

*Exceptional service in the national interest*



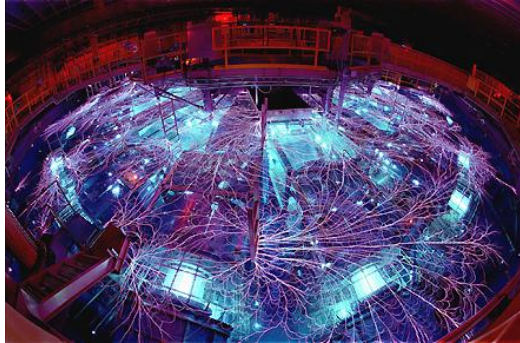
# University of Arizona Campus Visit

5-6 November 2012

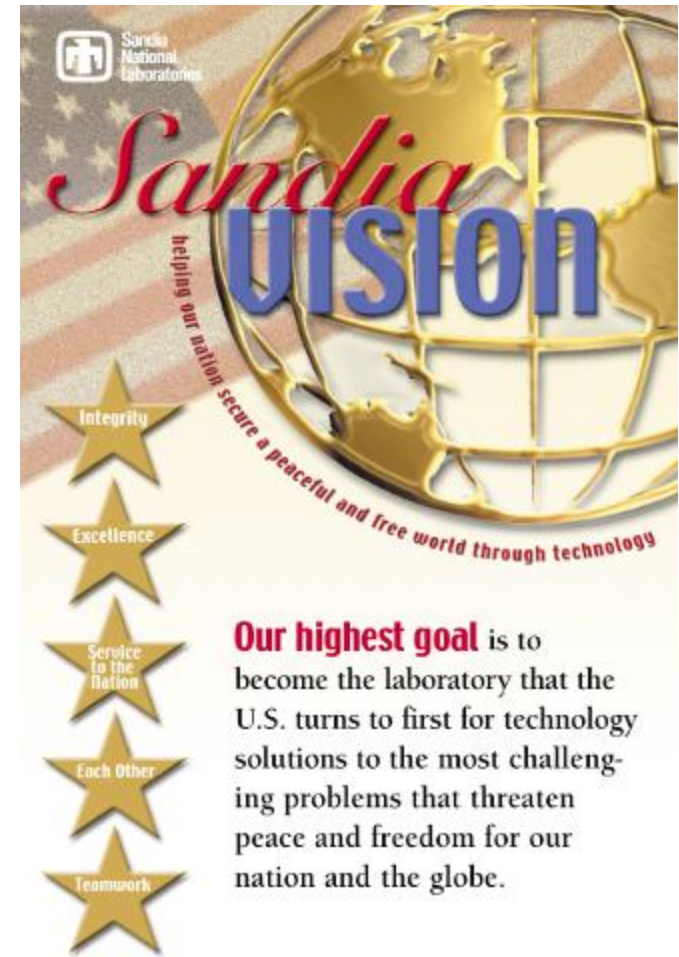


Sandia National Laboratories is a multi-program laboratory managed and operated by Sandia Corporation, a wholly owned subsidiary of Lockheed Martin Corporation, for the U.S. Department of Energy's National Nuclear Security Administration under contract DE-AC04-94AL85000. SAND2011-0439P

# The laboratory the U.S. turns to first



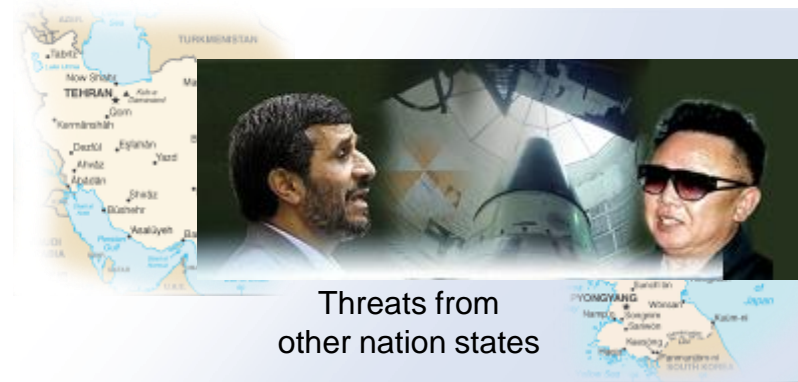
- National Security Laboratory
- Broad mission in developing science and technology applications to meet our rapidly changing, complex national security challenges
- Safety, security and reliability of our nation's nuclear weapon stockpile



# Addressing Our Evolving National Security Environment is of the Greatest Importance



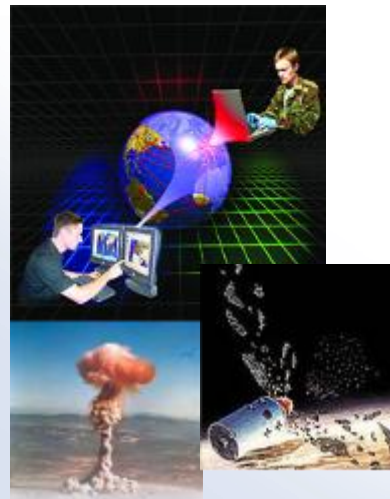
Traditional strategic nuclear threats



Threats from other nation states



Threats from non nation states



Threats of tech surprise



Other threats: natural disasters, climate change, energy supply



# Where is Sandia?

## ■ Albuquerque, NM

- Top 10 most affordable cities
- Outstanding climate with 310 days of sunshine
- World famous cuisine & arts
- Paradise for outdoor recreation
  - World-class skiing/snowboarding
  - Challenging cycling/mountain biking & running
  - Camping & fishing
  - 2 of the nation's top 50 golf courses



## ■ Livermore, CA

- Located in the Bay Area
  - Over 1,100 miles of beaches
  - 6 major professional sports leagues
  - Haven for musicians & artists
- Over 40 world class wineries
- Farmers Markets
  - Fresh fruits & veggies grown year round
- Largest urban national park in the world – Golden Gate Park

# Total Rewards

## ■ The Work Experience

- Challenging assignments
- State-of-the-art research facilities
- Internationally recognized scientists and engineers
- Rotational opportunities
- Diverse fields

## ■ Site Amenities

- Company sports teams
- Recreational Equip rentals
- Indoor/outdoor pools
- Rock climbing gym

## ■ Work/Life Balance

- 9/80
- flex
- Vacation buy
- Telecommuting
- Holiday Shutdown

## ■ 401(k)

- Sandia automatically contributes 6%
- Then matches 2/3 of your first 6% contribution

# University Programs



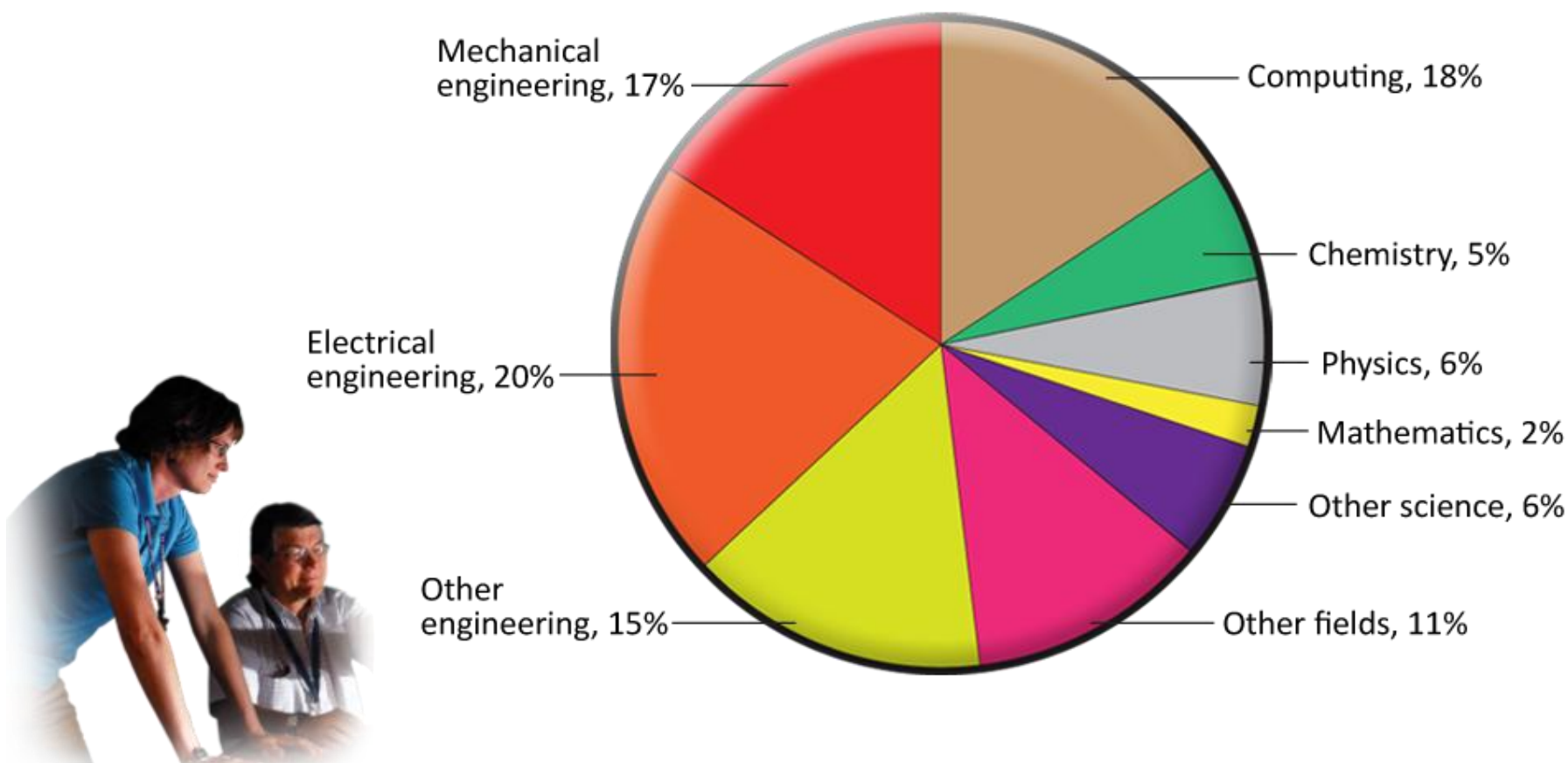
- Tuition Assistance Program (TAP)
- University Part-Time (UPT)
- Special Masters Program (SMP)
- Doctoral Study Program (DSP)
- Master's Fellowship Program (MFP)
- Critical Skills Master's Program (CSMP)

# People and Budget

- Onsite workforce: 11,500
- Regular employees: 8,950
- Gross payroll: ~\$515M
- Budget: \$2.4B

*Data for FY12 through the end of March*

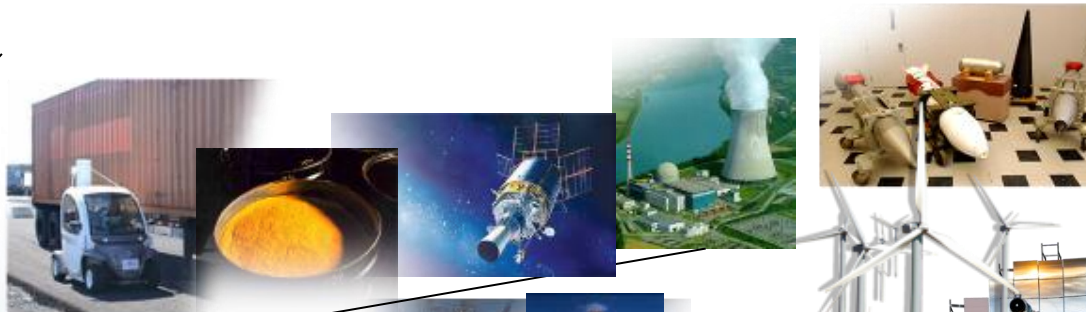
## Technical staff (4,650) by discipline



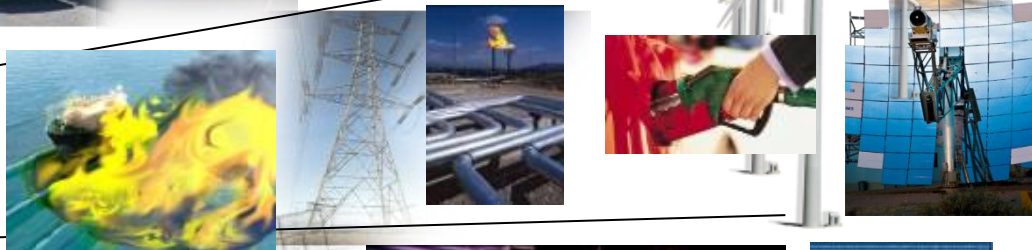
# Emerging National Security Thrusts



Nuclear



Energy



Cyber



Science & Technology

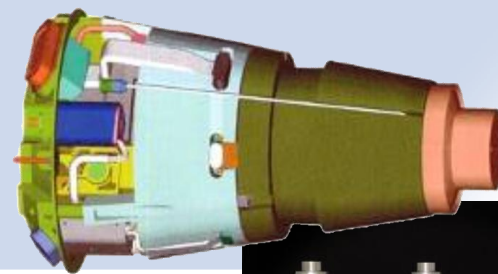




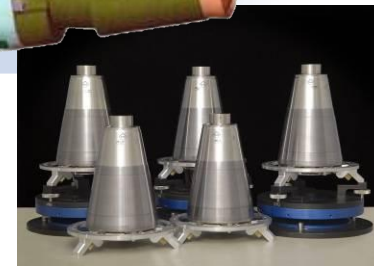
# Nuclear Weapons



**Integrated,  
engineered warhead  
systems**



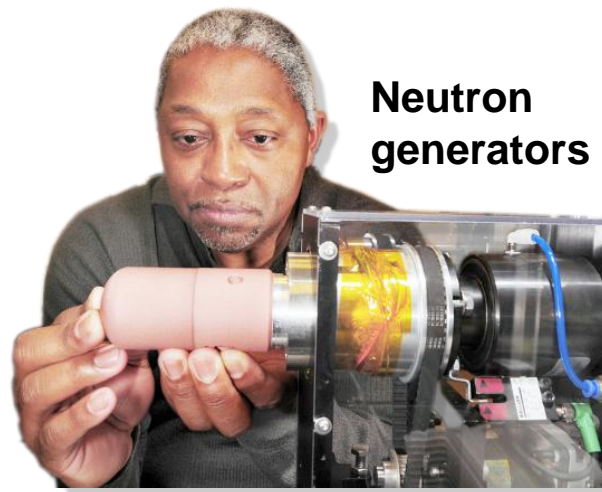
**Arming, fuzing,  
and firing  
systems**



**Safety systems**

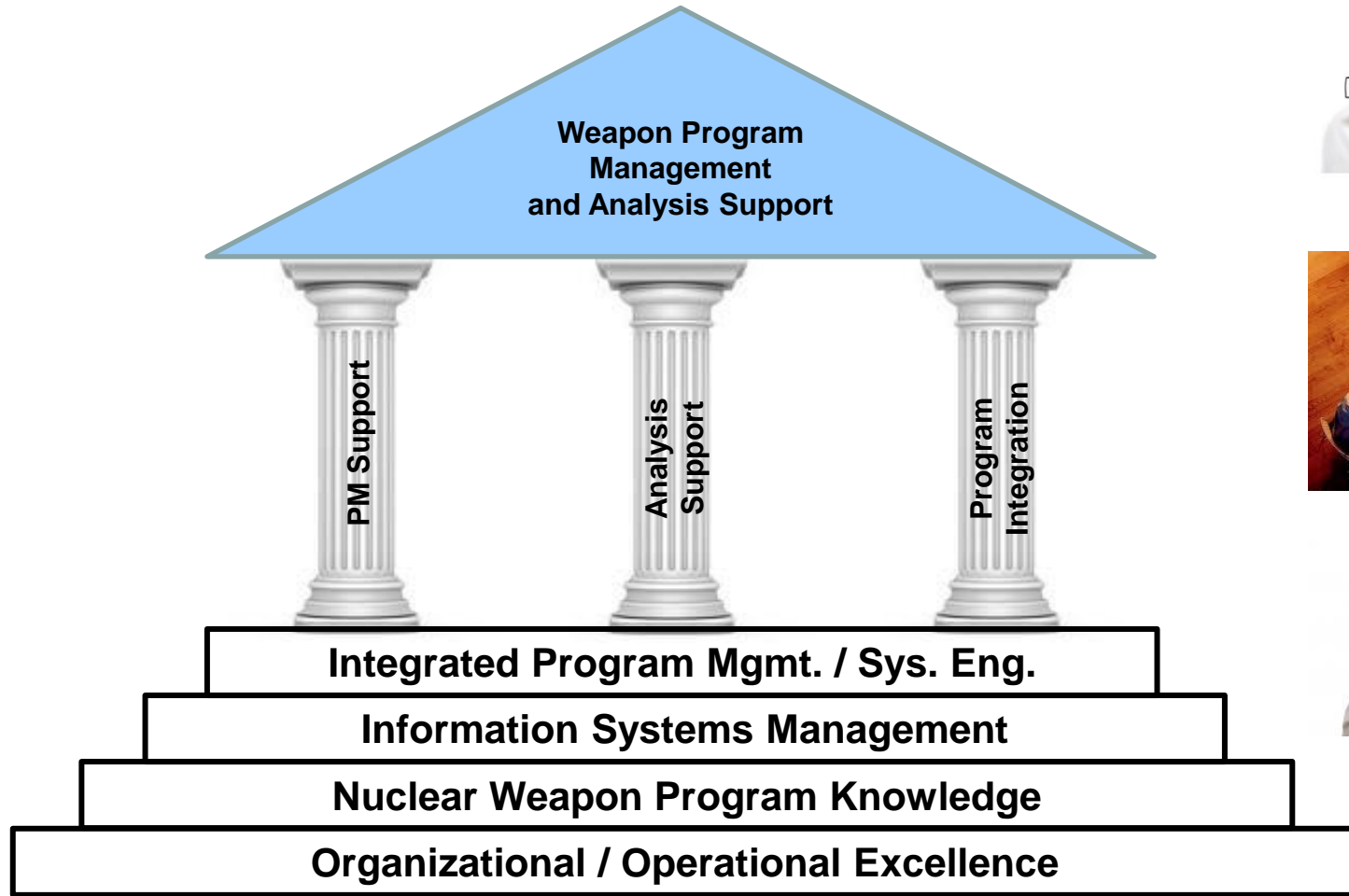


**Gas transfer  
systems**



**Neutron  
generators**

# Integrated Program Management & Systems Engineering



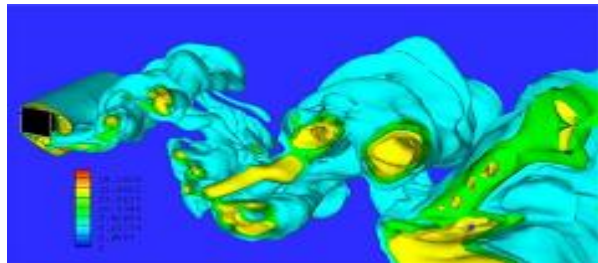
*High reliability, high consequence of failure, challenging environments,  
and technology solutions*

## Facilities and Capabilities



### Microelectronics and microsystems

*Design, fabricate, package, and test  
trusted semiconductor components*



### Computational simulation

*High-performance hardware and  
software tools to enable solutions  
requiring massively parallel computers*

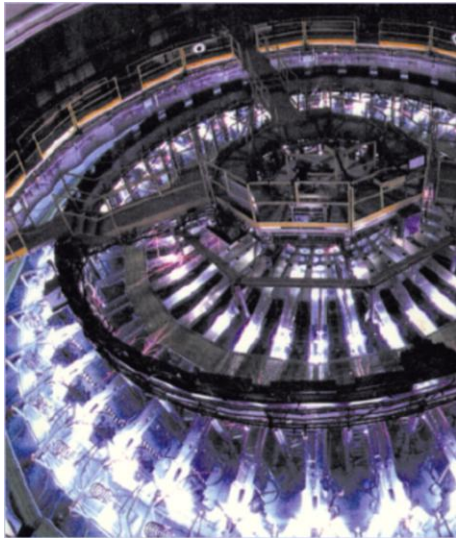


### Environmental testing

*Simulate environmental conditions and  
collect relevant data for systems,  
subassemblies, and components*



# Applied Radiation Sciences



Simulating  
Radiation  
Environments



Nuclear Reactor Safety  
and Accident Testing



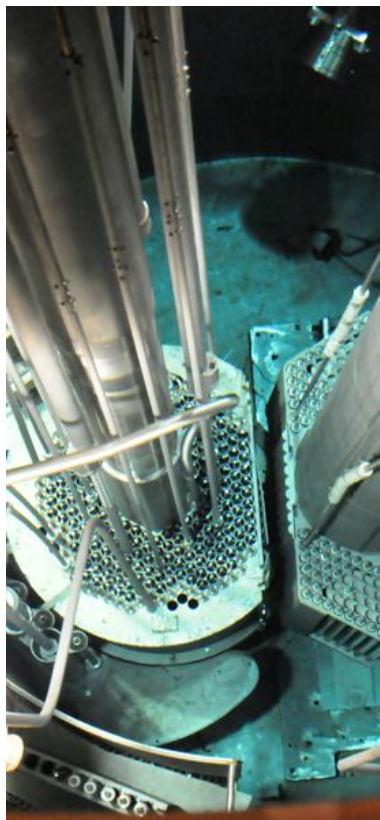
Designing and Testing  
Nuclear Fuel



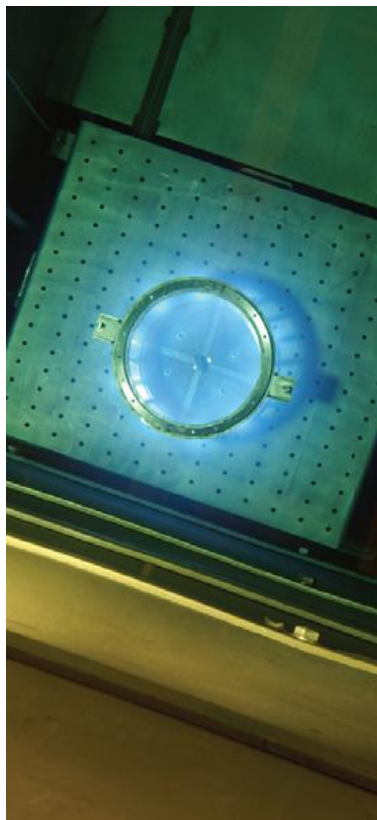
Designing and Modifying  
Nuclear Reactors



# Unique Nuclear Environments



Annular Core  
Research  
Reactor (ACRR)



Gamma  
Irradiation  
Facility (GIF)



Sandia Pulsed  
Reactor Critical  
Experiments  
(SPR/CX)



Radiation  
Metrology Lab  
(RML)

# ACRR Pulse

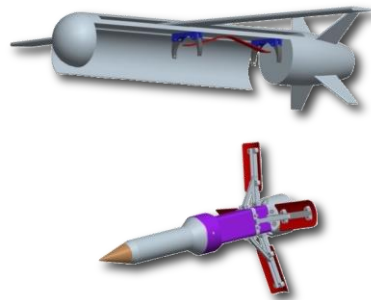


## Program Areas

- Information Operations
- Integrated Military Systems
- Proliferation Assessment
- Remote Sensing & Verification
- Space Mission
- Surveillance & Reconnaissance

## Areas of Expertise

- Nuclear Detonation Detection System
- Nonproliferation
- Cyber Security
- Synthetic Aperture Radar
- Space Situational Awareness
- Data Processing and Exploitation





## Program Areas

- Infrastructure Security
- Energy Security
- Climate Security
- Enabling Capabilities

## Areas of Expertise

- Modeling & Analysis, Cyber, Electricity Distribution, and Energy Assurance
- Renewables, Energy Efficiency, Energy for Transportation, and Nuclear Energy Systems
- Sensing & Monitoring, Carbon Capture, Sequestration, Modeling and Analysis, and Water
- Discovery Science & Engineering, Systems Analysis, and Regulatory & Policy





## Program Areas

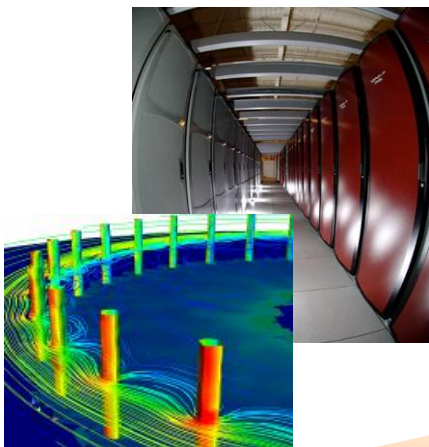
- Critical Asset Protection
- Global Security
- Homeland Defense and Force Protection
- Homeland Security

## Areas of Expertise

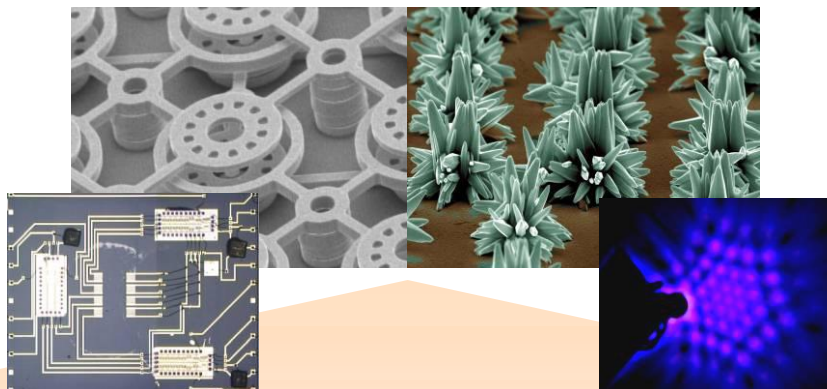
- Countering Bioterrorism
- Nuclear, Radiological, and Chemical Risk Reduction
- Nonproliferation and Arms Control
- Physical Security
- Emergency Response
- Systems Analysis and Engineering
- Border Security
- Aviation and Airworthiness Security



# Research Disciplines Drive Capabilities



**High Performance  
Computing**



**Nanotechnologies &  
Microsystems**



**Extreme  
Environments**

**Computer  
Science**

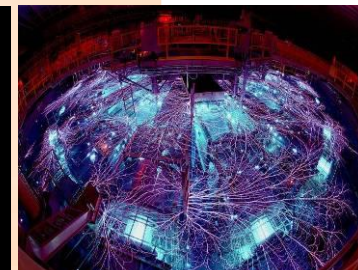
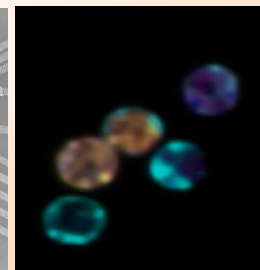
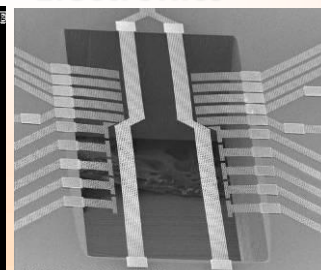
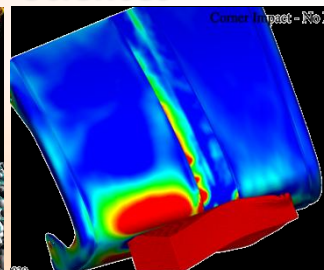
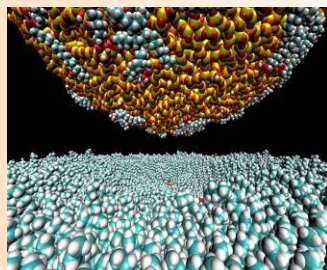
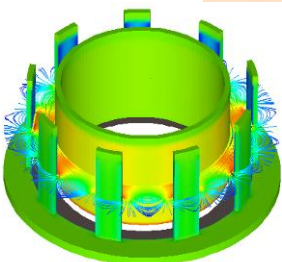
**Materials**

**Engineering  
Sciences**

**Micro  
Electronics**

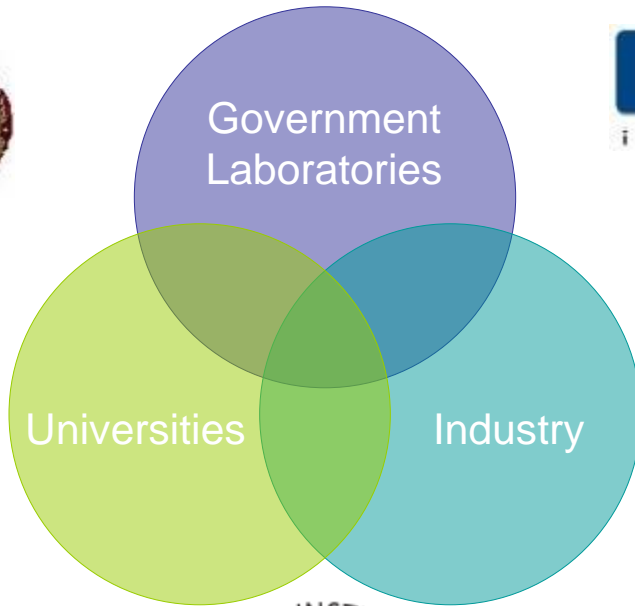
**Bioscience**

**Pulsed Power**



**Research Disciplines**

# Partnerships & Collaboration Accelerate Innovation





# The People of Sandia Give Back

- United Way in 2011
  - New Mexico: >\$4.6M
  - California: \$250,000
- Lockheed Martin donations to nonprofit organizations – \$1.4M
- Volunteer hours in 2011– 108,000
- K-12 education partnerships
- Beginning our 12<sup>th</sup> habitat house in April 2012





# University of Arizona



145 alumni work at Sandia, including 3 post-docs, 8 graduate interns and 1 undergraduate intern

Campus Executive: Duane Dimos, Director, Materials Science & Engineering



2 doctoral grad fellows: Ari Posner, Hydrology and Water resources and Luke Walker, Materials Science and Engineering

Deputy Campus Executive and Recruiting Team Lead: Ray Finley, Manager, Earth Systems Department



Truman Fellow: Darin Desilets, Hydrology

Average of \$671K/year in research contracts



Sandian Serving on Advisory Board: David Robinson, member Industrial Advisory Council

[www.sandia.gov/careers](http://www.sandia.gov/careers)

