



21 June 2011

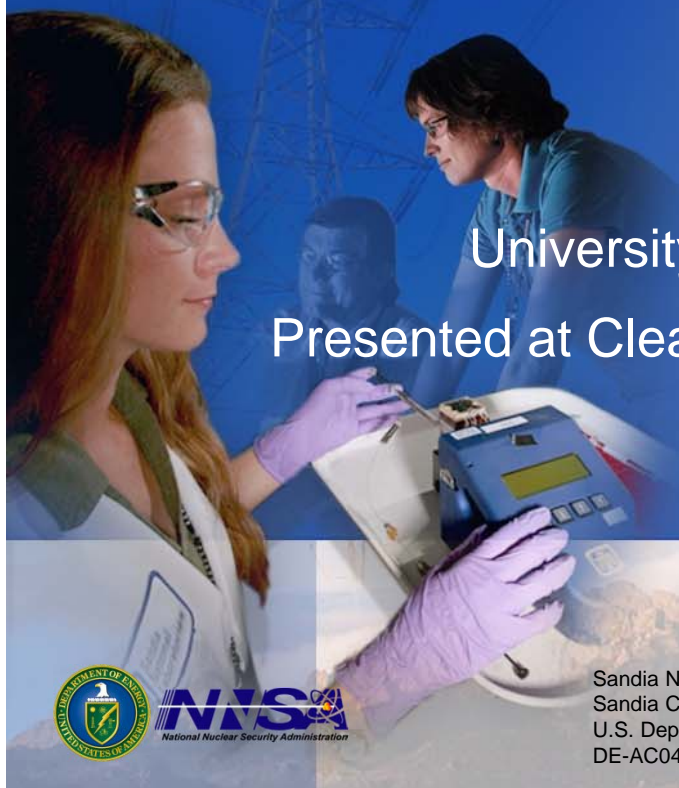


Research Partnerships

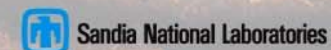
Marie L. Garcia

University Research Programs Manager

Presented at Cleantech 2011 Workshop & Action Summit



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.



Sandia's Sites

**Albuquerque,
New Mexico**



**Livermore,
California**



Tonopah, Nevada



**Waste Isolation Pilot Plant
Carlsbad, New Mexico**



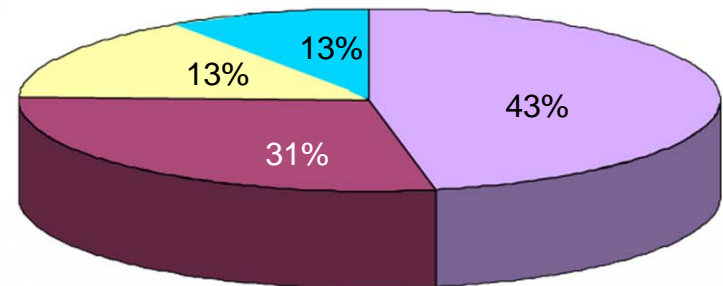
Pantex, Texas



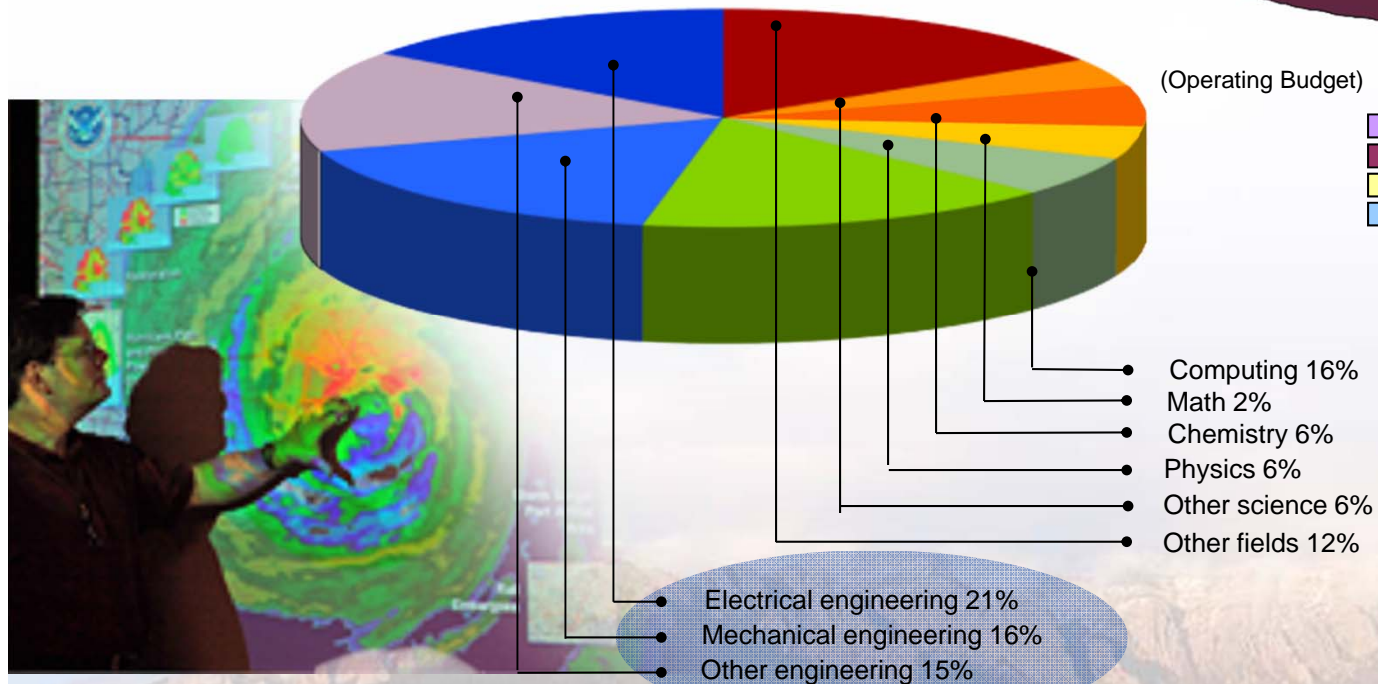
Sandia's People and Budget (As of October 15, 2010)

- On-site workforce: 11,677
- Regular employees: 8,607
- Gross payroll: ~\$898.7 million

FY10 operating revenue
\$2.3 billion



Technical staff (4,277) by discipline:



(Operating Budget)

- Nuclear Weapons
- Defense Systems & Assessments
- Energy, Climate, & Infrastructure Security
- International, Homeland, and Nuclear Security

Enhancing the Nation's Security While Advancing the Frontiers of Science and Engineering

Mission Areas



Energy, Climate & Infrastructure



Nuclear Weapons



Defense Systems & Assessments



International, Homeland and Nuclear Security

High Performance
Computing &
Simulation

Nanotechnologies
and Microsystems

Extreme
Environments

Computer
Science

Materials

Engineering
Sciences

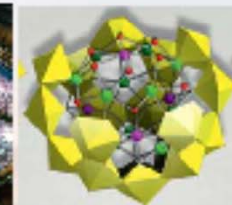
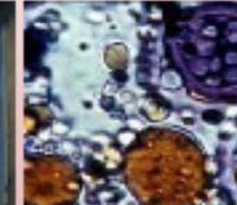
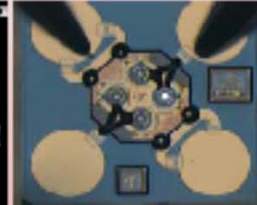
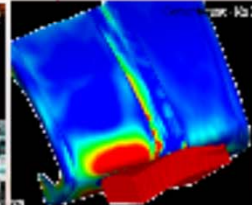
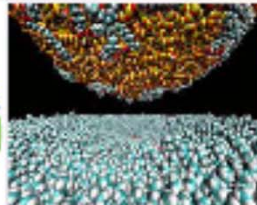
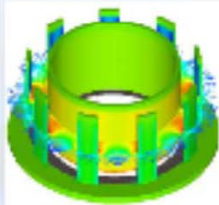
Micro
Systems

Bioscience

Pulsed Power

Geoscience


Combustion
Chemistry



Mission delivery while advancing the frontiers of science and engineering.



Sandia National Laboratories



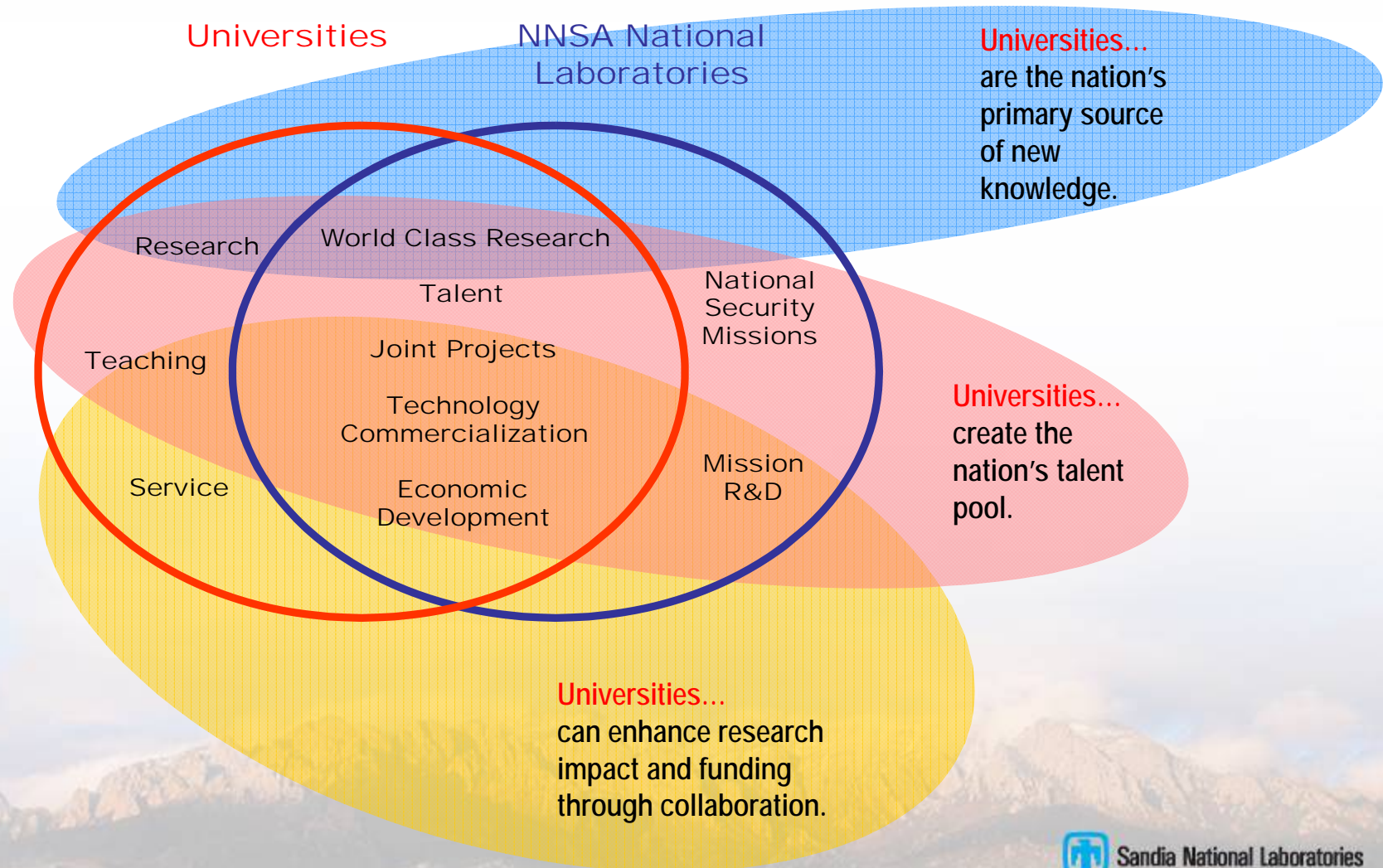
What Do We Mean by “National Security”

- Sandia is a multidisciplinary national security laboratory that develops technologies to:
 - Sustain and modernize the nuclear deterrent,
 - Prevent the spread of weapons of mass destruction,
 - Protect the national infrastructure,
 - Defend the nation against terrorist threats,
 - Provide new capabilities to the armed forces, and
 - Ensure the stability of the nation’s energy and water supplies.

Sandia’s science, technology, and engineering help ensure that the nation maintains technological superiority and preparedness, which are critical to national defense, homeland security, and the nation’s economic well-being.



University Partnerships = World-class Science + Top Future Employees



Sandia's University Partnerships' Strategy

Our strategy is to establish enduring partnerships with a focused set of universities to nurture talent, collaborative research, and national advocacy.

Recruit, retain and develop the best and brightest



Build two-way relationships of mutual benefit and advocacy

Conduct collaborative world-class R&D to support mission needs

Corporate investments in research, recruiting, and education are aligned with the focused set of partner universities.

Campus Executive Program

- The program by which Sandia currently executes its University Partnerships' strategy
- Pairs Sandia executives (VPs & Directors) with University Vice Presidents of Research/Deans
- Campus Executive schools are selected based on:
 - Academic quality
 - Talent capture
 - Research investment
 - Demographics including diversity



Campus Exec
↕
Technical
Managers & Staff
↕
Recruiting & University
Research Managers

President
VP, Research
Dean
↕
Faculty
↕
Students



**Strategically team at
multiple levels across
institutions.**

Basic Collaborations are the Foundation of our University Interactions



Increasing:

- **Influence**
- **Skill Set**
- **Intentionality**
- **Commitment**
- **Exclusivity**
- **Shared Destiny**

"Merger"

Strategic Ally:
Program-scale collaborations and national policy-level interactions. Requires mutual institutional investment and advocacy.

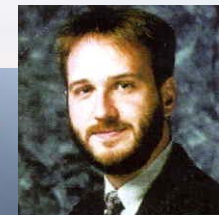
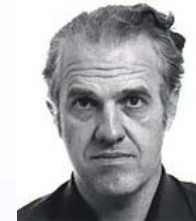
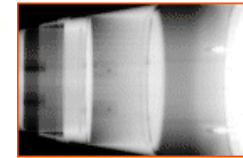
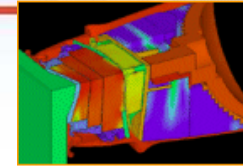
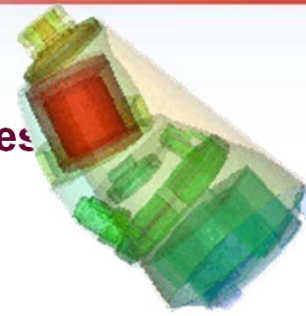
Engaged Partner: A focused number of key relationships with defined benefits beyond individual efforts. Worthwhile to execute an MOU. Sandia's Campus Executive program targets this level.

Basic Relationship: Individual projects and people. Sandia works with more than 100 universities at this level of engagement.



Partnerships are Built upon Interactions: Faculty

- **Collaborative research**
 - ~ \$25M annually, with ~100 universities
 - Mission related
- **Sabbaticals and summer research appointments**
 - ~ 20 appointments annually
 - 4 weeks to full year
- **PECASE** (President's Early Career Award for Scientists & Engineers)
 - \$250K award
 - New faculty with prior lab relationship
 - Currently 6 awardees



Partnerships are Built upon Interactions: Students

- **Graduate Fellowships**
 - ~ 80 annually
- **Internships & Co-ops**
 - ~ 800 technical interns annually
 - Year-round (semester/quarter) or summer
 - Annual Symposium
 - Critical Skills Institutes
- **Post Doctoral appointments**
 - ~ 175 on roll
 - 1-3 year appointments
 - 2-3 Truman Fellows annually



Develop Tools to Support Partnerships

- Graduate Fellowships
- Internships and Co-ops
 - Critical Skills Institutes
- Post Doctoral Appointments
- Informing national policy
- Building relationships at multiple levels
- Leadership Outreach Committees



- Collaborative Research
- Sabbaticals
- Joint Appointments
- PECASE
- Capstone Projects



Steps toward Successful Research Collaborations

- **Do some simple research before contacting the Labs:**
 - Who's doing research in your field of interest?
 - Determine if others from your institution are collaborating with a particular Lab. Obtain leads from them.
- **Start at the “basic relationship” level: PI to PI**
- **Convince the PI that they need your research expertise**
 - Be able to demonstrate how you might fill a research gap
- **Have realistic funding expectations**
 - The Labs' university partnership expenditures are less than 1% of the total budget
 - Many collaborations are unfunded or funded by a third party

**A National Laboratory “experience” is key to
successful collaborations**