



# Radioactive and Hazardous Materials Committee

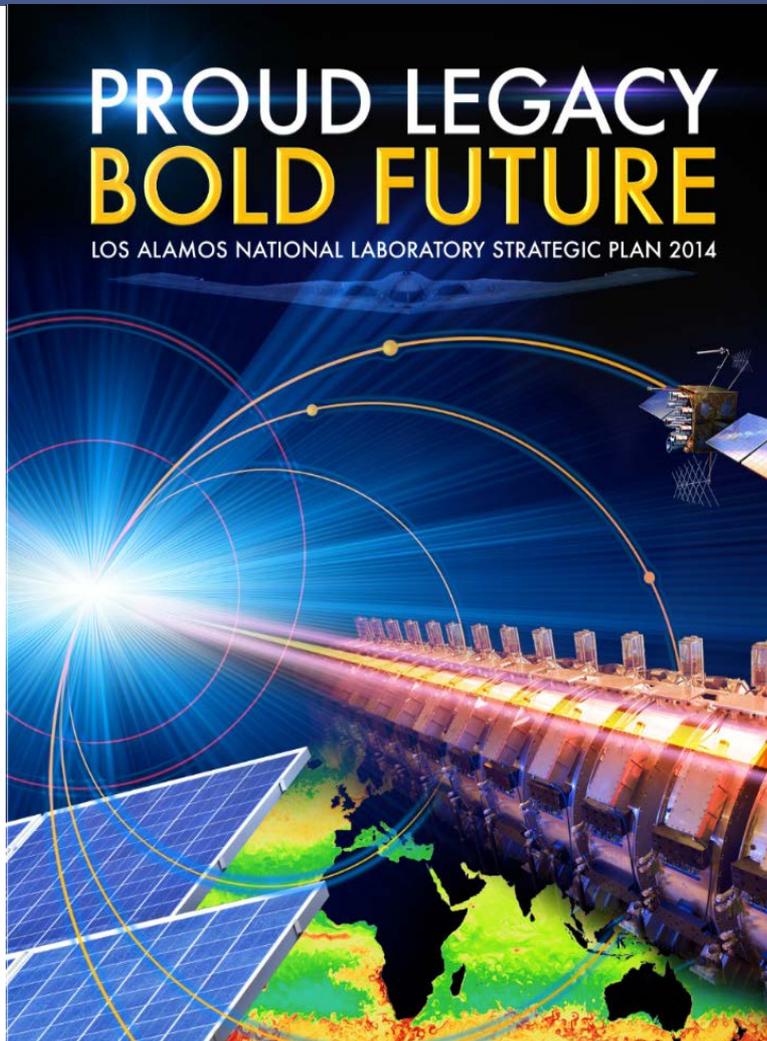
Charlie McMillan, Director

September 25, 2015



# The Los Alamos mission is to solve national security challenges through scientific excellence

Strategic Alignment



## GOALS

Deliver national nuclear security and broader global security solutions

*and*

Foster excellence in science and engineering disciplines essential for national security missions

*by*

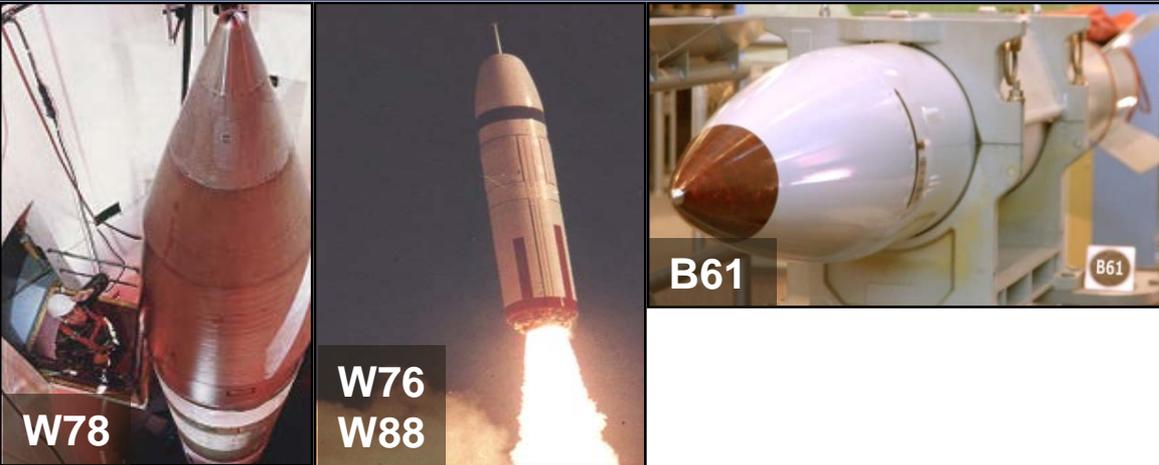
Attracting, inspiring and developing world-class talent to ensure a vital future workforce

*and*

Enabling mission delivery through next-generation facilities, infrastructure, and operational excellence

# We are essential to ensuring the U.S. nuclear deterrent

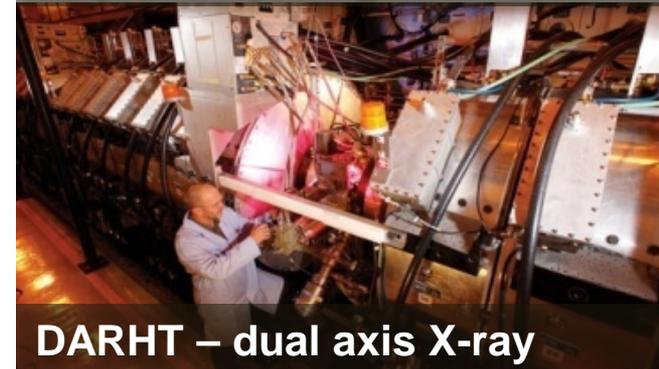
## Mission Delivery



- » Modeling, simulation, radiography, and non-nuclear testing provide assurance



## Supercomputing



- » Ensure safety, security, and effectiveness of the nation's deterrent
- » Design agency for four out of seven warhead systems in the nation's arsenal

Los Alamos uses scientific assessment, experimentation, and modeling to assess and certify the stockpile, which has aged significantly since it was first developed and since the conclusion of full-scale testing

# Reduction of threats of WMD and terrorism are critical to our national security

Broader Global Security



- » Reduce proliferation threats
- » Safeguard and detect radiological material
- » IAEA inspector training
- » Counterterrorism
- » Critical infrastructure modeling
- » Disaster response

# Long-term investment in science creates lasting payoffs for the United States

Science Supporting Mission

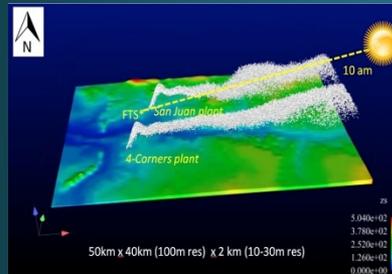


## MATERIALS FOR THE FUTURE

Defects and Interfaces

Extreme Environments

Emergent Phenomena

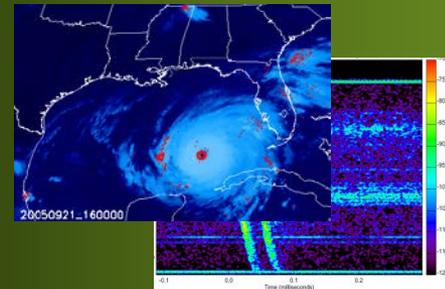


## SCIENCE OF SIGNATURES

Discover Signatures

Revolutionize Measurements

Forward Deployment

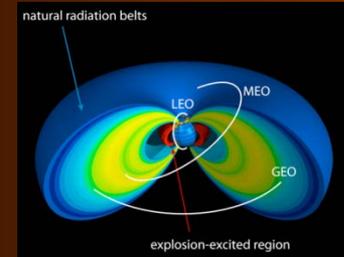


## INTEGRATING INFORMATION, SCIENCE, AND TECHNOLOGY FOR PREDICTION

Complex Networks

Computational Co-Design

Data Science at Scale



## NUCLEAR AND PARTICLE FUTURES

High Energy Density Physics & Fluid Dynamics

Nuclear & Particle Physics, Astrophysics & Cosmology

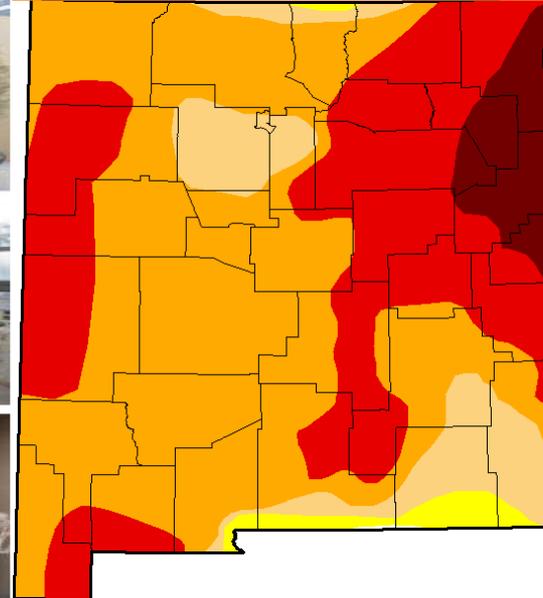
Applied Nuclear Science & Engineering

Accelerators & Electrostatics

LANL Science Pillars are a foundation of mission success

# Our science addresses emerging environmental challenges

Science Supporting Mission - Environment



## DOE's Climate Change Research

- » Tree mortality studies - "It's not easy being green"
- » Forest mortality at its worst in millennia with no forest immune
- » LANL researching preservation options

## New Mexico Drought Task Force

- » Drought is recurring and extensive in Western U.S.
- » LANL lending expertise to drought studies
- » LANL supporting NM Recoverable Water Initiative

# The Laboratory has identified a path forward for storage and treatment of nitrate-salt waste

The Laboratory has developed preliminary plans for storage and treatment:

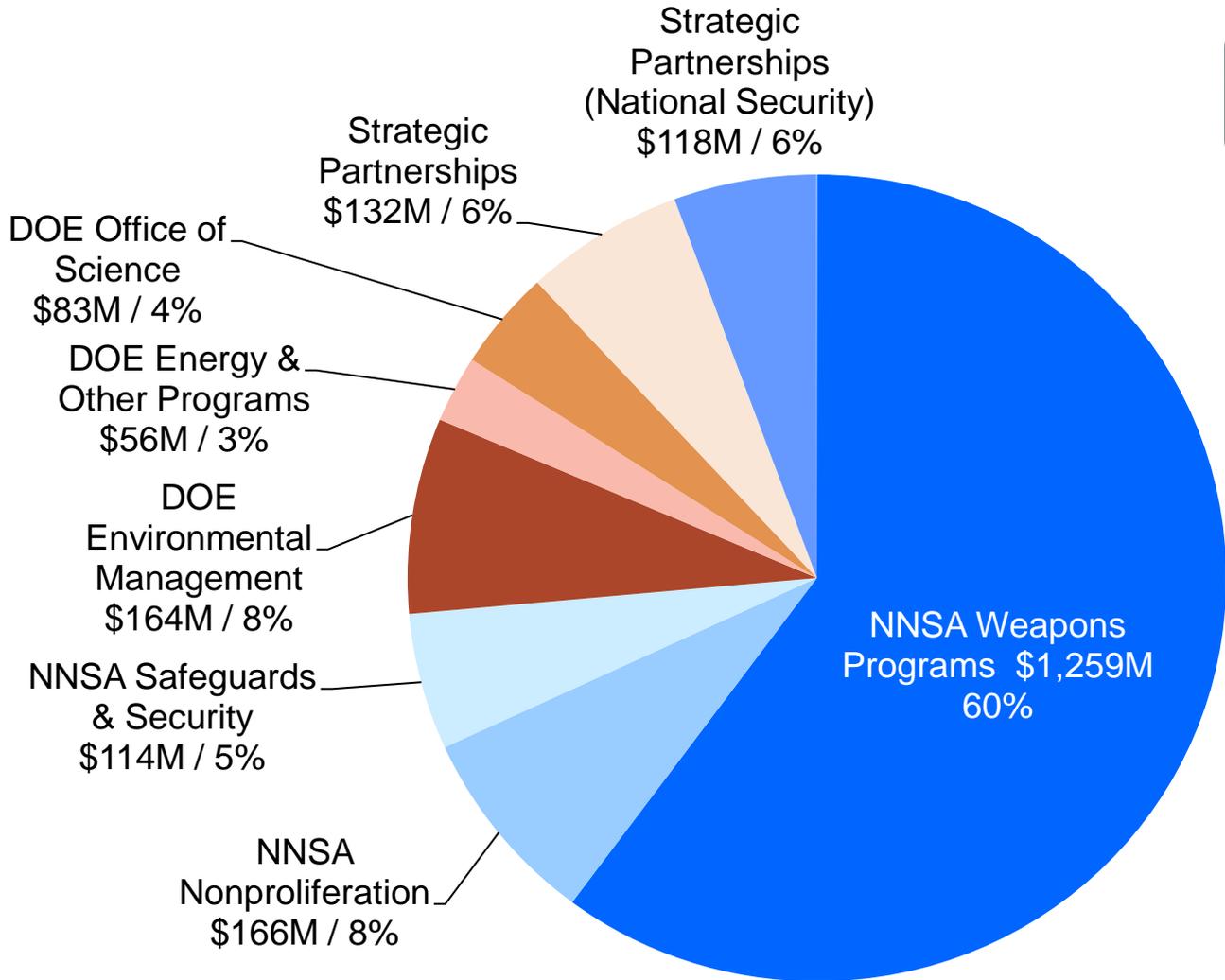
- » Gearing up for testing to develop the technical basis and processing variables for regulatory approvals
- » Identified a strategy to test the materials to eliminate the hazards associated with incompatible materials



- » Working with regulatory officials to finalize the plans, obtain permits and execute the waste treatment operations
- » External review held in July

# Our FY15 programmatic portfolio funding by program area (over 500 B&Rs and 1,000 Strategic Partnership projects)

**FY15 est. LANL Budget Authority = \$2.1B**

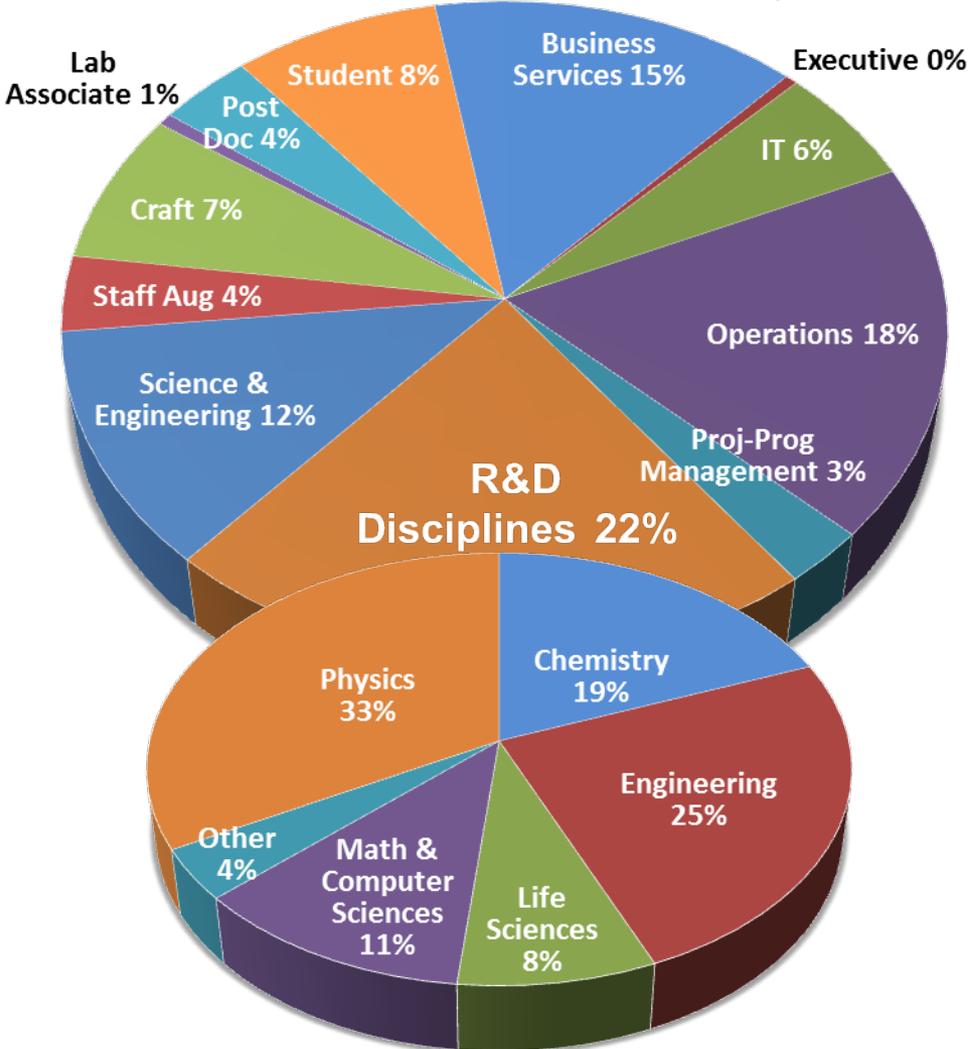


~98% from federal government sponsors  
~81% from NNSA sponsors

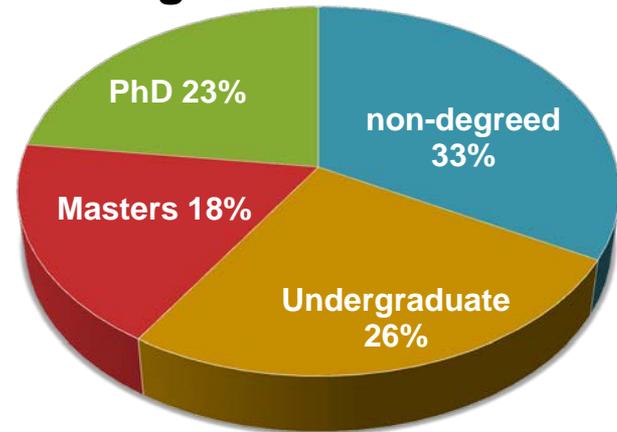
# A wide variety of technical disciplines collaborate on our missions

Operations

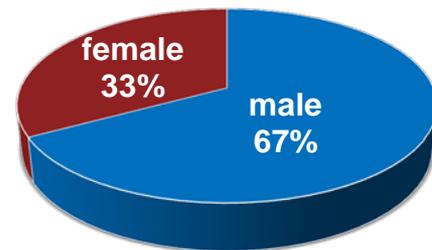
### Current Workforce ~10,000



### Degreed Workforce

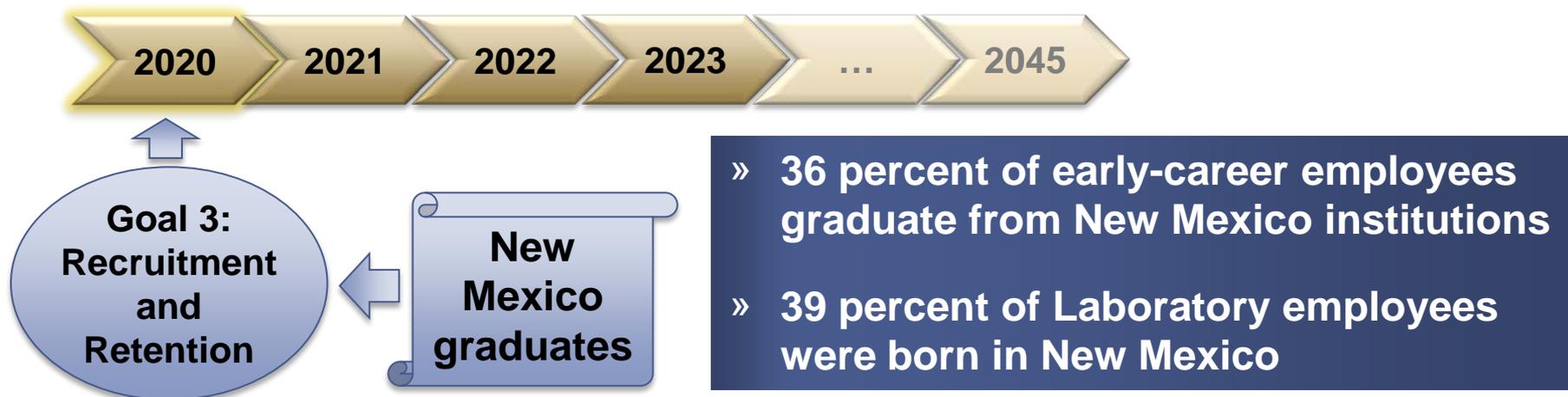


average age 46



# Five-year attrition projections provide opportunity to recruit the workforce of the future

- » Based on five-year budget projections and attrition models, Los Alamos plans to hire ~1,500 people across all job categories by 2020
- » The Laboratory's current hiring rate for Los Alamos employees is keeping pace with attrition
- » The distribution of worker types at LANL has been fairly stable in recent years—before and after the 2012 Voluntary Separation Program (VSP)



# New Mexico business benefitted from nearly \$300 million in purchasing in Fiscal Year 2015

## FY 2014-2015 Small Business Achievements by \$ Value

Category	FY2014 Achievements (\$)	FY2015 Achievements (\$) (as of 8-31-2015)
Small Business (SB)	\$284M	\$286M
Small Disadvantaged Business	\$119M	\$112M
Women-Owned SB	\$79M	\$64M
HUBZone SB	\$20M	\$12M
Veteran-Owned SB	\$30M	\$31M
Service-Disabled Veteran-Owned SB	\$11M	\$13M
NNM (LB/SB)	\$197M	\$190M
NM (LB/SB)	\$276M	\$282M

# The Venture Acceleration Fund assists regional businesses

- » **10 selected for funding in 2014 - \$407K allocated**
  - » Flow Science, Santa Fe
  - » FLuTE, Rio Arriba
  - » Heavy Oil Solutions, Santa Fe
  - » Keystone Restoration, Santa Fe
  - » Milk + Honey, Santa Fe
  - » Private Label Select, Taos
  - » Purple Adobe Lavender, Rio Arriba
  - » Seed Worthy, Bernalillo
  - » Taos Mountain Energy, Taos
  - » Xpress, Santa Fe

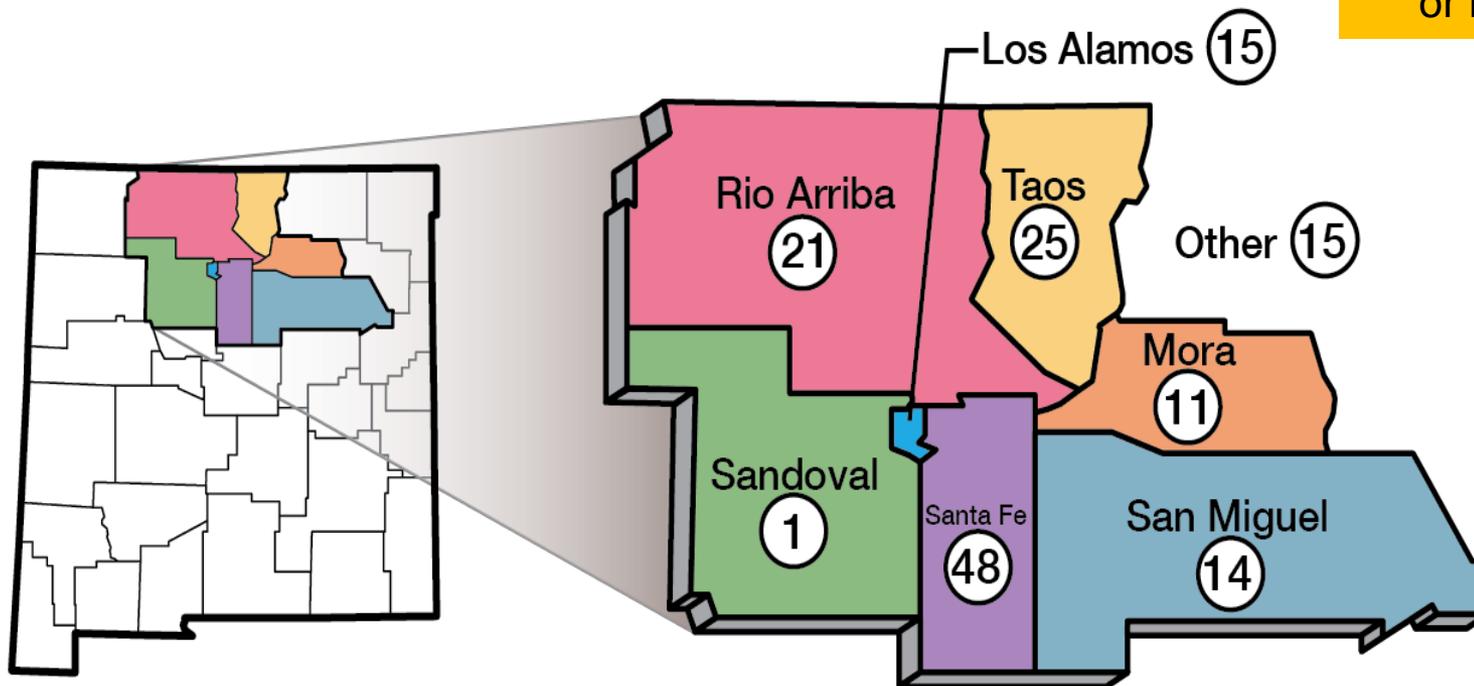
# State funding enables Lab technical assistance to companies

## NM Small Business Assistance Program

- » More than 160 businesses received technical assistance from the Lab in 2015

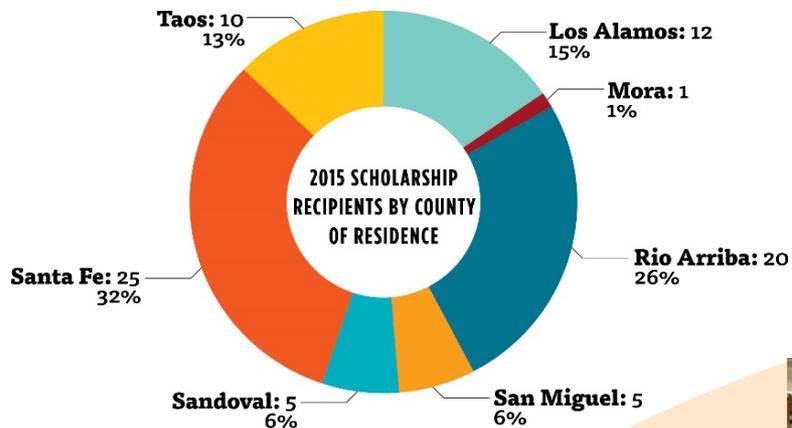
Since 2006:

- » 713 companies assisted
- » 735 jobs created or retained



# STEM learning opportunities span from pre-kindergarten to scholarships

## Our future workforce



 LANL  
FOUNDATION

- » In partnership with with LANL Foundation, Laboratory employees awarded 78 scholarships in May to Northern New Mexico students
- » Since 1998, more than 1,000 scholarships have been awarded
- » Students have received more than \$5M in scholarships