

INTEGRATED SECURITY SOLUTIONS OVERVIEW



PRESENTED BY



Sandia National Laboratories is a multimission laboratory managed and operated by National Technology and Engineering Solutions of Sandia LLC, a wholly owned subsidiary of Honeywell International Inc. for the U.S. Department of Energy's National Nuclear Security Administration under contract DE-NA0003525.



SANDIA'S PURPOSE STATEMENT

**Sandia develops
advanced technologies
to ensure global peace**



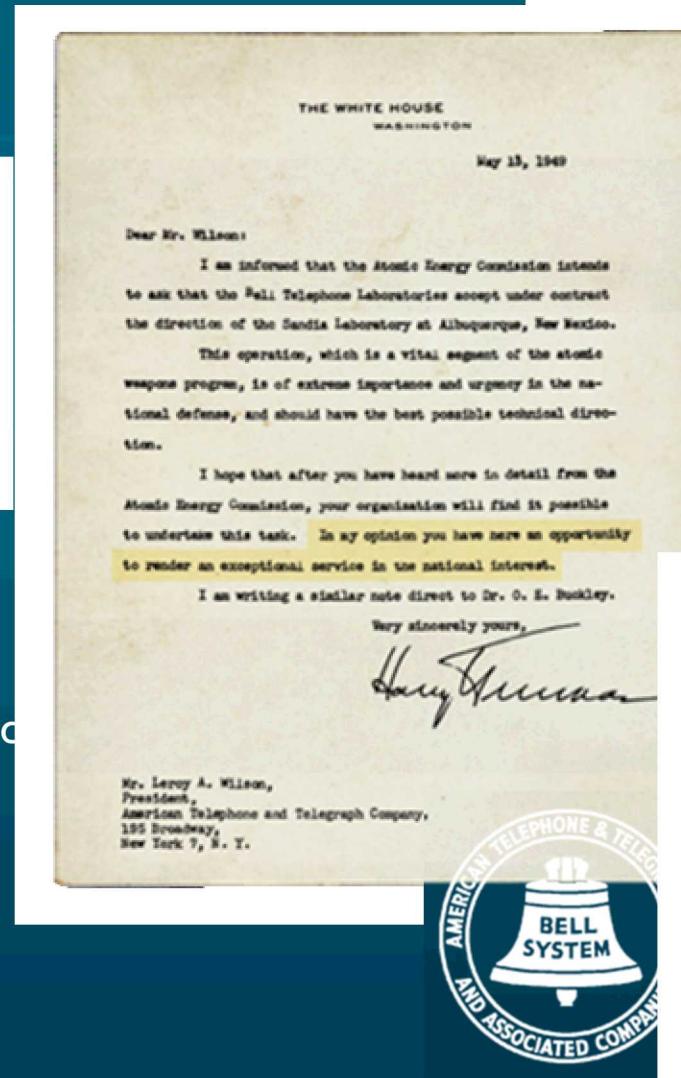
Our purpose statement

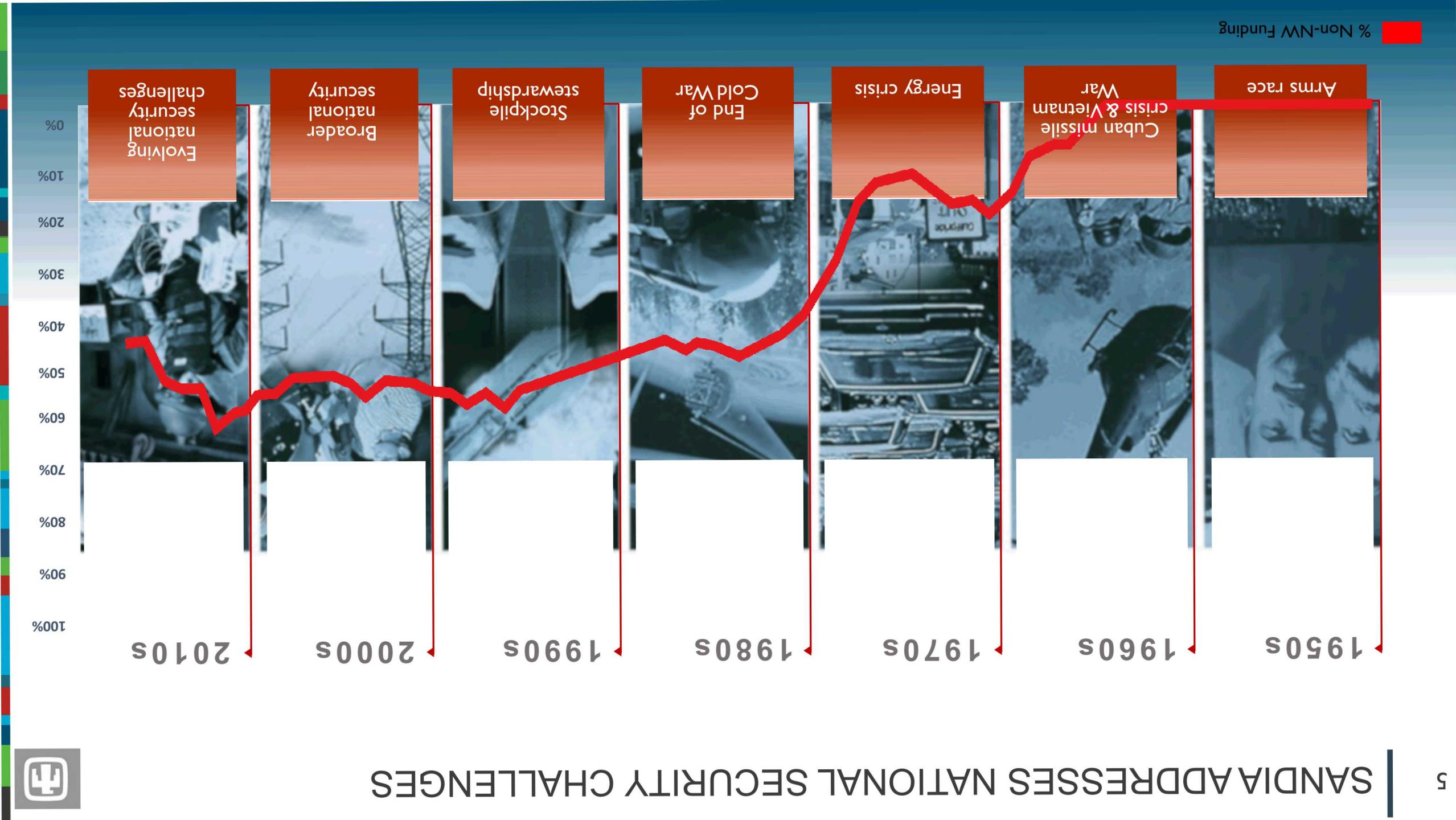
**Sandia develops
advanced technologies
to ensure global peace**

SANDIA'S HISTORY IS TRACED TO THE MANHATTAN PROJECT

...In my opinion you have here an opportunity to render an exceptional service in the national interest.

- July 1945 Los Alamos creates Z Division
- Nonnuclear component engineering
- November 1, 1949, Sandia Laboratory established
- AT&T: 1949–1993
- Martin Marietta: 1993–1995
- Lockheed Martin: 1995–2017
- Honeywell: 2017–present







FACTS & FIGURES

- Largest of the national laboratories
- FY19 budget of \$3.81B
 - 57% allocated to nuclear deterrence
- FY20 projected budget of \$3.77B
 - 57% allocated to nuclear deterrence
- 14,089 employees
 - 51% are technical staff
 - 44% have been at Sandia less than 5 years
- Average age of facilities is 39 years
 - >7,000,000 sq. ft.
 - >300 sq. mi.

ACTIVITY LOCATIONS

- Kauai, Hawaii
- Pantex Plant
Amarillo, Texas
- Tonopah, Nevada
- Washington, D.C.
- Waste Isolation
Pilot Plant (WIPP)
Carlsbad, New Mexico

SANDIA ESTABLISHES A SECOND LABORATORY IN CALIFORNIA



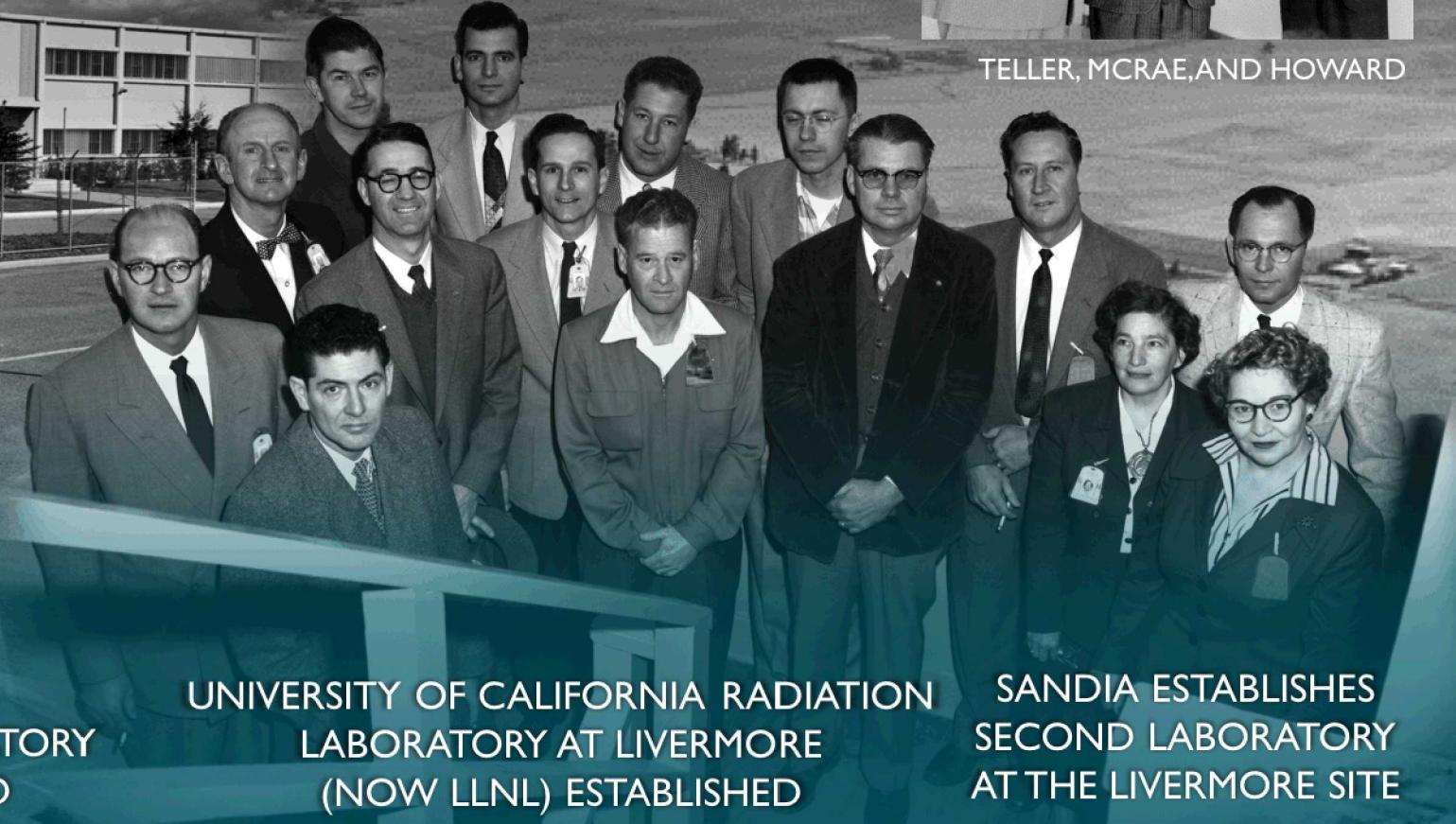
LOS ALAMOS
CREATES Z DIVISION

SANDIA LABORATORY
ESTABLISHED

UNIVERSITY OF CALIFORNIA RADIATION
LABORATORY AT LIVERMORE
(NOW LLNL) ESTABLISHED



TELLER, MCRAE, AND HOWARD



1945

1949

1952

1956

SANDIA ESTABLISHES
SECOND LABORATORY
AT THE LIVERMORE SITE

THE LEADERSHIP TEAM BRINGS EXPERIENCE AND EXPERTISE



ADVANCED SCIENCE &
TECHNOLOGY
DR. SUSAN SEESTROM



GLOBAL SECURITY
DOUG BRUDER



INTEGRATED
SECURITY SOLUTIONS
DR. ANDY MCILROY



NATIONAL SECURITY
PROGRAMS
MIKE BURNS



NUCLEAR DETERRENCE
DR. STEVE GIRRENS



GENERAL COUNSEL
WILL ELIAS



HR & COMMUNICATIONS
JOHN MYERS



INFRASTRUCTURE
OPERATIONS
JOHN CLYMO



MISSION ASSURANCE
MARK SELLERS



MISSION SERVICES
SCOTT AEILTS



CHEMISTRY, COMBUSTION,
& MATERIALS SCIENCE
BOB HWANG
+ ND, AS&T PROGRAMS



ENERGY & EARTH
SYSTEMS
CAROL ADKINS
+ ND, AS&T, GS PROGRAMS
*CROSS DIVISION INITIATIVES



CBRN DEFENSE & ENERGY
TECHNOLOGIES
ANUP SINGH
+ AS&T, GS PROGRAMS
*CROSS DIVISION INITIATIVES



HOMELAND SECURITY &
DEFENSE SYSTEMS
RICHARD GRIFFITH (ACTING)
+ ND, AS&T, GS PROGRAMS
*CROSS DIVISION INITIATIVES



INTEGRATED SECURITY SOLUTIONS | DIVISION 8000

ASSOCIATE LABS
DIRECTOR
DR. ANDY MCILROY



CALIFORNIA LABORATORY,
ENERGY & HOMELAND SECURITY
PORTFOLIO



CA WEAPON SYSTEMS
ENGINEERING
MIKE HARDWICK



CA WEAPON
COMPONENTS
ENGINEERING
TEDD ROHWER



E/HS PORTFOLIO, NUCLEAR
DETERRENCE PROGRAM
MANAGEMENT, & CA
BUSINESS OPERATIONS
MARCEY HOOVER



CA SITE OPERATIONS
PAM MCKEEVER

NUCLEAR
DETERRENCE

OPERATIONS



CA WEAPONS

W80-4 and Mk21 Fuze programs, Livermore stockpile, advanced & exploratory systems, nuclear deterrence capabilities (surety systems, gas transfer systems, handling gear, and telemetry)

DIVISION

Program execution and stewardship of the California site

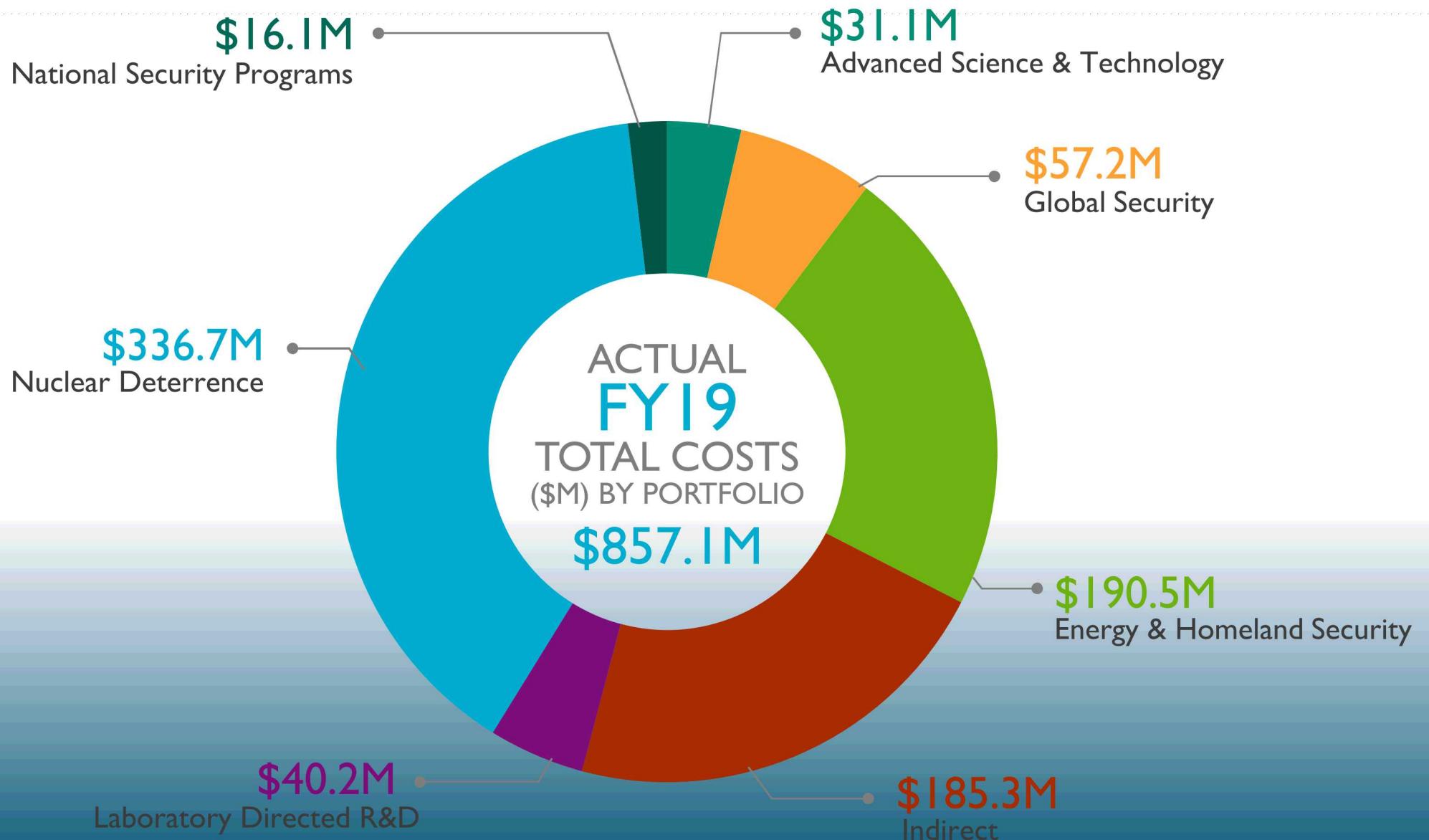
E/HS PORTFOLIO

Program management direction of work in support of the Department of Energy (DOE) and Department of Homeland Security (DHS)

RESEARCH FOUNDATIONS

Bioscience and Earth Science Research Foundations and stewardship for the Joint Bioenergy Institute (JBEI) and the Combustion Research Facility (CRF)

FY19 INTEGRATED SECURITY SOLUTIONS | TOTAL COSTS BY PORTFOLIO





CENTER 8100

Energy & Homeland
Security Program
Management



257

CENTER 8200

CA Weapon
Systems
Engineering



169

CENTER 8300

Chemistry,
Combustion, &
Materials Science



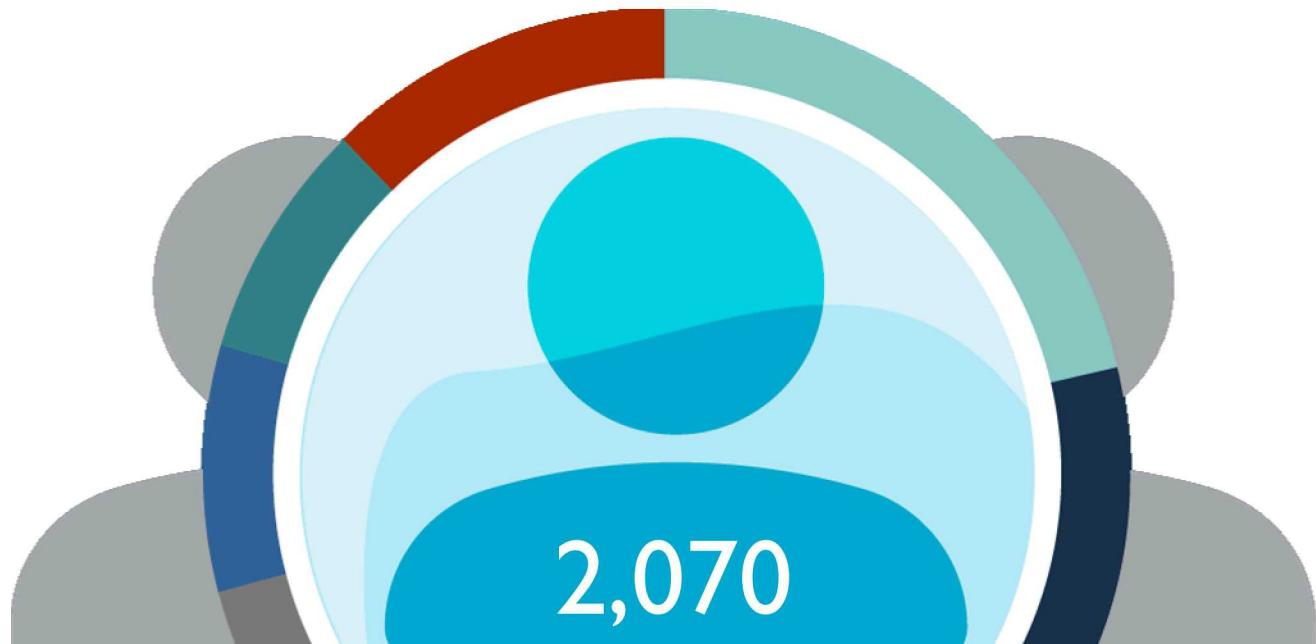
178

CENTER 8400

CA Weapon
Components
Engineering



240



CENTER 8500

California Site
Operations



274

CENTER 8600

CBRN Defense
& Energy
Technologies



180

CENTER 8700

Homeland Security
& Defense Systems



327

CENTER 8800

Energy &
Earth Systems

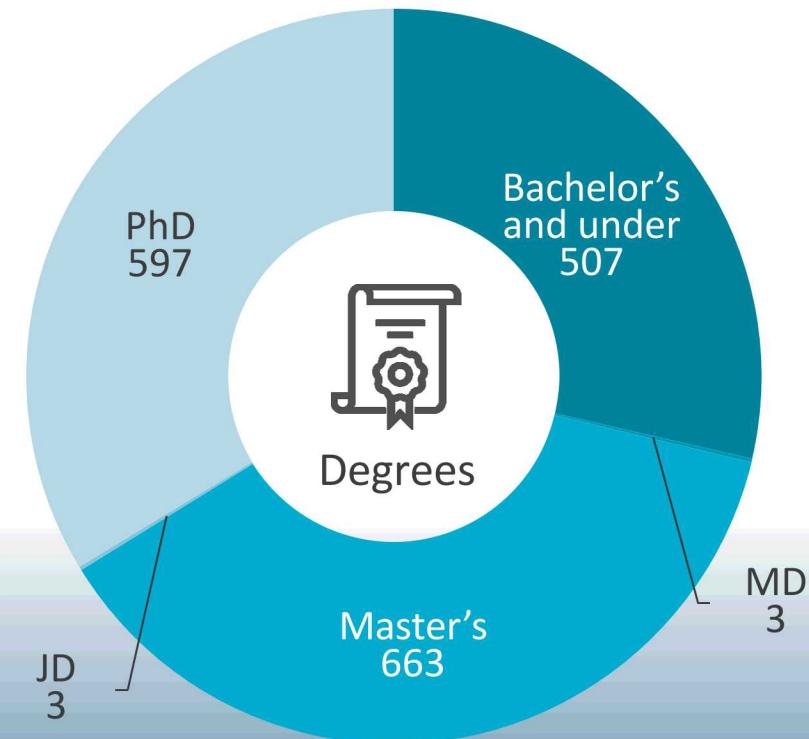
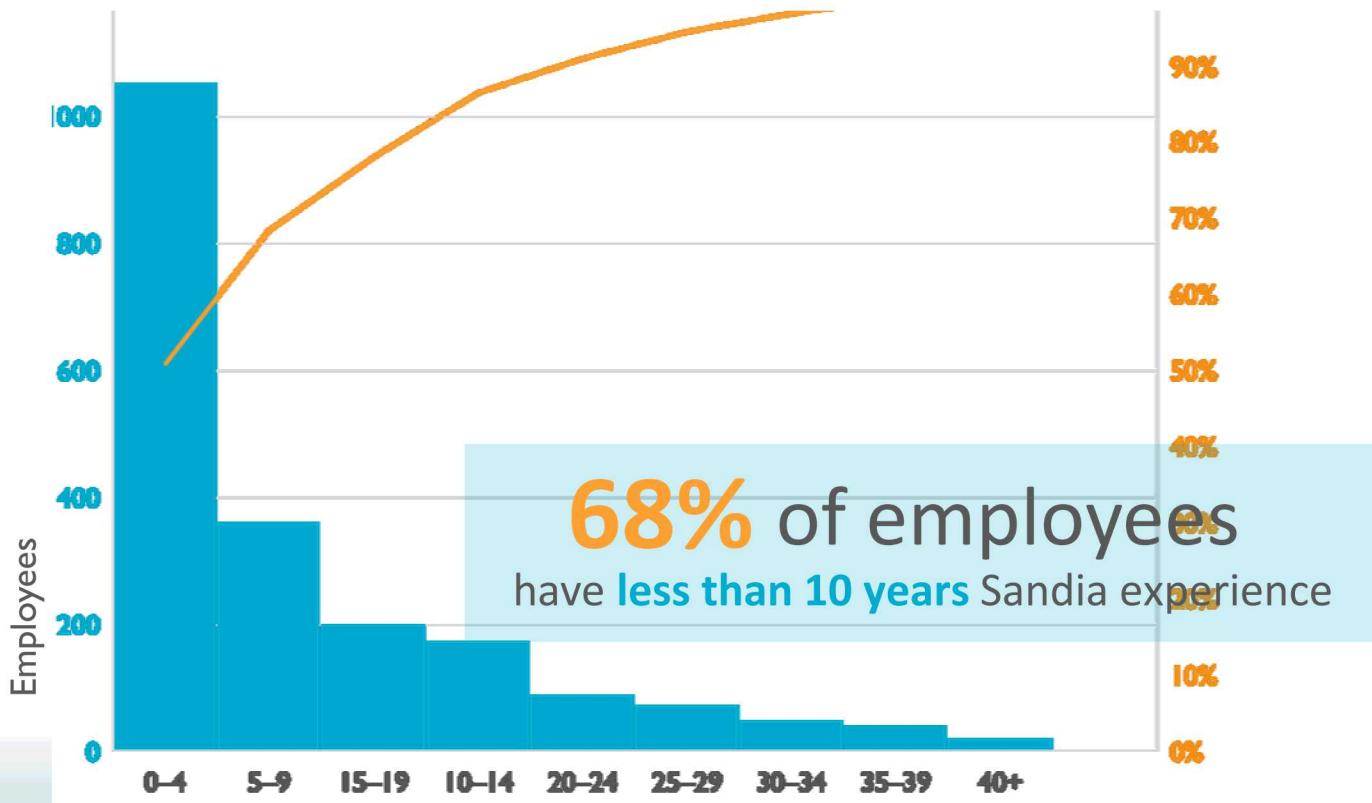


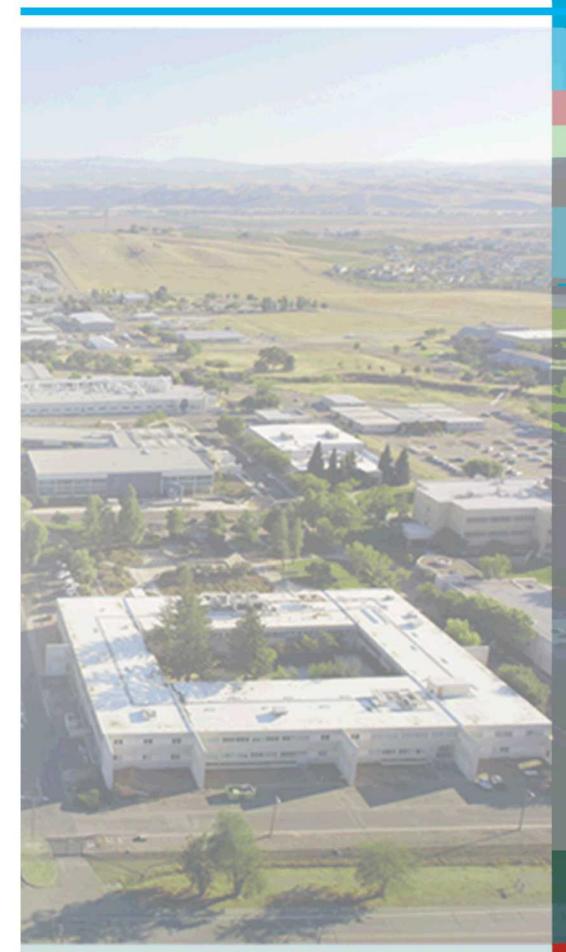
441

YEARS OF EXPERIENCE & DEGREES | 2,070 EMPLOYEES



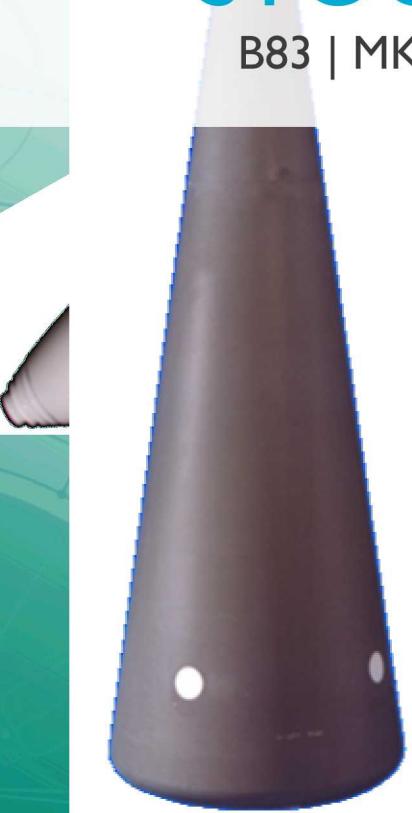
All Employees (regular, limited-term, & post-doc's)





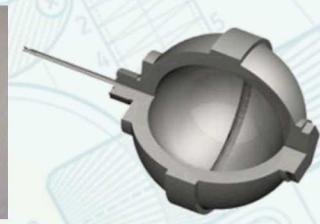
STOCKPILE SYSTEMS

B83 | MK21/W87 | ALCM/W80-1 | W84



COMPONENTS

- SURETY SYSTEMS
- JOINT TEST TELEMETRY INSTRUMENTATION
- GAS TRANSFER SYSTEMS
- HANDLING GEAR



MODERNIZATION PROGRAMS

- W80-4
- B61-12 LEP
- MK21/W87
- W88 ALT 370
- W87-I



GLOBAL SECURITY

Protects the U.S. from threats

Develop space- and ground-based sensor systems for monitoring emerging threats

Supply technology, crisis response, and training to respond to a crisis associated with weapons of mass destruction

Provide capabilities for protecting U.S. nuclear weapons and materials at fixed sites and in transit

- Produce systems that deter proliferation and verify compliance with international agreements using space-borne and ground-based sensing technology
- Lead global technical engagement to prevent the misuse of nuclear, chemical, biological, and radiological materials

ISS



NATIONAL SECURITY PROGRAMS

Strengthens our nation's defenders

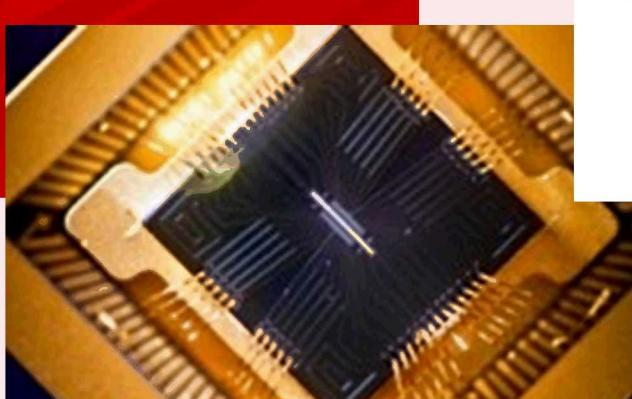
ISS



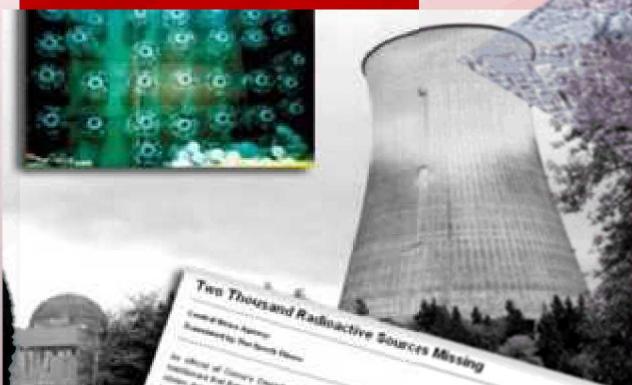
Information Operations



Integrated Military Systems

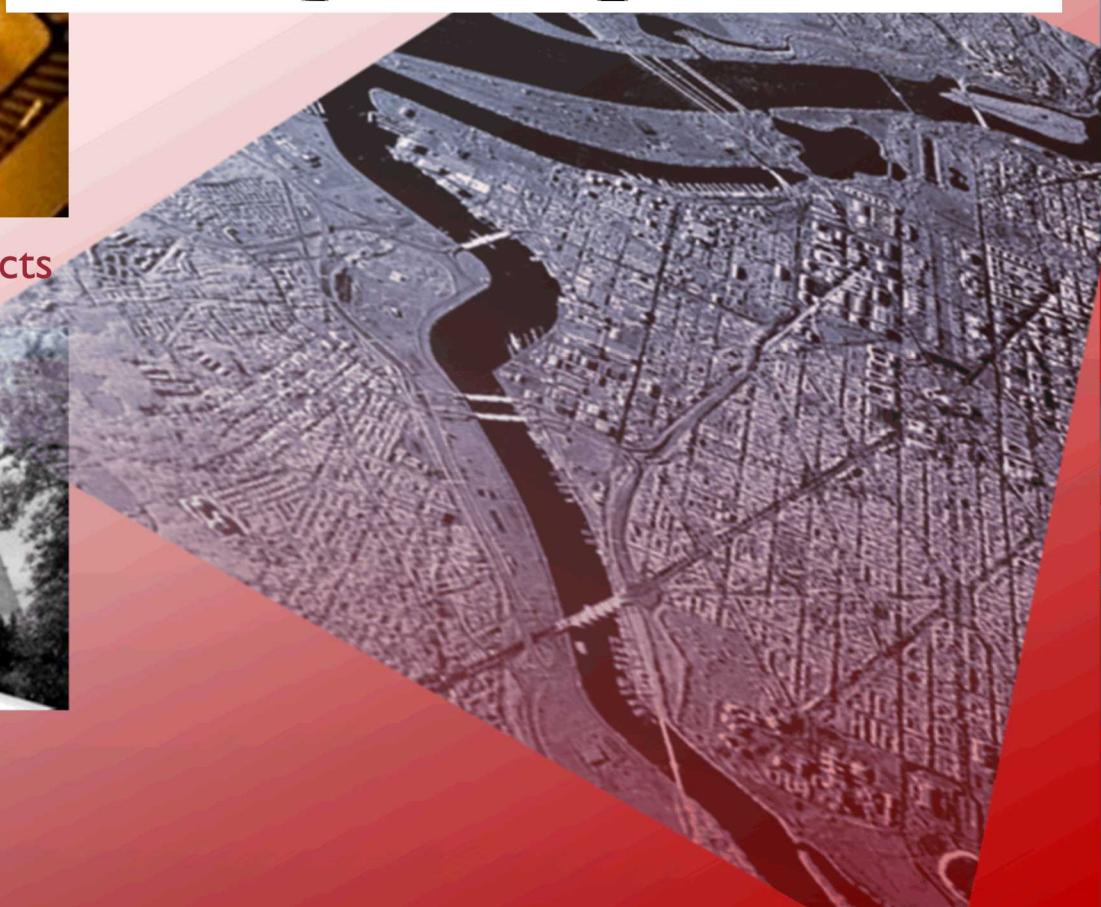


Science & Technology Products



Proliferation Assessment

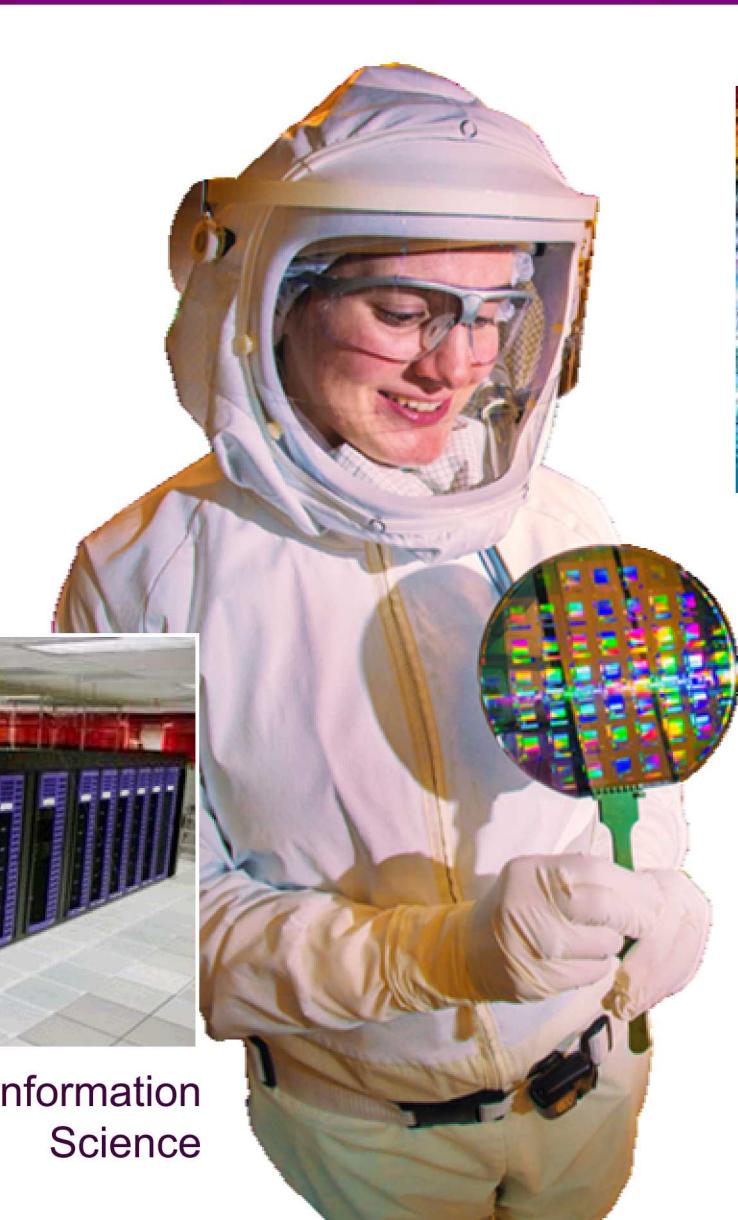
Surveillance &



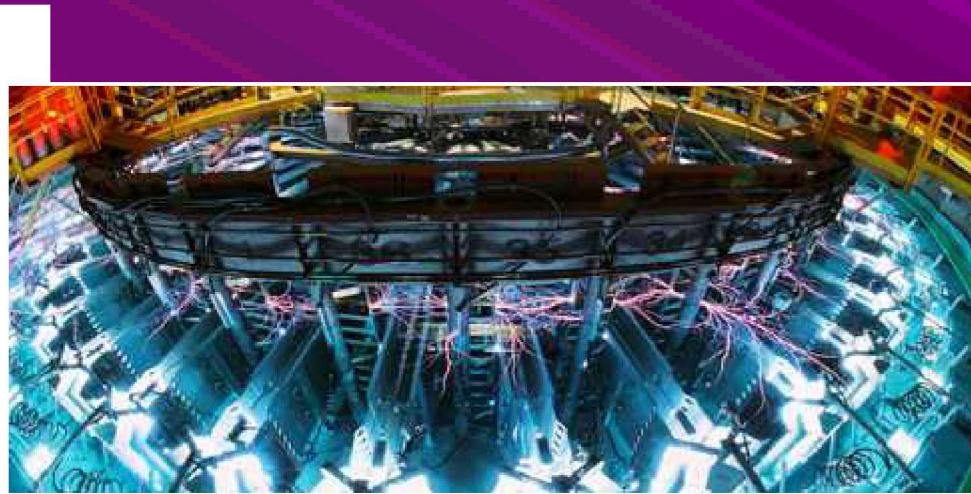
Research Foundations play an integral role in mission delivery



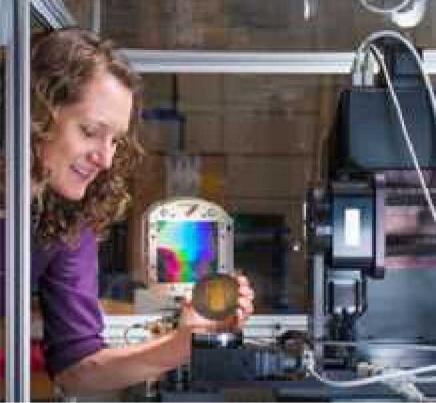
Computing & Information Science



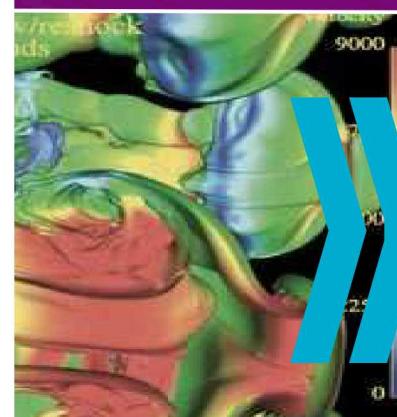
Nanodevices & Microsystems



Radiation Effects & High-Energy Density Science



Materials Science



Engineering Science



Earth Science



Bioscience

ISS



ISS

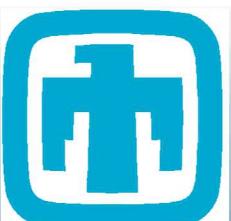


- Perform fundamental and applied R&D to support the resilience and security of the nation's energy system
- Provide protection for our nation's digital and physical critical infrastructures
- Reduce U.S. vulnerability to chemical, biological, radiological, and nuclear threats
- Accelerate transformative innovations in the transportation sector through foundational physical and computational research



WHY AN ENERGY & HOMELAND SECURITY PORTFOLIO?

Sandia has a special relationship with both these customers codified in legislation and M&O contract



ENHANCE THE RESILIENCE
OF THE NATION'S CRITICAL
INFRASTRUCTURES TO NATURAL
AND ANTHROPOGENIC THREATS

SANDIA'S CORE SYSTEMS
ENGINEERING CAPABILITY IS KEY
TO TACKLING THE COMPLEX
CHALLENGES OF DOE AND DHS





TRANSPORTATION ENERGY & SYSTEMS

Bob Hwang

Program Area Director



Provide transformative solutions in the transportation sector

SECURE ENERGY & EARTH SYSTEMS

Carol Adkins

Program Area Director



Create solutions for a safe, secure, and resilient energy future

TRANSPORTATION ENERGY & SYSTEMS



ENERGY & HOMELAND SECURITY PORTFOLIO



Andy McIlroy
Associate
Labs Director



CBRN DEFENSE



CBRN DEFENSE

Anup Singh

Program Area Director

Reduce the nation's vulnerability to chemical, biological, radiological, and nuclear threats

SECURE ENERGY & EARTH SYSTEMS



HOMELAND INFRASTRUCTURE SECURITY & RESILIENCE



HOMELAND INFRASTRUCTURE SECURITY & RESILIENCE

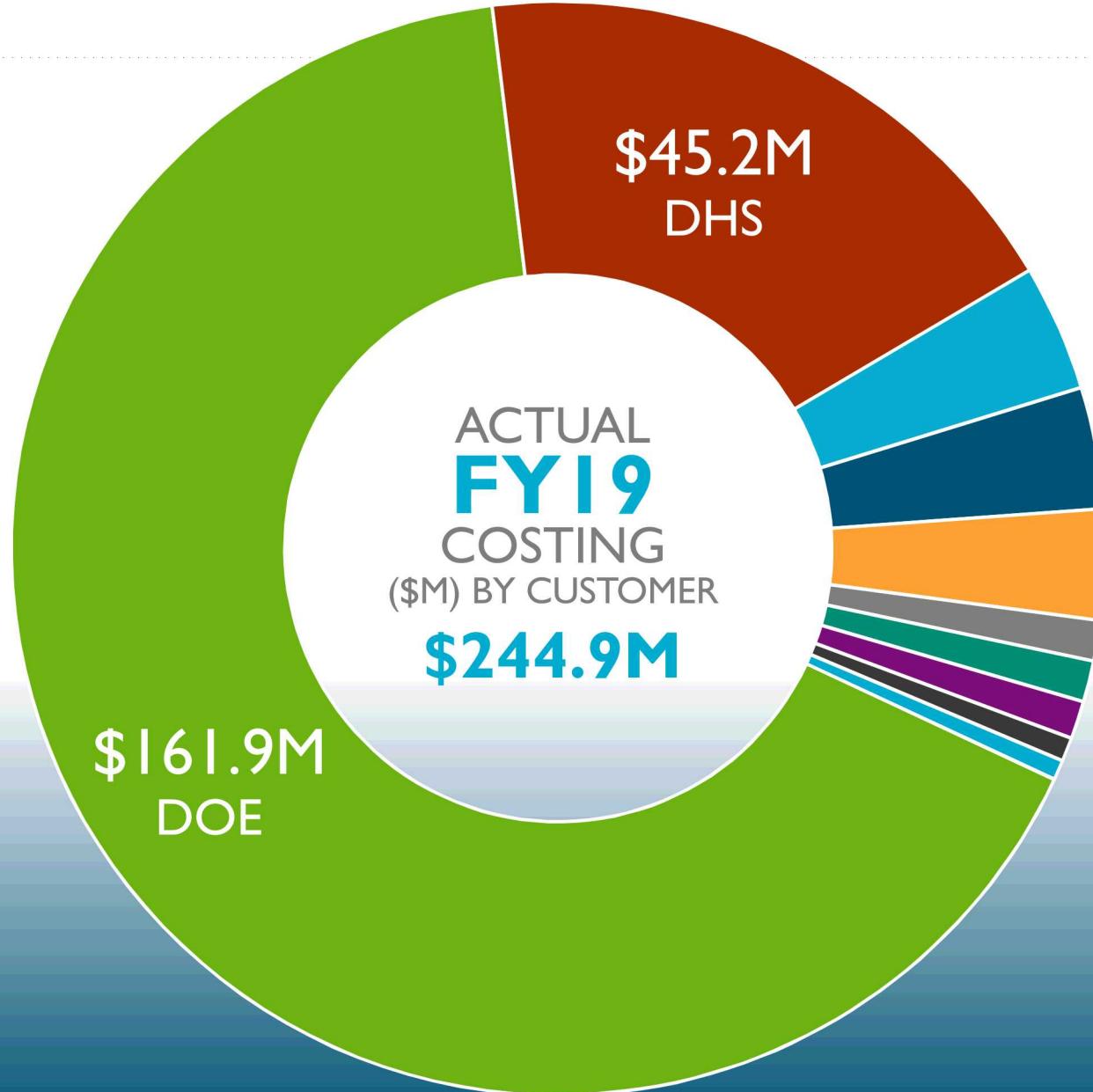
Heidi Ammerlahn
Program Area Director



Richard Griffith
Acting Program Area Director

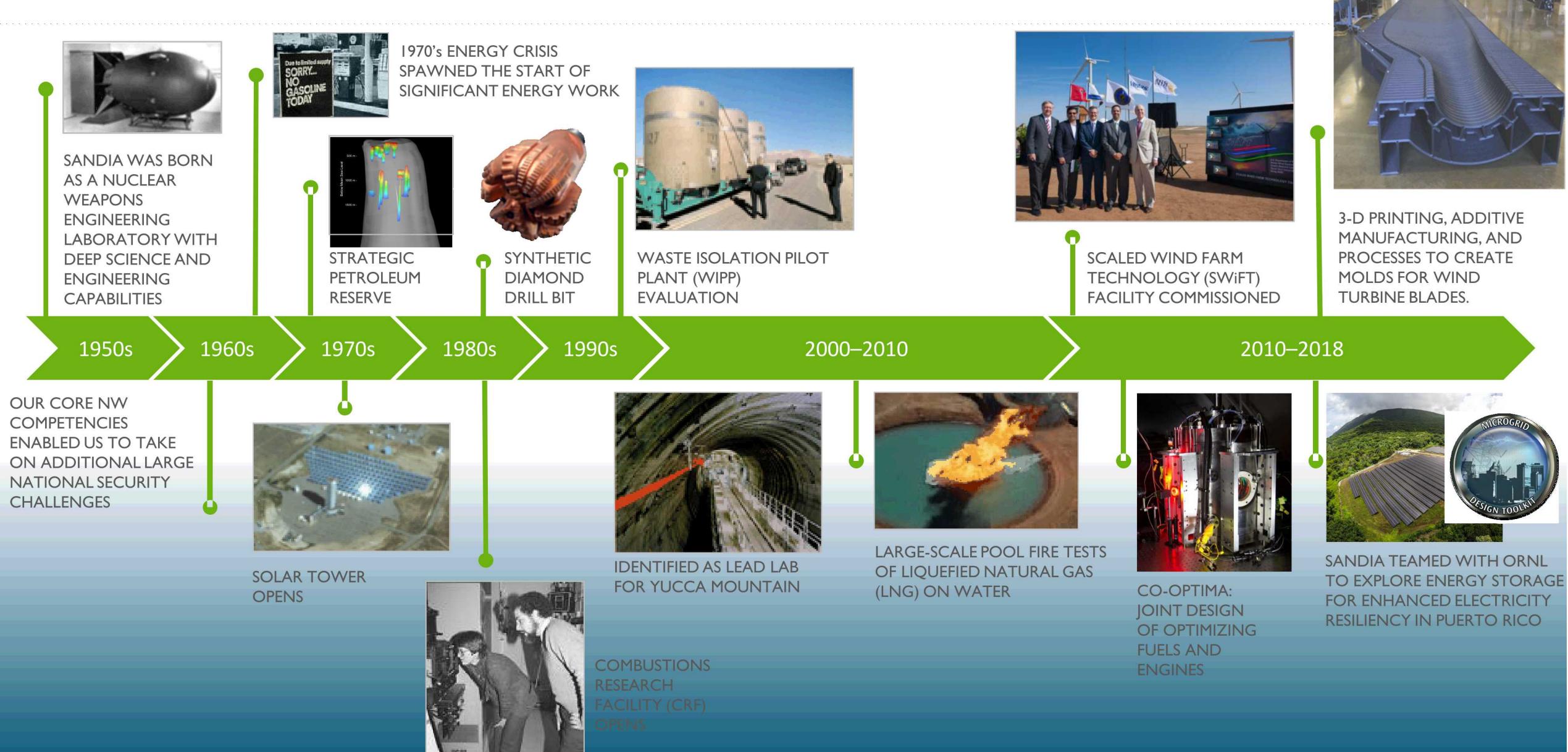
Provide protection for our nation's digital and physical critical infrastructures





- DOE – \$161.9M**
Department of Energy
- DHS – \$45.2M**
Department of Homeland Security
- NRC – \$9.2M**
Nuclear Regulatory Commission
- DOD – \$8.8M**
Department of Defense
- IEWs – \$8M**
Inter-Entity Work
- CRADAs – \$3M**
Cooperative Research & Development Agreements
- NFEs – \$3M**
Non-Federal Entities
- NASA – \$2.7M**
National Aeronautics & Space Administration
- DOT – \$1.7M**
Department of Transportation
- Other – \$1.4M**
(HHS, EPA, DOC, DOL, Other)

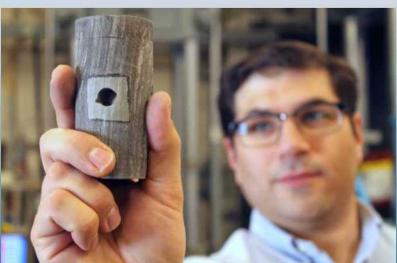
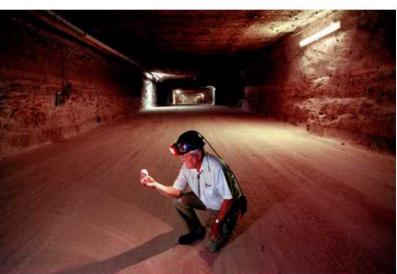
HISTORY OF THE SANDIA ENERGY PROGRAM



SECURE ENERGY & EARTH SYSTEMS



SUPPORT THE RESILIENCE & SECURITY OF THE NATION'S ENERGY SYSTEM BY
PERFORMING FUNDAMENTAL & APPLIED R&D



RENEWABLE ENERGY
ENERGY EFFICIENCY
GRID MODERNIZATION AND ENERGY STORAGE
FOSSIL ENERGY
DOE-MANAGED NUCLEAR WASTE
NUCLEAR ENERGY SAFETY AND SECURITY
NUCLEAR ENERGY FUEL CYCLE

FY19 TOTAL COSTS \$151.8M

U.S. DEPARTMENT OF
ENERGY | Energy Efficiency & Renewable Energy

U.S. DEPARTMENT OF
ENERGY | Electricity Delivery & Energy Reliability

U.S. DEPARTMENT OF
ENERGY | Fossil Energy
OFFICE OF OIL & NATURAL GAS

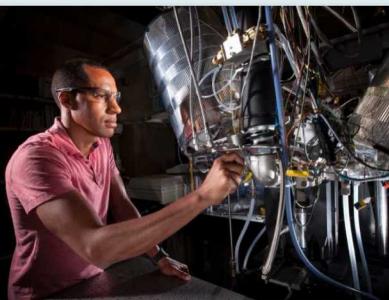
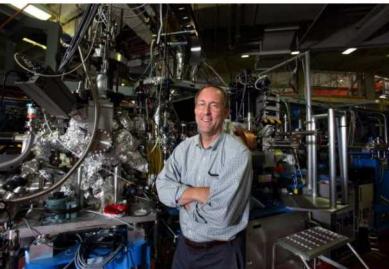
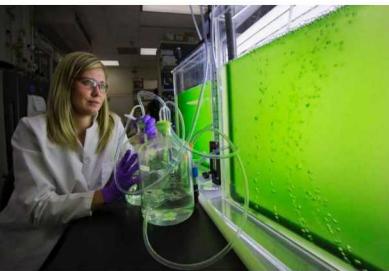
U.S. DEPARTMENT OF
ENERGY | OFFICE OF ENVIRONMENTAL MANAGEMENT

U.S. DEPARTMENT OF
ENERGY | Nuclear Energy

U.S.NRC



ACCELERATE TRANSFORMATIVE INNOVATIONS IN THE TRANSPORTATION SECTOR BY PROVIDING FOUNDATIONAL PHYSICAL & COMPUTATIONAL RESEARCH



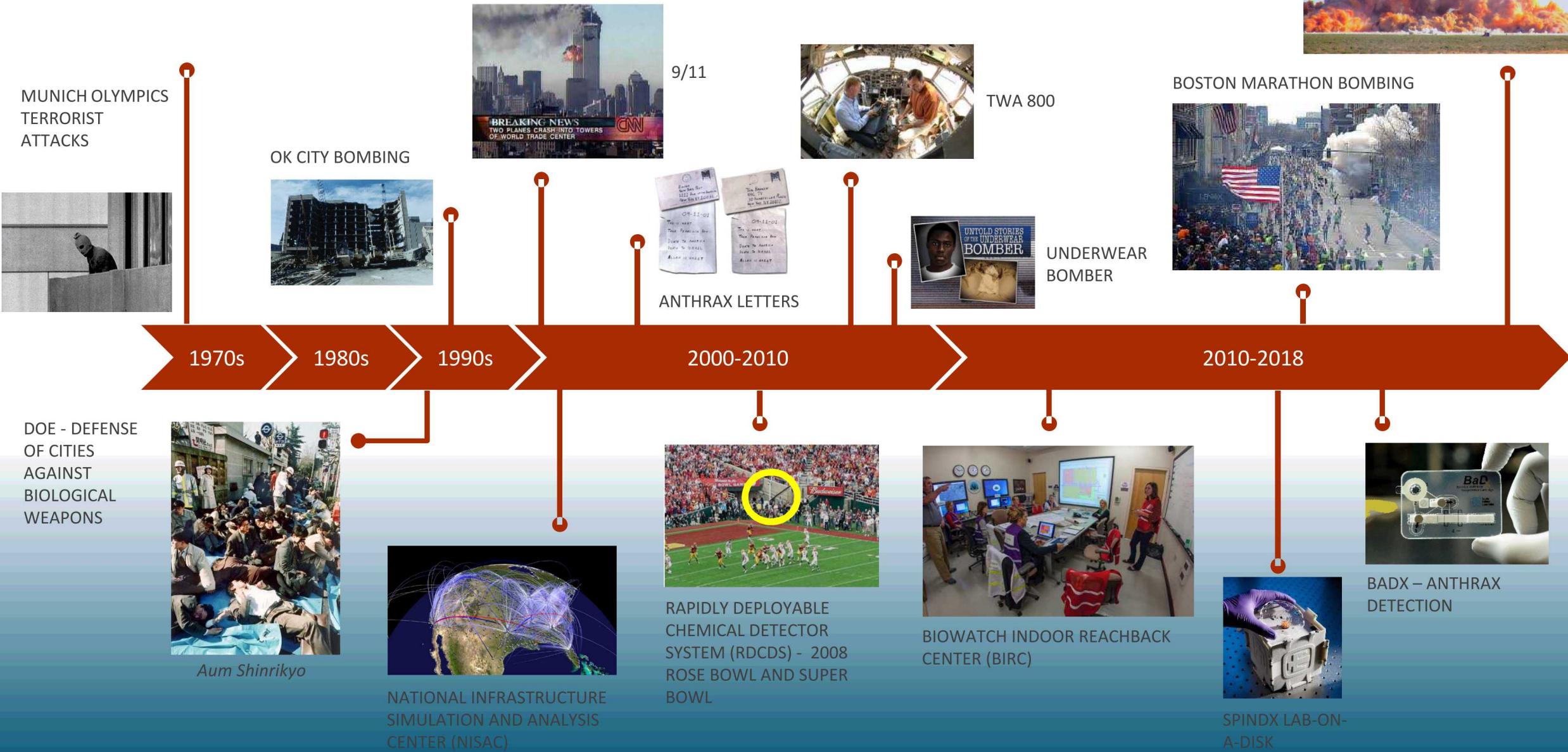
BIOMASS
HYDROGEN & FUEL CELLS
VEHICLE TECHNOLOGIES

FY19 TOTAL COSTS \$37.6M

U.S. DEPARTMENT OF
ENERGY | Energy Efficiency & Renewable Energy

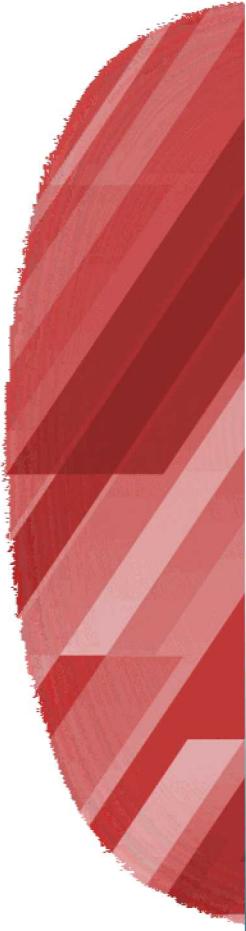
arpa-e
Advanced Research Projects Agency • ENERGY

HISTORY OF SANDIA'S HOMELAND SECURITY PROGRAMS





REDUCE THE NATION'S VULNERABILITY TO CHEMICAL, BIOLOGICAL, RADIOLOGICAL, & NUCLEAR THREATS



Homeland
Security

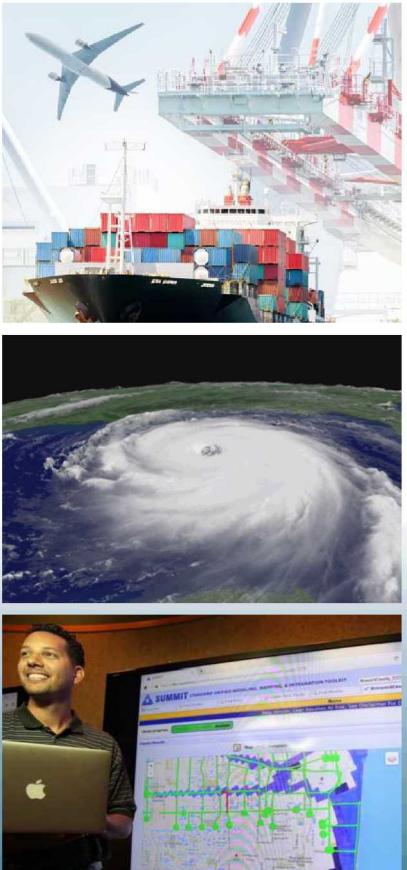


NIH  National Institutes of Health

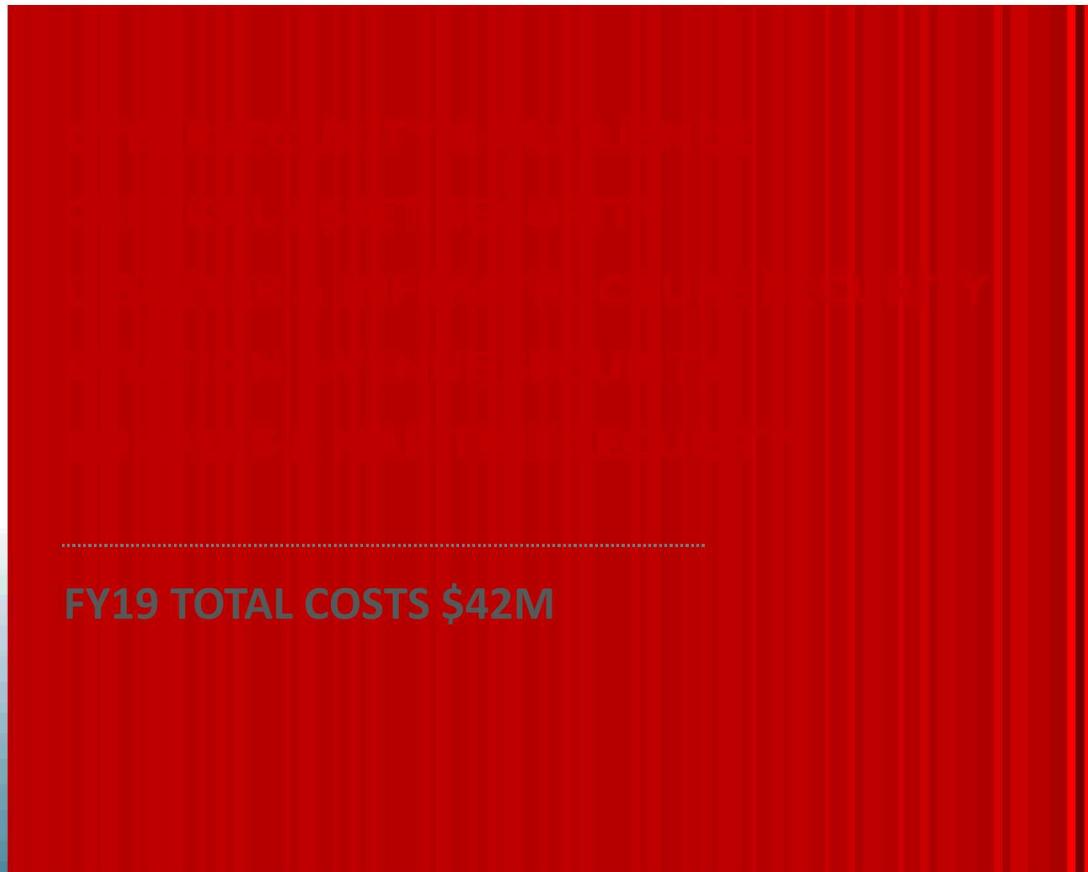




INCREASE OUR NATION'S DIGITAL AND PHYSICAL CRITICAL INFRASTRUCTURE RESILIENCE TO NATURAL AND MAN-MADE THREATS



FY19 TOTAL COSTS \$42M



CISA
CYBER+INFRASTRUCTURE



**Homeland
Security**

Science and Technology



**Transportation
Security
Administration**



**U.S. Customs and
Border Protection**



U.S. Secret Service



BATTERIES

ASC CODES

MICROELECTRONICS

NON-PROLIFERATION
MONITORING, MODELING

NUCLEAR WEAPONS,
RADIATION EFFECTS

NUCLEAR & TRANSPORTATION ENERGY,
LOW-POWER WMD DIAGNOSTICS

NUCLEAR, WMD PROTECTION/RESPONSE,
AIR-2-ELECTRONS MODELING

DIGITAL SECURITY,
POWER ELECTRONICS

NUCLEAR WASTE REPOSITORIES,
BORDER/PHYSICAL SECURITY

SOLAR TOWER, GRID EFFECTS,
NUCLEAR DISASTER PLANNING/RESPONSE



Thank you.



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