

*Exceptional service in the national interest*



# Sandia National Laboratories

## *An Overview*

Paul Hommert, President and Laboratories Director

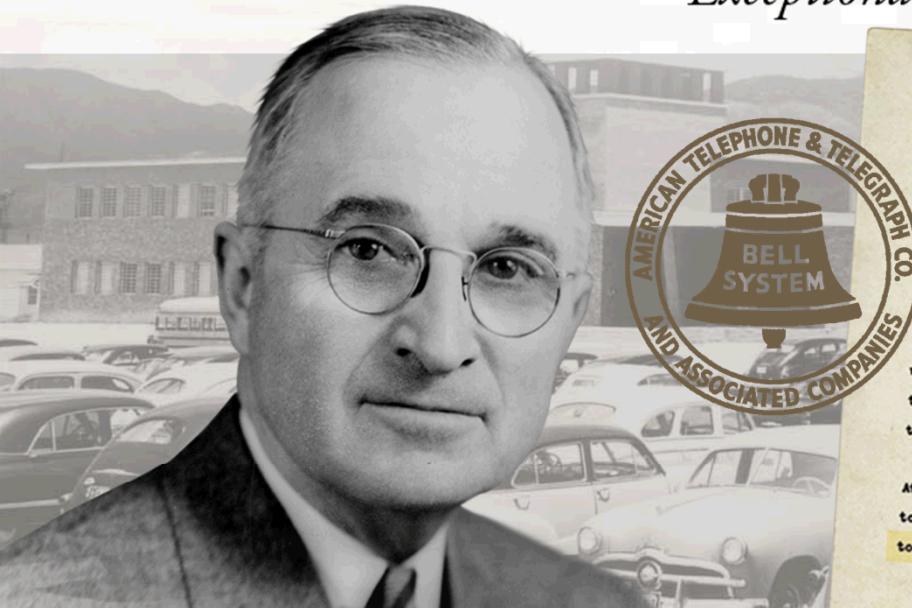
December 18, 2014



Sandia National Laboratories is a multi-program laboratory managed and operated by Sandia Corporation, a wholly owned subsidiary of Lockheed Martin Corporation, for the U.S. Department of Energy's National Nuclear Security Administration under contract DE-AC04-94AL85000. SAND 2014-20499C.

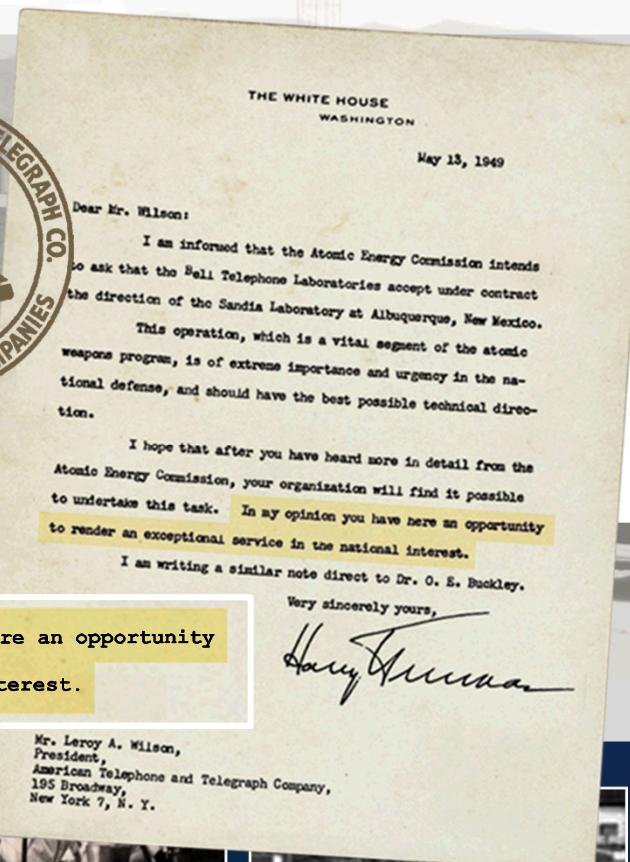
# Sandia's history

*Exceptional service in the national interest*



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

Mr. Leroy A. Wilson,  
President,  
American Telephone and Telegraph Company,  
195 Broadway,  
New York 7, N. Y.



- **July 1945:** Los Alamos creates Z Division
- Nonnuclear component engineering
- **November 1, 1949:** Sandia Laboratory established



# Core Essence

*Forged by 65 years of exceptional delivery on our core nuclear weapons mission*

- Responsible to ensure that a nuclear weapon will *always* work as intended when called upon by the U.S. president...and *never* work under any other circumstances
- Operated as a federally funded research and development center
- Enriched by management and operating entities
- Shaped by the legacy of our Laboratories' pioneers



*“We must find a way to form a very close coupling between advances in fundamental knowledge and engineering design of new weapons.”*

Dick Claassen, director of physical research, 1960



# Vision and mission statements

- On behalf of our nation, we anticipate and solve the most challenging problems that threaten security in the 21<sup>st</sup> century.
- Our **unique** mission responsibilities in the **nuclear weapons** program create a **foundation** from which we **leverage** capabilities enabling us to solve complex **national security** problems.



# Sandia's sites

*Albuquerque, New Mexico*



*Livermore, California*



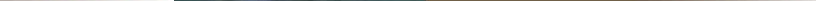
*Kauai, Hawaii*



*Pantex Plant,  
Amarillo, Texas*

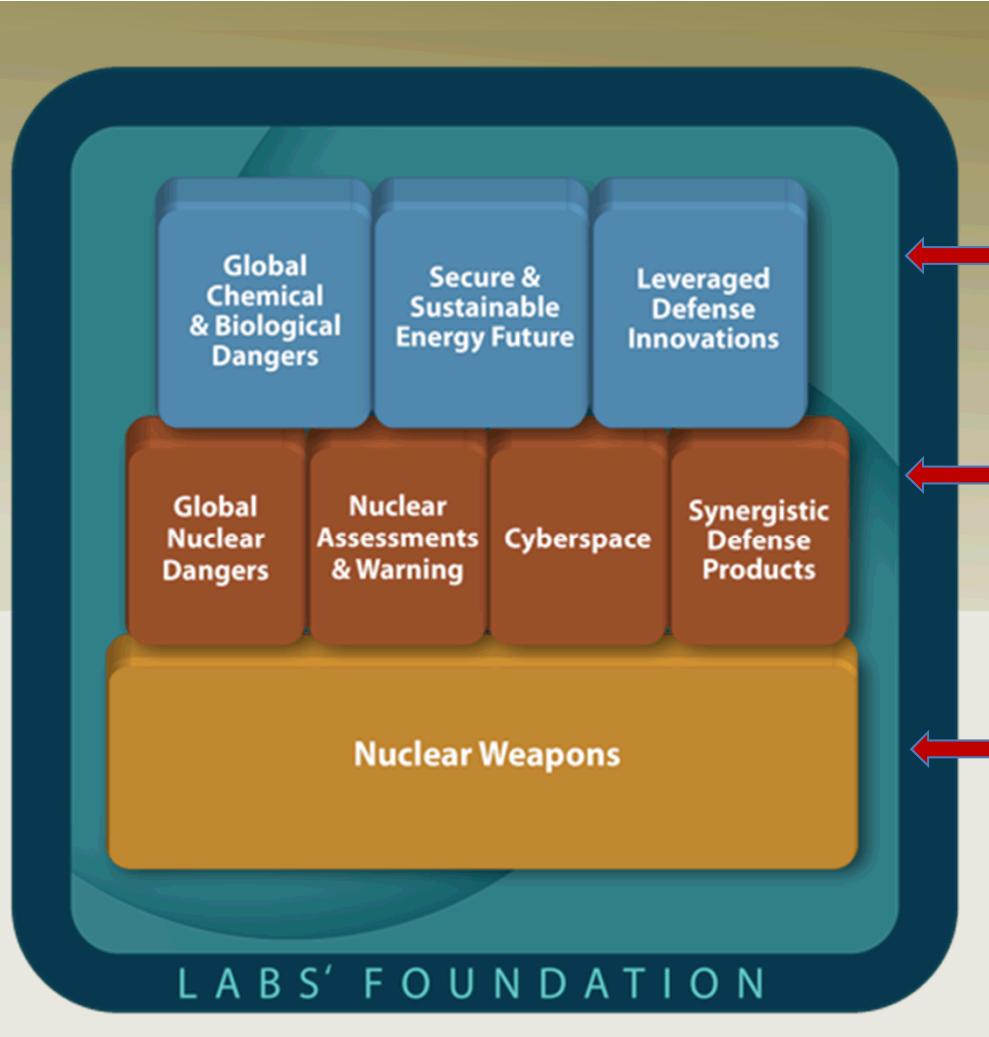


*Waste Isolation Pilot Plant,  
Carlsbad, New Mexico*



*Tonopah,  
Nevada*

# Sandia's national security mission areas



- Top row: Critical to our national security, these three mission areas leverage, enhance, and advance our capabilities.
- Middle row: Strongly interdependent with NW, these four mission areas are essential to sustaining Sandia's ability to fulfill its NW core mission.
- Bottom row: Our core mission, nuclear weapons (NW), is enabled by a strong scientific and engineering foundation.

# Sandia's people

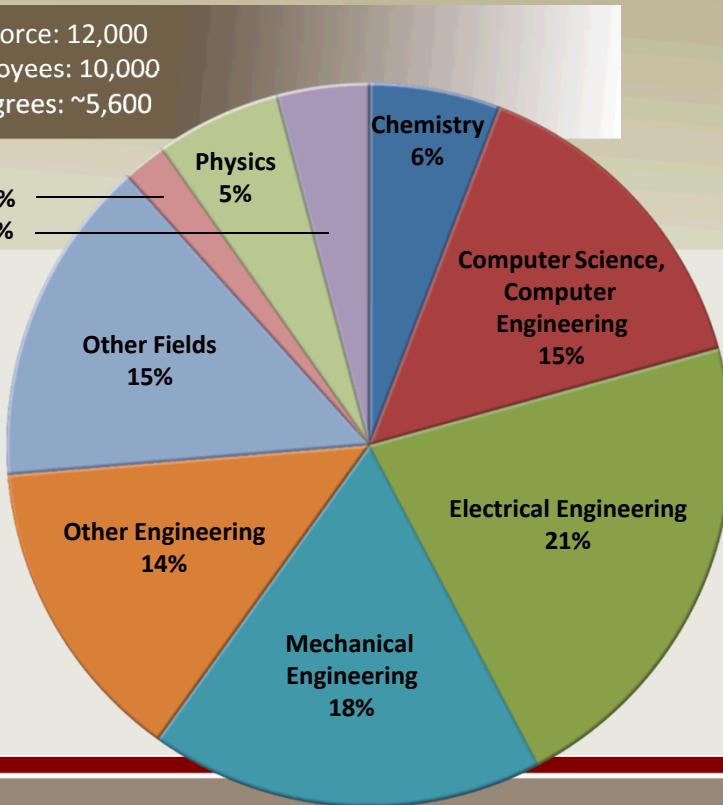
## Exceptional talent

- Highly educated workforce
- Strategically managed workforce of diverse skills and competencies
- Modern business practices and operations in support of our missions

- On-site workforce: 12,000
- Regular employees: 10,000
- Advanced degrees: ~5,600

Other Science 2%  
Cybersecurity 4%

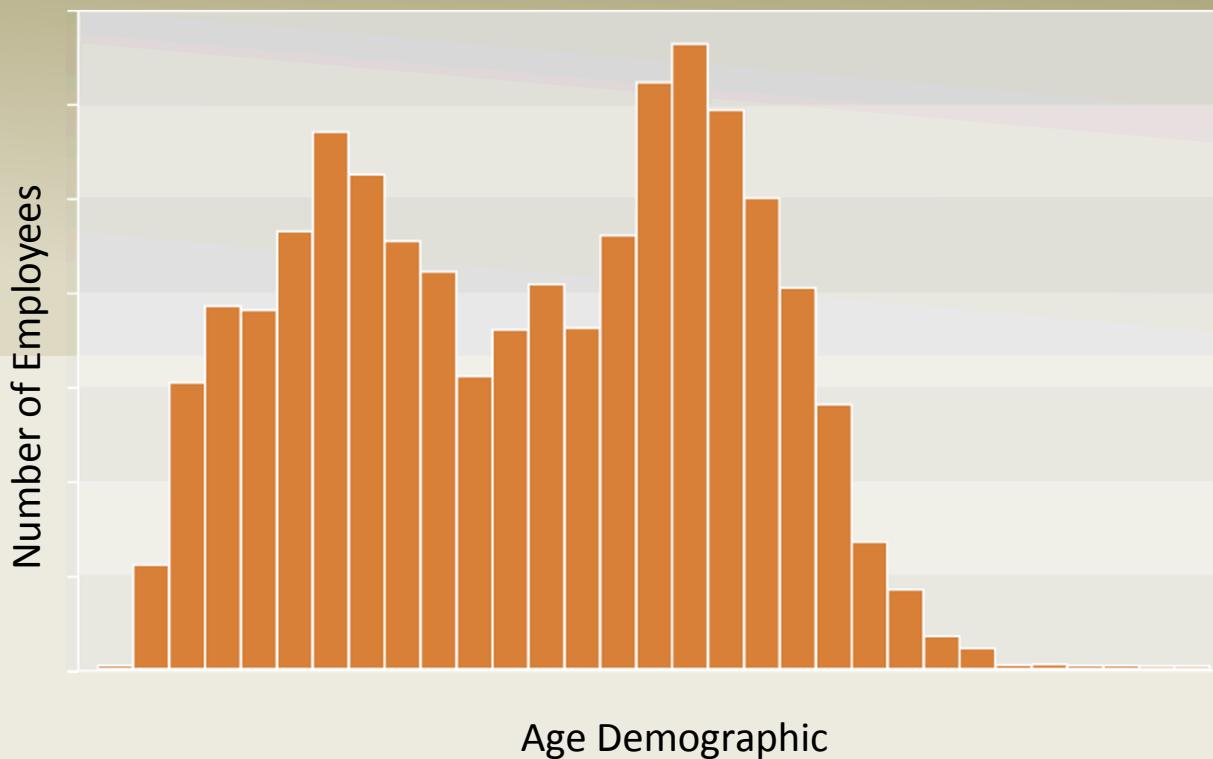
R&D staff (~5,700) by discipline



# Sandia's people

## Dynamic workforce

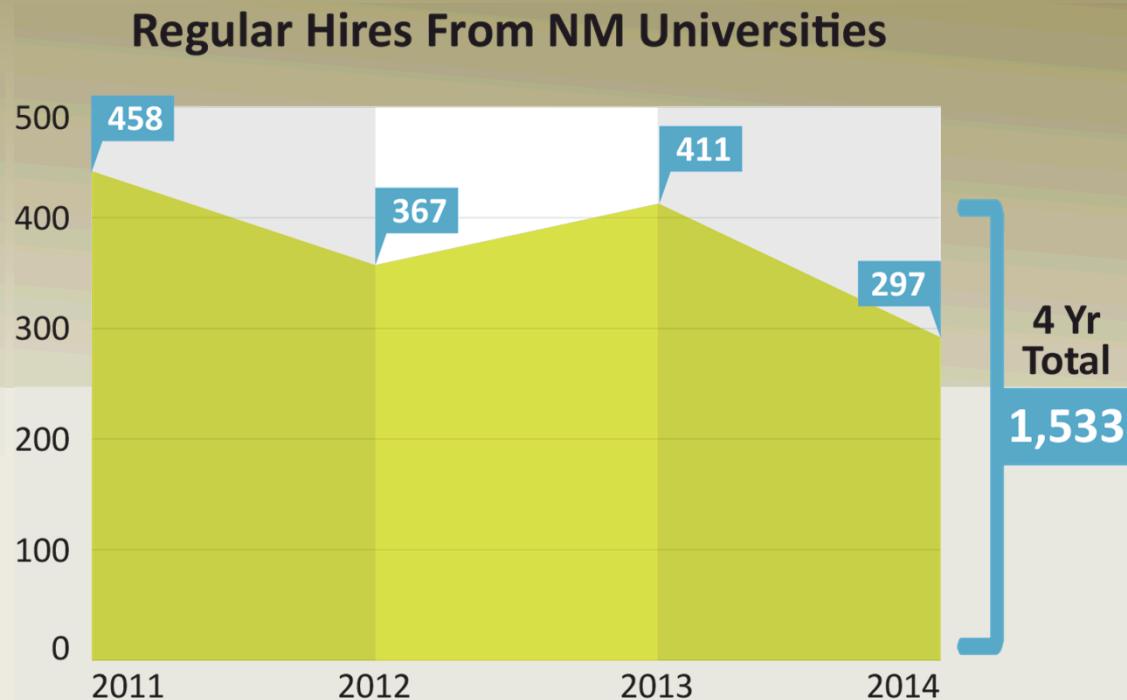
### Today's Demographic Makeup



- ~10,000 regular employees
- ~3,500 with less than 5 years of service

# Sandia's people

## *Collaborations with NM universities*



# Sandia's facilities and tools

*Enable differentiated scientific and engineering test and discovery*

Sandia has facilities in multiple locations:  
Albuquerque, NM; Livermore, CA;  
Carlsbad, NM; Tonopah, NV; Kauai, HI;  
Amarillo, TX.

## Key Facilities and Tools

- Major Environmental Test Facilities
- Microsystems and Engineering Sciences Applications (MESA)
- High-Performance Computing
- Explosive Components Facility
- Weapons Evaluations Test Laboratory (WETL)
- Pulsed-Power Facility
- Center for Integrated Nanotechnologies (CINT)
- Combustion Research Facility (CRF)
- Ion Beam Laboratory
- ...

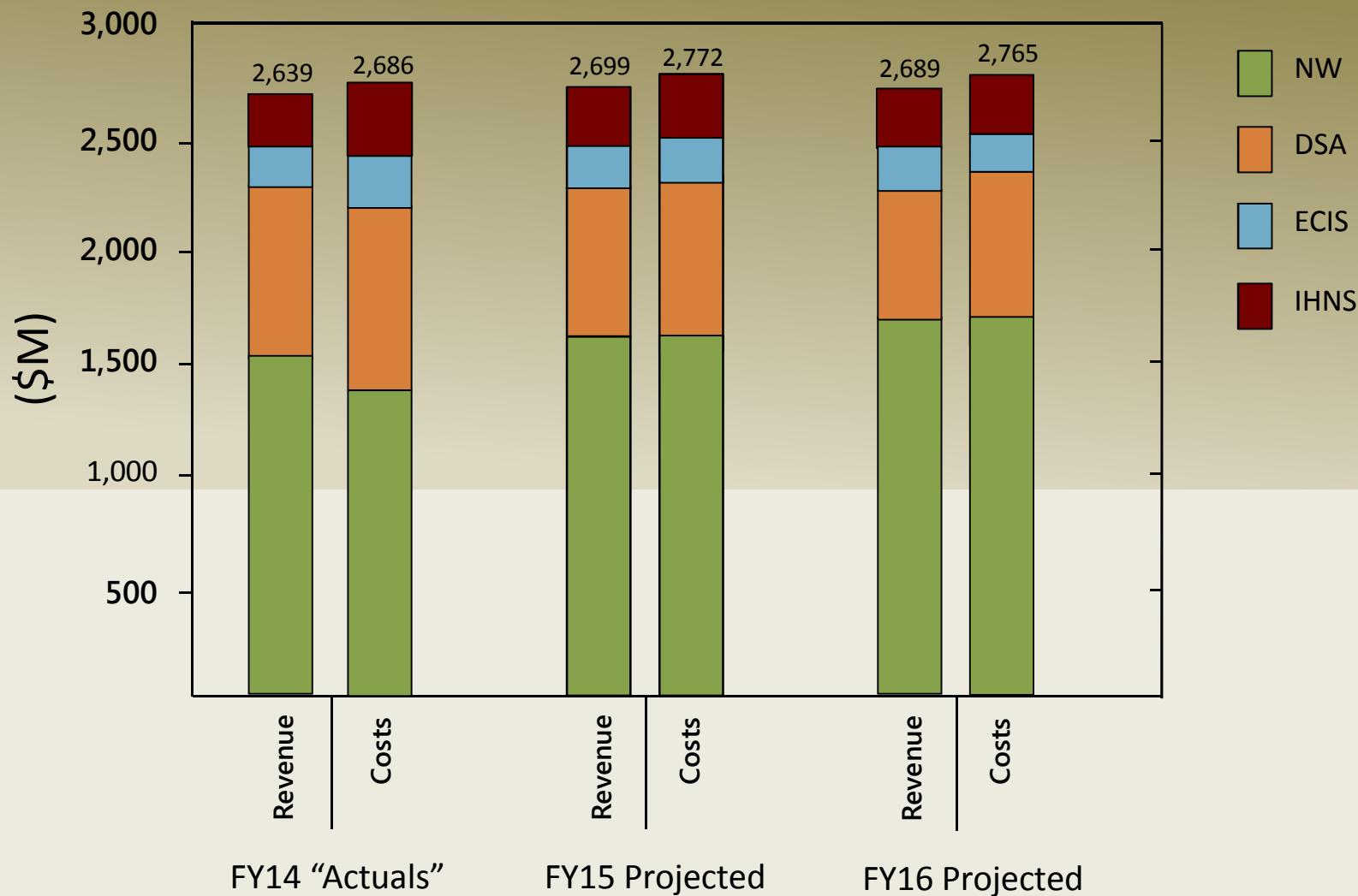


# Leveraging core capabilities to solve 21st century national security challenges

- High-reliability engineering
- Sensors and sensing systems
- Cyber technology
- Reverse engineering
- Pathfinders
- Modeling & simulation and experiment
- Natural and engineered materials
- Micro & nano electronics and systems
- Safety, risk, and vulnerability analysis



# Cost and revenue projections

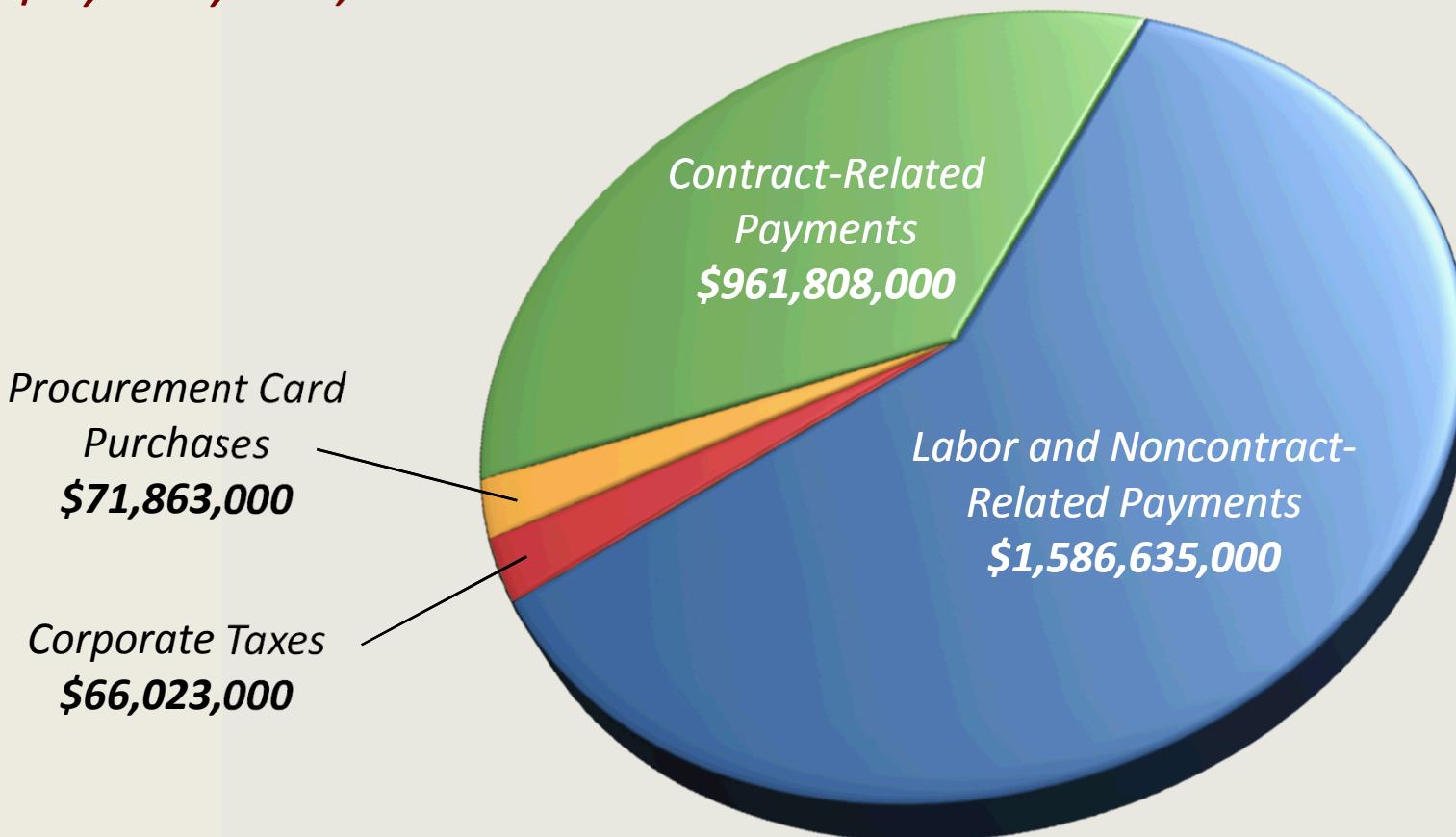


# Sandia has a strong impact on the New Mexico business environment



# FY2014 Total Sandia expenditures

**\$2,686,329,000**

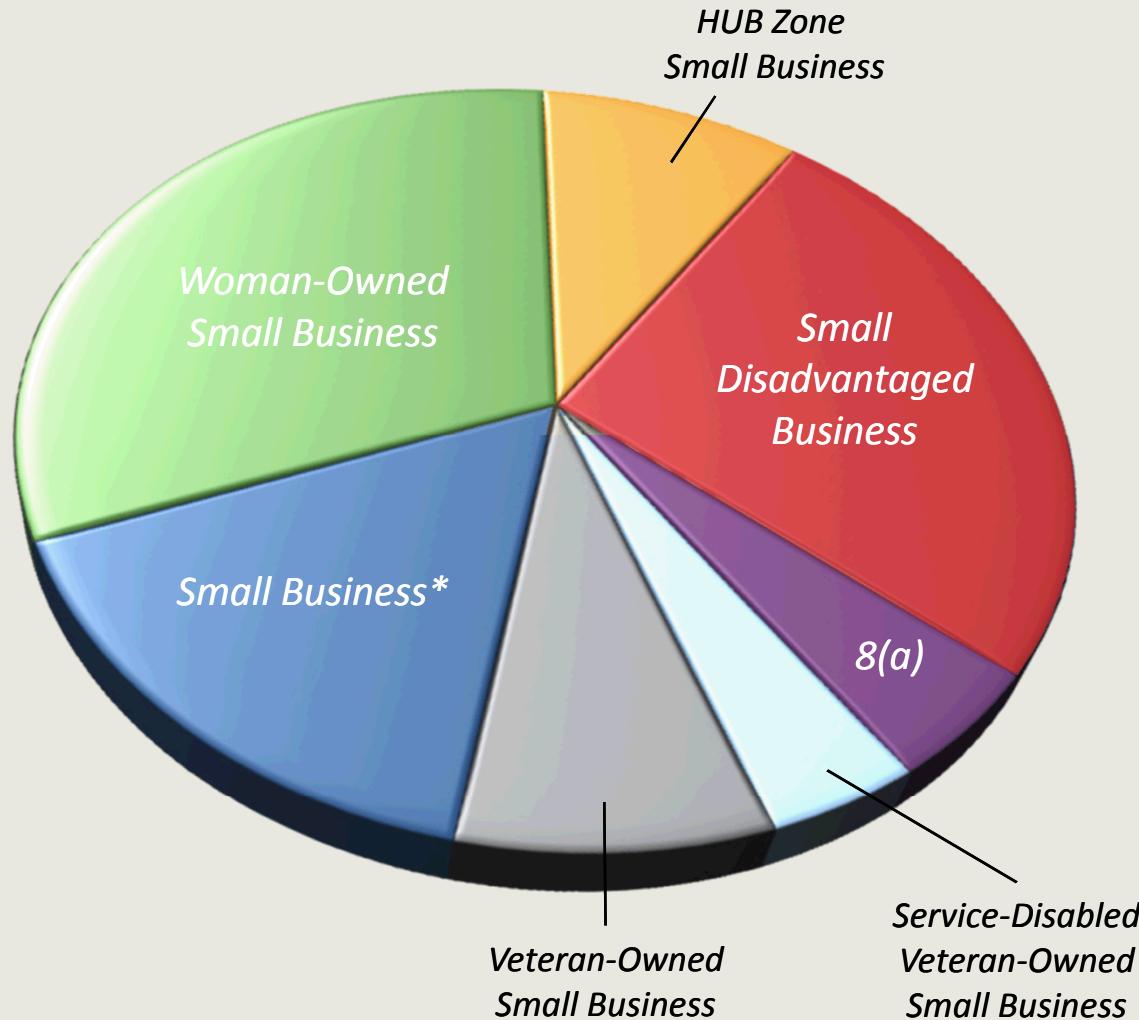


# FY2014 New Mexico small business breakdown

**\$240,575,000**

Total New Mexico Impact

**\$362,408,000**



\*non-minority, non-woman, non-veteran owned

# Sandia Science & Technology Park

*An internationally recognized technology community*

- The Park was founded in 1998
- 37 companies and organizations, 25 facilities, 2,300 employees
- Partnership tool for Sandia National Laboratories
- Public-private partnership: Private sector and government institutions
- Sandia will pursue a Center for Collaboration and Commercialization (C3)



# Entrepreneurial separation to transfer technology (ESTT)

- Entrepreneurs terminate Sandia employment
- Term of separation is two years with the option to request a third year
- Entrepreneurs are guaranteed reinstatement by Sandia if they return before ESTT expiration
- Participants may ***start up*** or help ***expand*** technology businesses
- 146 people have left to start up or expand 100 companies, mostly in New Mexico



# Abbott's Wavefront Sciences

*Successful NM company with roots in Sandia*

- Three licenses with Sandia for Wavefront sensor and binary optics technologies
- Optical measuring systems evolved from space telescopes to LASIK surgery
- The iDesign Advanced WaveScan System, latest ophthalmic product line, is used in treatment planning for laser refractive surgery
- Abbott Medical Optics, a division of Abbott Laboratories, has acquired Wavefront Sciences
- Company continues in Albuquerque; has grown from 3 to 50 people



# New Mexico Small Business Assistance (NMSBA) Program



- Governed by the Laboratory Partnership with Small Business Tax Credit Act (a New Mexico state law)
- Public-private partnership with Sandia National Laboratories, Los Alamos National Laboratory, State of New Mexico, and New Mexico Small Businesses
- Allows up to \$2.4 million per lab annually in assistance and tax credits
- Must be a New Mexico for-profit small business to qualify
- Companies in rural counties are eligible for \$20K per business each year; urban counties are eligible for \$10K per business each year

# Exceptional service in our community

## *2014 United Way*

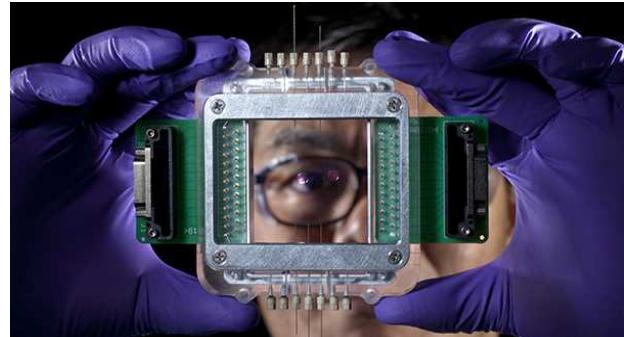
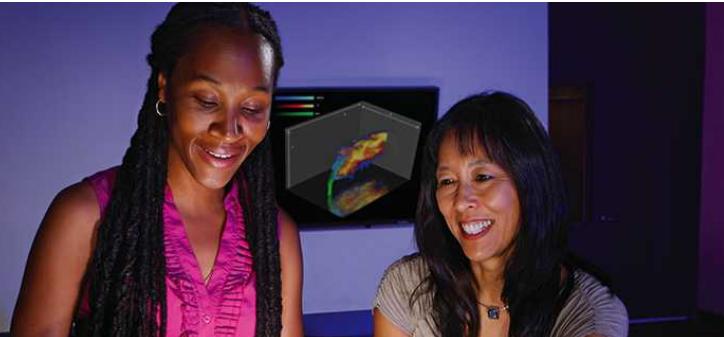
**Total for Sandia: \$6.4M**

- NM results: \$5.5M
- CA results: \$183K
- \$735K from retirees

**NM participation rates**

- 2013: 75%
- 2014: 77%





# Questions?