

An Overview of Sandia National Laboratories

SAND2008-1392P

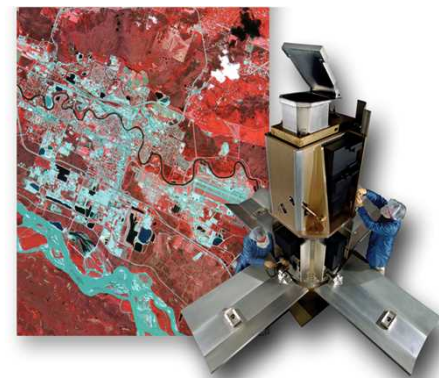
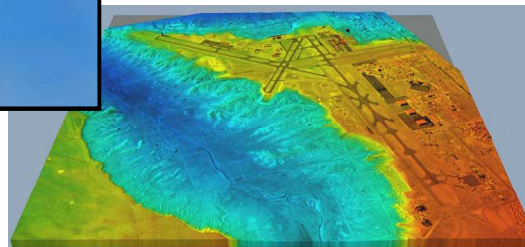
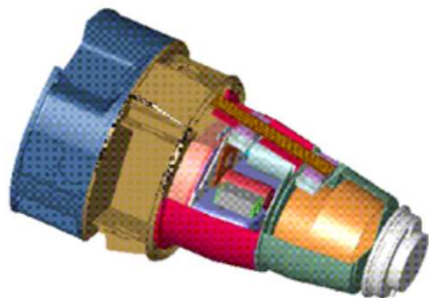
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<http://www.sandia.gov/mst/>





Sandia National Laboratories Sites



***Weapon Evaluation Test Lab
(WETL)
Amarillo, Texas***



***Tonopah Test Range
Tonopah, Nevada***



***Pacific Missile Range
Kauai, Hawaii***



***Sandia New Mexico
Albuquerque, New Mexico***



***Sandia California
Livermore, California***



***Waste Isolation Pilot Plant
(WIPP),
Carlsbad, New Mexico***



***Yucca Mountain Repository
Yucca Mountain, Nevada***

Sandia's Historical Primary Mission: Non-Nuclear Components in Nuclear Weapons

- **Design/Development: All Non-Nuclear NW Components (~90% of total parts)**
- **Production: Neutron Generators**
- **Nuclear Surety: Safety, Security (incl. use control), Reliability & Survivability**



**W88 Ballistic Missile
Arming, Fuzing, &
Firing System**

Radars
Impact fuzes
Shock absorbers
Casing
Detonators
Firing sets
Capacitors
Switches
Switch tubes
Rectifiers
Programmers
Neutron generators
Reservoirs
Stronglinks, PALs
Batteries
Timers
Spin generators
Parachutes
Ejector systems
Access controllers
Training & Surveillance



B83 Strategic Bomb



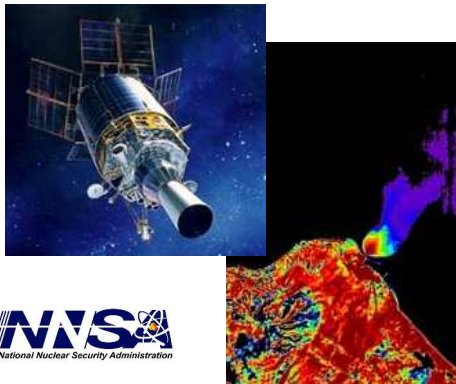
**Neutron
Generator
Production**

Today -- Broader Mission as a National Security Science & Engineering Lab

Though we are an NNSA lab, we support multiple government agencies:

- **Advanced military technologies**
- **Treaty verification, nonproliferation, counterproliferation**
- **Homeland security, countering weapons of mass destruction**
- **Energy & Infrastructure assurance**

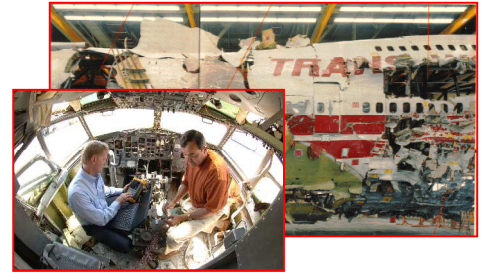
Non-Proliferation



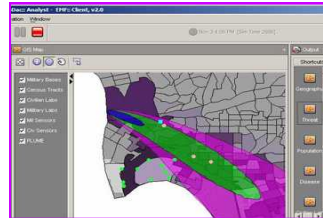
Missile Defense



Combustion Research



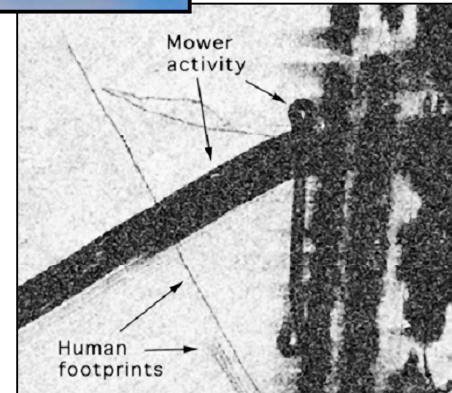
Non-Destructive Structural/Electrical Eval of Aging Aircraft



Threat & Vulnerability Assessments



Chem/Bio/Explosive Detection/Neutralization



Synthetic Aperture Radar Imaging

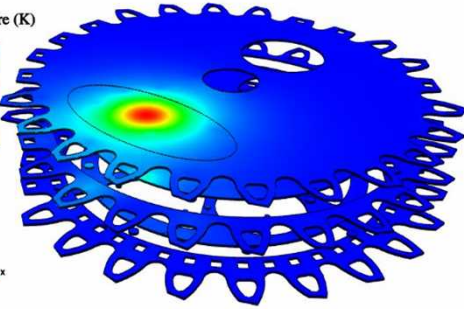


Physical & Cyber Security

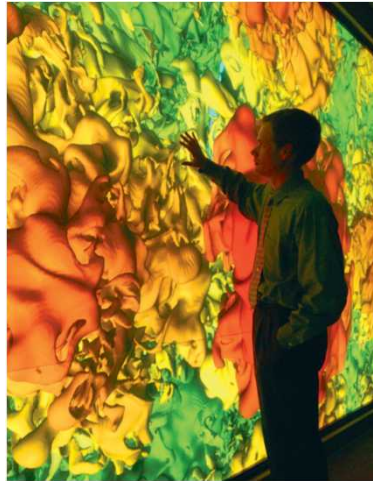
Sandia's Mission Support Relies on Strong Science and Engineering

Temperature (K)

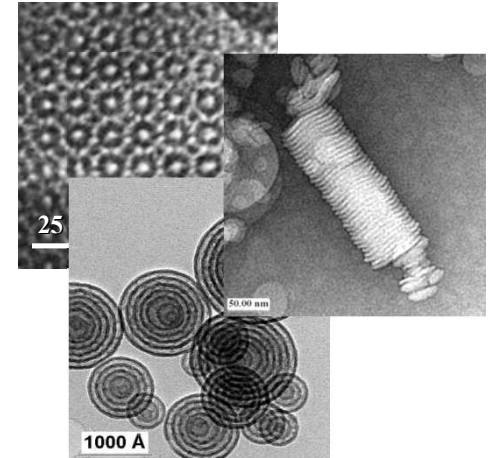
551.80
488.35
424.90
361.45
298.00



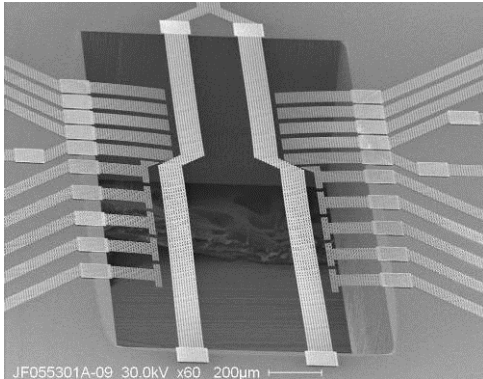
Engineering Sciences



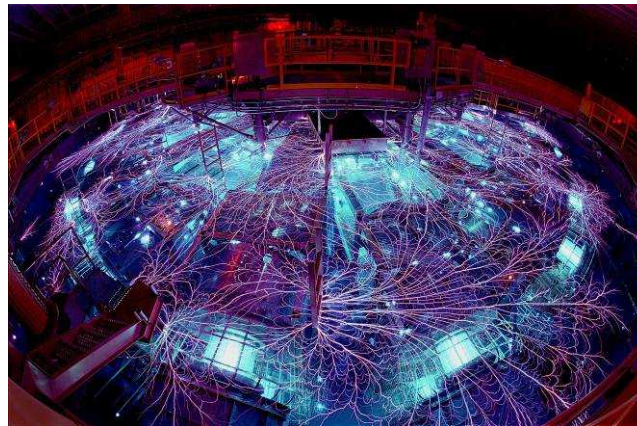
Computational and Information sciences



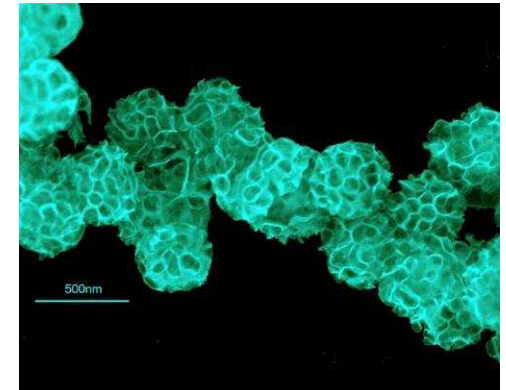
Materials Science and Technology



Microelectronics and Photonics



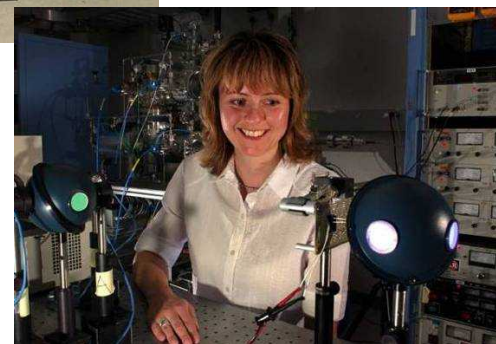
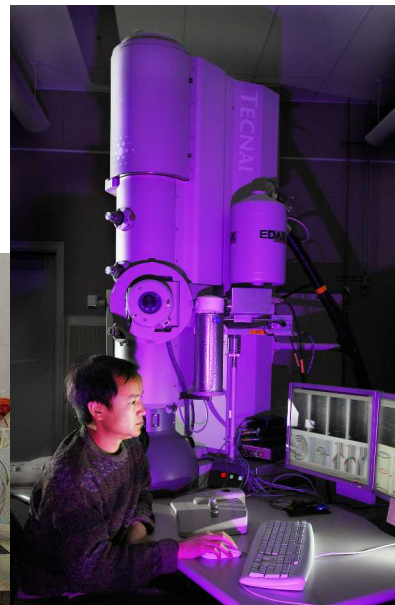
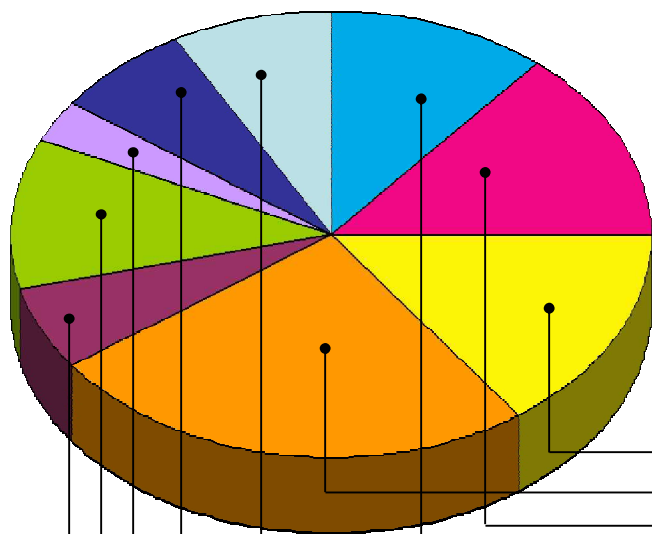
Pulsed Power



Biotechnology

Sandia Has a Highly Skilled Workforce

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



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