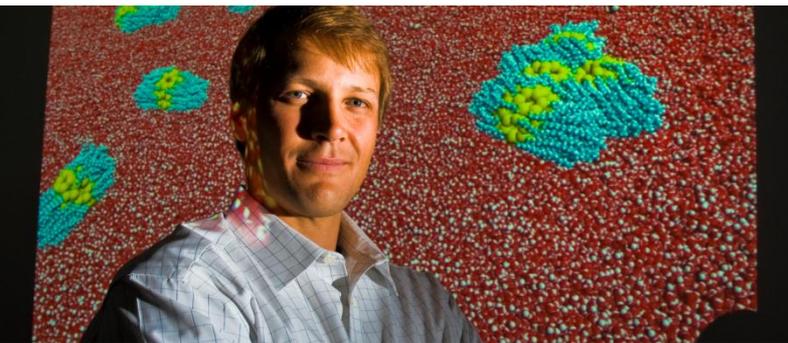


*Exceptional service in the national interest*



# Research at Sandia

Julia M. Phillips, PhD  
Chief Technology Officer



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. SAND2013-1419P

# Sandia's History



exceptional service in the national interest.

THE WHITE HOUSE  
WASHINGTON  
May 13, 1949

Dear Mr. Wilson:

I am informed that the Atomic Energy Commission intends to award the Bell Telephone Laboratories accept under contract to the Atomic Energy Commission, Albuquerque, New Mexico.

This operation, which is of an atomic nature, is of great importance to the national defense, and should have the highest technical direction.

I hope that after you have heard more in detail from the Atomic Energy Commission, your organization will find it possible to undertake this task. In my opinion you have here an opportunity to render an exceptional service in the national interest.

I am writing a similar note direct to Dr. C. E. Buckley.

Very sincerely yours,  
*Harry Truman*

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



# Four Mission Areas Supporting National Security



Nuclear Weapons

Energy Climate and Infrastructure Security



International Homeland and Nuclear Security

Lab on a Chip  
Manufacturing for chemistry, biology & bioengineering

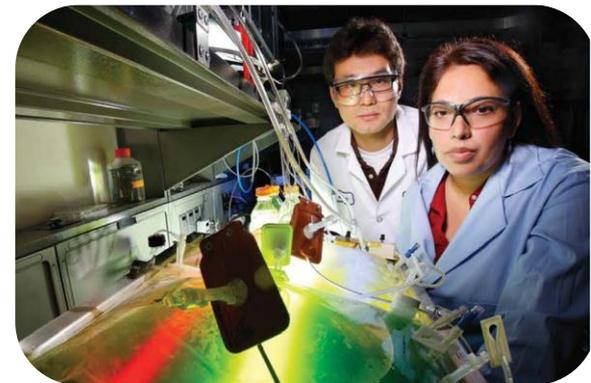
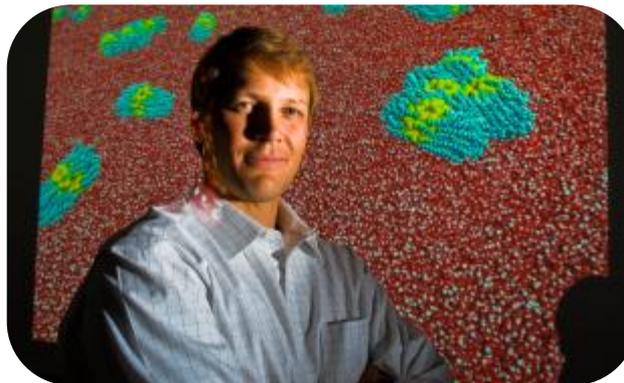


Defense Systems and Assessments



# Research Objective

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

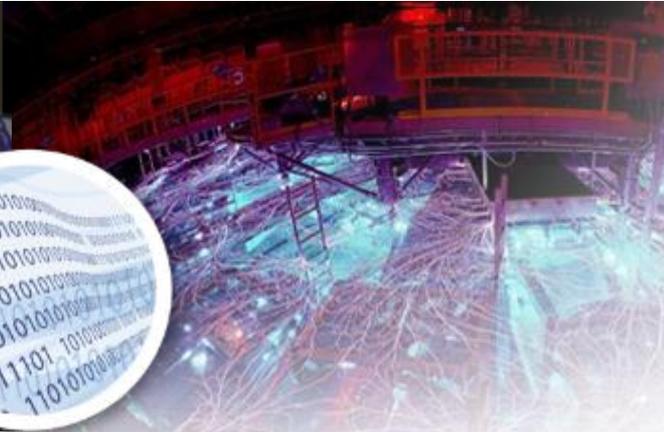


# Strong Research Foundations Enable Mission Performance

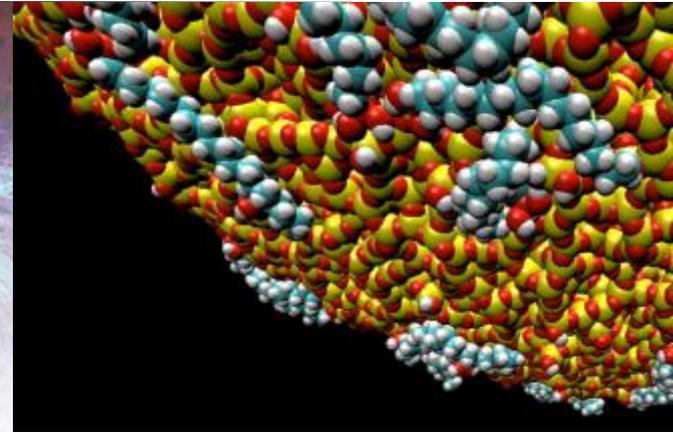
Computing & Information Sciences



Radiation Effects & High Energy Density Science

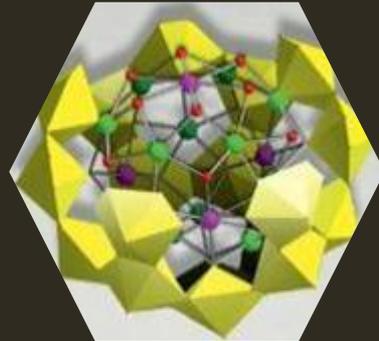
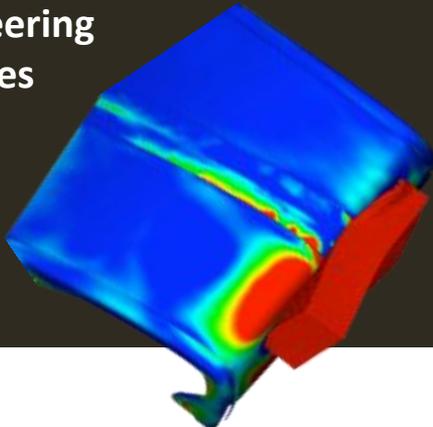


Materials Science

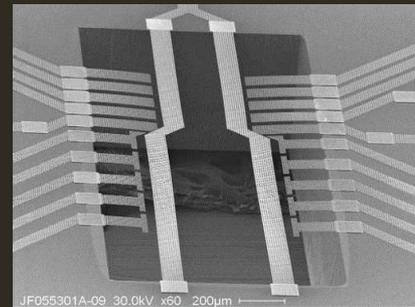


Nanodevices & Microsystems

Engineering Sciences



Geoscience

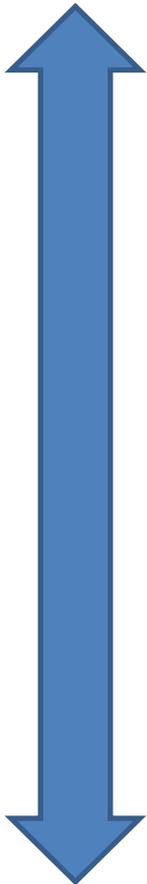


Bioscience



# SNL Cognitive Science Research

**Micro**



**Social**

- Cognitive function from energy efficient neuronal processes and materials – brain inspired computing
- HPC neuron simulations for neuroscience, complex systems and information processing
- EEG validation of improved memory and decision making in national security applications
- New methods and sensor technologies for detecting and augmenting cognitive state
- Measure and train cognitive adaptability
- Validating agent based models through virtual worlds
- Behavioral Influence Assessments for understanding conflict and deterrence

# Sandia is Identifying Mission and Research Challenges

## Why Sandia?

- National Security Impact
- Existing Capability Base
- Enables other parts of our mission and advances the frontiers of science & engineering

