment timeframes. The initiative will target a 2027 timeframe for a next-generation HPC facility based on current weapons program milestones. Facility selection will examine options for both on-campus and off-campus locations.
2. Meet performance targets for weapons simulations on Crossroads by 2023.
3. Demonstrate the capabilities of the Laboratory's next-generation code project on El Capitan by 2024.
4. Demonstrate and utilize the capabilities of Venado to increase predictive capabilities qualitatively through improved three-dimensional (3D) multi-physics simulations and advanced machine learning techniques, enabling a broad set of science and security breakthroughs by 2024.
5. By 2024, develop and document an ATS-5-associated strategy to achieve multi-physics simulation workflows within a human learning cycle.
6. Explore, develop, and incorporate high-fidelity computational exploration of narrative uncertainties into programmatic mission-critical assessments.
7. Accelerate fundamental and applied computational and data science R&D efforts, including artificial intelligence and machine learning (AI/ML) technologies, to enable achievement of Lab Agenda critical outcomes for LANL priority areas.
8. Strengthen and diversify the associated pipeline across the LANL information science and technology community.
9. Develop and apply computational tools that improve prediction of high-explosives behavior in full weapons stockpile-to-target-sequence (STS) regimes.
10. Develop and apply computational methods that accelerate design for manufacturing.
11. Develop infrastructure to support the next generation HPC facility as a future national resource for the ASC Tri-Lab program, which will include high-density/high-efficiency computing capability.



## Experimental Advances

Advance LANL's experimental characterization tools in conjunction with our computational advances to underwrite stockpile assessment without the need for a nuclear test.

### Initiatives

1. By 2030, develop the capability to underwrite the certification of a new weapon system with the radiographic and reactivity capabilities of the Enhanced Capabilities for Subcritical Experiments project and validated 3D calculations. Develop an alternative first experiment on ECSE.
2. Advance our understanding of static and dynamic mesoscale material science at existing light sources and accelerators to impact annual assessments. Provide leadership for upgrades to the Advanced Photon Source and Linac Coherent Light Source-Materials in Extreme Conditions to enable critical mesoscale materials science measurements.
3. Establish and sustain leading roles in high-energy density experimental design and analysis.
4. Develop and apply fundamental and empirical tools that improve the characterization of high explosives (HE) in full weapons STS regimes.
5. Deliver the accelerator-related project for Enhanced Capabilities for Subcritical Experiments (ECSE) by 2027.
6. Deliver Plutonium Proton Radiography at pRAD by 2024, which requires execution of upgrades to the facility, operations, and readiness support to field the first experiment.
7. Achieve CD-0 for Los Alamos Neutron Science Center (LANSCE) Modernization (LAMP) in 2023 and CD-1 in 2024 with nominal CD-2/3 in 2027. Develop concept for codesign of a proton storage ring replacement for consideration as part of LAMP. Pursue other LANSCE enhancements to sustain the required capabilities.
8. Develop strategy and plan to expand the Dual-Axis Radiographic Hydrodynamic Test (DARHT) Facility Capability needed to provide a growing need for this essential data.
9. Establish and sustain LANL's leading role as the NNSA Accelerator Laboratory, aligning investments in LDRD, staffing, equipment, and infrastructure with LANL's Accelerator Strategy.
10. Deliver Level 1 milestone on Advanced Understanding of Primary Performance for Aging in 2025.
11. Deliver Level 1 milestone for Alternative Materials in 2027 to support advanced qualification of replacement materials for canned subassemblies and other components in support of technology maturation and stockpile modernization.



## **Integrated Deterrence**

Develop and demonstrate capabilities to strengthen U.S. deterrence across the competition-conflict spectrum.

### **Initiatives**

1. Analyze and document how new multi-domain capabilities can improve the existing nuclear deterrent. Develop nuclear weapon employment concepts and options to maximize deterrent and strike capability in addition to providing input to nuclear force policy.
2. Assess how evolving adversary nuclear arsenals and defense systems affect the efficacy of the current US nuclear deterrent. Propose options for alternative weapons and delivery systems that enhance US capabilities to manage escalation.
3. Evaluate and document how emerging technologies, e.g., advances in nuclear power, space, and computing technologies could lead to strategic surprise. Develop technical concepts and solutions to leverage these technologies to ensure a resilient and integrated system of systems across the competition-conflict continuum.



## Technology Modernization

Optimize and apply advanced technologies to enable modernization of the deterrent and its nuclear warheads.

### Initiatives

1. Develop effective manufacturing and supporting technologies for depleted uranium and enriched uranium that enhance fabrication readiness and agility at Y-12. Inclusive of modernization of core facilities like Sigma.
2. Develop effective manufacturing alternatives, including electron beam additive manufacturing for upcycling components related to manufacturing at Y-12.
3. Develop effective manufacturing alternatives for polymers and other non-SNM material components to benefit the Kansas City National Security Campus (KCNSC) and Y-12 (e.g., salts and special materials).
4. Advance HE formulations through an understanding of process-structure-performance interplay along with physics and chemistry at the mesoscale.
5. Enhance HE pilot scale synthesis, formulation, and advanced manufacturing capabilities to support product development within the NSE complex and to benefit Pantex.
6. Deliver a technically mature and manufacturable initiation system for the next LANL weapon system that improves reliability and safety of the warhead and that is applicable to multiple weapons systems.
7. Develop advanced applications for gas transfer systems, power, and surety that can be applied to new weapons systems to improve reliability, performance, and safety.
8. Enhance and extend capabilities in delivery vehicle design:
  - Payload and system integration with hypersonic platforms – Collaborate with services and industry; participate in current and future designs.
  - Hypersonic flight analysis and platform design – Identify gaps and develop options to bridge them; strengthen collaboration with the Texas A&M University's University Consortium for Applied Hypersonics; ensure coordination of Lab-wide capabilities are applied to problems.
9. Modernize facilities and infrastructure per current ALDW ten-year infrastructure plan.

## Threat Response

Develop and deploy technical solutions supporting future nonproliferation, counterproliferation, & counter-terrorism strategies.

### Initiatives

1. Develop and demonstrate capabilities that counter asymmetric threats with focus on monitoring, detection, and verification in the nuclear and space threat domains. Enhance transitioning of new research to deployment technologies toward integration with national global security missions.
2. Develop methodologies and tools that advance international nuclear safeguards, enhance global nuclear and radiological security, and support future arms control agreements.
3. Continue to develop nonproliferation stewardship capacity.
4. Develop and field design-agnostic physics defeat tools, techniques, and procedures in support of nuclear emergency support team counterterrorism efforts.
5. Develop innovative technologies and methods to further national counterproliferation goals.



## Quantum Leadership

Assert LANL leadership in the National Quantum Initiative; enable emergent scientific and national security needs by advancing quantum- relevant capabilities in materials, algorithms, simulation, and devices.

### Initiatives

1. Develop and nurture the Laboratory's quantum information sciences capabilities (as measured through capability/program reviews and developed quantum information science [QIS] programs), supporting R&D at the frontier of quantum information sciences to enable responsive solutions for emerging national security needs.
2. By the end of 2023, develop, communicate, and publish an integrated QIS strategy that spans multiple capability pillars and identifies specific areas of leadership and partnership, as well as areas of lower priority. Align QIS LDRD, instrument, staffing, and infrastructure investments to the QIS strategy priorities.
3. Strengthen and grow the LANL workforce in QIS through education and training.
4. Increase regional, inter-laboratory, industrial, and academic partnerships.
5. Advance the Center for Integrated Nanotechnologies (CINT) as the leading Nanoscale Science Research Center (NSRC) for QIS, as validated through the NSRC program manager and the CINT triennial review in FY 2023.
6. Demonstrate the Quantum Science Center's leadership role among the National Quantum Information Science Research Centers.
7. Expand funding in basic and applied quantum information sciences that leverages our capabilities and underpins our national security mission.
8. Leverage LANL QIS capabilities as a part of a comprehensive LANL microelectronics strategy that includes the incorporation of the codesign process used to design quantum materials to create materials for advanced microelectronics.



## Climate and Clean Energy

Enable regional and national achievement of Administration 2030/2050 climate and clean energy objectives through scientific, technological, and partnership innovations that build on established LANL capabilities.

### Initiatives

1. Enhance the capability to forecast at regional scale impacts of the evolving climate to enable science-based civilian and military actions both domestically and globally, particularly at the sub-decadal scale and integrated with weather, infrastructure, disease, and other models. Deploy LANL tools to decision makers.
2. Demonstrate leadership, with relevant partners, in the multidisciplinary experimental R&D needed to inform near- and long-term predictions that influences action, as well as provide technical options to support those actions.
3. Develop, with relevant partners, utilizing a place-based strategy, innovative technology that can mitigate climate change, address the impacts of climate change, and enable monitoring of international norms and agreements.
4. Inform and facilitate implementation of a rapid transformation of the energy system towards less carbon-intensive solutions domestically, which will be paralleled by a transformation of the global energy system.
5. Support NNSA in establishing and achieving climate mitigation goals, including using the Laboratory as a testbed for demonstration and deployment efforts.



## **Biosecurity Preparedness**

Enable national preparedness and response to infectious diseases and biosecurity threats by harnessing life sciences along with other innovative scientific approaches.

### **Initiatives**

1. Assert leadership in national security life sciences that demonstrates current national laboratory capabilities and a vision for increased impact.
2. Expand national security R&D in areas that align with core capabilities and focus areas that have been externally peer reviewed.
3. Build on LANL COVID-19 R&D for future pandemics and national emergencies.
4. Enable near-term decision making that demonstrates the impact of science-informed planning.
5. Create technical options through a productive and dynamic innovation pipeline from research to adoption.
6. Form partnerships to enable achievement.



## Culture Enhancements

Champion enhancements to our work environment that support inclusive staff engagement, respectful behaviors, and learning opportunities that are the foundation for safe, secure, compliant, and quality performance of our missions.

### Initiatives

1. Continue to evolve and enhance a Lab-wide culture of teaming and collaborative behaviors based on common values.
2. Measure and document annually the Laboratory culture maturity with a focus on sustained improvement in four areas:
  - Leadership, where the leadership team through the responsible line managers (RLMs), demonstrates and models a commitment to transform culture.
  - Senior leaders commit to investing in our First Line Managers (FLMs), reducing the burden on FLMs so they can spend more time directly engaging with their employees, and regularly reviewing metrics to measure areas of improvement.
  - Employee Engagement, with shared and integrated improvement actions across LANL, leveraging the Institutional Worker Environment, Safety, and Security Team (IWESST), WESST, Voluntary Protection Program, and Safety and Security Improvement Program.
  - Organizational Learning, with demonstrated excellence in safety, security, quality, compliance, and behaviors (i.e., how we do our work is as important as what we do).
3. Increase focus on disciplined operations by learning from upsets in order to reduce mission and operational impacts.



## Operational Capacity

Meet the capacity requirements necessary to perform current and future mission.

### Initiatives

1. Implement talent acquisition plans, tools, practices, and career development opportunities to meet requirements of the Laboratory missions.
2. Improve the fidelity of procurement planning and increase procurement volume in support of Laboratory spending plans, leveraging new tools such as Ariba and Master Agreement Task Order Contracts (MATOCs), and Construction Manager/General Contractor (CM/GC) project delivery method, and using both forward-looking input and existing data from previous procurement cycles. Assure procurements are executed efficiently and support missions and community-centered/small business targets to the extent possible.
3. Ensure construction capacity to meet construction growth by leveraging tools such as MATOCs to decrease self-perform work and to support entire site's plans as identified in the critical outcomes.
4. Meet increased demand for space including office space and lab space for critical outcomes and to support growth in mission and support activities.
5. Complete and present a comprehensive transportation study and develop/execute a plan that enables mission, optimizes commute times, incentivizes user adoption of mass transit as the preferred option, leverages regional partnerships for off-hill parking/bussing, and supports net-zero goals.
6. Develop and execute a comprehensive facility-based five-year plan for major maintenance to improve the overall reliability and mission readiness of the LANL facility portfolio.
7. Improve and measure critical mission process efficiencies through innovations in process design and implementation, increased use of automation and workflow tools, better training with end users in the loop, consistent with the integrated System of Management Systems (iSoMS) online tool framework for improvement.
8. Develop an IT RoadMap to improve and prioritize IT infrastructure investments and communications tools, including wireless in PF-4, red net capacity in new and existing Laboratory facilities, and other capabilities to ensure modern collaboration tools.
9. Continue to develop the campus master plan (CMP) and the CMP White Board application to fully integrate facility/infrastructure requirements with mission drivers, environmental opportunities and constraints, and security requirements.
10. Deliver operational tools, processes, and management systems that are streamlined to provide effective and efficient mission execution.
11. Deploy innovative and strategic approaches to permitting strategy and implementation to enable mission delivery.



## Force for Good

Be recognized as a force for good by Northern New Mexico communities and trusted by stakeholders to perform missions with minimal operational issues.

### Initiatives

1. Partner proactively with NNSA headquarters and NA-LA to create new opportunities to earn the trust of, and directly engage with, New Mexico leaders and the public on operational competence and contributions to national security and other missions.
2. Define and pursue novel and varied communication channels and technologies to reach employees both onsite and at offsite/remote locations to ensure internal communications are accurate, transparent, timely, responsive, and agile. Reinforce desired Laboratory culture, values, and organizational learning objectives, regardless of physical location of employees.
3. Protect the Laboratory from reputational risks by proactive management of legal, regulatory, environmental, counterintelligence, and financial/audit risks and by promoting integrity throughout our Laboratory culture.
4. Design and implement a regional educational partnership strategy with New Mexico schools, community colleges, and universities to support near-term and decadal institutional workforce capacity needs. Define and explore potential mechanisms to reach more high school and middle school students.
5. Leverage LANL technologies, expertise, and networks to stimulate start-ups, accelerate business growth, and address regional community-led development challenges for a sustainable, secure, and equitable future.
6. Partner with county and state entities in the community to promote infrastructure investments that enable increased capacity at LANL.
7. Direct procurement effort to local vendors where possible and develop a strategy to strengthen and improve pueblo alliance.
8. Optimize investment of philanthropic dollars to address critical socioeconomic needs and to make a lasting, significant impact on the wellbeing of the communities.



## Acronyms & Definitions

**ASC** (Advanced Simulation and Computing). The National Nuclear Security Administration's (NNSA's) collaborative program between Lawrence Livermore, Los Alamos, and Sandia National Laboratories to ensure the safety and reliability of the nation's nuclear weapons stockpile.

**CD-0** (Critical Decision 0). Begins the initiation phase of a project by approving mission need.

**CD-1** (Critical Decision 1). Approves the definition phase of a project and provides authorization for the execution phase to begin.

**CD-2** (Critical Decision 2). Marks the approval of the performance baseline and requires the preliminary design for all projects.

**CD-3** (Critical Decision 3). Authorizes the use of all resources necessary, within budget, to execute a project.

**CD-4** (Critical Decision 4). Approves project completion and initiates transition to operations.

**CINT** (Center for Integrated Nanotechnologies). A Department of Energy nanoscale science research center leveraging the expertise of Los Alamos National Laboratory and Sandia National Laboratories.

**CMRR** (Chemistry and Metallurgy Research Replacement). A project relocating some mission-critical technical capabilities from the current Chemistry and Metallurgy Research building to the Radiological Laboratory/Utility/Office Building (RLUOB).

**CSA** (comprehensive safeguards agreement). An agreement with the IAEA where the IAEA has the right and obligation to ensure that safeguards are applied on all such nuclear material for the exclusive purpose of verifying that such material is not diverted to nuclear weapons or other nuclear explosive devices

**DU** (depleted uranium). Uranium with a lower content of the fissile isotope than natural uranium.

**ECSE** (Enhanced Capability for Subcritical Experiments). A LANL program geared toward understanding how plutonium reacts under extreme pressure from explosive shocks to ensure the safety and reliability of the nation's nuclear deterrent without full-scale underground testing.

**EPCU** (Electrical Power Capacity Upgrade). A project to increase electrical power capacity to meet the peak seasonal power demand for the Lab and Los Alamos County.

**EU** (enriched uranium). Uranium in which the percent composition of uranium-235 (written  $^{235}\text{U}$ ) has been increased through the process of isotope separation.

**GBD-IIIF** (Global Burst Detector IIIF). Payloads on GPS satellites that can monitor the globe and detect nuclear explosions, ensuring compliance with treaties like the Limited Test Ban Treaty.

**HPC** (high performance computing). A practice using supercomputers to solve advanced computational problems. The ability to process data and perform complex calculations at high speeds.

**IAEA** (International Atomic Energy Agency). The IAEA is the international center for cooperation in the nuclear field. The Agency works with its member states and multiple partners worldwide to promote the safe, secure, and peaceful use of nuclear technologies.

**LAMP** (LANSCE Modernization Project). A critical upgrade to LANSCE to ensure the facility's readiness and reliability.

**LAP4** (Los Alamos Plutonium Pit Production Project). An NNSA directive to produce 30 plutonium pits per year by 2026.

**LLW** (low-level waste). Items that have been contaminated with radioactive material or have become radioactive through exposure to neutron radiation.

**NASA/RPS** (National Aeronautics and Space Administration Radioisotope Power Systems). A type of nuclear energy technology used by NASA that uses heat produced by the natural radioactive decay of plutonium-238 to produce the electrical power for operating spacecraft systems.

**PEI2** (PF-4 Equipment Installation-Phase 2). A subproject to upgrade operations at the Plutonium Facility.

**pRad** (proton radiography). The use of protons from the LANSCE accelerator facility to diagnose dynamic experiments.

**RACR** (Radiography/Assembly Complex Replacement). A project to consolidate and modernize existing radiography operations and assembly complex operations near major experimental facilities.

**TLW** (transuranic liquid waste). Liquid waste that contains manmade elements heavier than uranium.

**USNDS** (United States Nuclear Detonation Detection System). A national system to detect, locate, and report nuclear detonations in the Earth's atmosphere, near space, or deep space in real time.

**WCRR** (Waste Characterization, Reduction, and Repackaging). A facility supporting the packaging and staging of low-level waste, mixed low-level waste, and hazardous waste in PF-4.



# Behaviors

There are five behaviors that support the Lab's values, and that are used to evaluate employee performance. These behaviors, which shape how we work, include:

## Collaborative Problem Solving

Exhibits initiative and willingness to work with others and be inclusive with people inside and outside their organization; is open minded to find appropriate solutions to facilitate the accomplishment of Laboratory work goals.

## Continuous Learning

Proactively develops, adapts, and transforms oneself and shares lessons with others. Applies feedback and lessons learned in response to changing mission, business needs, processes and work responsibilities. Assesses risk to ensure it is addressed appropriately.

## Shared Outcome

Demonstrates a shared purpose within the Laboratory. Respects others and maintains a positive/responsive attitude to accomplish work in an ethical, efficient, and cost-effective manner. Encourages and supports security and safety for ourselves and each other.

## Trustworthy

Interacts with others in a way that gives them confidence in one's intentions and those of the organization; communicates openly, honestly, and with integrity with colleagues and customers; follows through on initiatives.

## Commitment

Stays motivated, focused, and dedicated to a position or plan of action.



Los Alamos National Laboratory, an affirmative action/equal opportunity employer, is operated by Triad National Security, LLC for the National Nuclear Security Administration of U.S. Department of Energy under contract 89233218CNA000001. By approving this article, the publisher recognizes that the U.S. Government retains nonexclusive, royalty-free license to publish or reproduce the published form of this contribution, or to allow others to do so, for U.S. Government purposes. Los Alamos National Laboratory requests that the publisher identify this article as work performed under the auspices of the U.S. Department of Energy. Los Alamos National Laboratory strongly supports academic freedom and a researcher's right to publish; as an institution, however, the Laboratory does not endorse the viewpoint of a publication or guarantee its technical correctness.