



Exceptional service in the national interest



S A N D I A   N A T I O N A L   L A B O R A T O R I E S

# An Overview

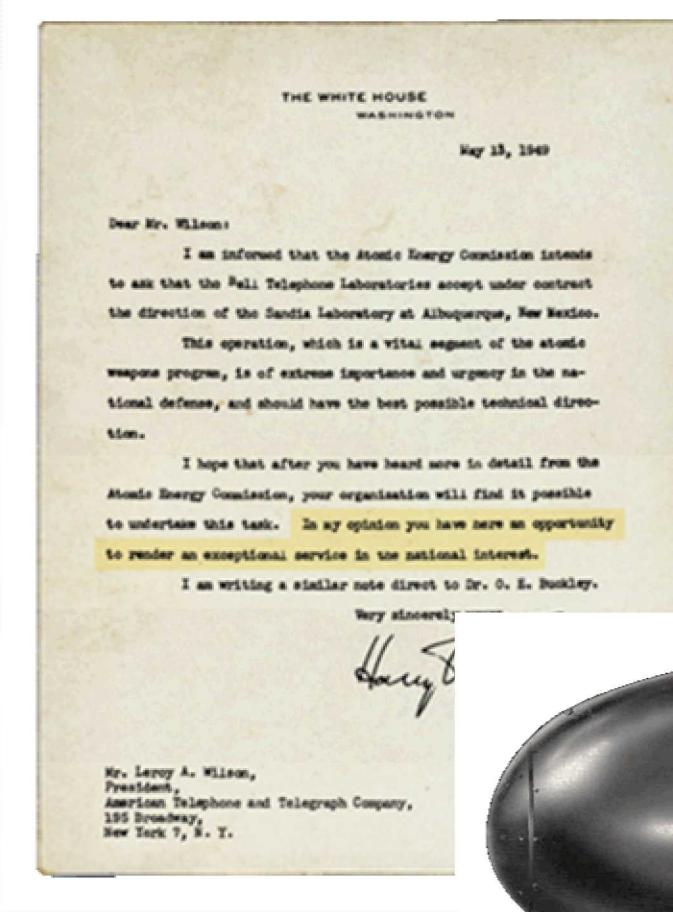
Jaime Moya, Director for Environment, Safety & Health  
New Mexico State University Campus Executive  
October 18, 2018

Sandia National Laboratories is a multimission laboratory managed and operated by National Technology and 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.  
SAND 2018-XXXX PE

# Sandia's history is traced to the Manhattan Project

*...In my opinion you have here an opportunity to render an exceptional service in the national interest.*

- July 1945  
Los Alamos creates Z Division
- Nonnuclear component engineering
- November 1, 1949  
Sandia Laboratory established
- AT&T: 1949–1993
- Martin Marietta: 1993–1995
- Lockheed Martin: 1995–2017
- Honeywell: 2017–present



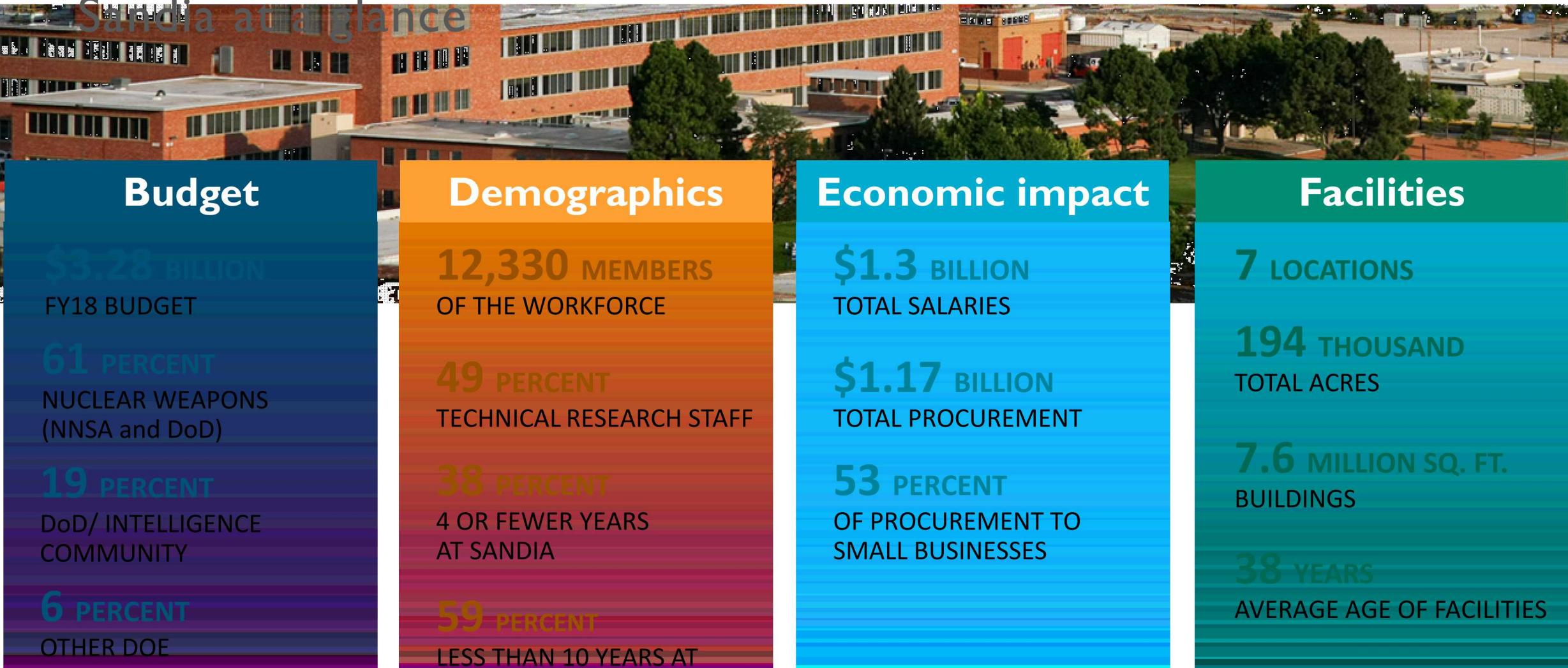
Sandia is a federally funded research and development center managed and operated by

National Technology & Engineering Solutions of Sandia, LLC, a wholly owned subsidiary of Honeywell International Inc.: 2017 – present

Government owned, contractor operated



# Sandia at a glance



## Budget

**\$3.28 BILLION**  
FY18 BUDGET

**61 PERCENT**  
NUCLEAR WEAPONS  
(NNSA and DoD)

**19 PERCENT**  
DoD/ INTELLIGENCE  
COMMUNITY

**6 PERCENT**  
OTHER DOE

**14 PERCENT**  
OTHER PROGRAMS

## Demographics

**12,330 MEMBERS**  
OF THE WORKFORCE

**49 PERCENT**  
TECHNICAL RESEARCH STAFF

**38 PERCENT**  
4 OR FEWER YEARS  
AT SANDIA

**59 PERCENT**  
LESS THAN 10 YEARS AT  
SANDIA

## Economic impact

**\$1.3 BILLION**  
TOTAL SALARIES

**\$1.17 BILLION**  
TOTAL PROCUREMENT

**53 PERCENT**  
OF PROCUREMENT TO  
SMALL BUSINESSES

## Facilities

**7 LOCATIONS**

**194 THOUSAND**  
TOTAL ACRES

**7.6 MILLION SQ. FT.**  
BUILDINGS

**38 YEARS**  
AVERAGE AGE OF FACILITIES

Sandia has facilities across the nation



## Main sites

- Albuquerque, New Mexico
- Livermore, California

## Activity locations

- Kauai, Hawaii
- Waste Isolation Pilot Plant, Carlsbad, NM
- Pantex Plant, Amarillo, Texas
- Tonopah, Nevada
- Barrow, Alaska





Our purpose statement  
defines what we do

Sandia develops  
advanced technologies  
to ensure global peace

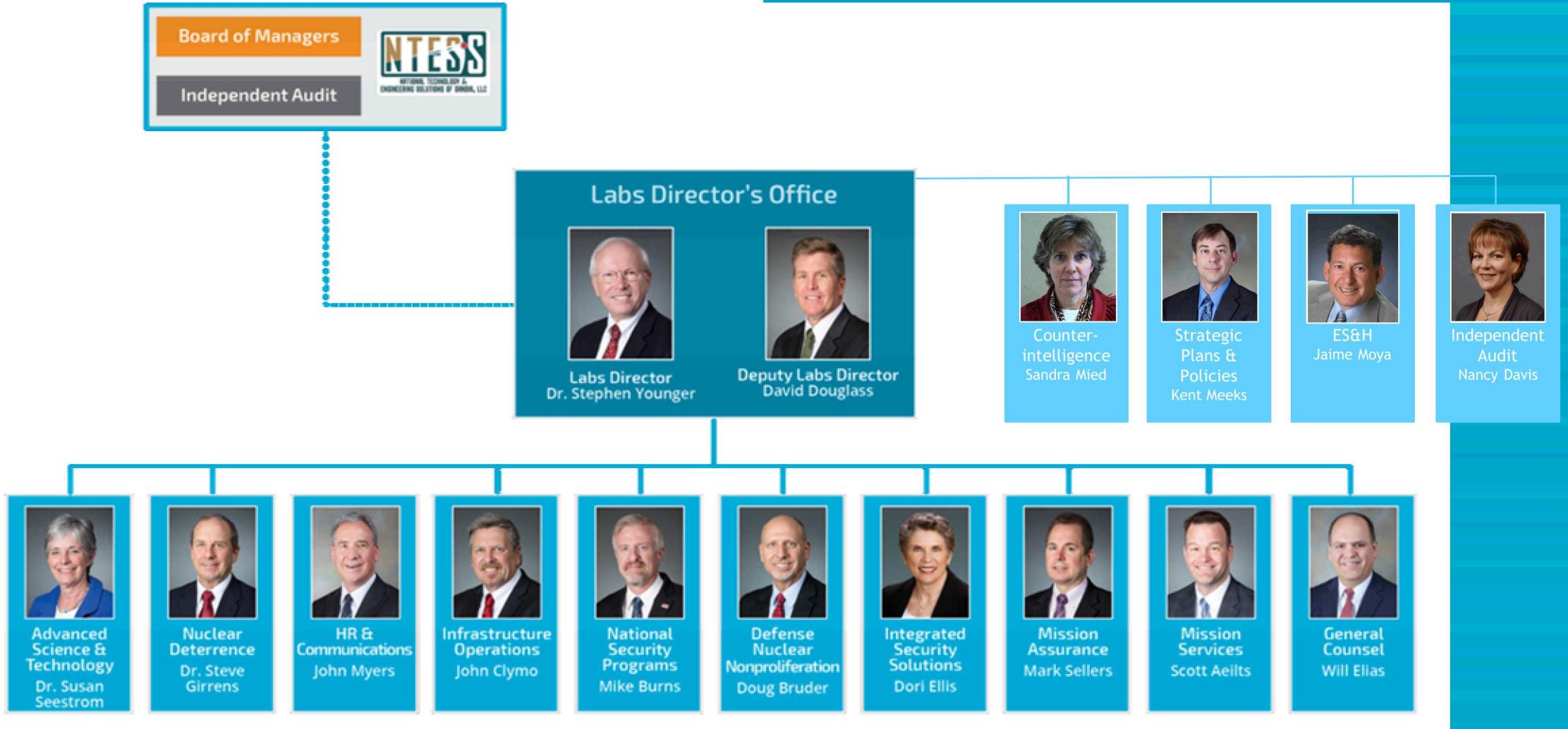
# Our priorities create a vision for the future



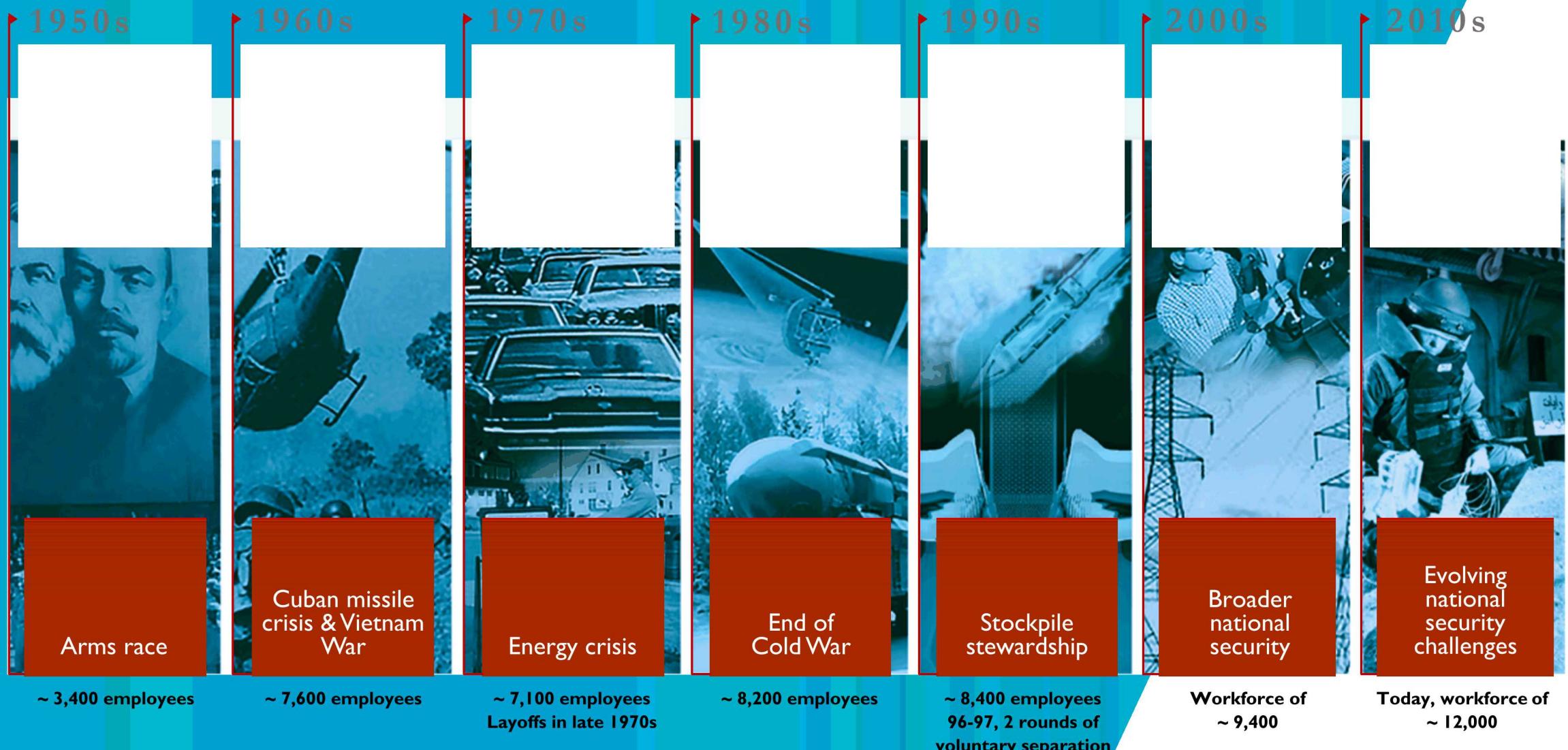
- Deliver quality engineering, science, and technology in the most efficient way possible
- Safety and security are top of mind
- Collaboration is vital – inside and outside the Labs
- Sustain a diverse and inclusive Laboratories culture
- Think strategically: What might the world look like in 20 to 30 years?



# The leadership team brings experience and expertise



# Sandia has evolved over seven decades



# Sandia has five major program portfolio





# Nuclear Deterrence

## Is our primary mission

### Maintain the current U.S. nuclear weapons stockpile

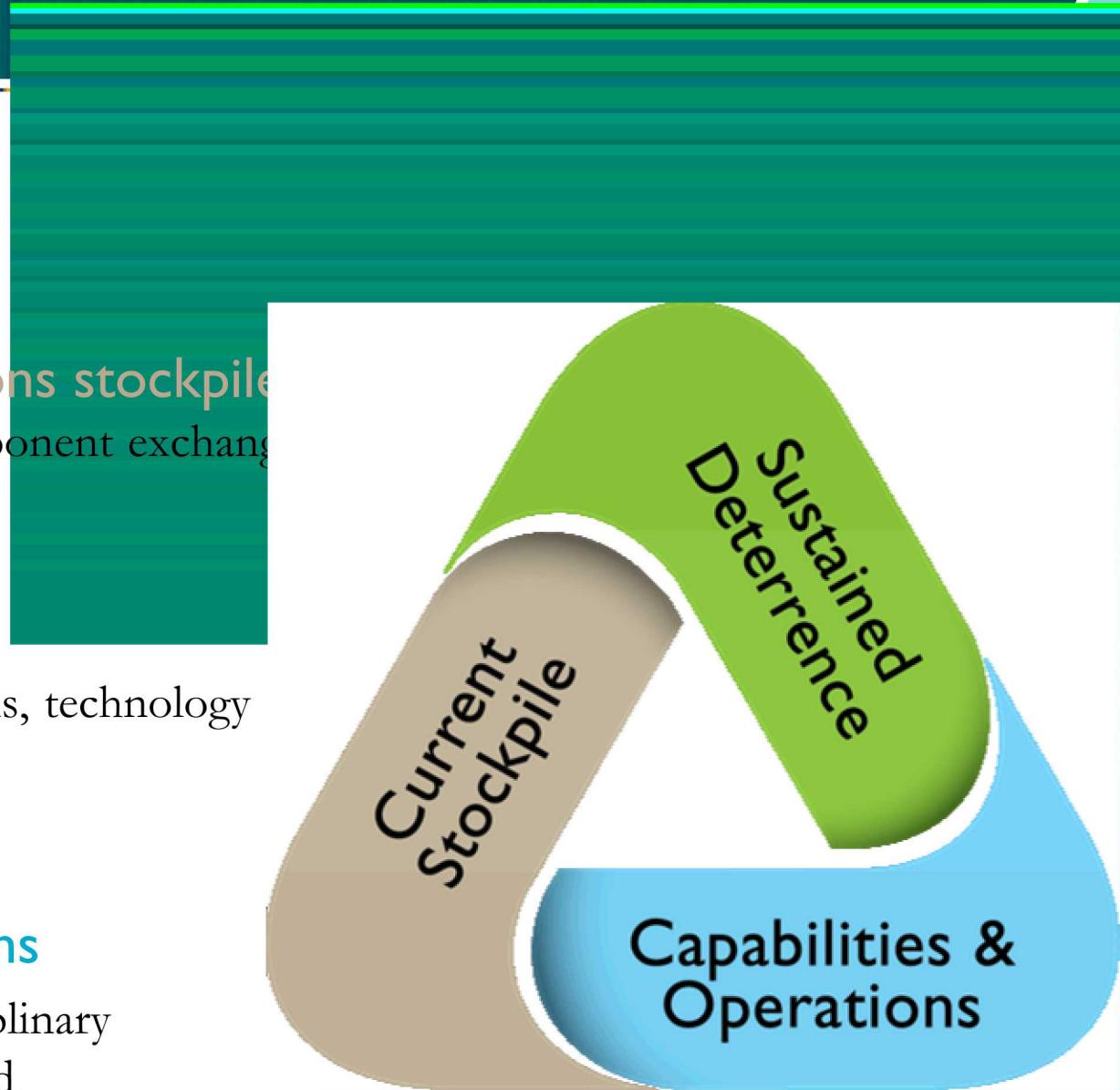
Annual Assessment, surveillance, limited life component exchange, significant finding investigations

### Sustain the stockpile into the future

Life Extension Programs, alterations, modifications, technology maturation, advanced & exploratory work

### Steward the long-term vitality of our capabilities, infrastructure, and operations

Persistent commitment to world-class, multi-disciplinary staff, state-of-the-art labs, equipment, facilities, and safe/secure/quality/affordable operations





# Defense Nuclear Nonproliferation

Protects the U.S. from threats

Develop space- and ground-based sensor systems for monitoring emerging threats

Supply technology, crisis response, and training to respond to a crisis associated with weapons of mass destruction

Provide capabilities for protecting U.S. nuclear weapons and materials at fixed sites and in transit

Produce systems that deter proliferation and verify compliance with international agreements using space-borne and ground-based sensing technology

Lead global technical engagement to prevent the misuse of nuclear, chemical, biological, and radiological materials



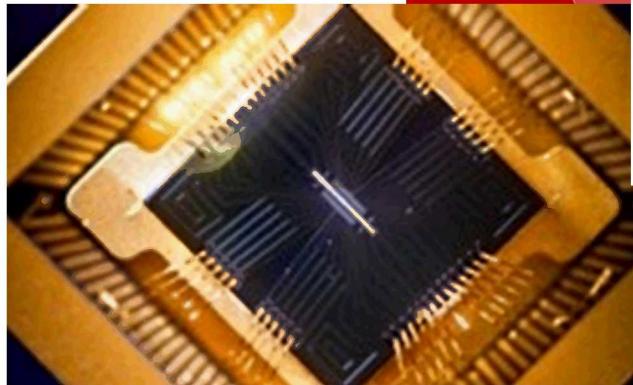


# National Security Programs

## Strengthens our nation's defenders



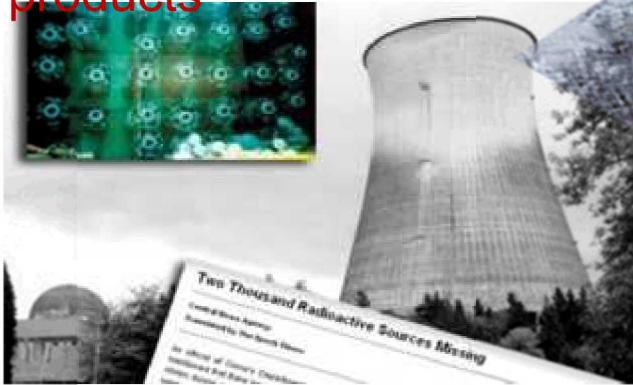
Information operations



Science & technology products

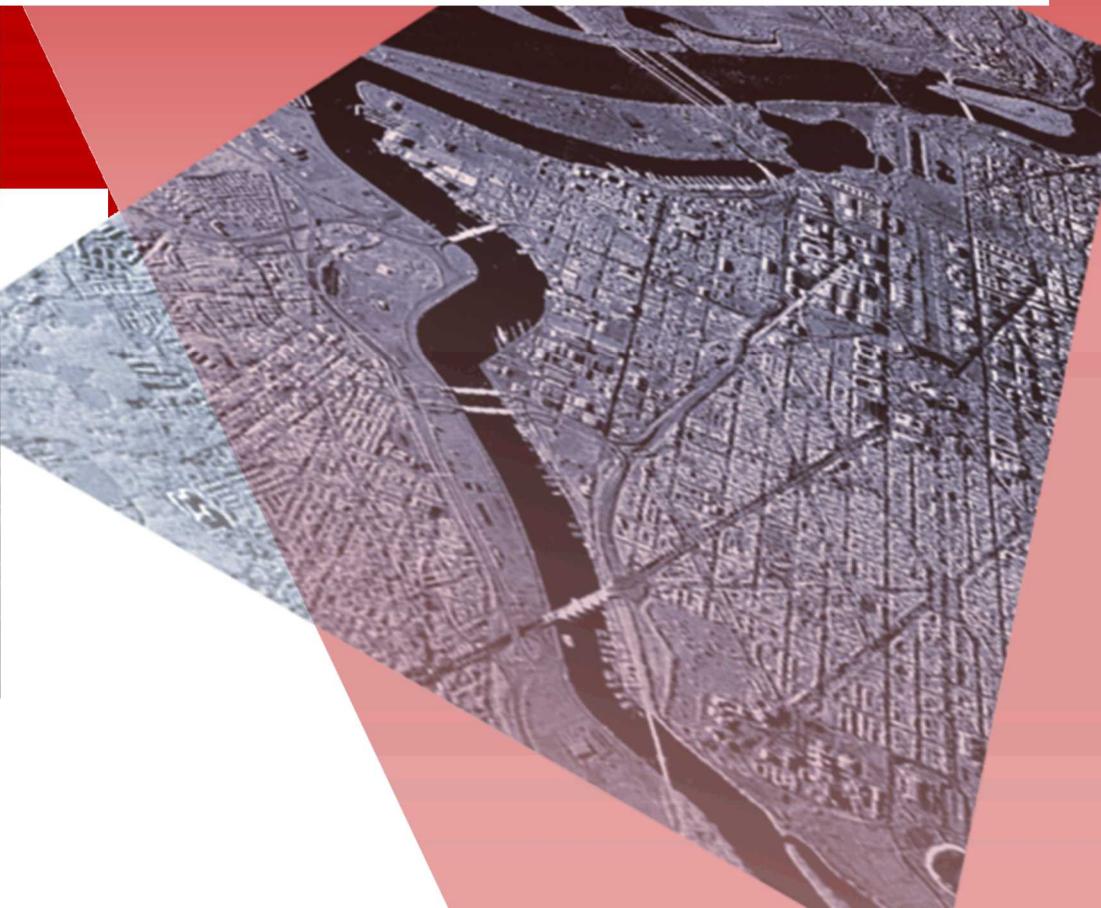


Integrated military systems



Proliferation assessment

Surveillance & reconnaissance





# Energy & Homeland Security

Innovates for a secure future

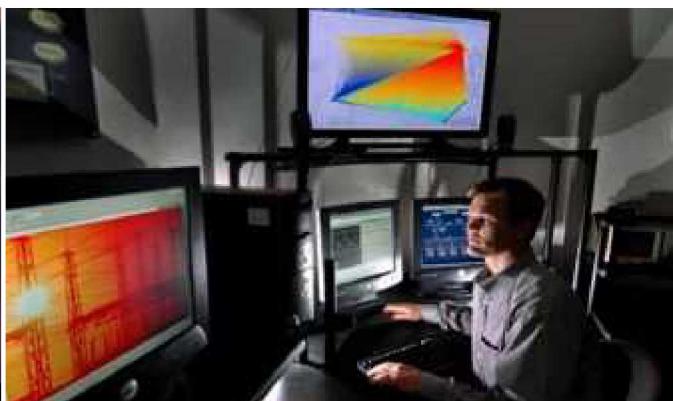


- Perform fundamental and applied R&D to support the resilience and security of the nation's energy system

Provide protection for our nation's digital and physical critical infrastructures

Reduce U.S. vulnerability to chemical, biological, radiological, and nuclear threats

Accelerate transformative innovations in the transportation sector through foundational physical and computational research





# Advanced Science & Technology

## Research & Development



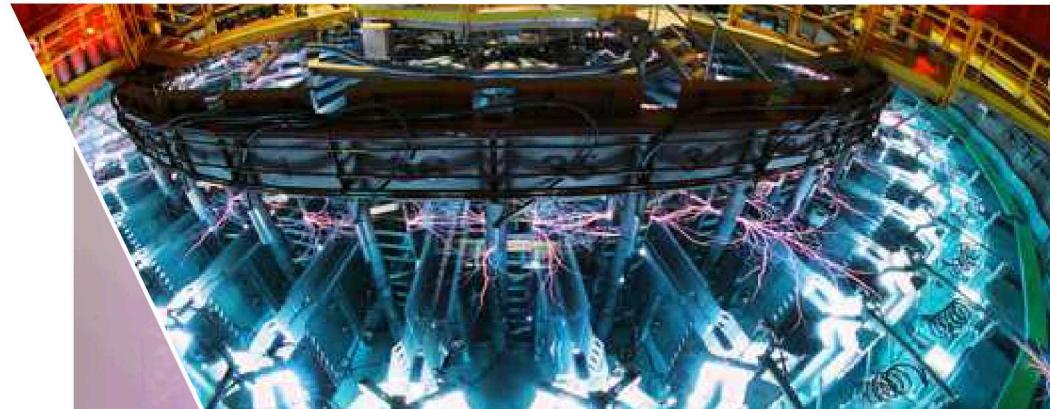
Nanodevices &  
Microsystems



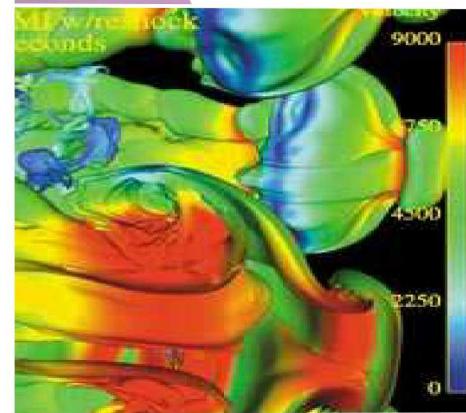
Computing & Information



Integral role in mission delivery



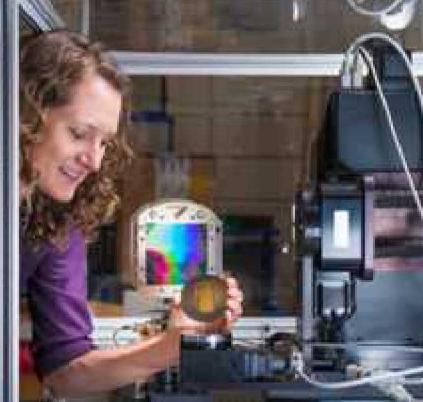
Radiation Effects & High Energy Density  
Science



Engineering Science



Geoscience

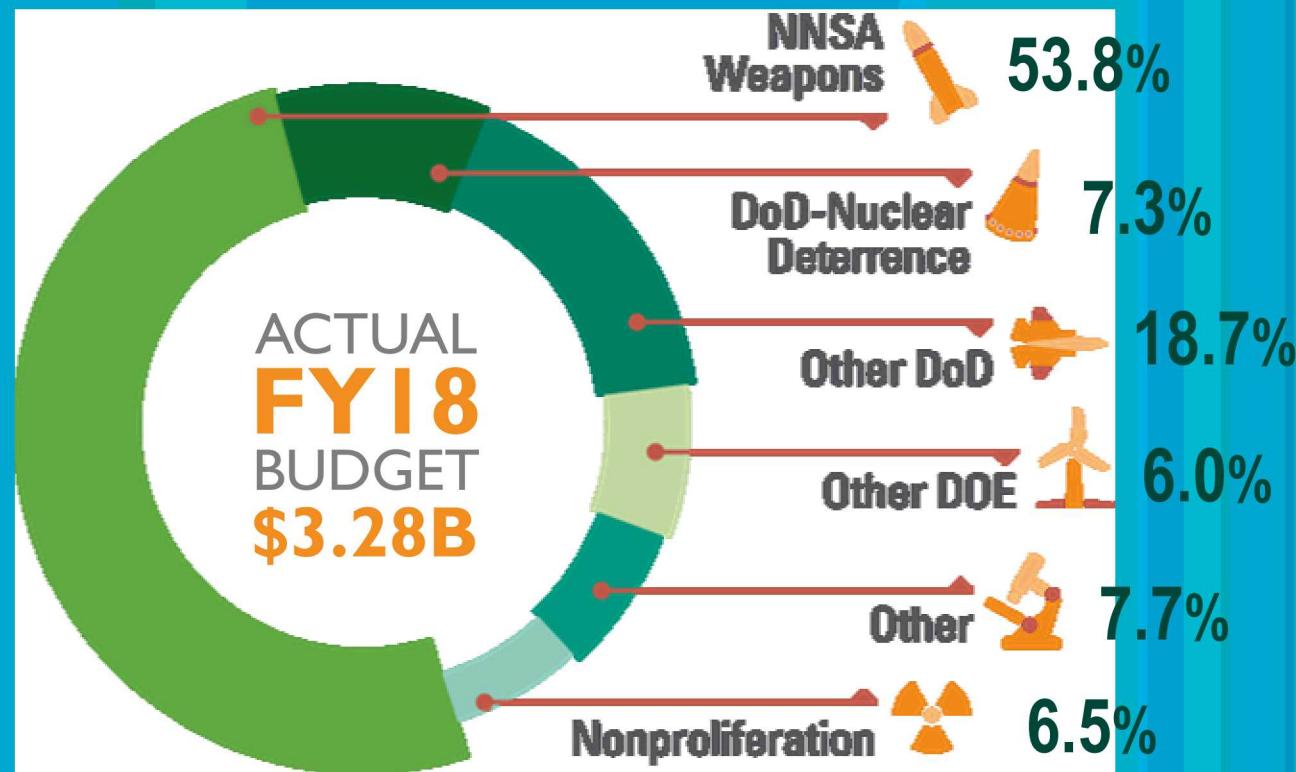


Materials  
Science



Bioscienc  
e

# Sandia's budget covers a broad range of government and other work



## OTHER

Department of Homeland Security  
Other federal agencies | Nonfederal entities  
CRADAs, licenses, royalties | Inter-entity work



## DoD

Air Force | Army | Navy  
Defense Threat Reduction Agency  
Ballistic Missile Defense Organization  
Office of the Secretary of Defense  
Defense Advanced Research Projects Agency  
Intelligence Community



## OTHER DOE

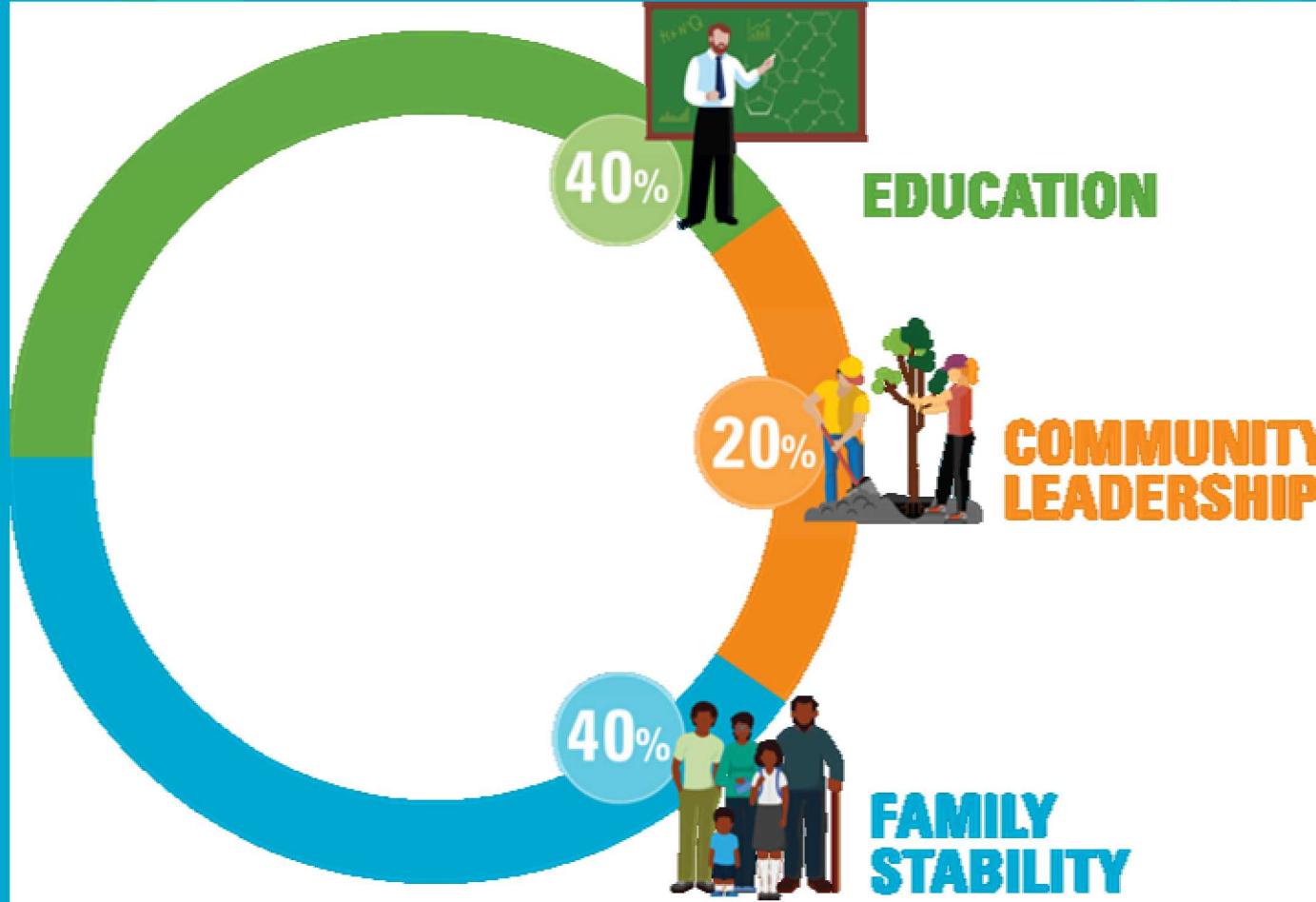
Science  
Energy Efficiency and Renewable Energy  
Nuclear Energy  
Environmental Management  
Electricity Delivery and Energy Reliability  
Other DOE



## NONPROLIFERATION

NNSA/NA20 | State Department

Our community commitment plan averages \$1.4 million



### Educational success

Inspiring students to graduate prepared to create their future

### Community leadership/Economic development

Supporting initiatives that promote economic and community development

### Family stability

Helping families provide a more stable home environment for children

# Diversity and inclusion are strategic advantages to Sandia

Our leadership is dedicated to attracting, hiring, and retaining a diverse workforce, and building an inclusive environment

We strive to increase the pool of diverse candidates

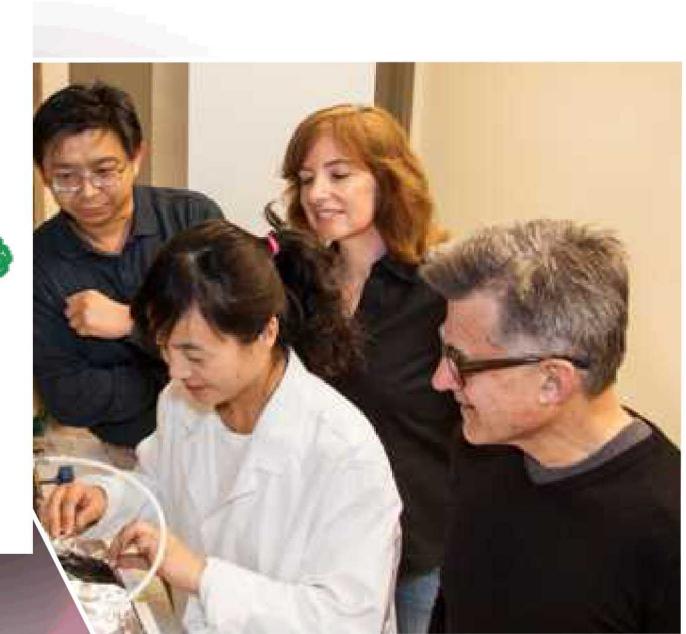
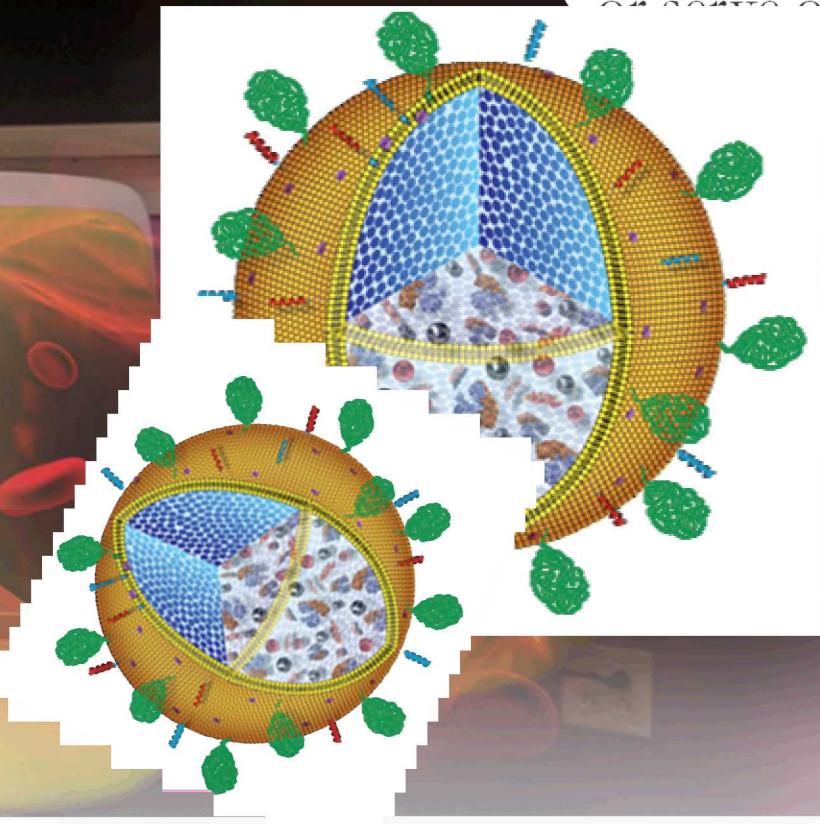
- Close collaboration with hiring
- Partnership with Sandia's Affirm Action Employee Resource Group to recruit, mentor, and support career development
- Expanded diversity outreach activities at targeted schools



# New Mexico State University is one of 16 Sandia Campus Executive Universities

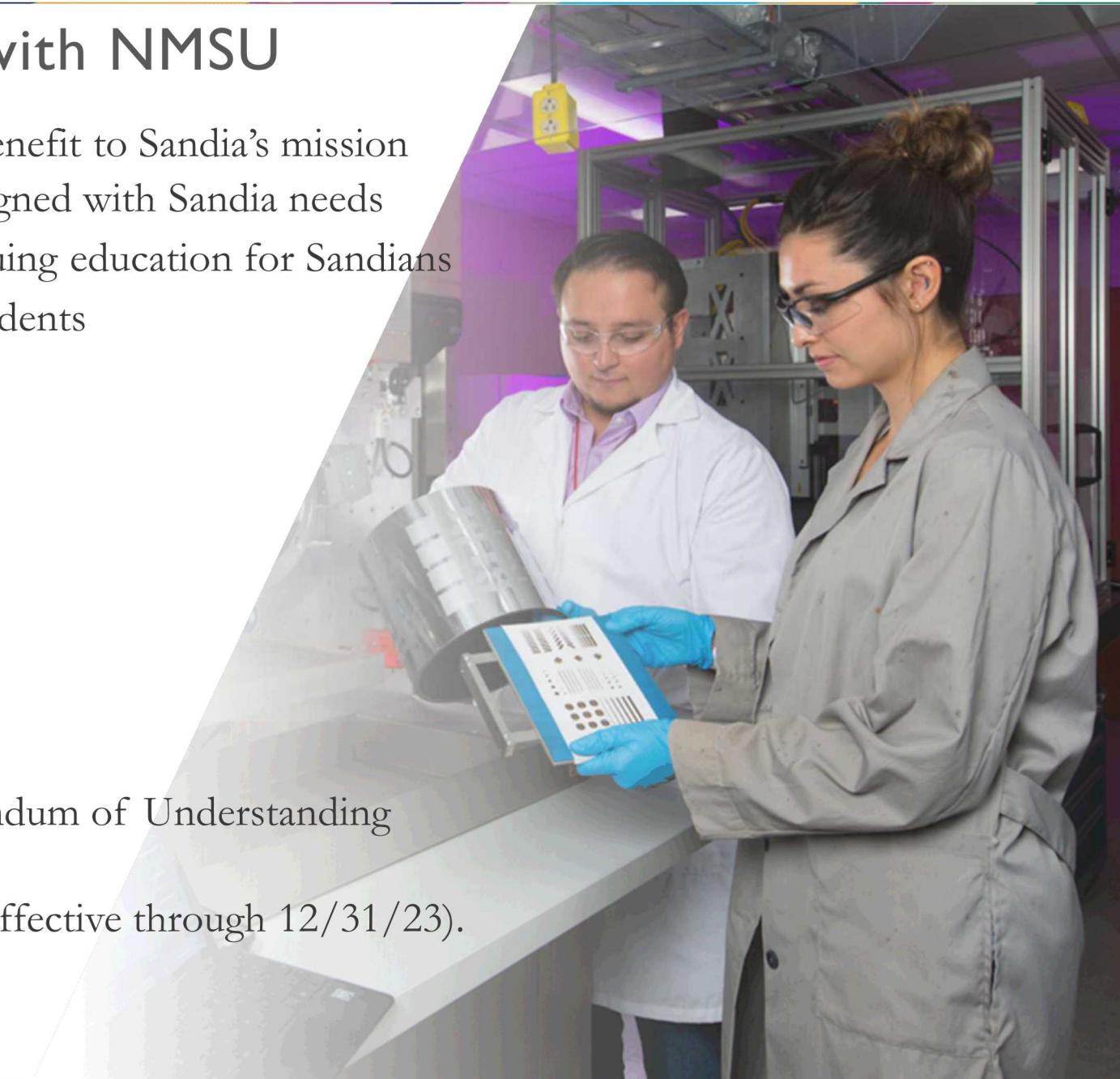


- More than 700 NMSU alumni are part of the Sandia workforce.
- Sandia hires about 15 NMSU alumni as staff and 15 student interns every year.
- 15 Sandians serve as affiliated faculty or committee members on advisory boards at NMSU.

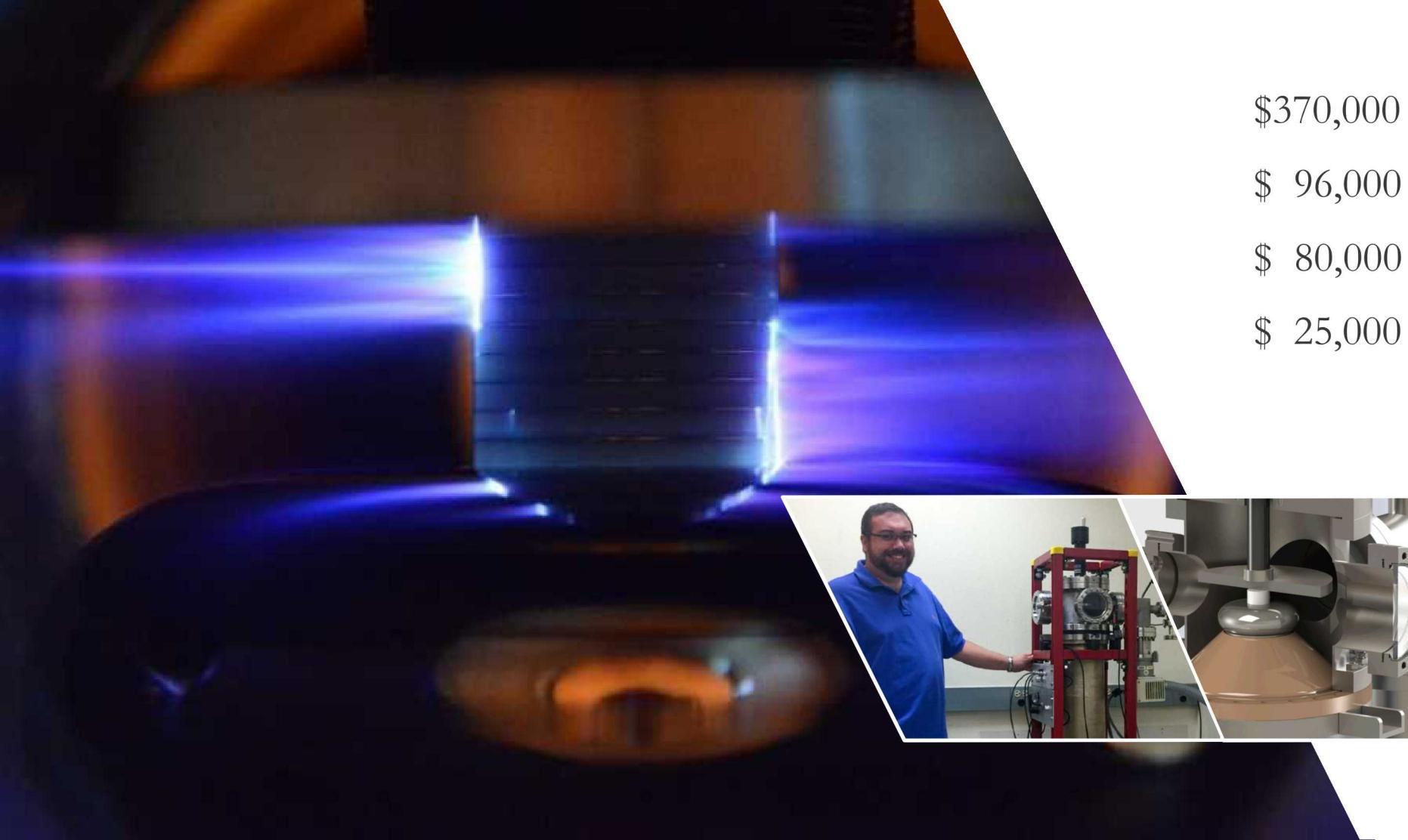


# Sandia's engagement strategy with NMSU

- High-level goal: leverage our relationship to benefit to Sandia's mission
  - Support NMSU in strengthening areas aligned with Sandia needs
  - Provide focused opportunities for continuing education for Sandians
  - Provide real-world work situations for students
- Collaborative research focus areas
  - Power systems
  - Water quality/purification
  - Signal processing
- Institutional Agreements
  - Overarching Campus Executive Memorandum of Understanding 13-S-636 (effective through 5/7/18).
  - Contract Purchase Agreement 1875431 (effective through 12/31/23).



## Sandia invested about \$0.5 million in FY18 in LDRD and direct projects at NMSU

A large, abstract image of a plasma simulation dominates the left side of the slide. It features a central vertical column of blue and white light, with surrounding orange and yellow plasma filaments. In the bottom right corner of this image, there is a smaller, separate photograph. This inset shows a man with a beard and glasses, wearing a blue polo shirt, standing next to a red industrial machine with various pipes and valves. To the right of the inset, there is a close-up photograph of a large, metallic cylindrical component, possibly a vacuum chamber or a part of a plasma simulation setup.

- \$370,000 from LDRD
- \$ 96,000 from direct projects
- \$ 80,000 from NMSBA
- \$ 25,000 from community outreach

## Next Steps

- Jointly evaluate the existing research focus areas: prioritize, leverage NMSU's and Sandia's institutional strategic planning
- Leverage the NM research community: Schools (NMSU, UNM, NMT) and laboratories (SNL, LANL, AFRL)
- Leverage human capital: adjunct and research professor roles, and student engagement beyond the Sandia intern program
- Leverage broader university partnerships: undergraduate semester/year university exchanges, graduate school agreements (bilateral), joint research proposals, events
- Update institutional agreements (MOU, NDA)





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