

Sandia
National
Laboratories

onal service in the national interest



SANDIA NATIONAL LABORATORIES

Dr. Stephen Younger, Laboratories Director
November 30, 2018



Sandia National Laboratories
managed and operated
Engineering Solutions
subsidiary of Honeywell
Department of Energy
Administration



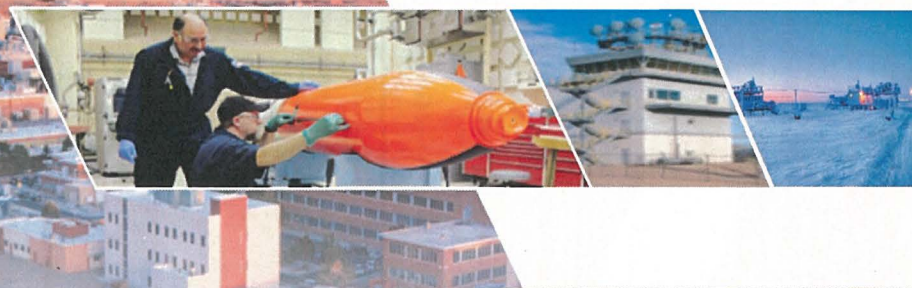
Sandia has facilities across the nation

Activity locations


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

Main sites

- Albuquerque, New Mexico
- Livermore, California



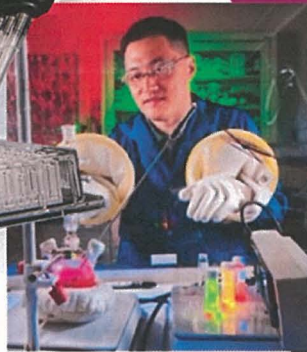
our purpose statement ...



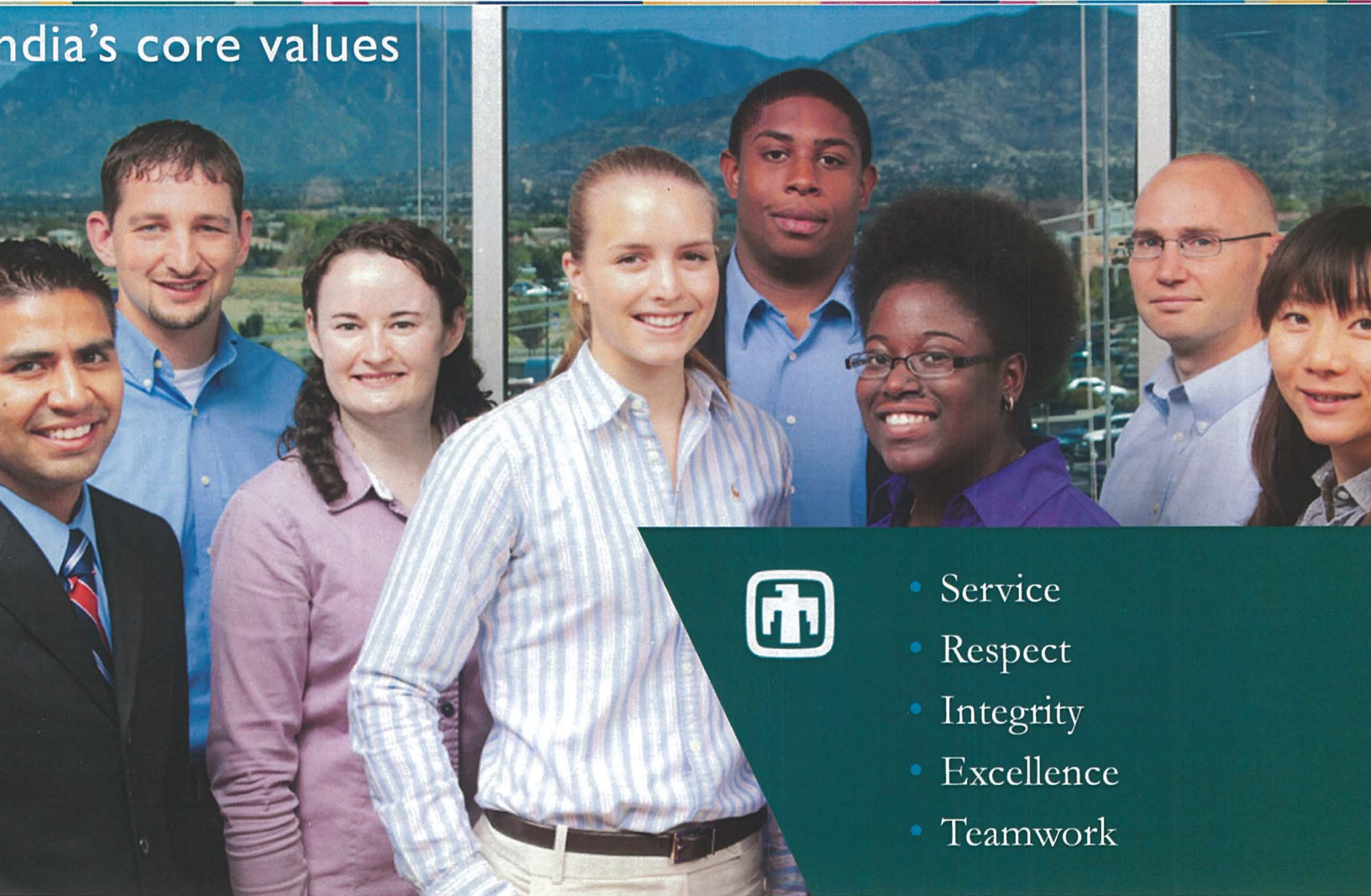
Sandia develops
advanced technologies
to ensure global peace

Our priorities create a vision for the future

- Deliver **quality engineering, science, 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?



India's core values



- Service
- Respect
- Integrity
- Excellence
- Teamwork

The Laboratories have evolved to meet national challenges

1950s	1960s	1970s	1980s	1990s	2000s	2010s
NUCLEAR WEAPONS ENGINEERING AND TESTING	NW STOCKPILE DIVERSITY AND BUILD-UP	NW + ENERGY: MULTIPROGRAM LABORATORY	DOE MULTIPROGRAM + MISSILE DEFENSE AND OTHER DoD WORK	DOE MULTIPROGRAM + DoD, ECONOMIC COMPETITIVENESS	EXPANDED NATIONAL SECURITY ROLE POST 9/11	MULTIMISSION LAB: LEPs CYBER, BIO, SPACE, TERRORISM
Arms race	Cuban missile crisis & Vietnam War	Energy crisis	End of Cold War	Stockpile stewardship	Broader national security	Evolving national security challenges

Sandia is a multimission national security laboratory with five major program portfolios



Sandia received five R&D 100 Awards in 2018

Detergent-Assisted Fabrication of Multifunction Nanomaterials, a process that allows the synthesis of new nanomaterials with carefully controlled physical and chemical properties

LAMMPS: Atomistic Simulation of Materials, a molecular dynamics simulation code

Large Field-of-View Bench Top 3-D X-Ray Phase Contrast Imaging System, enables new levels of nondestructive inspection and defect detection

Power API, a standardized interface for power measurement and control for all types of computing systems. In addition to the award, received a special recognition for corporate responsibility.

SWiCK Zoom, a true optical zoom method that requires low power and no macroscopic parts to achieve millisecond-timescale changes to optical resolution and field of view





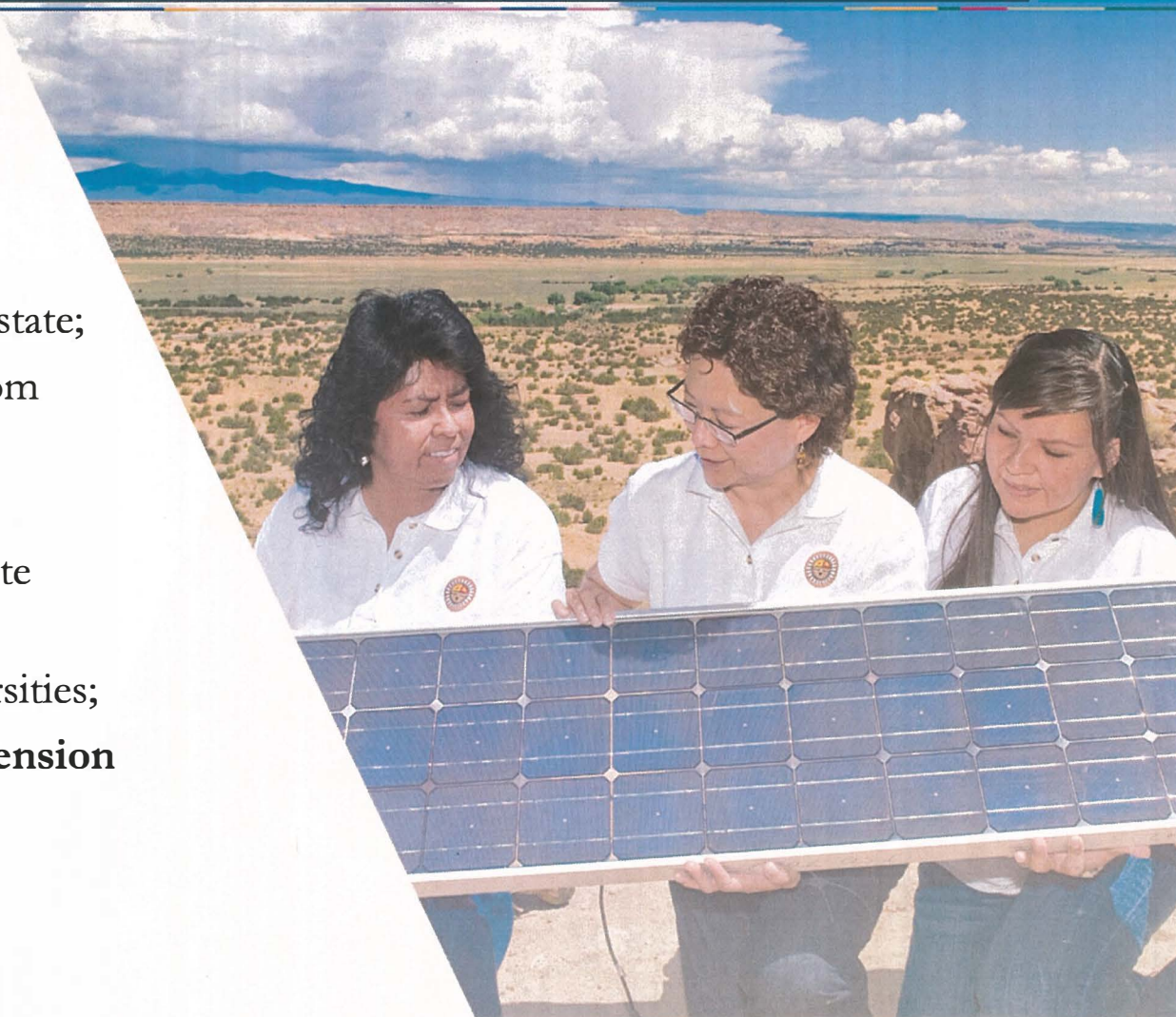
Our cybersecurity leadership drives electric grid resilience

- Evaluating and mitigating cyber **threats** to national security
- Defining and measuring **resilience**
- Developing **new technologies** and cyber-resilient systems
- Partnering with **key organizations** to assure impact

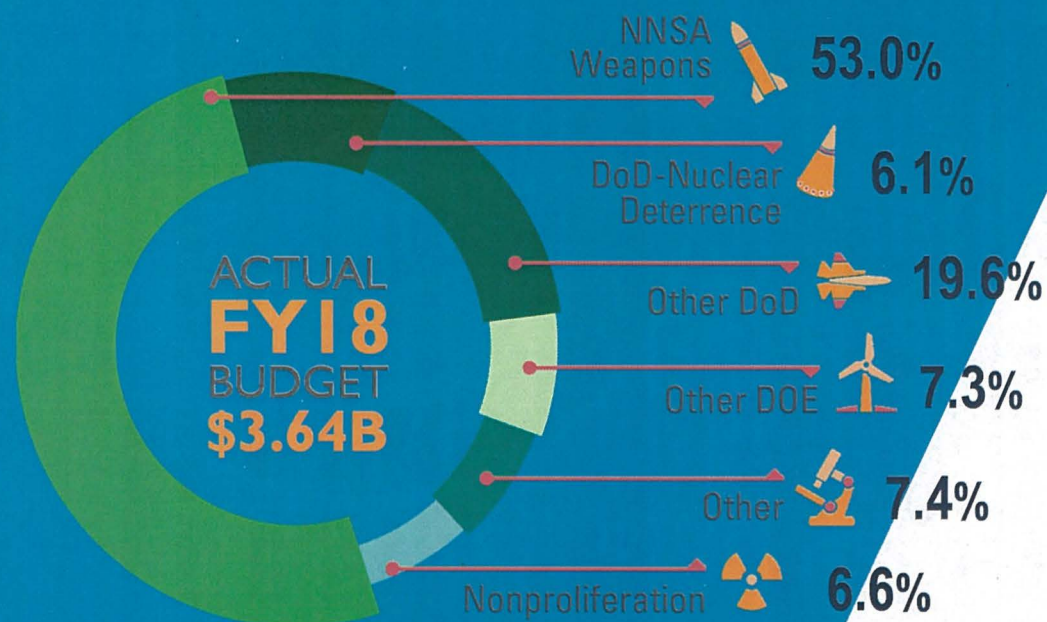


Sandia helps the New Mexico economy in significant ways

- We **attract professionals** to the state;
- **procure goods and services** from New Mexico sources;
- **help small businesses** succeed;
- **transfer technology** to the private sector;
- **partner** with New Mexico universities;
- have considerable **payroll and pension** distributions



Our activities encompass the full spectrum of national security challenges



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

In FY18 the Labs' spending topped \$3 billion



 **\$1,858,356,000**



SUBCONTRACT-RELATED PAYMENTS + PROCUREMENT CARD
PURCHASES = TOTAL PROCUREMENT IMPACT
 $\$1,092,155,000 + \$85,688,000 = \mathbf{\$1,177,843,000}$

└ SMALL BUSINESS SUBCONTRACT-RELATED PAYMENTS
\$580,998,000

└ NEW MEXICO SUBCONTRACT-RELATED PAYMENTS +
PROCUREMENT CARD PURCHASES = TOTAL NM IMPACT
 $\$404,903,000 + \$15,513,000 = \mathbf{\$420,416,000}$

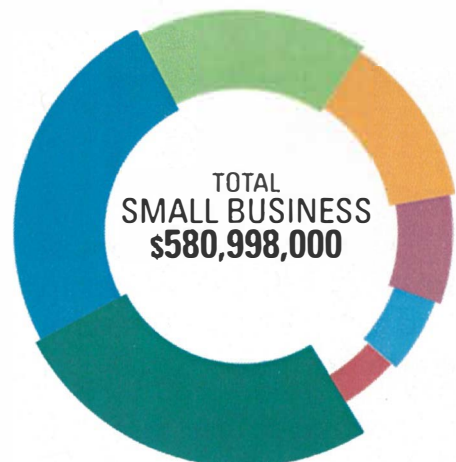
└ NEW MEXICO SMALL BUSINESS SUBCONTRACT-RELATED
PAYMENTS **\$267,425,000**



GROSS RECEIPTS, SALES/USE, AND CORPORATE TAXES
\$88,072,000

└ NEW MEXICO GROSS RECEIPTS AND CORPORATE TAXES
\$83,675,000

Small business contracting is a priority



DISADVANTAGED	\$151,638,000
OTHER*	\$145,889,000
<small>* Non-minority, non-woman, non-HUBZone, non-veteran owned</small>	
WOMAN OWNED	\$98,237,000
VETERAN OWNED	\$74,101,000
SERVICE-DISABLED VETERAN OWNED	\$48,721,000
HUBZone	\$36,497,000
8(a)	\$25,915,000



DISADVANTAGED	\$69,992,000
WOMAN OWNED	\$66,334,000
OTHER*	\$49,685,000
<small>* Non-minority, non-woman, non-HUBZone, non-veteran owned</small>	
VETERAN OWNED	\$30,963,000
HUBZone	\$22,510,000
8(a)	\$14,400,000
SERVICE-DISABLED VETERAN OWNED	\$13,541,000

66% OF ALL SANDIA SUPPLIERS ARE SMALL BUSINESSES

>510 NEW SMALL-BUSINESS SUPPLIERS ADDED TO SANDIA'S SUPPLIER BASE

NEW MEXICO SMALL BUSINESS SUBCONTRACTING PAYMENTS ARE:

46% OF TOTAL SMALL-BUSINESS SUBCONTRACTING PAYMENTS

66% OF TOTAL NEW MEXICO SUBCONTRACTING PAYMENTS

Sandia programs promote small-business success

The Labs are committed to **60% of total contracting dollars** going to small companies within five years

A **Small Business Steering Committee** was established to source, evaluate, and strategically plan small-business opportunities within major Sandia areas and programs. Small-business division goals were established to increase awareness.

A **5% NM small-business pricing preference** is offered on competitive procurements. All New Mexico small businesses are eligible for the preference.

Sandia offers **Supplier Open Houses** and other programs to prepare small companies to do business with the Labs

- Sandia hosted over 645 suppliers in FY18;
- hosted and scheduled Technical Open Houses in the fields of IT, manufacturing, and construction;
- partnered with DOE's Office of Small and Disadvantaged Business Utilization for HUBZone Open House

An Arm-based supercomputer was deployed at Sandia in **partnership with Westwind Computer Products Inc.**, a New Mexico woman-owned and HUBZone small-business supplier



Technology-based economic development helps New Mexico companies start up and grow

New Mexico Small Business Assistance (NMSBA)

6,858 new jobs created and retained; all **33** New Mexico counties supported
\$57.9M in technical assistance to **2,797** New Mexico small businesses
 2017: **\$2.4M** in assistance provided by Sandia alone, **188** small businesses in **21** counties



Sandia Science & Technology Park (SSTP)

47 companies and organizations employing **2,059** people
\$384.8M of investment
\$98K average annual salary, **\$5.4B** wages and salaries generated
 2018: **3** new companies



Entrepreneurial Separation to Transfer Technology (ESTT)

162 Sandia entrepreneurs have left the Labs
113 companies started or expanded
 2018: **5** entrepreneurs left to start **4** companies and expand **1** company



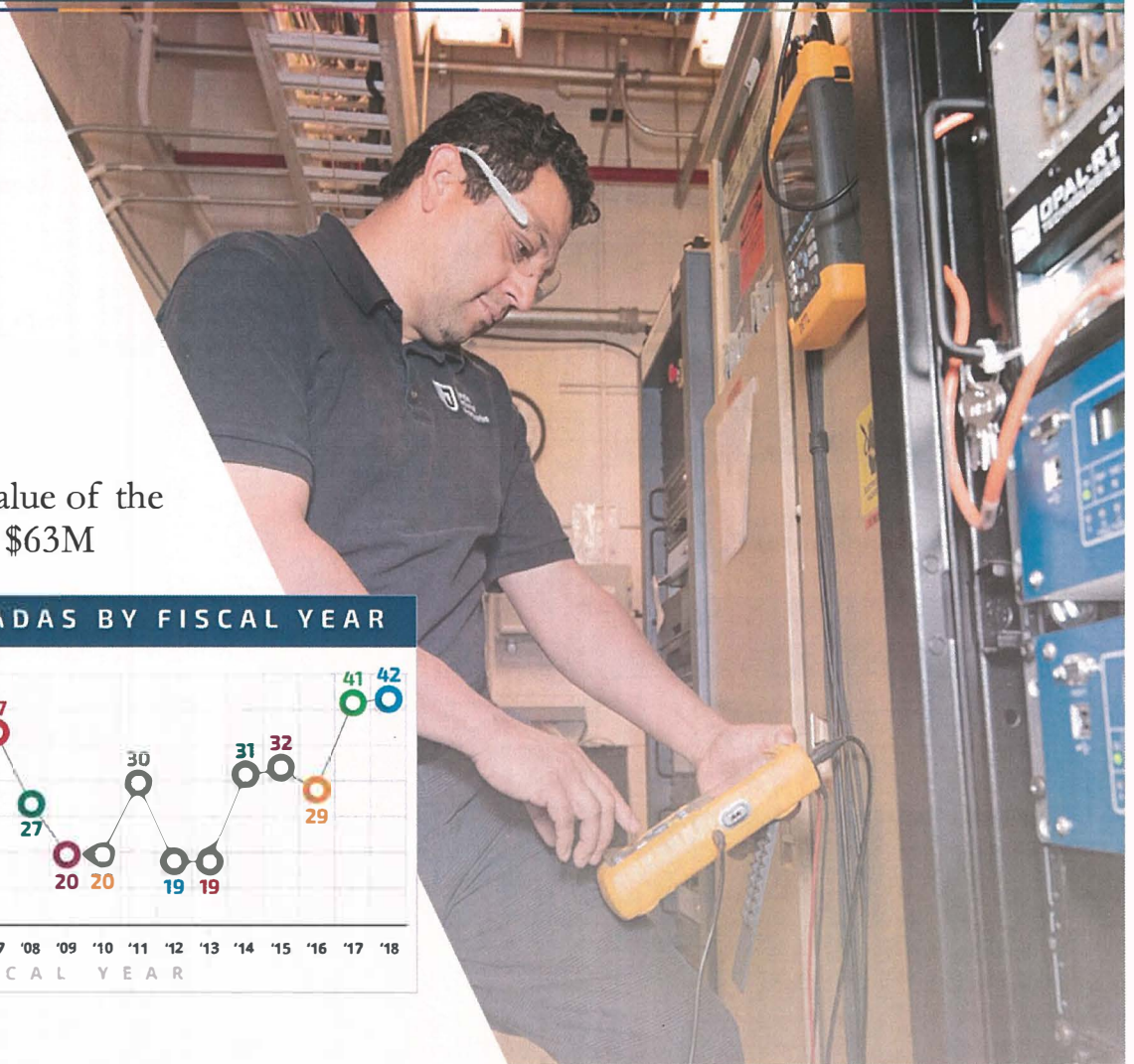
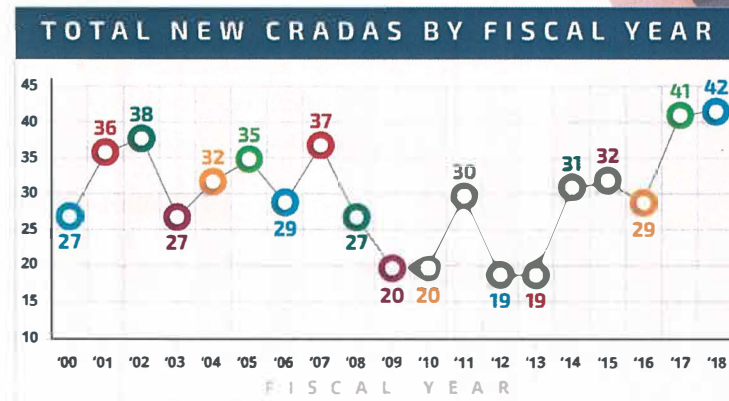
Center for Collaboration and Commercialization (C3)/Entrepreneur Exploration (EEx)

68 entrepreneur events, **3,319** participants including both Sandians and community members
 C3 location at the University of New Mexico Lobo Rainforest building fosters collaboration with UNM
 2018: EEx had **22** entrepreneur events with **1,256** participants

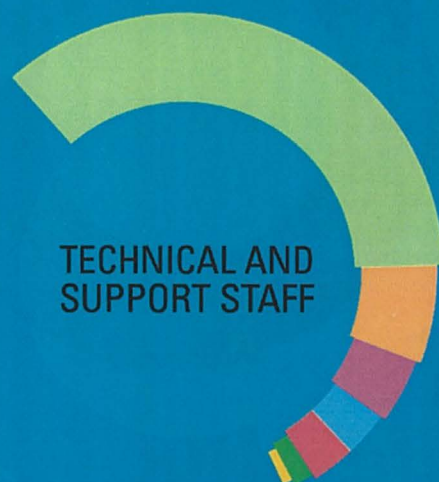


Sandia signed 42 Cooperative Research and Development Agreements in FY18, a record

- CRADA numbers are rising
- In FY17, 41 CRADAs were signed. Contract value of the 83 new agreements in FY17-18 was more than \$63M
- Sandia has about 155 active CRADAs
- The 2018 agreements include small businesses, education institutions, local businesses, nonprofits, and large international agencies

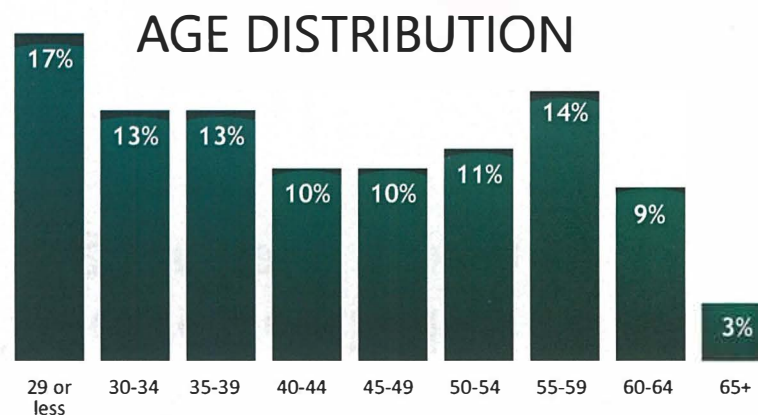
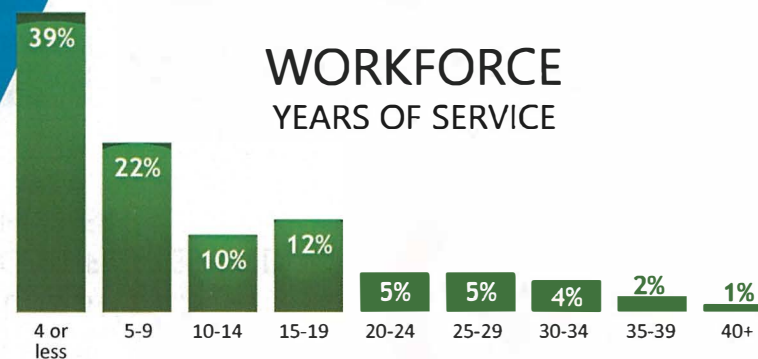


Sandia's workforce totals about 13,000 and is growing



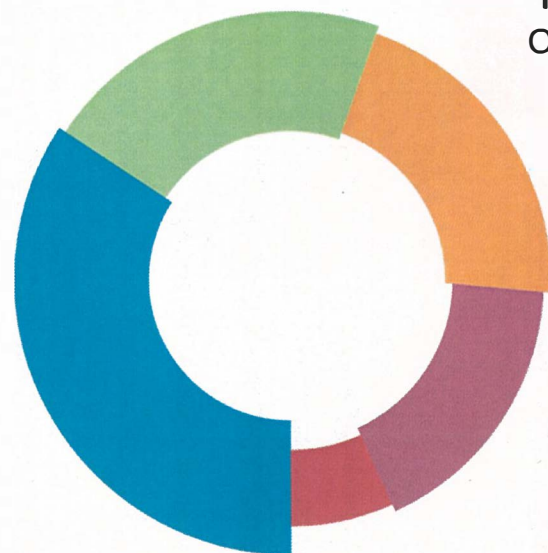
- 36% Operations Support Staff
- 6% Technical Research Mgmt
- 4% Undergrad Student
- 3% Graduate Student
- 3% Operations Support Mgmt
- 2% Post Doctoral
- .1% Senior Leadership

In the past five years, 42% of regular hires — or about 1,600 professionals — relocated to New Mexico





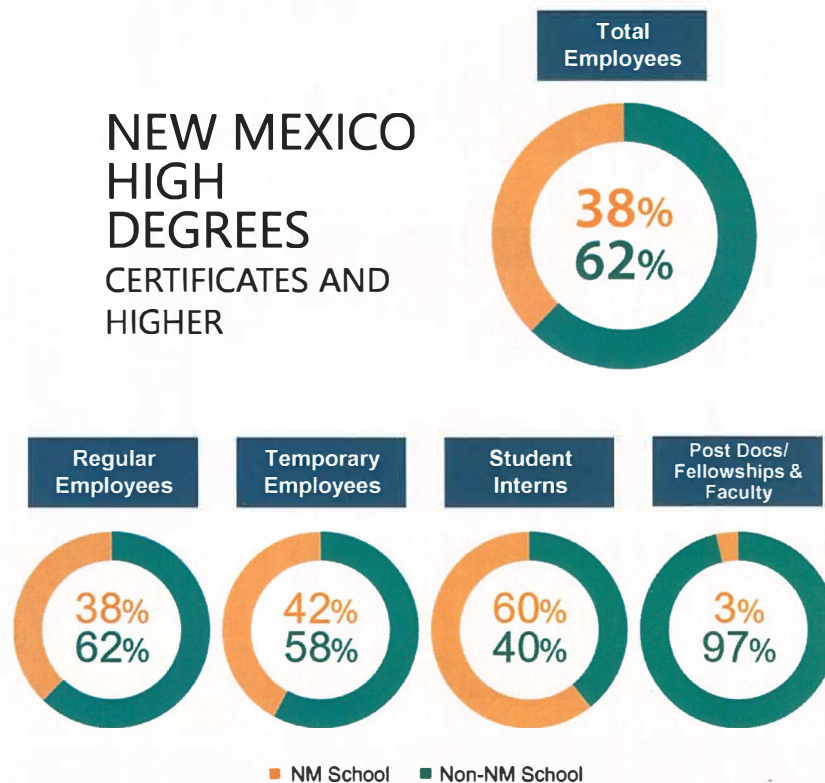
73% of our employees hold a bachelor's degree or higher; 38% of those who hold a certificate or higher have a high degree from a New Mexico school



HIGH DEGREES OF SANDIA EMPLOYEES

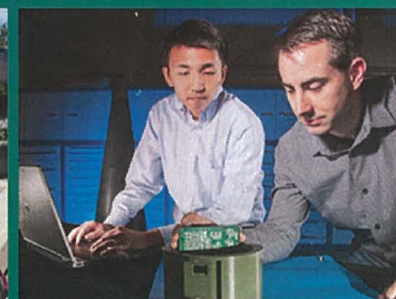
- 35% Masters
- 21% Bachelors
- 20% Less than Associates
- 17% Doctorate
- 7% Associates

NEW MEXICO HIGH DEGREES CERTIFICATES AND HIGHER



Sandia spending on New Mexico labor tops \$1 billion

- \$1.13B in New Mexico labor in FY17
- Average New Mexico salary of \$111,956 for regular employees
- More than \$196M in annual pension payments to New Mexico residents



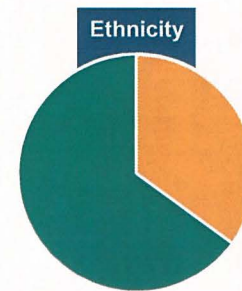
Diversity and inclusion are strategic advantages to Sandia

Diversity demographics

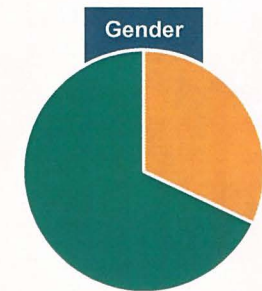
- Sandia embraces the values of ethnic and gender diversity, which we will continue to expand
- Minority representation at the Labs is increasing
- More minorities are joining the management ranks each year
- Diversity of applicants has risen

Veteran hiring

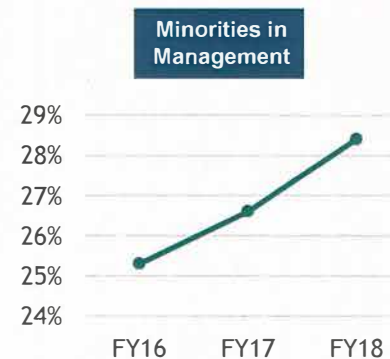
Hire rate went from 5.5% in FY17 to about 13% in FY18



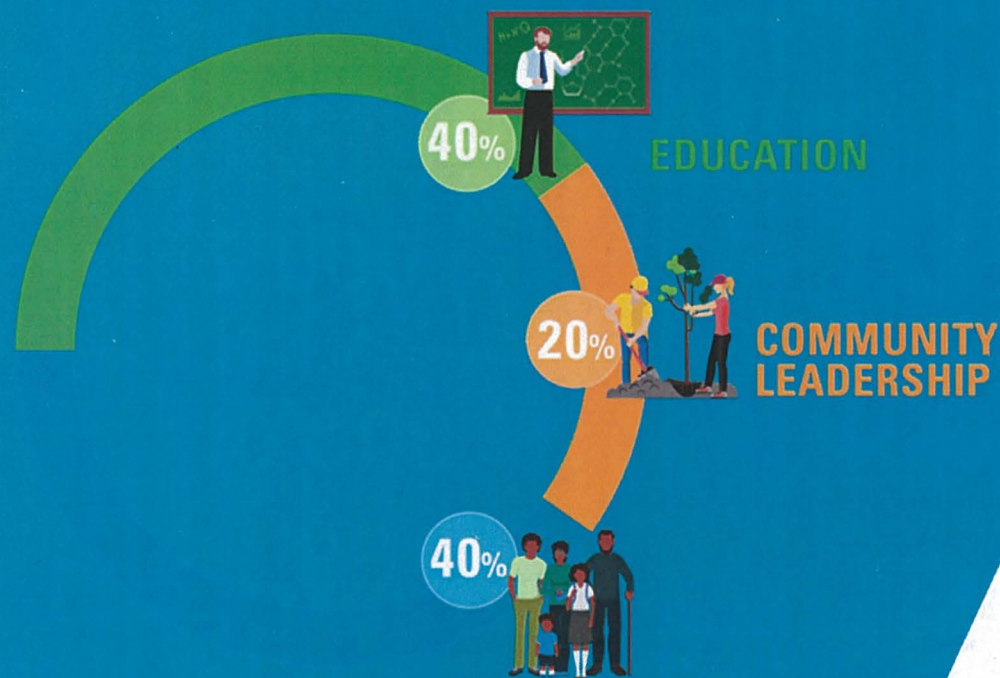
■ Minorities ■ Non-minorities



■ Women ■ Men



Community commitment plan averages \$1 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

Focusing on New Mexico's greatest needs

Our community involvement aims high

GIVE

\$5M Contributed through the United Way of Central NM

10,000 SCHOOL SUPPLIES for local children

2,000 HOLIDAY GIFTS for children in need

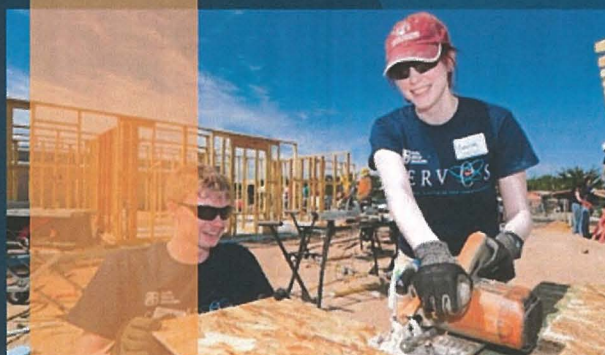


SERVE

15 HOMES BUILT for Habitat for Humanity

100 SANDIANS matched with high school students via Mentor 2.0

10 of Sandia Serves Saturdays Events



INSPIRE

Family **Math Nights** Family **Science Nights**

New Mexico **Electric Car Challenge** Science **Bowls**

STEM workshops HM Tech, Manos & Dream Catchers



Crime and education impact
ability to recruit and retain

Factors that affect employees relocating to New Mexico and our national recruiting efforts:

- NM typically sits at or **near the bottom** of most national education and violent crime rankings
- NM's violent **crime rate is 82% higher** than the national average
- The state also had the nation's **highest rate of property crime** in 2016 (FBI data)
- Study ranks NM as **49th in quality** of education

Growing evidence of concern:

- Exit interviews information
- Glass door comments
- General feedback, comments, observations:
 - Summer interns from out of state have **shared concerns** about crime rate in Albuquerque
 - **MOWs have left Sandia** specifically for better school systems, especially young families whose children were about to start school



Sandia provides exceptional service in the national interest – we bring the same dedication to New Mexico

- Sandia continues to be an **important contributor** to the New Mexico economy
- We strive to **further the state's entrepreneurial spirit** through innovation and economic development
- Partnerships with New Mexico **universities are critical** to Sandia's success
- As New Mexicans, Sandia and its **employees give generously** and volunteer to ensure the communities in which we live and work remain vibrant and thrive





Exceptional service in the national interest



