SAND2016-6272PE

Exceptional service in the national interest

Sandia National Laboratories

Sandia's California Laboratory

Marianne C. Walck, Ph.D.

U.S. DEPARTMENT OF ENERGY

NNSA National Nuclear Security Administration

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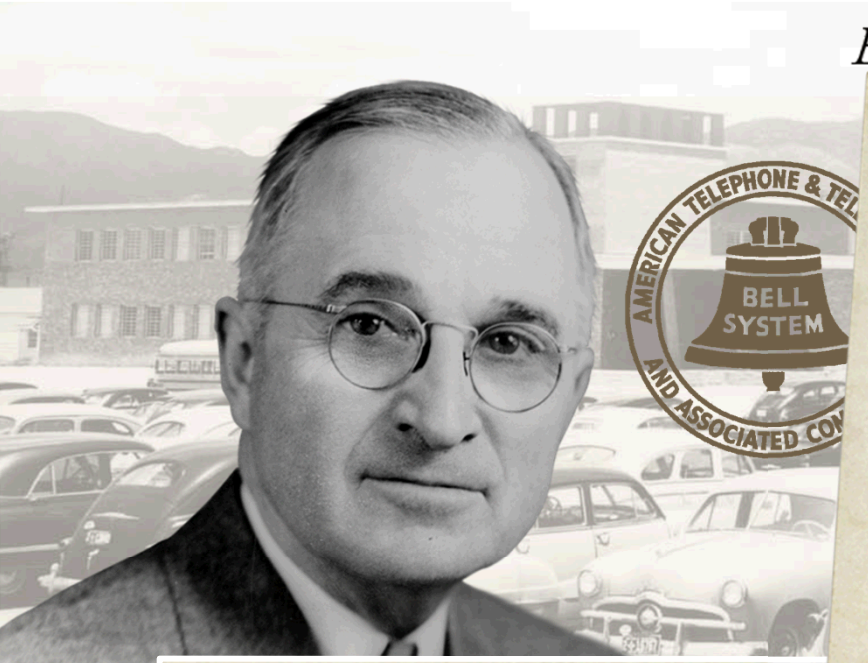
Origin of the California Laboratory

Sandia National Laboratories

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 ask that the Bell Telephone Laboratories accept under contract the direction of the Sandia Laboratory at Albuquerque, New Mexico.

This operation, which is a vital segment 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. O. E. Buckley.

Very sincerely yours,

Harry Truman

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

to undertake this task. In my opinion you have to render an exceptional service in the national

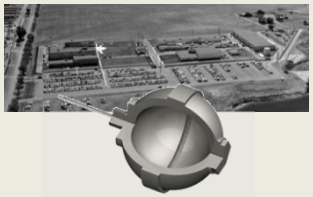
- **July 1945:** Los Alamos creates Z Division
- **November 1, 1949:** Sandia Laboratory established
- **1952:** University of California Radiation Laboratory at Livermore (now LLNL) established
- **March 8, 1956:** Sandia officially establishes a second laboratory at the Livermore site

California Laboratory History

Sandia National Laboratories

1956
California Laboratory opens, singular NW mission

1960s



Gas Transfer

Polaris - W47

Poseidon - W68

Strong NW mission, Energy crisis

1970s

W62

Minuteman III

Lance - W70

Combustion Research

Solar Tower

Strong NW mission, "Star wars"

1980s

AFAP – W79

B83

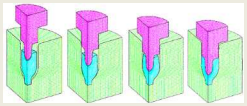
Peacekeeper - W87

"Tech Transfer", Stockpile stewardship

1990s

Extreme Ultraviolet Lithography

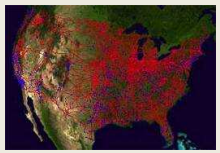
Demil



Stockpile Stewardship

Broader national security

2000s



Homeland Security

m - Chemlab

ALCM - W80 LEP

Stockpile modernization, Open campus

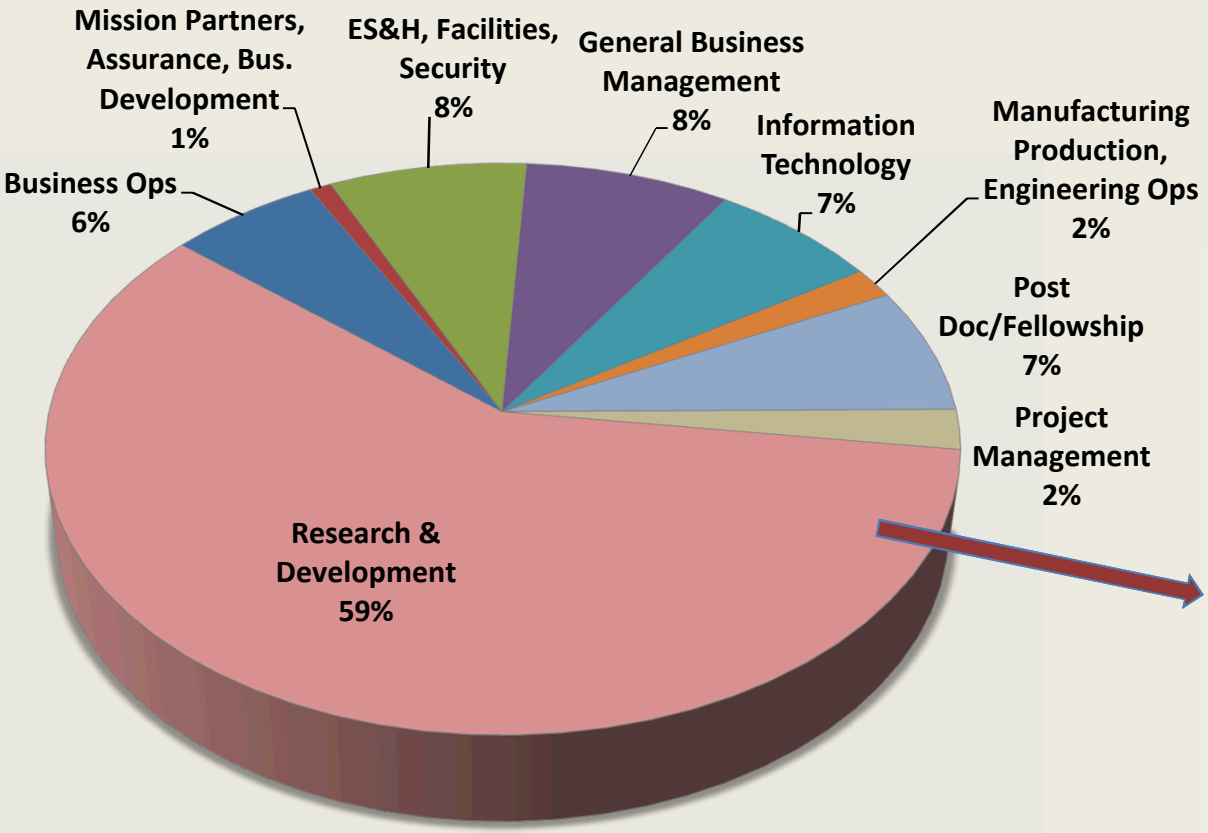
2010s

B61 LEP

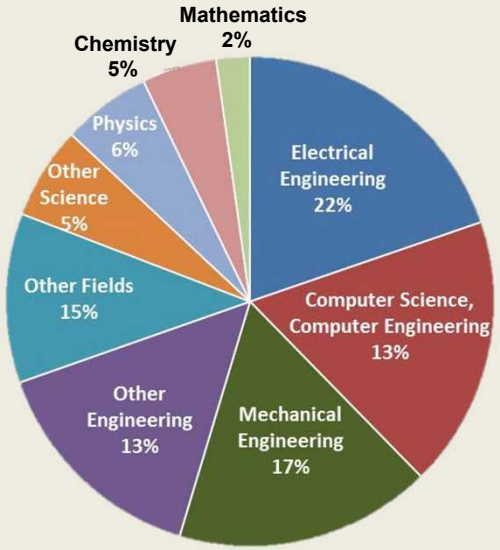
LRSO/W80-4

California Laboratory Demographics

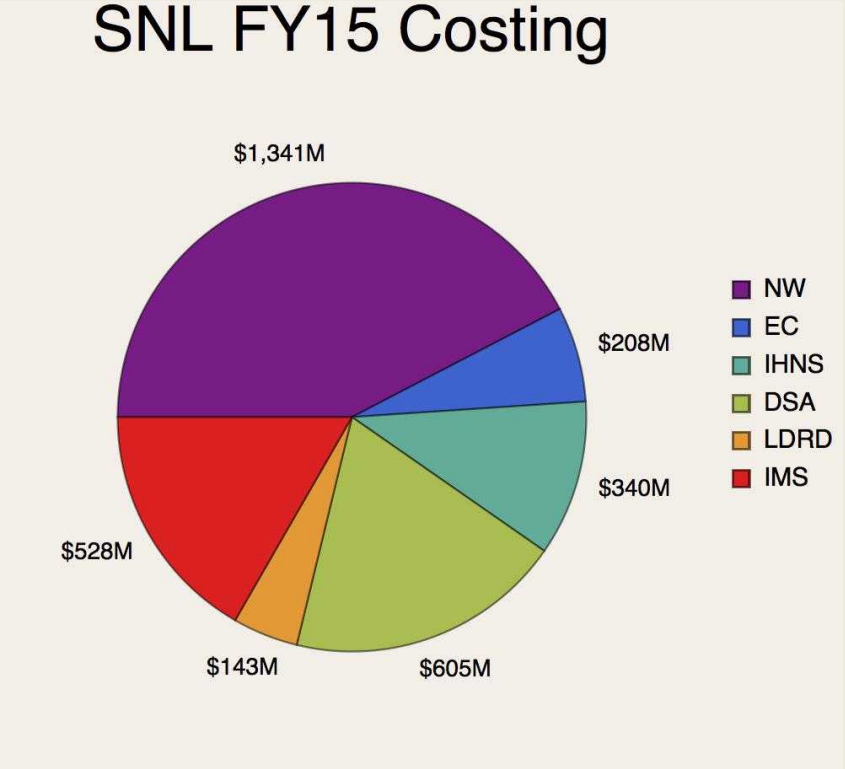
- On-site workforce: 1,161
- R&D staff: 673
- Post Docs: 82



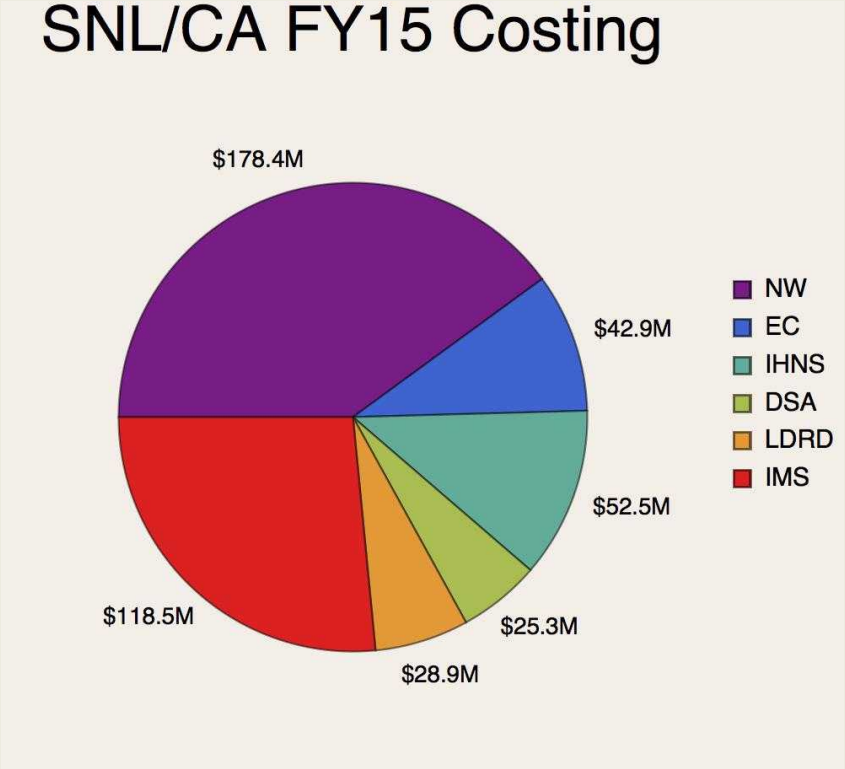
Includes 76 highly talented international workers



California Laboratory Costs



$3,165 M



$446.5 M

California Laboratory leadership

Sandia National Laboratories

CI (20)
Legal (11000)
Govt Relations (100)
Quality (400)
Recruiting (3000)

8000
Marianne Walck
California Laboratory Division

8005
Craig Tewell
Deputy to the Vice President

8100
Duane Lindner
Homeland Security & Defense Systems

8200
Russ Miller
CA Nuclear Weapon Systems Engineering

8300
Bob Hwang
Transportation Energy Center

8500
Denise Koker
Site Operations
- HR
- Facilities
- ES&H

8600
Anup Singh
Biological & Engineering Sciences

8900
Heidi Ammerlahn
Acting Computer Science & Information Systems

Sandia capabilities stewarded by Division 8000

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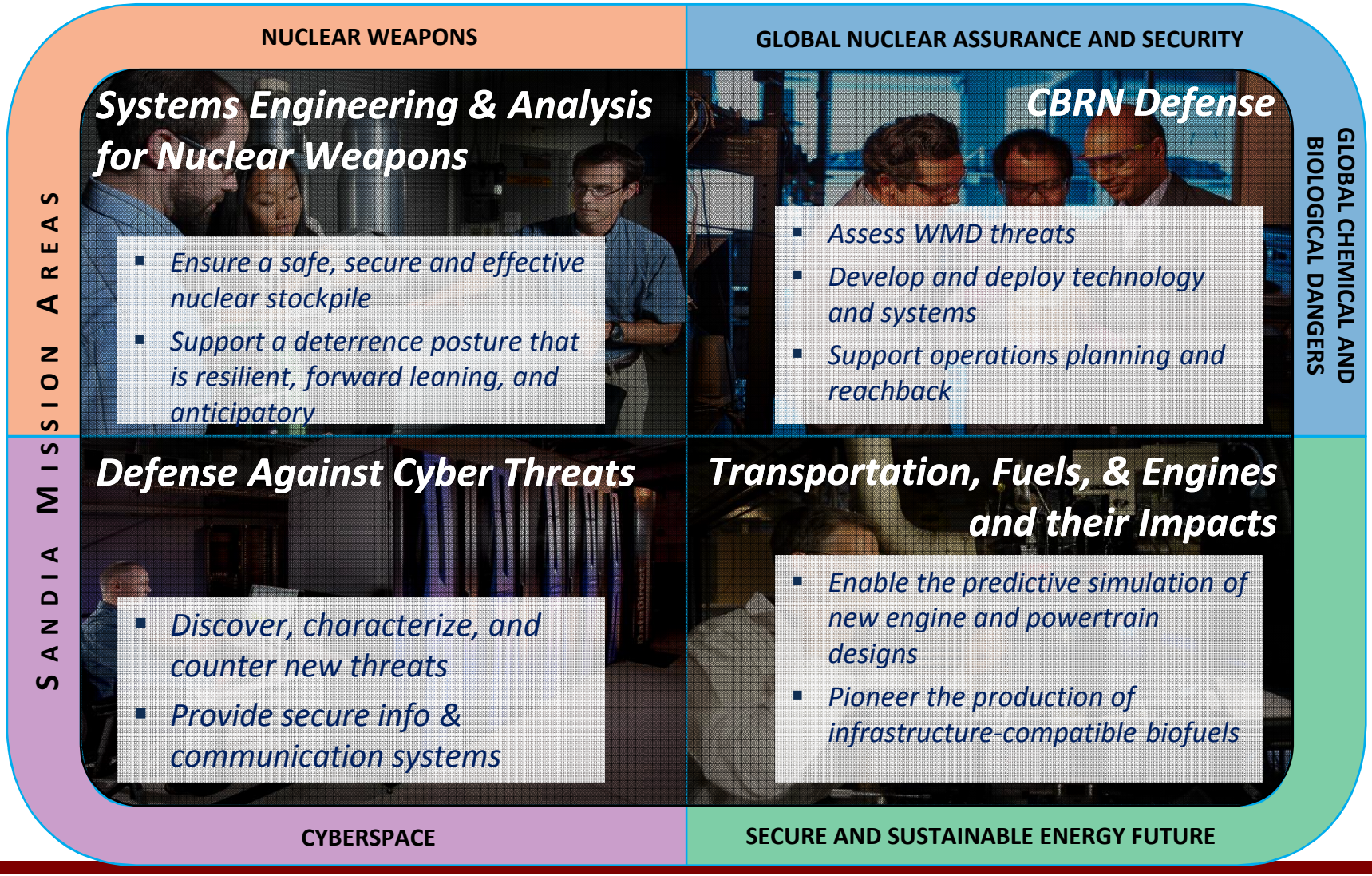


The California Laboratory is a Strategic Asset for Sandia

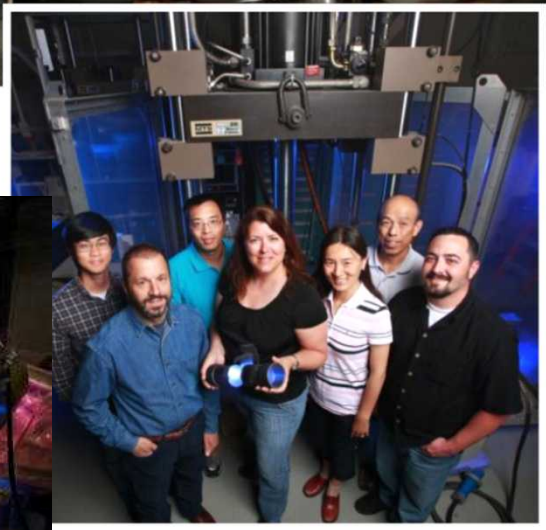
- **National Laboratory Partnerships**
  - **Lawrence Livermore**
  - **Lawrence Berkeley**
- **University Collaborations and Partnerships**
  - **access to world-class minds and unique facilities**
- **International Partnerships**
- **Industry Collaborations**
- **State of California – leadership in energy policy**

LVOC enables partnerships that benefit the entire breadth of Sandia's mission space

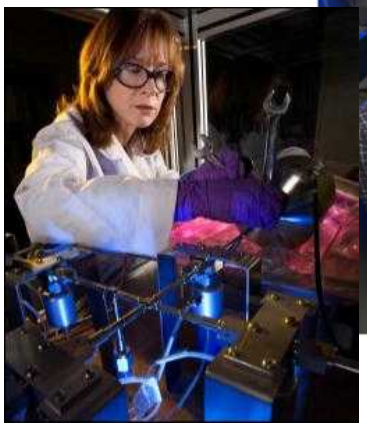
Differentiating Capabilities for Systems Engineering and Analysis for **Nuclear Weapons** Portfolio

Sandia National Laboratories

- Systems integrator for stewardship and development of CA nuclear weapon systems (W80, B83, W84, W87, W78-LEP (future))
- Solutions for security systems, gas transfer systems, and joint-test assembly telemetry systems
- World class expertise in hydrogen/tritium
- Cross-cutting cyber security expertise for secure weapon systems
- Systems analysis to inform NW policy decisions

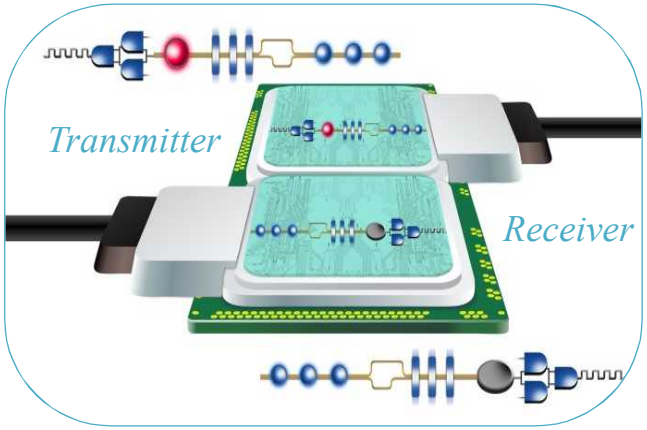


W80 Nuclear Warhead



Differentiating Capabilities for Defense Against **Cyber** Threats Portfolio

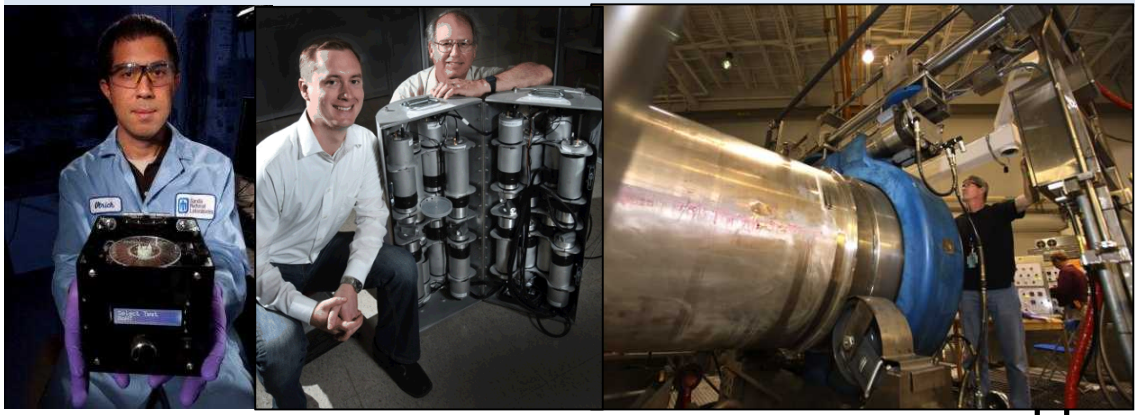
- Internet-scale network emulation and analysis tools
- Communications systems that enable national security missions
- Threat and vulnerability analysis on information systems of national consequence
- Advanced security concepts for contested environments (operate in enemy territory)
- Algorithms and computing architectures for large-data analysis
- Formal methods for hardware/software verification
- LVOC internship program



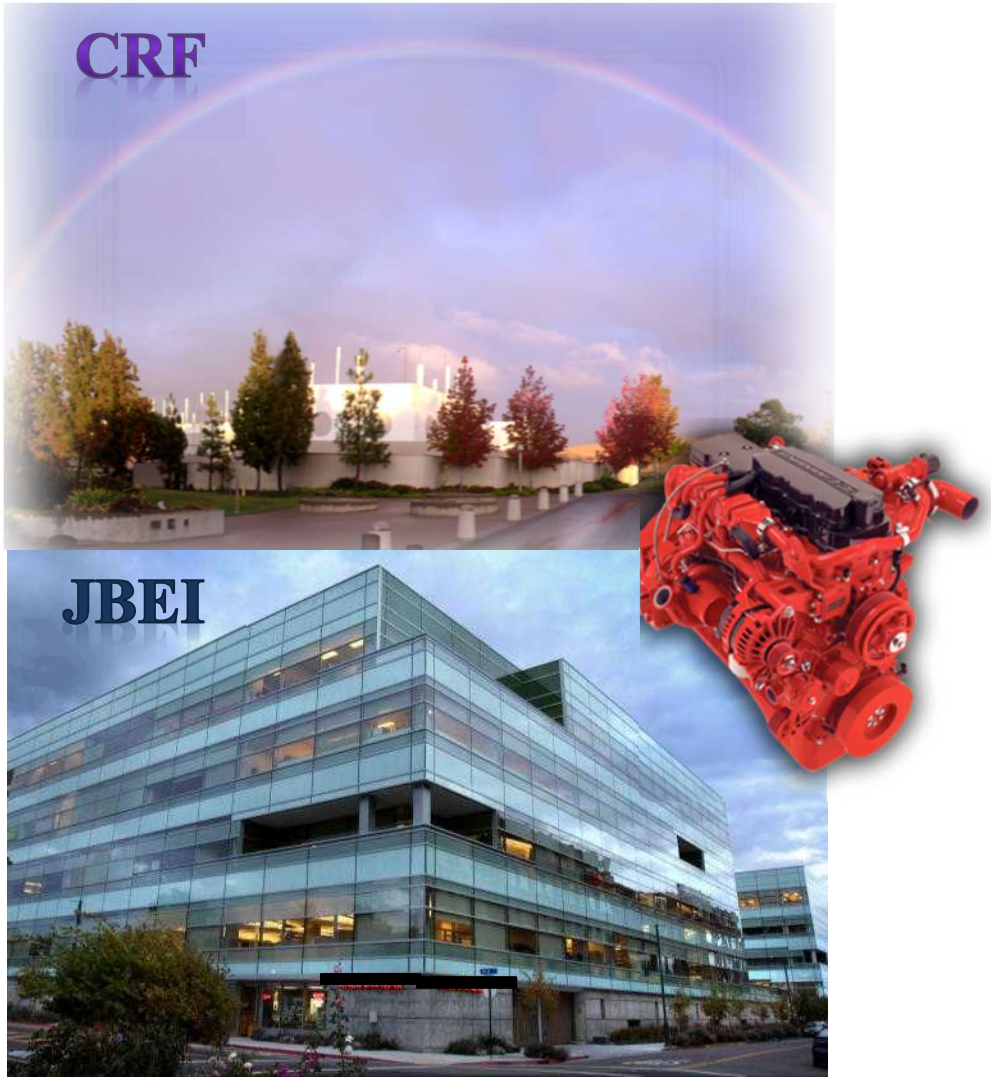
Quantum Transceiver

Differentiating Capabilities for **Chem/Bio/Rad/Nuclear** Defense Portfolio

- Systems analysis expertise
- Microfluifics for detection and diagnostics
- Definition and detection of signatures associated with biological and chemical materiel
- Radiation detection systems
- System and ConOp development and deployment for the detection of CBRN attacks
- Systems for neutralization and disposal of chemical munitions and agents
- 24/7/365 reachback for rad and bio events



Differentiating Capabilities for **Transportation**, Fuels and Engines and their Impacts Portfolio



- Combustion Research Facility
- Deep, fundamental knowledge of engine/fuel behavior
- In-situ laser diagnostics applied to high-temperature and high-pressure chemically reacting flows
- Gas-phase combustion chemistry involving short lived intermediates
- Hydrogen in metals expertise for safe storage, transportation, and utilization
- Joint BioEnergy Institute
- Deconstruction of cellulose and lignocellulose into usable fuels

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