



Opportunities for Collaboration

DOE EPSCoR Annual Program Review
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Sandia National Laboratories is a multi-program laboratory operated by Sandia Corporation, a Lockheed Martin Company, for the United States Department of Energy's National Nuclear Security Administration under Contract DE-AC04-94-AL85000.
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Technologies for National Security



We develop technologies to:

- Sustain, modernize, and protect our nuclear arsenal
- Prevent the spread of weapons of mass destruction
- Provide new capabilities to our armed forces
- Protect our national infrastructures
- Ensure the stability of our nation's energy and water supplies
- Defend our nation against terrorist threats



Four Mission Areas

- Nuclear Weapons
- Defense Systems and Assessments
- Energy, Resources, and Nonproliferation
- Homeland Security and Defense





Distributed Facilities to Meet National Needs



**Albuquerque,
New Mexico**



**Tonopah Test Range,
Nevada**



**Kauai Test Facility,
Hawaii**



Livermore, California



**Yucca Mountain,
Nevada**

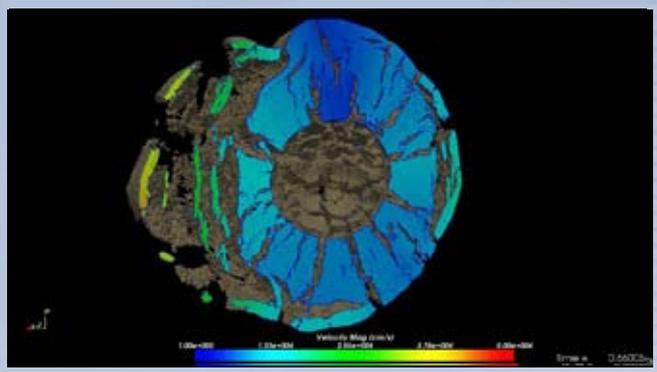


WIPP, New Mexico

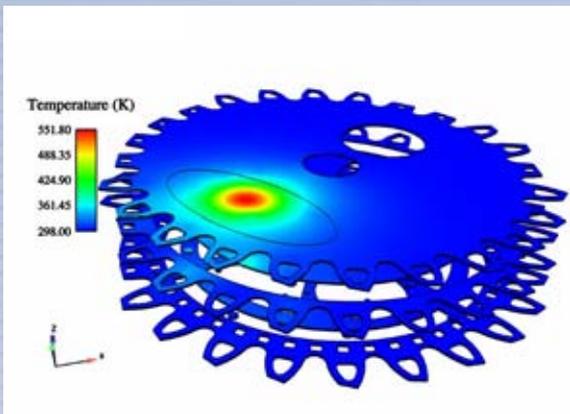


Pantex, Texas

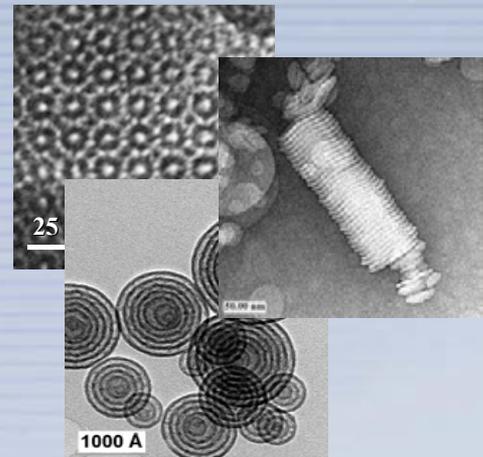
Our Mission Focus Relies on Strong Science and Engineering



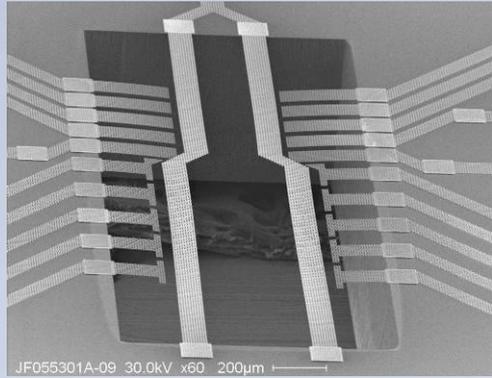
Computational and Information sciences



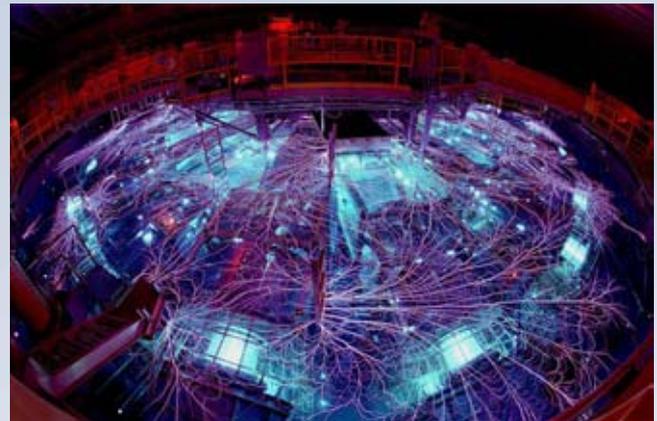
Engineering Sciences



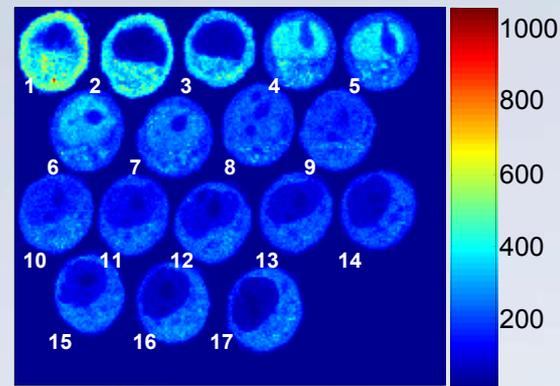
Materials Science and Technology



Microelectronics and Photonics



Pulsed Power



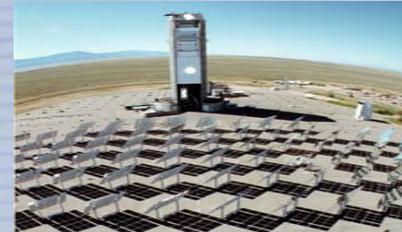
Bioscience



Foundational & Differentiating S&E Facilities

Foundations for transforming science to engineering

1.8B\$ of capital investment (06\$)



Solar Tower



HERMES III



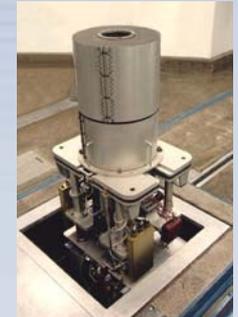
Micro-fabrication (MESA, MDL, CSRL)



Red Storm



Annular Core Research Reactor (ACRR)



Sandia Pulsed Reactor III (SPR)



Pulsed Power



Center for Integrated Nanotechnologies (CINT)



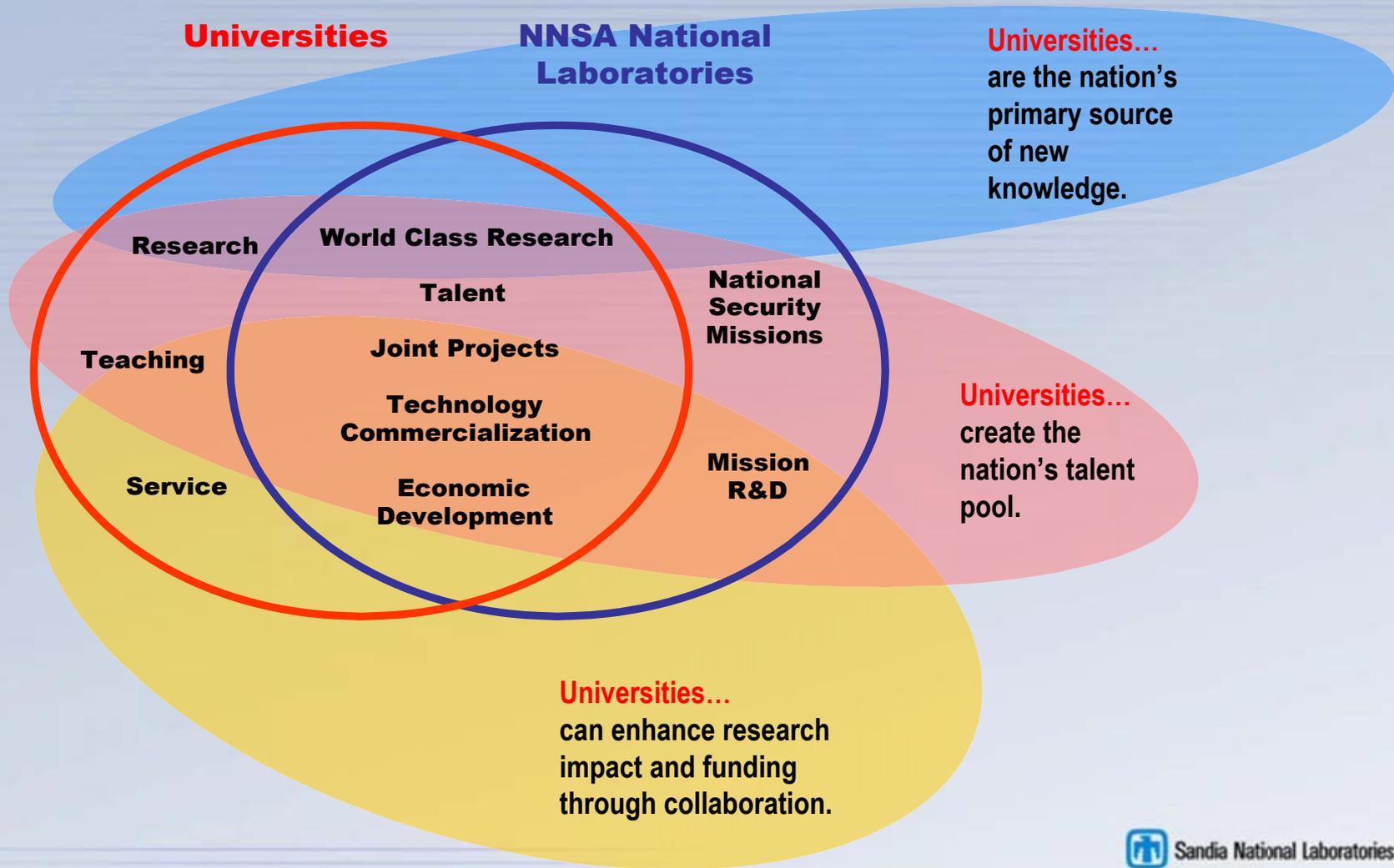
Thermal Test Complex



Combustion Research Facility



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

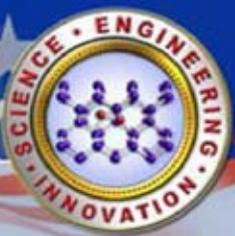


Build two-way relationships of mutual benefit and advocacy

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.

Some Key University Partners



STANFORD UNIVERSITY »

Carnegie Mellon

M UNIVERSITY OF MICHIGAN



University of Colorado at Boulder

UF UNIVERSITY OF FLORIDA



UC DAVIS
UNIVERSITY OF CALIFORNIA

THE UNIVERSITY of
NEW MEXICO

- In 2007, Sandia invested \$24.7M research partnerships with 103 universities

Berkeley
UNIVERSITY OF CALIFORNIA

New Mexico Tech
SCIENCE • ENGINEERING • RESEARCH • UNIVERSITY



Types of Research Collaborations

- **Technical outreach to universities: Campus Executive Program (CEP)**
- **Contract Research and Graduate Research Projects**
- **Faculty Development programs**
- **Faculty Awards for Research Leadership and Contributions to National Security**
- **Distinguished Post Doc Program**
- **Part-time Teaching Positions for Sandians: Joint appointments, adjunct faculty, etc.**
- **Joint Research and Development Efforts**



Tools used to support the partnership model

- 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 and Summer Appointments
- PECASE
- Capstone Projects



Backup Slides

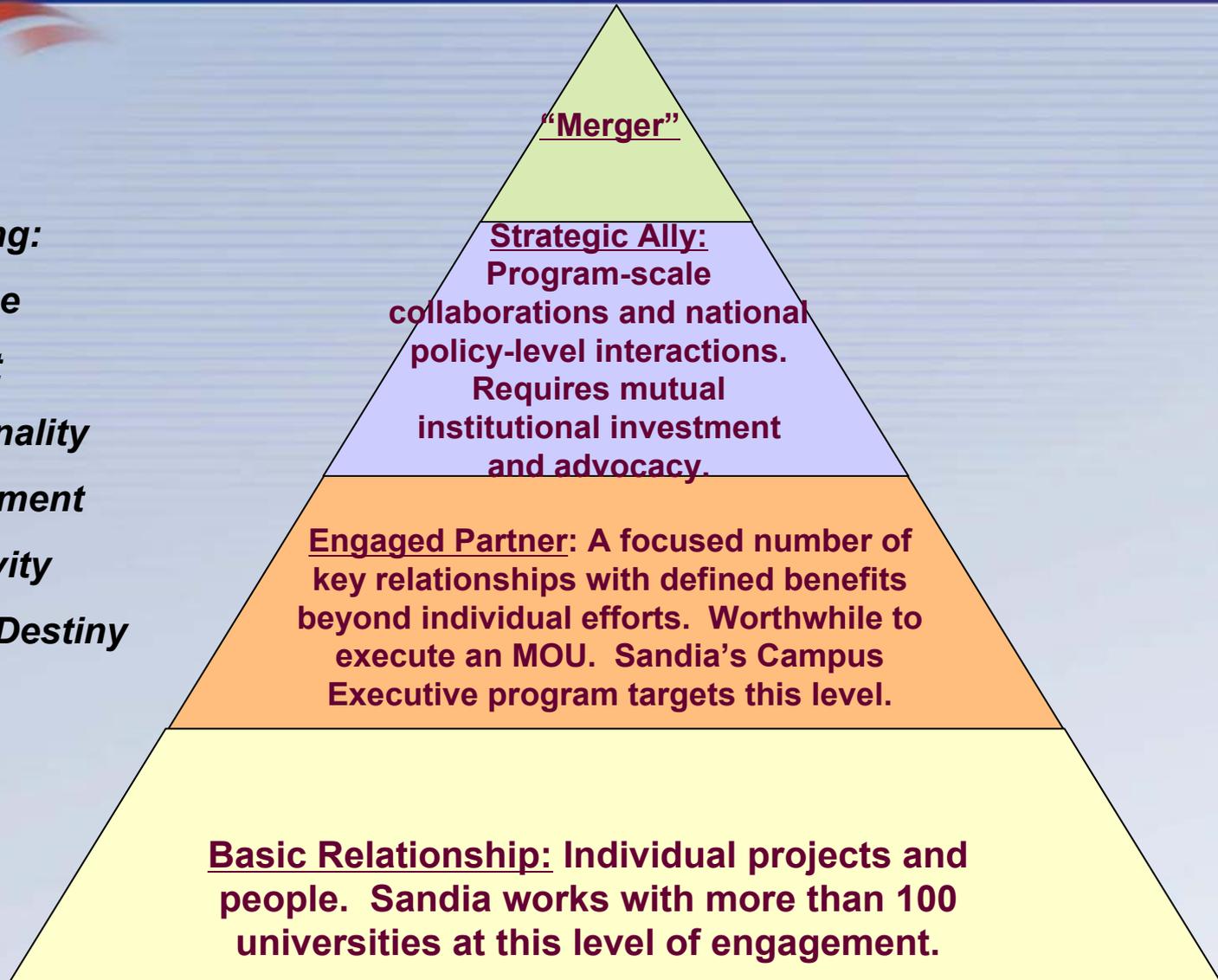


Partnerships take many forms



Increasing:

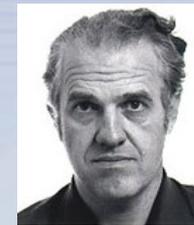
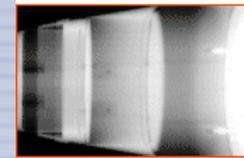
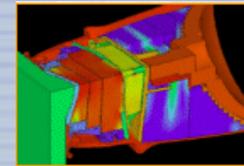
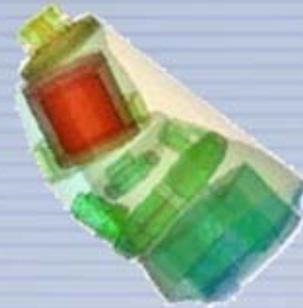
- **Influence**
- **Skill Set**
- **Intentionality**
- **Commitment**
- **Exclusivity**
- **Shared Destiny**





Partnerships are built upon interactions: Faculty

- Collaborative research
 - ~ \$25M annually
 - 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

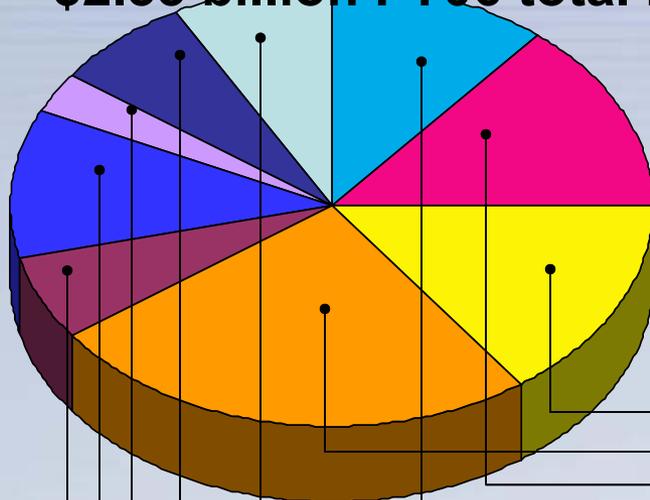
- **Graduate Fellowships**
 - ~ 80 annually: SMP, DSP, GEM, NPSC, LDRD
- **Internships & Co-ops**
 - ~ 800 technical interns annually
 - Year-round (semester/quarter) or summer
 - Annual Symposium
 - Critical Skills Institutes (next slide)
- **Post Doctoral appointments**
 - ~ 140 on-role
 - 1- 3 year appointments
 - 2-3 Truman Fellows annually





Highly Skilled Workforce

- More than 8,600 full-time employees
- More than 1,500 PhDs and 2,700 MS/MAs
- 2,200 on-site contractors
- \$2.33 billion FY06 total budget



- Mechanical Engineering - 16%
- Electrical Engineering - 22%
- Other Engineering - 15%
- Other Science - 6 %
- Physics - 6%
- Chemistry - 6%
- Math - 2%
- Computing - 16%
- Other Fields - 6 %

