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Title: Weapons Engineering and Experiments Directorate

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Intended for: Recruitment

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Weapons Engineering And Experiments Directorate

Dan L. Borovina

(Acting)Group Leader, Detonator Technology

Los Alamos National Laboratory

Los Alamos National Laboratory

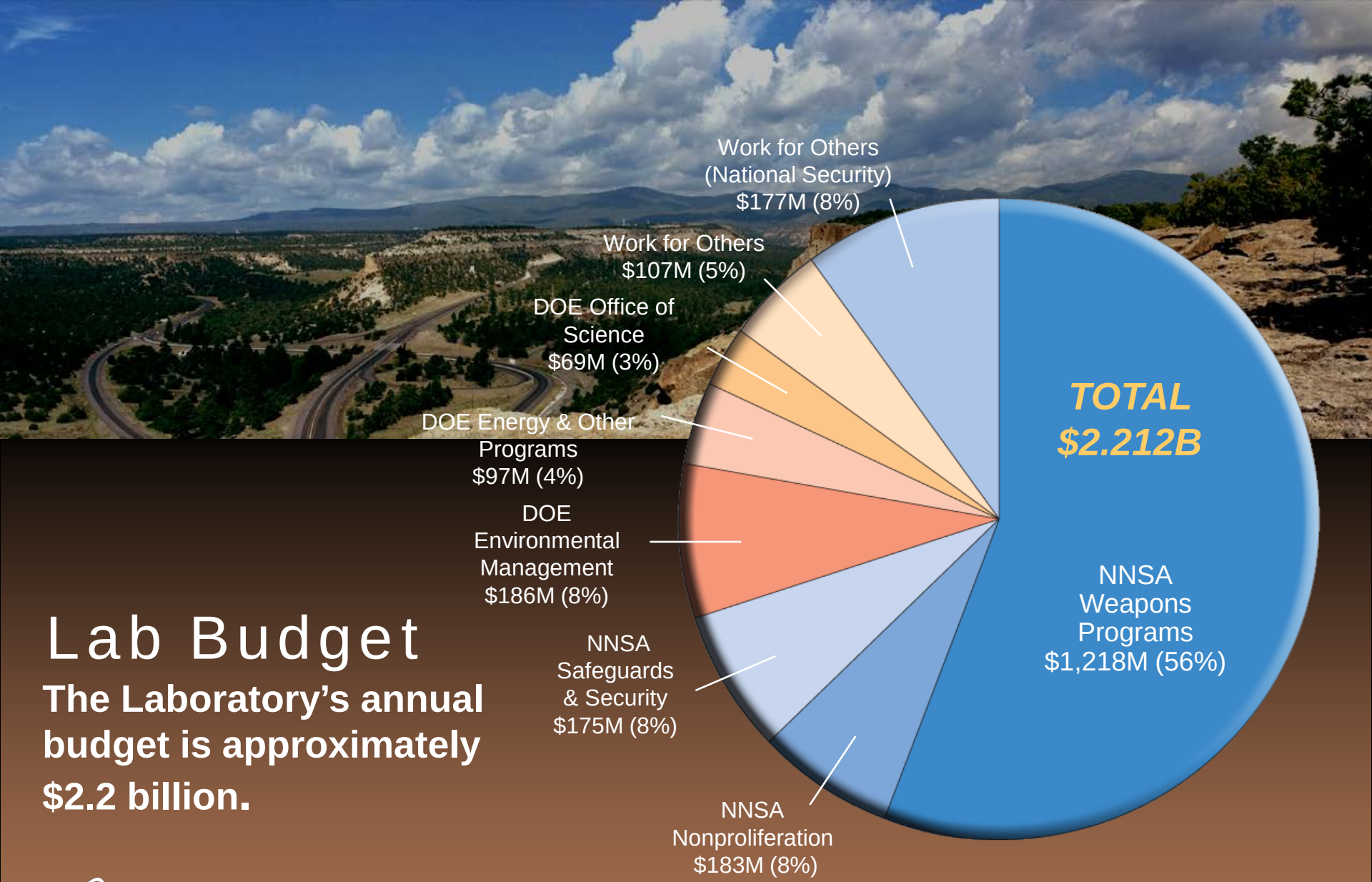
- **Multidisciplinary teams find science solutions to nation's issues**
- **Stockpile Stewardship is dominant mission**
- **Lab's tools also address other national priorities**
- **Technologies to reduce national security threats**
- **Solutions to challenges of energy security**

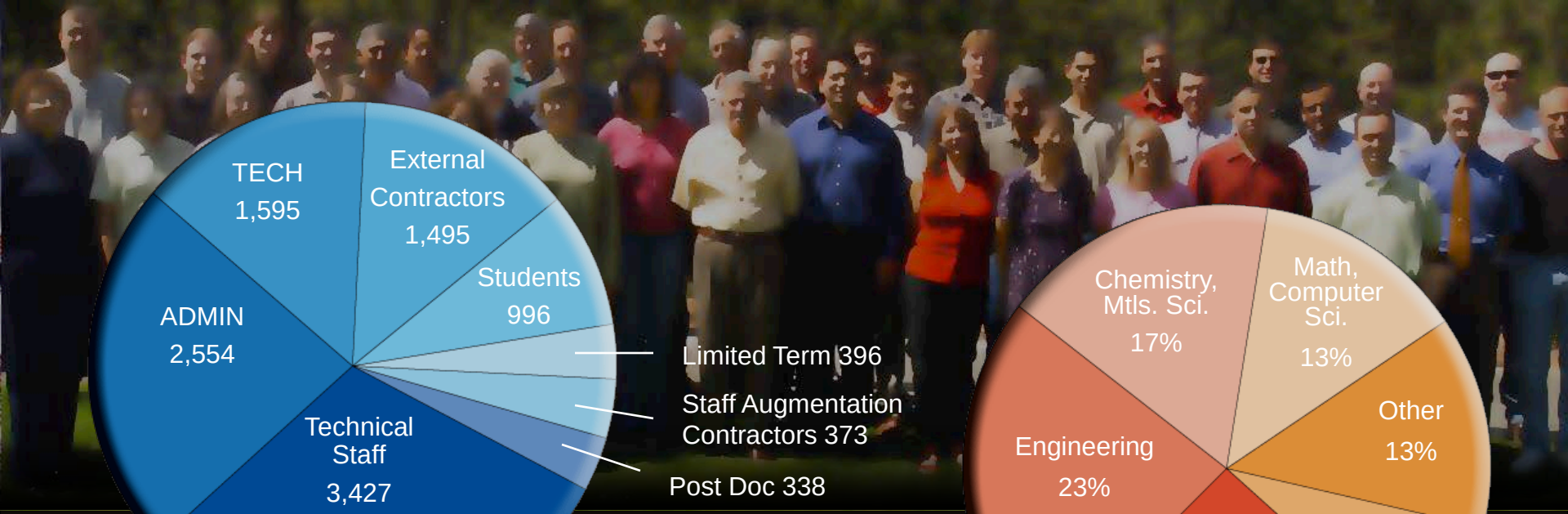
LANL is the oldest, most complex, and second largest NNSA Site

- ~ 40 square miles
  - 7,500 ft elevation
- 1,280 buildings with 9.0M gross sq. feet
  - 11 nuclear facilities
  - 40% are more than 40 years old
- 268 miles of roads (100 paved)
- Utilities
  - 26 miles of 115-KV transmission lines
  - 90 miles of gas transmission lines

Lab Budget

The Laboratory's annual budget is approximately $2.2 billion.





Technical Staff

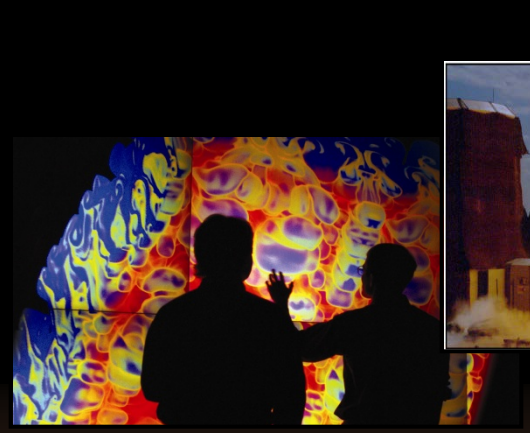
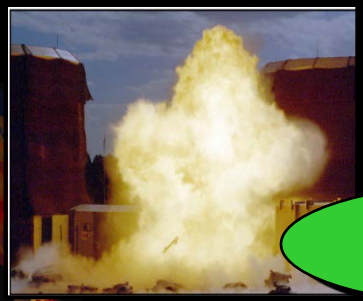
LANL is:

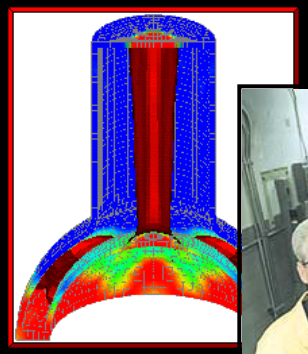
Broad and deep science

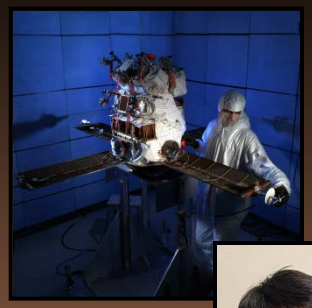
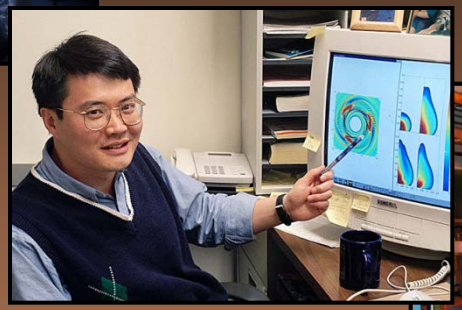
- **Drawn from across the nation**
- **2,130 PhDs**
- **One quarter of workforce started as students or postdocs**

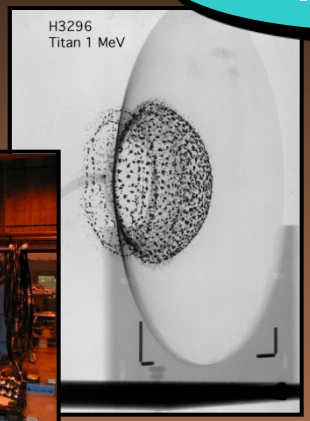
Our people make Los Alamos great!

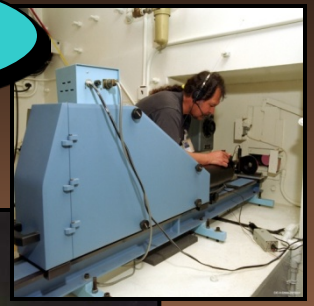
Weapons Program Capabilities are Used to Solve Many Challenging Problems








Theory

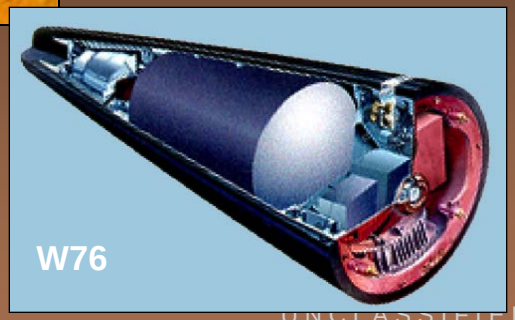
Computation

Experiment


Audits & Ethics Director
Jeanette Y. Bennion
Chief Prime Contracts
Steve Shook
Office of Equal Opportunity & Diversity
Charles (CJ) Bacino
Ombuds Office
Mary Beth Stevens
Comm. & Gov. Affairs
Lisa Rosendorf
Institutional Leaders
Charlie McMillan
Laboratory Director
Elizabeth Sellers
Deputy Laboratory Director
Executive Director
Rich Marquez
Executive Office Manager
Peggy Gonzales
Chief Information Officer
Chris Kemper (Acting)
General Counsel
David Sosinski
Chief Financial Officer
Glenn Kizer
LANS, LLC Executive Staff Director
Jerry Ethridge
Alan Bishop
Principal Associate Director
Science, Technology & Engineering
Chemistry, Life, & Earth Sciences
Assoc. Director
Nan Sauer
ADCLES
Bioscience
Chemistry
Earth & Environmental Sciences
Engineering Sciences
Assoc. Director
Steve Girrens
ADE
Accelerator Operations & Technology
Applied Engineering & Technology
Prototype Fabrication
Experimental Physical Sciences
Assoc. Director
Susan Seestrom
ADEPS
Materials Physics & Applications
Materials Science & Technology
Los Alamos Neutron Science Center
Physics
Information Technology
Assoc. Director
Carolyn Zerkle
ADIT
Departmental Computing Services
Network & Infrastructure Engineering
Software & Applications Engineering
Theory, Simulation, & Computation
Assoc. Director
Paul Dotson (Acting)
ADTSC
Computer, Computational, & Statistical Sciences
High Performance Computing
Theoretical
Laboratory-Directed Research & Development Program Office
Science Program Office
Science & Technology Base
Technology Transfer
LANL Institutes
Bret Knapp
Principal Associate Director
Weapons Programs
Plutonium Science & Manufacturing
Assoc. Director
Jeff Yarbrough
ADPSM
Integrated Program Management
Nuclear Component Operations
Manufacturing Engineering & Technology
Nuclear Process Infrastructure
Weapons Engineering & Experiments
Assoc. Director
John Benner
ADW
Weapons Experiments
Weapons Systems Engineering
Weapons Physics
Assoc. Director
Robert Webster
ADX
Computational Physics
Theoretical Design
Where We Fit
Terry Wallace
Principal Associate Director
Global Security
Threat Identification & Response
Assoc. Director
Scott Gibbs
ADTIR
Defense Systems and Analysis
Intelligence, Analysis, and Technology
Intelligence and Space Research
Nuclear Engineering & Nonproliferation
Carl Beard
Principal Associate Director
Operations & Business
Business Services
Assoc. Director
Mark Barth
ADBS
Acquisition Services
Central Training
Human Resources
Information Resource Management
Environment, Safety, Health
Assoc. Director
Michael Brandt
ADESH
Environmental Protection
Industrial Hygiene & Safety
ISMS/Worker Safety Office
Occupational Medicine
Radiation Protection
Waste & Environmental Services
Environmental Safety Health Deployed Resources
ES&H Integration Office
Maintenance & Infrastructure Services
Assoc. Director
Jay Johnson
ADMIS
Maintenance & Site Services
Logistics Division
Nuclear & High Hazard Operations
Assoc. Director
Charlie Anderson
ADNNHO
CMR Facility Operations
Engineering Services
Environmental & Waste Management Facility Operations
Fire Protection Division
LANSCE Facility Operations
Operations Support
Safety Basis
Science & Technology Operations
TA-21 Facility Operations
TA-55 Facility Operations
Utilities & Institutional Facilities
Weapons Facility Operations
Security & Safeguards
Assoc. Director
Michael Lansing
ADSS
Emergency Operations
Safeguards
Security Operations
Physical Security
Paul Henry
Principal Associate Director
Capital Projects
Environmental Programs
Assoc. Director
Jeff Mousseau
ADEP
Business & Project Services Division
Corrective Actions
Engineering & Technology
Regulatory Management
TA-21 Closure
LANL TRU Program
Waste & Project Services
Project Management
Assoc. Director
Don Toddings (Acting)
ADPM
Site Projects
CMRR
Functions
The Work We do
02/25/13

Los Alamos supports four warheads for the nation's nuclear deterrent

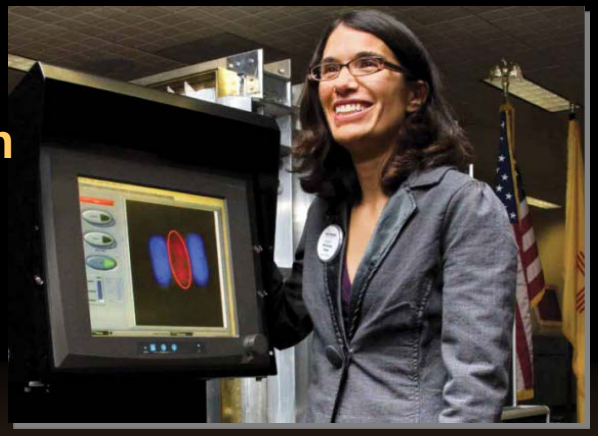
- These warheads constitute 63% of nation's deterrent and 90% of the on-alert deterrent
  - W76-1 LEP
  - B61 LEP
  - W78 LEP
  - W88 Alt



Our Weapon Mission is Increasing in Technical Complexity Requiring Development of Modern Tools and Techniques

Reducing threats of weapons of mass destruction and terrorism is critical to the security of our nation

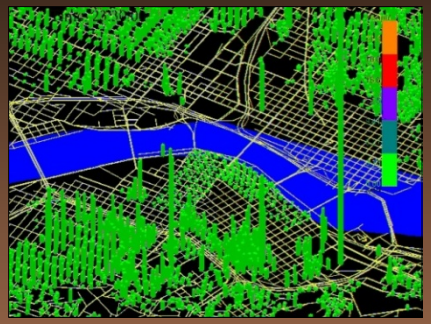
- **Space-based nuclear detonation detection, RF and lightning studies**
- **Imagery analysis and exploitation technology**
- **Securing nuclear materials in Russia, as well as other nations**
- **Advances in nuclear detection technology, active and passive techniques, novel materials**
- **Liquid explosives detector development and testing for homeland security applications**



MagViz Security Scanner

GPS

GPS- and DSP-based NUDET detectors



NISAC modeling and simulation

Understanding international nuclear proliferation risks

LANL is A Vital Part of the Nations Weapons Program

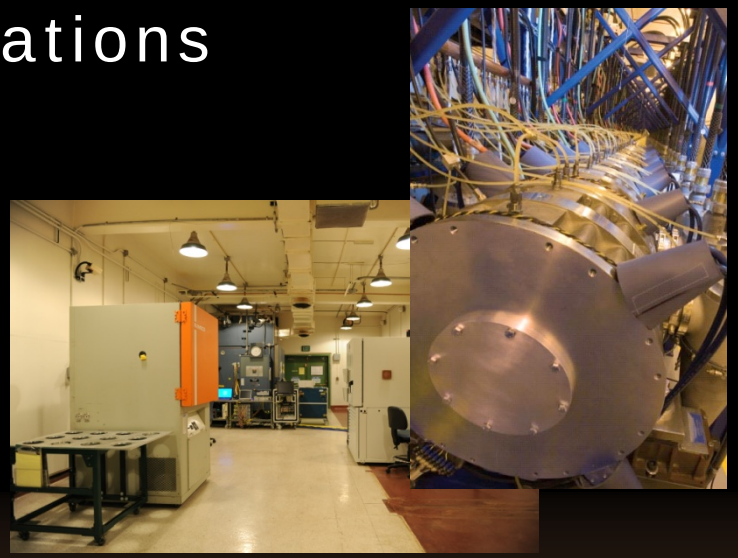
Defense Programs

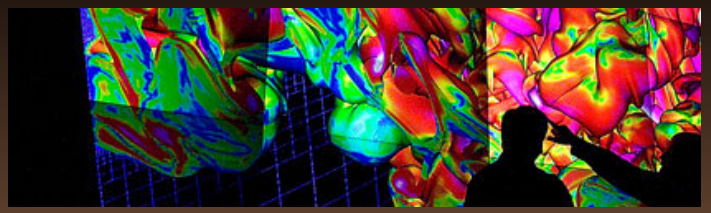
Getting the Job Done in FY 2012!

- Produce and deliver all required limited life components to ensure an effective deterrent.
- Successfully complete surveillance plans and assess the stockpile.
- Execute W76 LEP production recovery schedule to meet Navy deployments.
- Execute an NWC approved B61 Life Extension Program.
- Meet or exceed planned dismantlement quantities.
- Implement the Defense Programs Plan for governance reform across the Enterprise to improve mission execution, and safety and security performance.
- Achieve ignition on the NIF.
- Achieve advances in experimental and computational tools used in resolving Significant Finding Investigations and in supporting LEP activities associated with early phase primary implosion.
- Execute the plan for subcritical experiments at U1a.
- Achieve milestones for critical plutonium (CMRR-NF) and uranium (UPF) facilities.
- Achieve Predictive Capability Framework commitments, and populate Component Maturation Framework with technologies required to meet Stockpile Stewardship Management Plan objectives and goals for the stockpile.

NNSA National Nuclear Security Administration
DEFENSEPROGRAMS

DONALD L. COOK
Deputy Administrator
For Defense Programs





Benefits to Nation and Government

Ensure Necessary Capabilities
Remodel Facilities and Space
Recruit and Retain Talent
Execute Weapons Program

The Laboratory maintains multidisciplinary capabilities devoted to national needs

- Laboratory's primary missions of weapons stewardship and national security
- Basic to applied research
- Specialized facilities
- Ability to respond rapidly to solve problems of national interest

To those so inclined, working at Los Alamos is a special way to serve the Nation

Living in the Land of Enchantment

- Outdoor activities – hiking, biking, kayaking, skiing, rock climbing
- Great recreational facilities – tennis courts, golf course, Olympic-sized indoor pool
- History and culture

QUESTIONS ?????