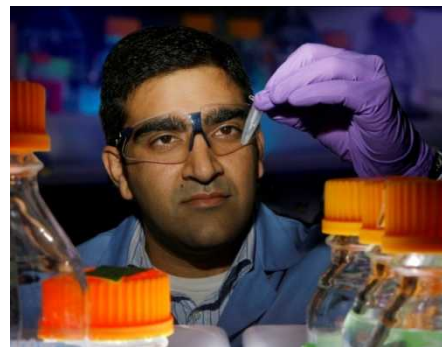
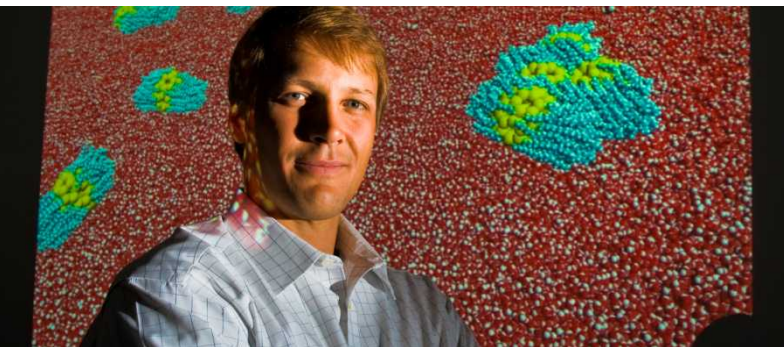


Exceptional service in the national interest



Research at Sandia

Julia M. Phillips, Ph.D.

Vice President and Chief Technology Officer

A little about Sandia's Chief Technology Officer

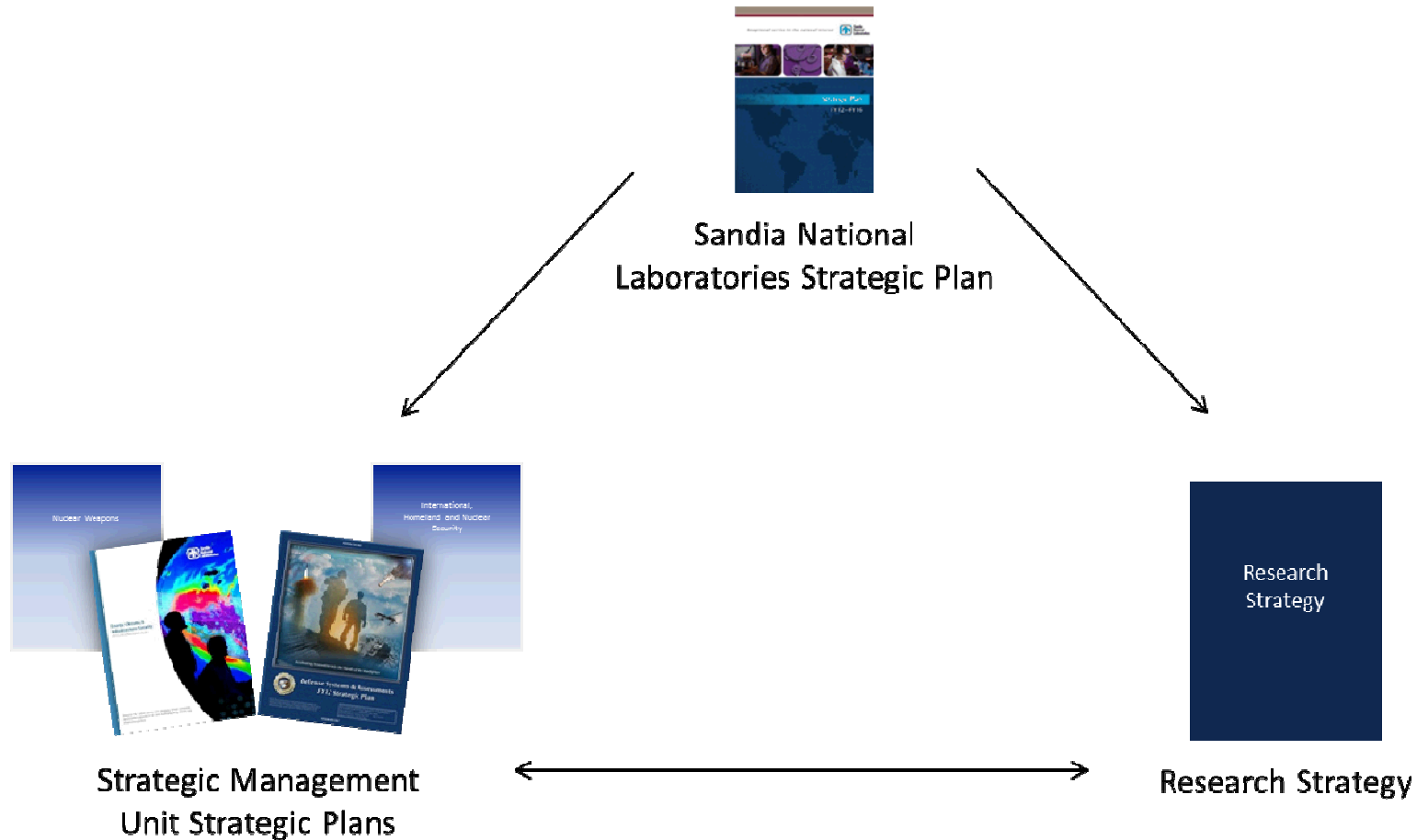
- My responsibilities include:
 - Science & Technology Research Strategy
 - Internally Funded R&D (Laboratory Directed Research and Development) Strategy and Management
 - Partnerships Strategy and Management



Laboratory missions are built on a foundation of capabilities – research, people, and facilities & tools

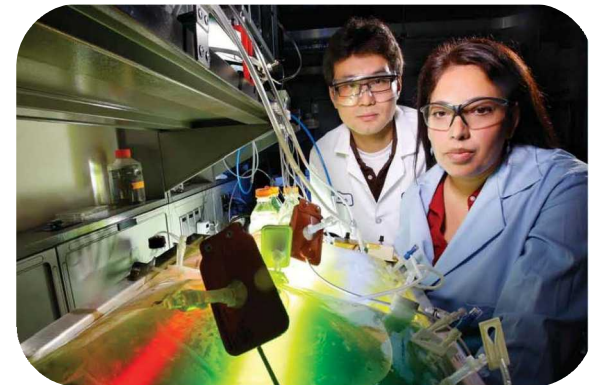
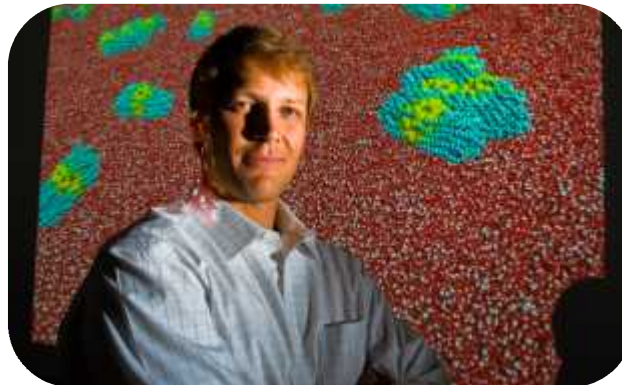


Sandia's Research Strategy is part of the Laboratories' strategy



Sandia's research objective

Research conducted at Sandia shall enable mission delivery now and in the future and advance the frontiers of science and engineering.



Research strategy objective

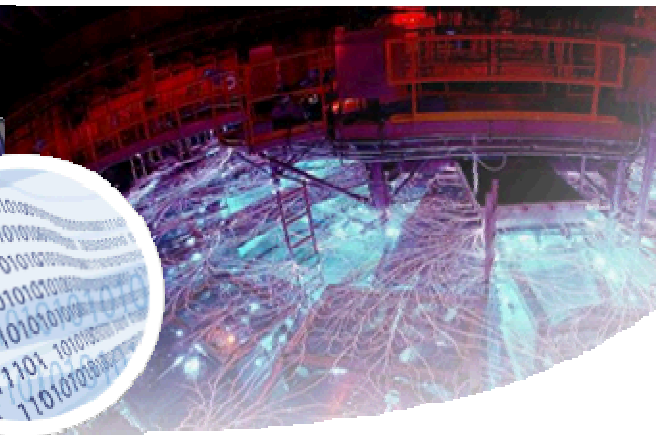
- A world-class research portfolio that:
 - provides critical differentiation in the delivery of mission commitments
 - tackles ground-breaking interdisciplinary research challenges that create transformational opportunities in national security
 - is nurtured by a vibrant, problem-rich research environment that is sustained as a fundamental element of the Laboratories' strategic plan

Strong Research Foundations provide differentiation in mission delivery

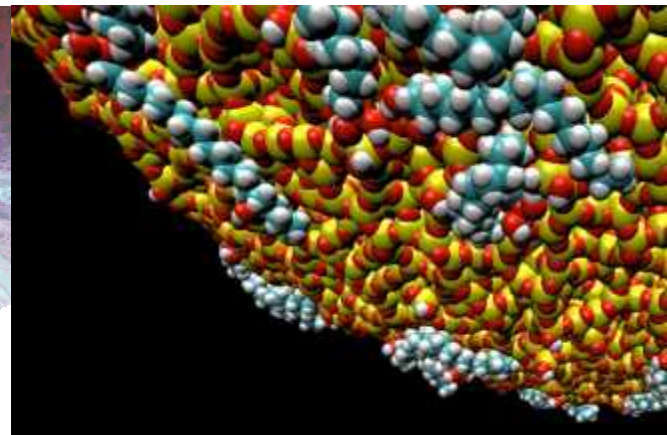
Computing &
Information Sciences



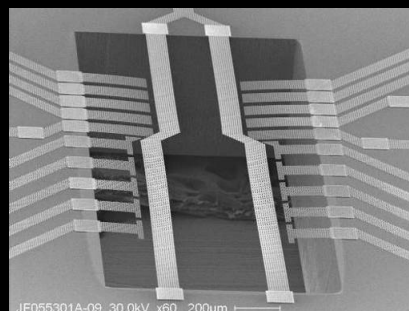
Radiation Effects &
High Energy Density Science



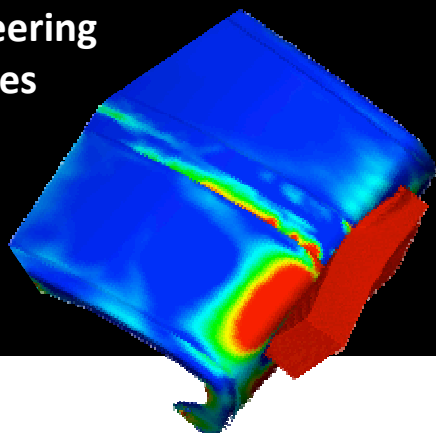
Materials Science



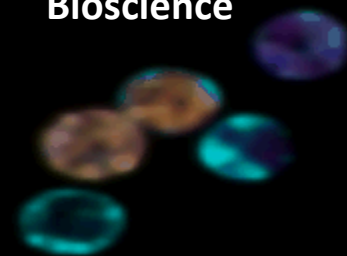
Nanodevices &
Microsystems



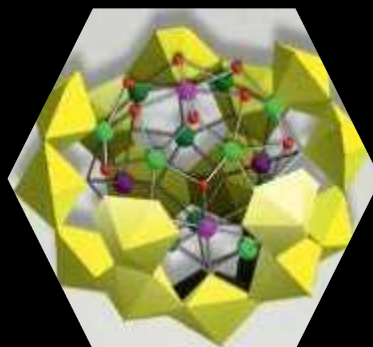
Engineering
Sciences



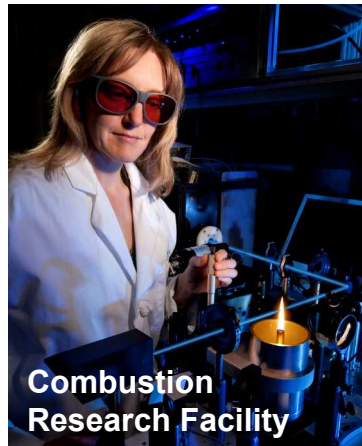
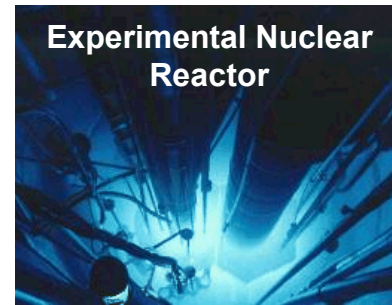
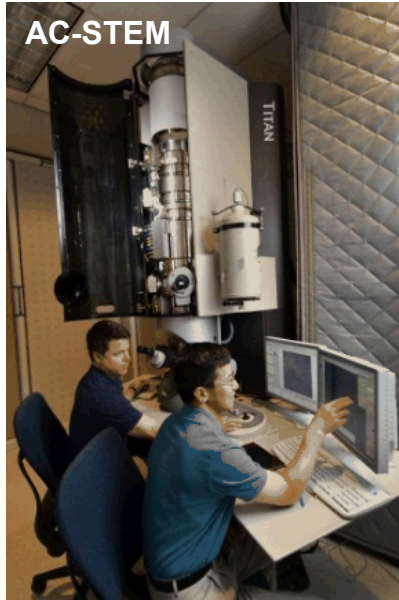
Bioscience



Geoscience



We steward key R&D facilities for the nation



Sandia is identifying research challenges that focus on big critical path issues

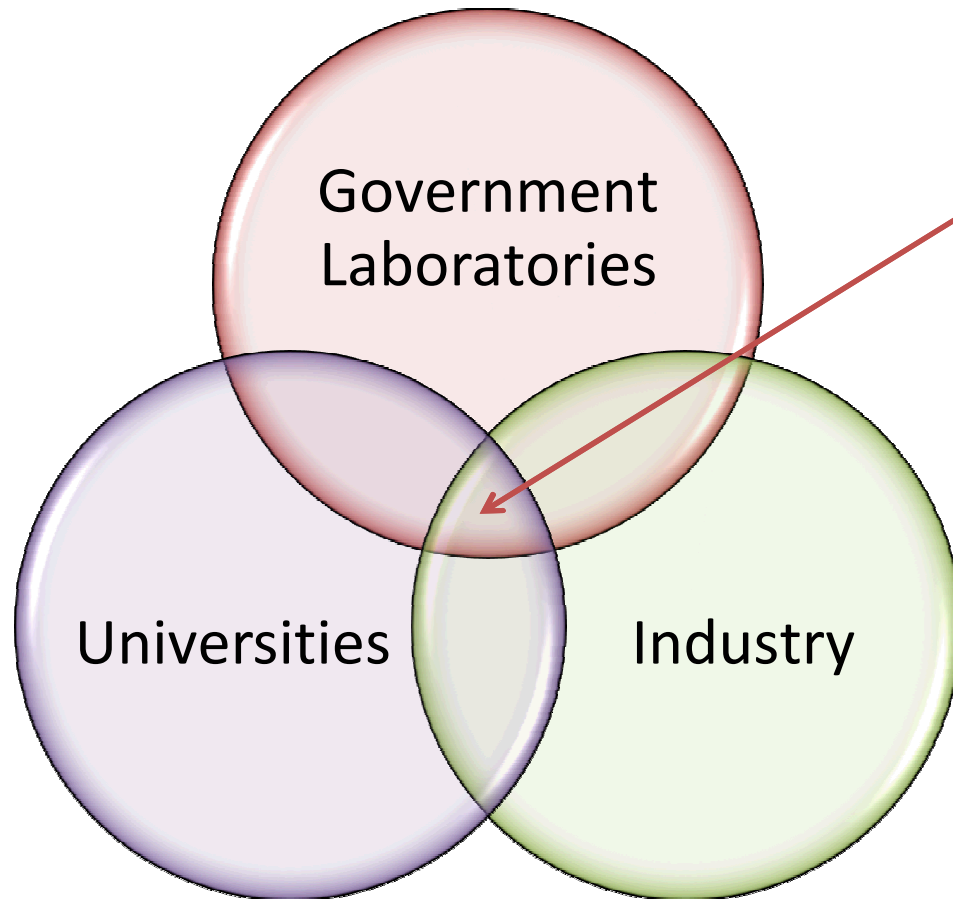
Research Challenge Characteristics:

- advance the state-of-the-art in science and engineering
- surmount a critical path technical obstacle for a mission challenge
- create differentiating capability for the Laboratory
- bring together a broad cross section of Laboratory capabilities and research foundations
- require an interdisciplinary approach and the active engagement of expertise from fundamental science to technology application
- have a long but finite lifetime
- will result in a long-term science and engineering legacy for Sandia
- the full set will have impact on a spectrum of time scales

Draft research challenges

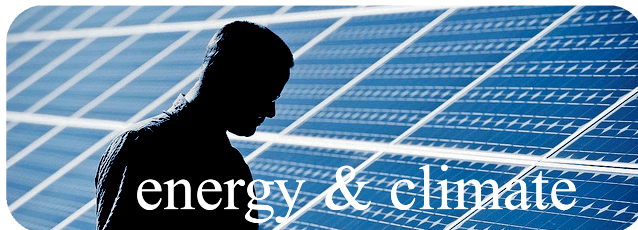
- Beyond Moore Computing
- Data Science
- First to High Yield Fusion
- Trusted Systems and Communications
- Detection at the Limit
- Engineering of Materials Reliability
- Cyber Resiliency
- Resiliency in Complex Systems
- Integrative Biological Systems Analysis and Engineering
- Power on Demand
- Embedded Annual Assessment

Strategic partnerships accelerate innovation



Our partnerships
fill critical research gaps and
maximize impact through
collaboration,
technology maturation,
and deployment

Please stick around for our poster session



2:30 – 4:00 p.m.

**Network with Sandia
representatives!**