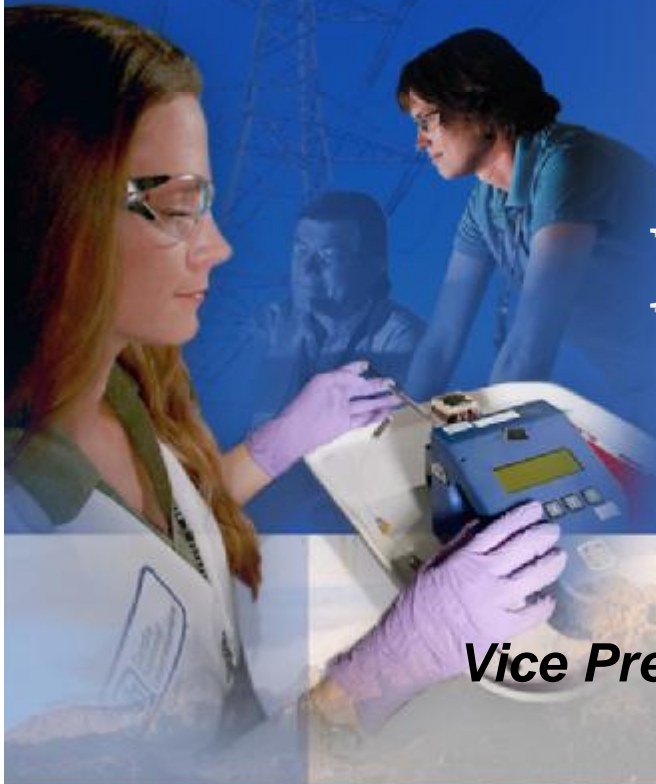




December 3, 2009



# National Laboratories and International Cooperation

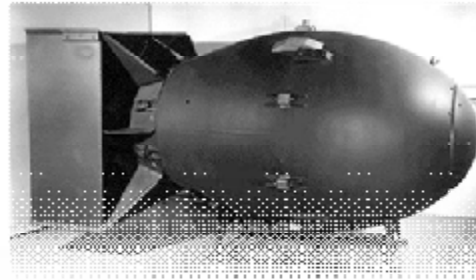


***J. Stephen Rottler***  
***Vice President, Science and Technology***  
***Chief Technology Officer***

A stylized graphic of the American flag, featuring red and white stripes and yellow stars on a blue background, positioned on the left side of the slide.

# Sandia's History

***“Exceptional service in the national interest”***



THE WHITE HOUSE  
WASHINGTON

May 15, 1948

Dear Mr. Wilson:

I am informed that the Atomic Energy Commission intends to see that the Bell Telephone Laboratories accept under contract the direction of the Sandia Laboratory at Albuquerque, New Mexico.

This operation, which is a vital aspect of the atomic weapons program, is of extreme importance and urgency in the national defense, and should have the best possible 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. Huskley.

Very sincerely yours,

Harry Truman

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



# The Evolution of Our Mission

## 1950s

Production engineering and Manufacturing engineering

## 1960s

Development engineering

## 1970s

Multiprogram laboratory

## 1980s

Research, development and production

## 1990s

Post-Cold War transition

## 2000s

Expanded national security role

**% NW FUNDING**

100%  
90%  
80%  
70%  
60%  
50%  
40%  
30%  
20%  
10%  
0%



# Defense Systems & Assessments

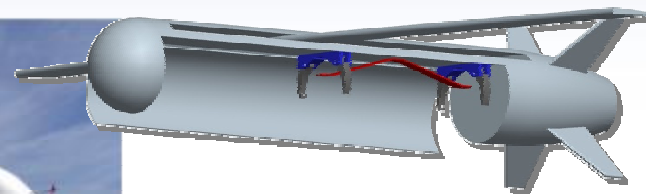
Materials International Space Station Experiment



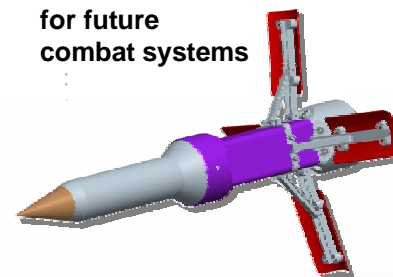
Real-time SAR images



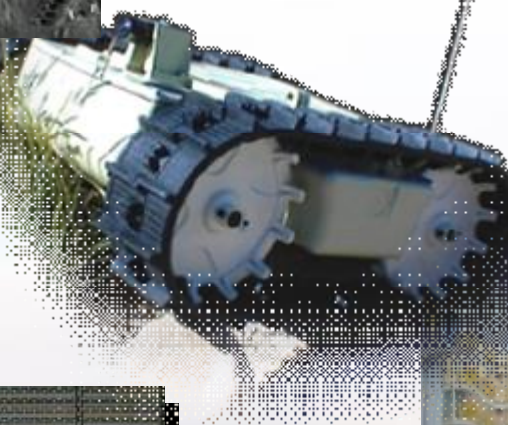
Predator UAV with SAR



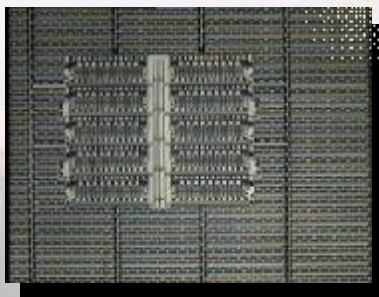
Ground sensors for future combat systems



Small robotic vehicle



MEMS louvers



Shuttle return to flight

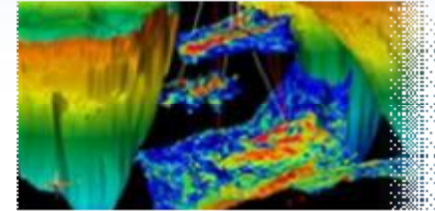


Target launch for Ballistic Missile Defense



# Energy, Resources & Nonproliferation

Safe, secure,  
reliable energy  
supply and  
infrastructure



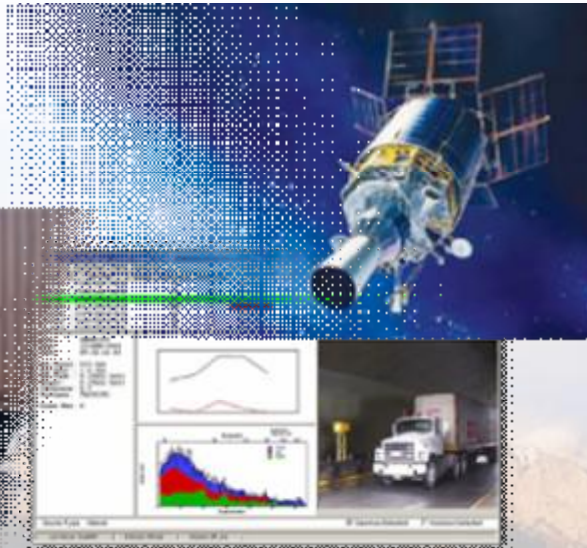
Energy efficiency and  
environmental stewardship



Energy and water  
interdependency



Nonproliferation





# Homeland Security & Defense



**Airport security**



**Maritime security**



**Energy supply**



**Infrastructure security**



**Physical security,  
base protection**





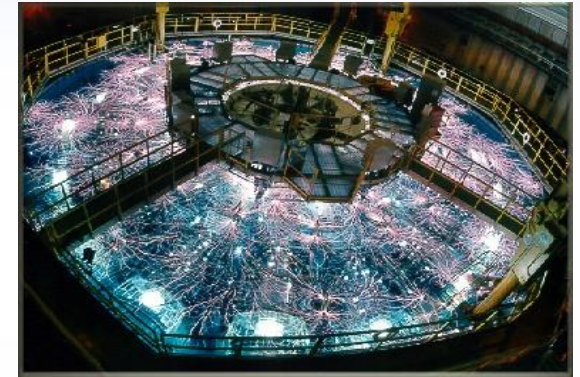
# Science-Based Engineering



**High  
Performance  
Computing &  
Simulation**

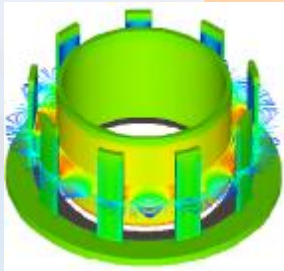


**Nanotechnologies and  
Microsystems**

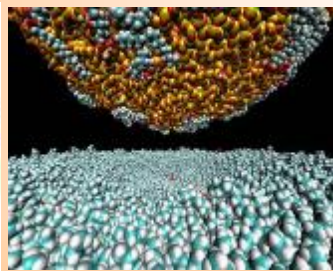


**Extreme  
Environments**

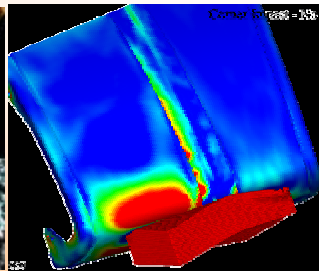
**Computer  
Science**



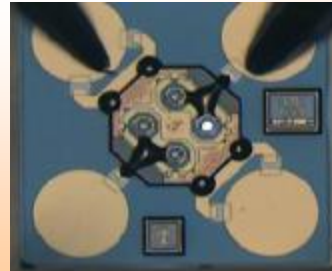
**Materials**



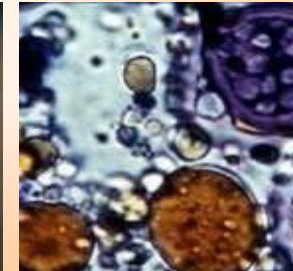
**Engineering  
Sciences**



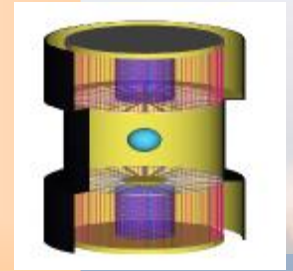
**Micro  
Systems**



**Bioscience**

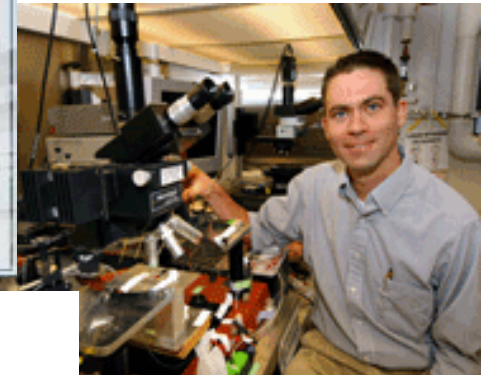


**Pulsed  
Power**



# Engaging the Scientific Community Helps Us Maintain a World-Class Workforce

Center for Integrated Nanotechnologies

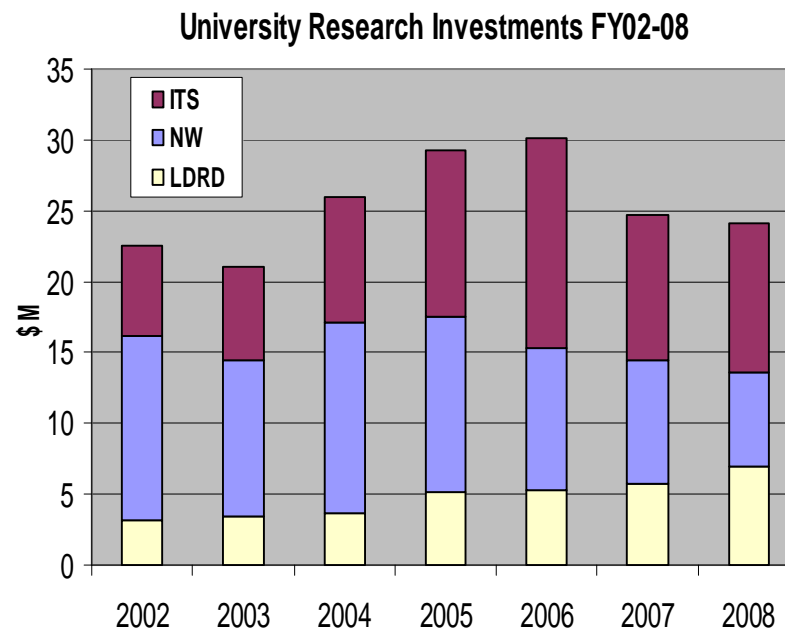


Truman Fellows

Computer Science Research Institute



Combustion Research Facility

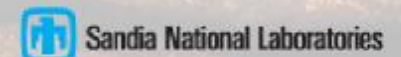
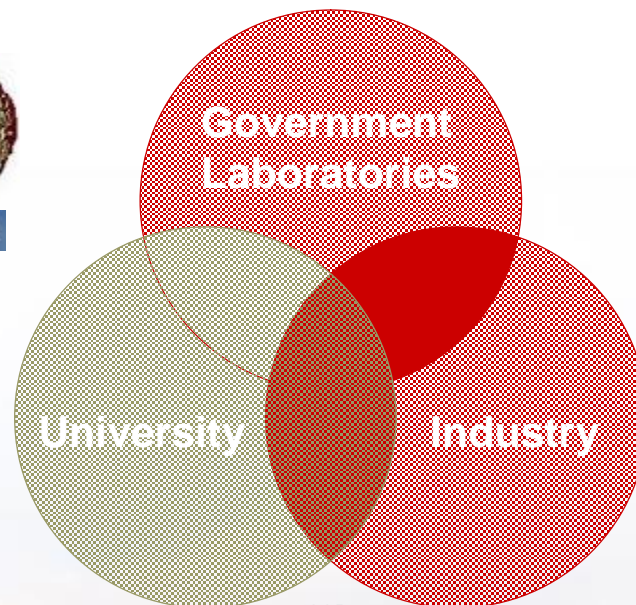


Student Interns



# Partnerships on a Global Scale

## *Accelerating Innovation*





# Example: National Institute for Nano-Engineering



A Sandia-University-Industry Consortium

- Multi-disciplinary projects
- Develop technical leaders
- Accelerate innovative solutions



Students

Mentors

Facilities

*Technical Depth*

*Leadership*

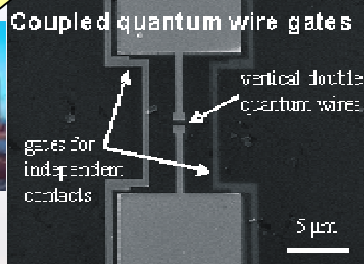
**Global  
Innovation  
Leaders**

*Teamwork*

*Breadth*



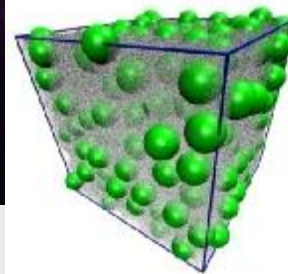
2007  
NINE  
Summer  
Class



**Next-generation  
Nanoelectronics**



**Nano for  
Energy**



**Computation &  
Modeling**

**Nano  
Materials**

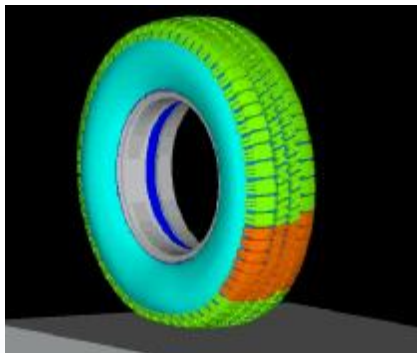


Sandia National Laboratories

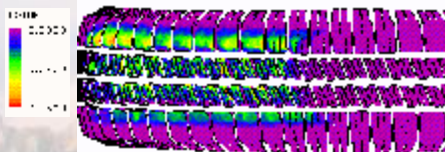
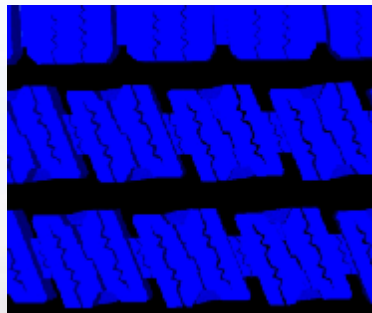


# Example: Industrial Partnerships

**GOODYEAR**



**Assurance™  
Featuring  
TripleTred  
Technology™**



**IBM**



**intel**



**hp**  
invent




**P&G**

**LOCKHEED MARTIN**

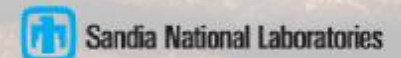
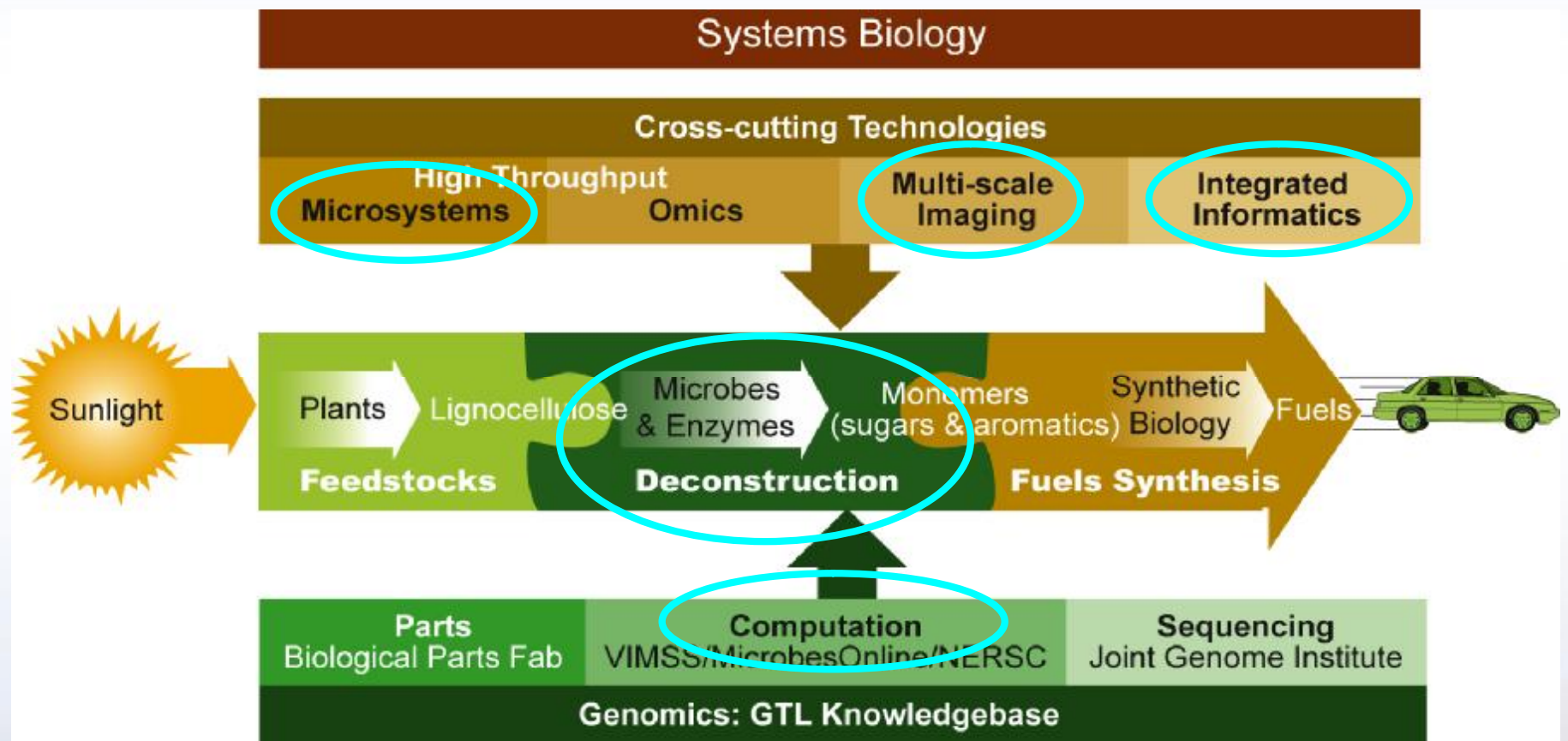
**CORNING**

**ExxonMobil**  
Taking on the world's toughest energy challenges.™

 **Sandia National Laboratories**



# Example: DOE Joint BioEnergy Institute



# Emerging International Collaborations

- n Carbon Capture and Storage
- n Low-Carbon Technologies
- n Photovoltaics
- n Climate Change
- n Smart Grid
- n Nuclear Energy
- n Energy Efficiency
- n Renewable Technologies
- n Energy and Water Relationships
- n Nanoelectronics and Nanomaterials
- n Computational Materials Sciences
- n Basic Research

