



Sandia National Laboratories

Heermann, Joe Castro

ation Session: Life After Graduation



Welcome



- Who We are
- Our Workforce & Culture
- What is a career like at Sandia
- Employment Opportunities

Sandia's Impact



Cleanroom invented 1963

\$50 billion worth of cleanrooms built worldwide. It's used in hospitals, laboratories and manufacturing plants today.



2008 Satellite Takedown

Red Storm computing helps shoot down rogue satellite.



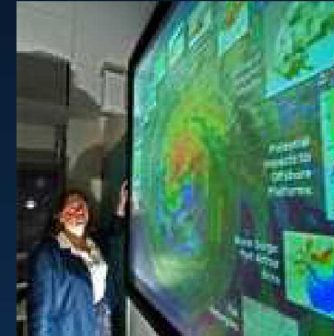
Fukushima Quake

Sandia helps cleanup radioactive wastewater.



9/11

Sandia sets contingency plans for release of materials and aircraft attacks on critical facilities immediately after 9/11. Search dogs are equipped with cameras for search and rescue K-9 handlers. The capability allowed search efforts to be carried out in spaces inaccessible to humans.



Hurricane Katrina

Sandia is called to assess flooding and infrastructure failures.



Gulf Oil Spill

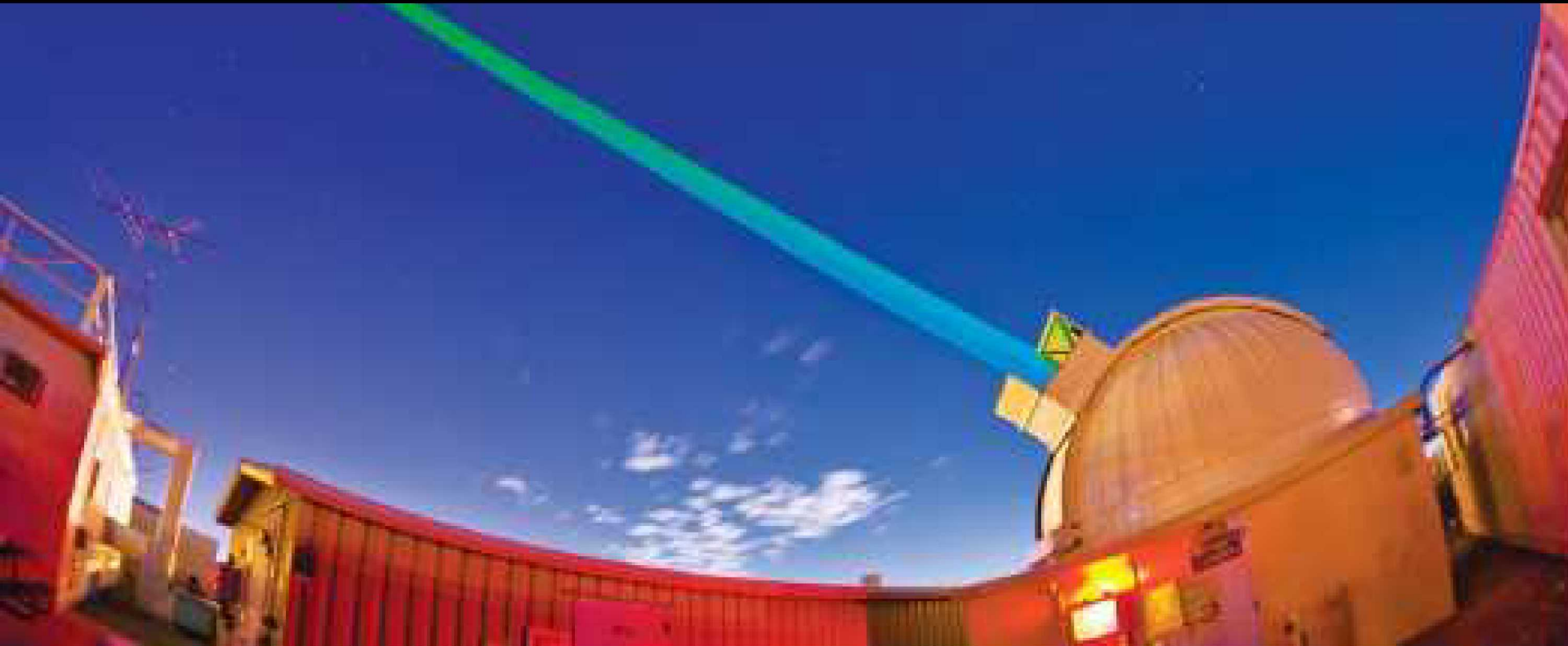
Sandia works to help to develop an approach for securing the damaged well head, stopping the leak, and minimizing the severity of the oil spill.

Sandia - Today



As a multi-faceted national security laboratory, Sandia has delivered essential science and technology for more than 60 years and plays a critical role in ensuring U.S. technical superiority.

At Sandia, you can become part of something more—and contribute to our quest to render exceptional service in the national interest.



Sandia is a National Laboratory



Sandia has two main locations



Science labs

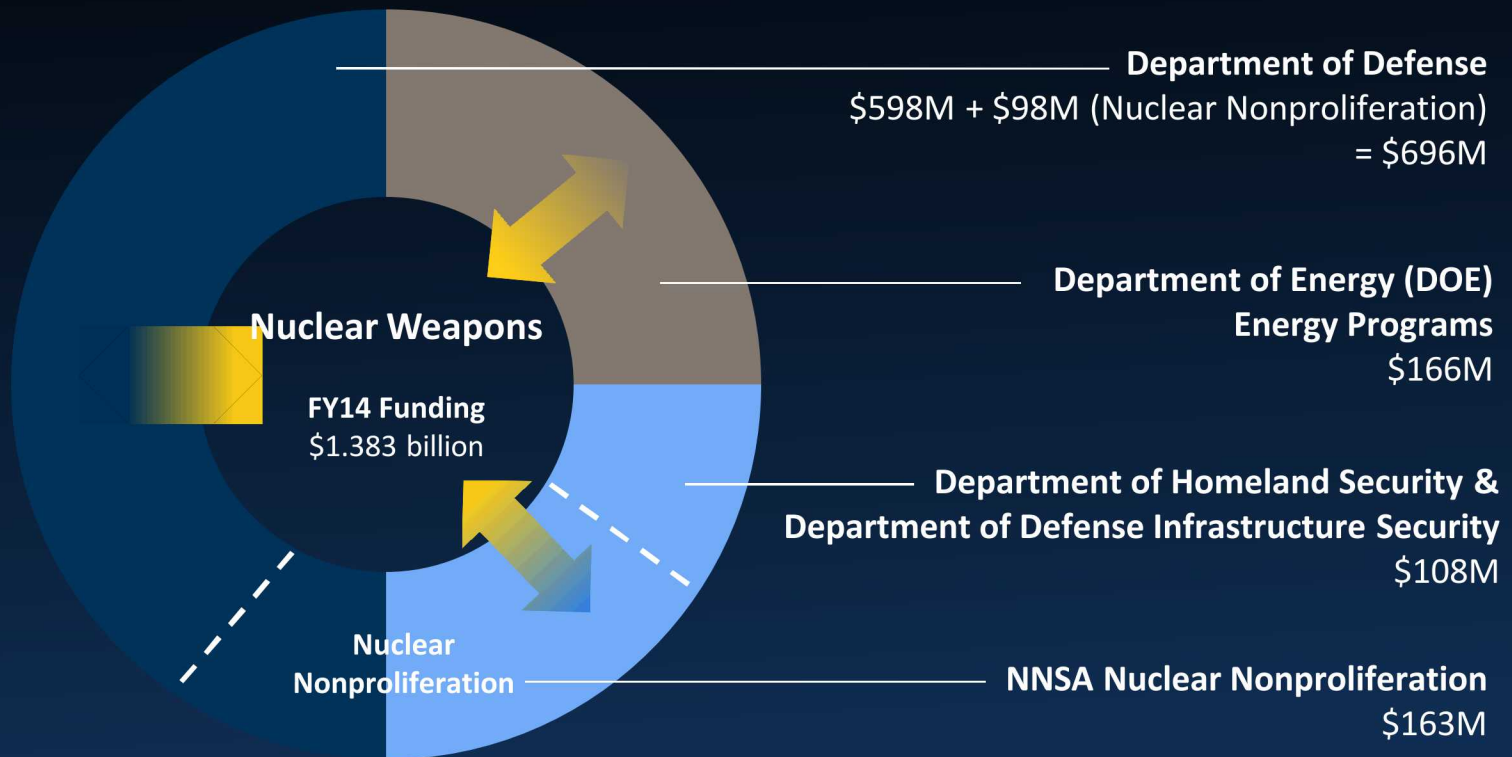
Nuclear energy lab



Fossil energy lab

Energy efficiency and
renewable energy lab

Sandia's Funding - ~\$2 Billion



Note: Other DOE and non-DOE Funding
\$195M

High reliability, high consequence of failure, challenging environments, and technology solutions

Fulfilling Our National Security Mission



Nuclear Weapons



International, Homeland & Nuclear Security



Energy & Climate



Defense Systems & Assessments

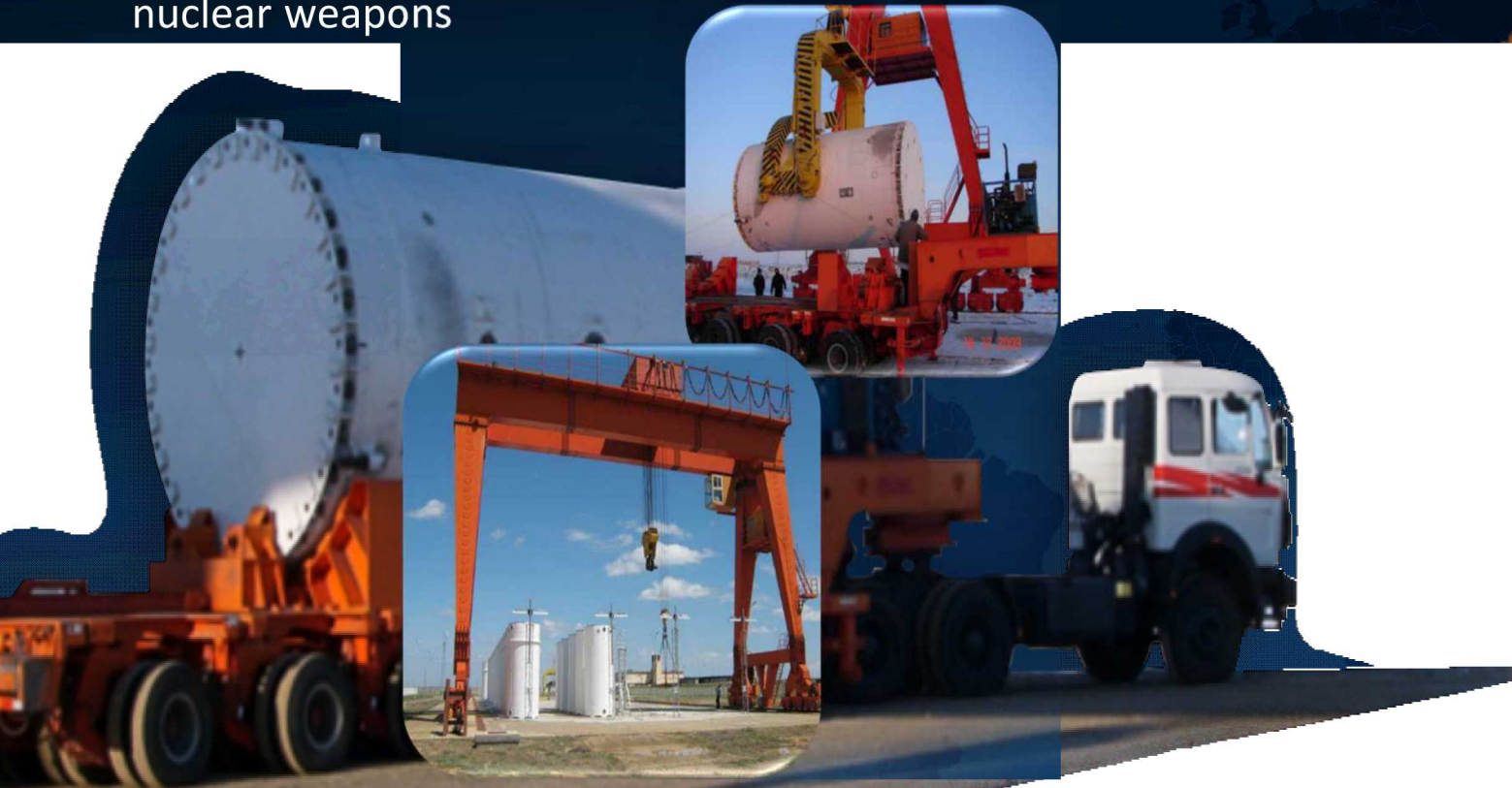
Nuclear Weapons

Sandia assumes an increasingly pivotal role in sustaining the nation's nuclear deterrent.



International, Homeland & Nuclear Security

Nonproliferation - the prevention of an increase or spread of the number of countries possessing nuclear weapons



Energy & Climate

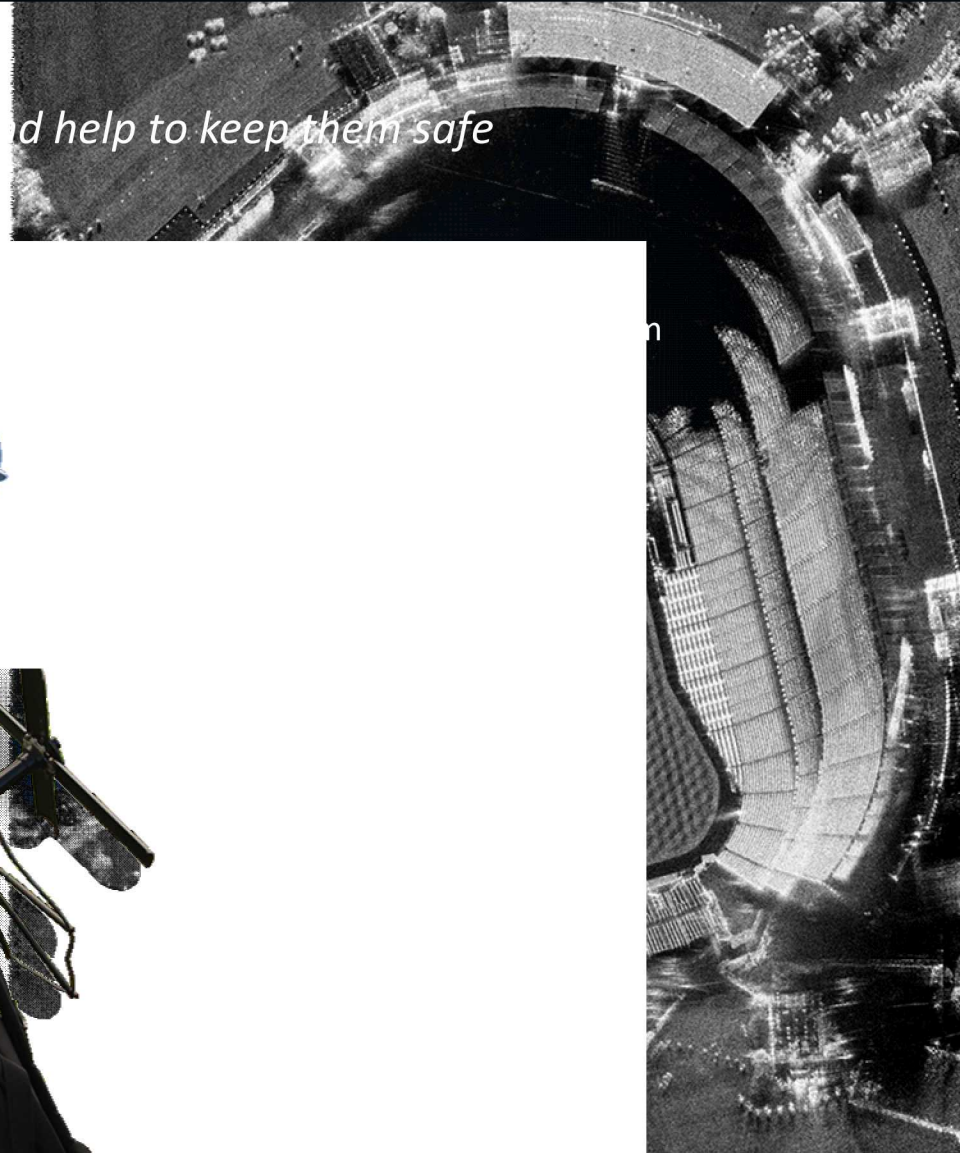


Energy Security
Food Security
Infrastructure Security
Disaster Preparedness Capabilities

Defense Systems & Assessments

We support our troops and

and help to keep them safe



Our Foundations in Research



*...ential research-and-discovery activities that
vention, innovation, entrepreneurship,
unity, and public benefit.*

- Bioscience
- Computing and Information Science
- Engineering Science
- Geoscience
- Materials Science
- Nanodevices and Microsystems
- Radiation Effects and High Energy Density Science



Our Workforce & Culture

Our Workforce ~11,700 employees



~10,300 Regular employees
~1,400 Temporary employees, students
& postdoctoral appointees

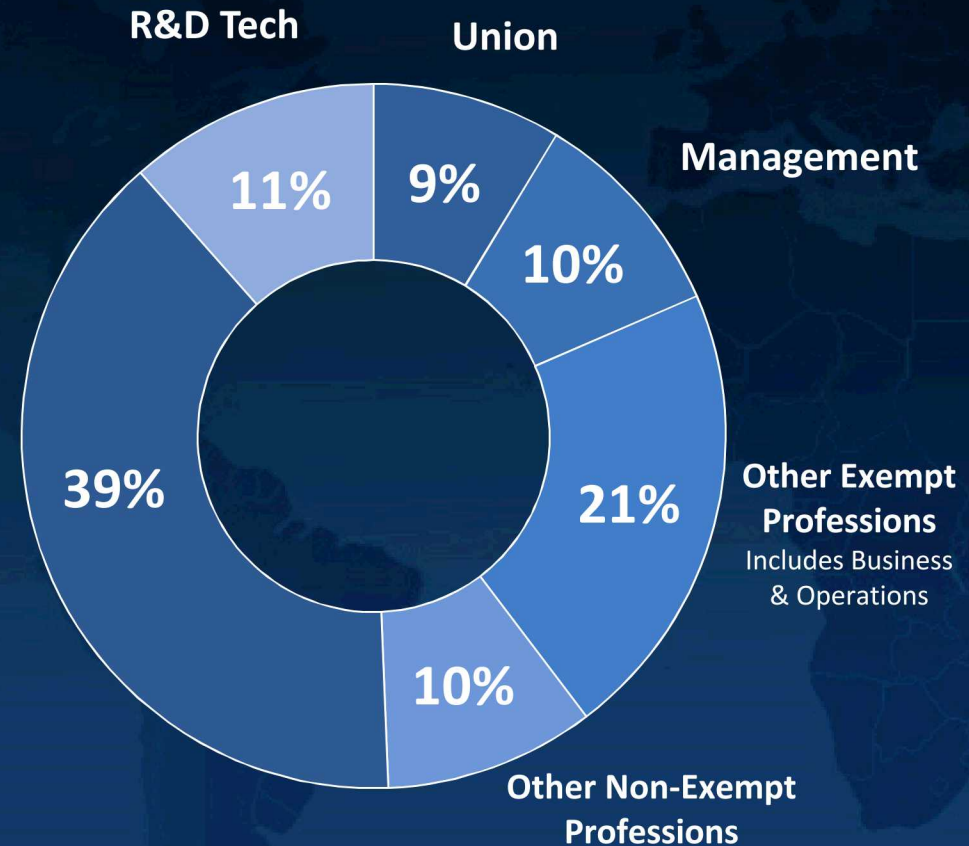
New Mexico Site:

Workforce: ~10,500
R&D employees: ~4,700
(R&D Staff & Technologists)

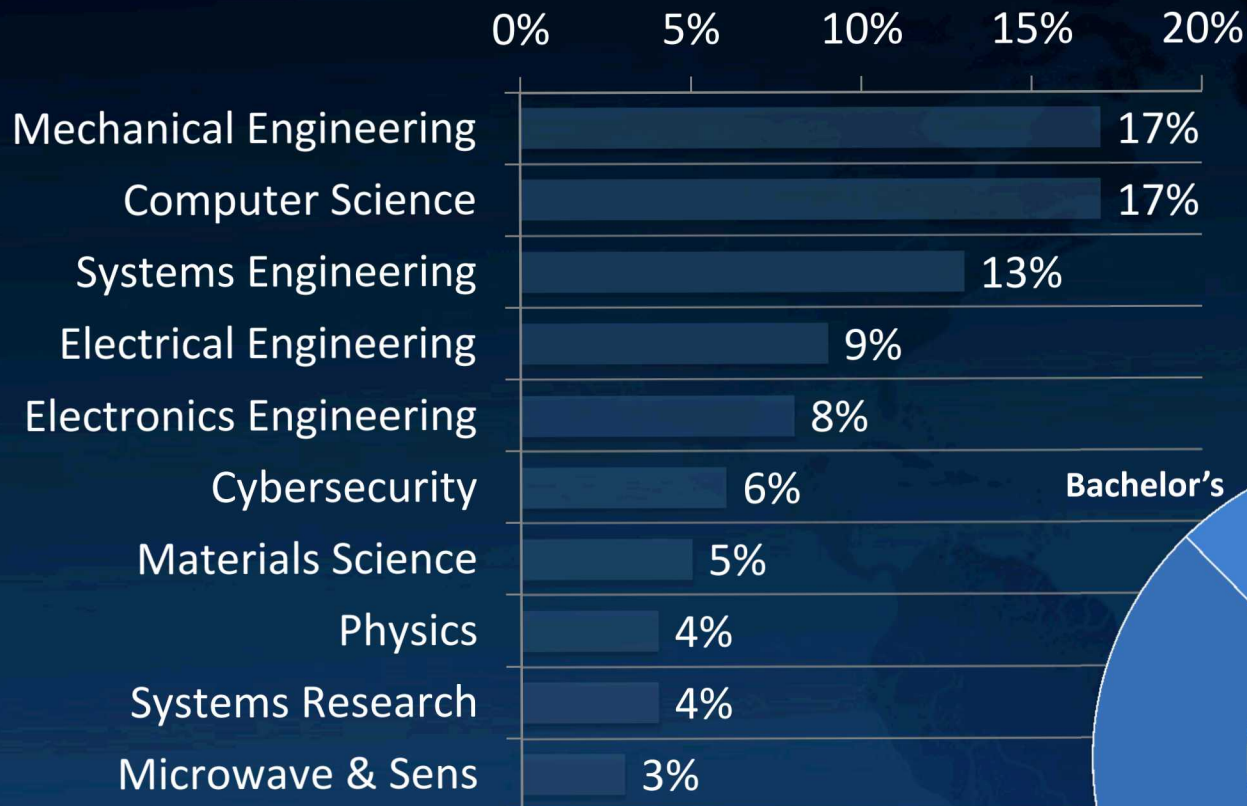
California Site:

Workforce : ~1,200
R&D employees: ~600
(R&D Staff & Technologists)

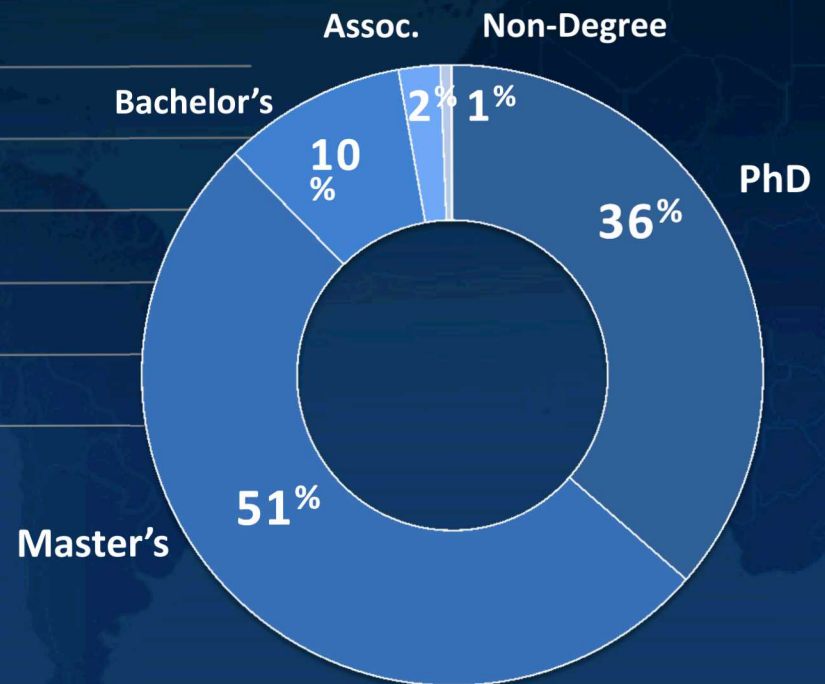
R&D Staff



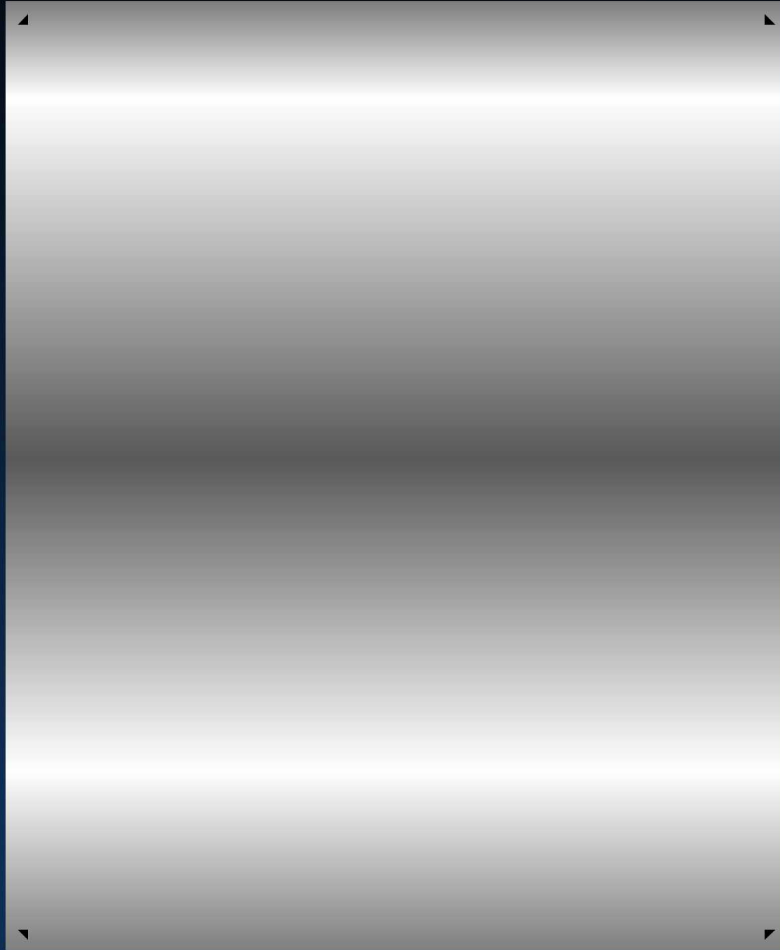
R&D by Discipline & Degree



Top 10 job descriptions shown, Regular exempt non-management employees only

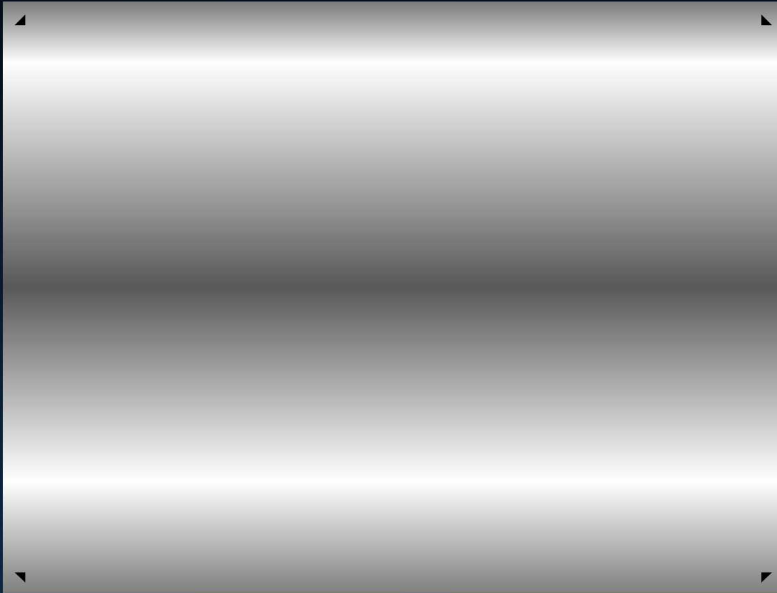


Our Culture – Our Values



- We serve the nation
- We team to deliver with excellence
- We respect each other
- We act with integrity
- We live safe and healthy lives

Our Culture – Giving Back



+ 100,000 Volunteer Hours Annually
~ \$6 Million Donated to Nonprofits Annually

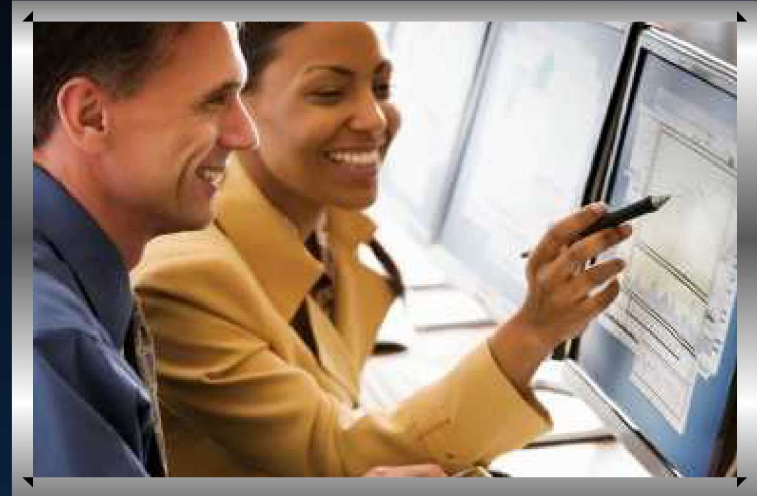
- Animal Adopt-a-thons
- Coach sports teams
- Lead scouting troops
- K-12 education outreach
- Help at food banks
- Build homes
- Contributions and drives

Special Programs, Education and Mentoring



University-based Education

- Tuition Assistance Program
- University Part-Time Program
- Special Master's Program
- Doctoral Study Program



In-house Education, Training and Mentoring Programs

- Business
- Communication
- Design and drafting
- Energy
- Health and wellness
- Information technology
- Manufacturing
- Marketing
- Project management
- Sciences



What's a career like at Sandia?

Joe Castro (PhD, NEEP, Class of 1995)

Undergrad Years (1984-1989)

Berkeley on the Brain

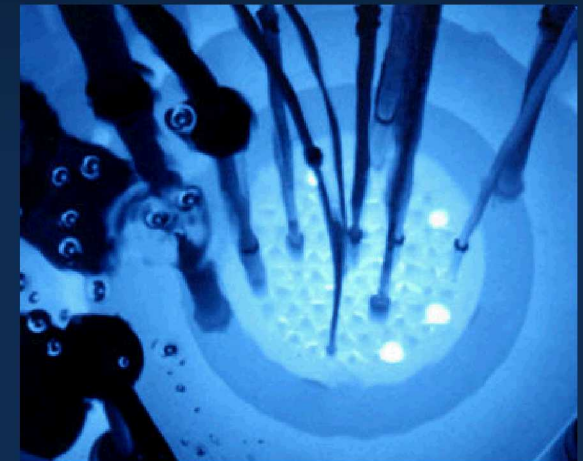
- Planned to transfer after freshman year
- 1st semester grades suffered

Refocused – graduate school is the next goal

K-State was a great school and a great experience

Obtained B.S. in Nuclear Engineering – Dec. 1989

- Emphasis on physics and math



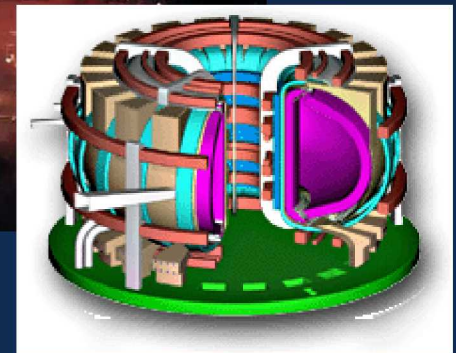
Lesson Learned:

“High Profile” School was not a critical need for my academic goals

Graduate Years (1989-1995)

Lessons Learned:

- ❖ On-site visit is critical – if not offered a visit take the time and expense to do it yourself
- ❖ The school is not only important but also the location – you'll live there for 5-8 years of your life!
- ❖ Grad school choice is more critical than undergrad – make sure to do your homework
- ❖ Your academics are important but have a broader perspective about your future. Transition to next slide...



Desert Period (1995-1997)

Lessons Learned:

- ❖ Assumed Would Receive a Post-Doc position (no money) – communicate with advisor!
- ❖ Should have been pro-active on job search early! (saw it coming)
- ❖ Should have made more contacts – involvement in intern program, university organizations, etc.
- ❖ Job market tends to be cyclic – don't give up!



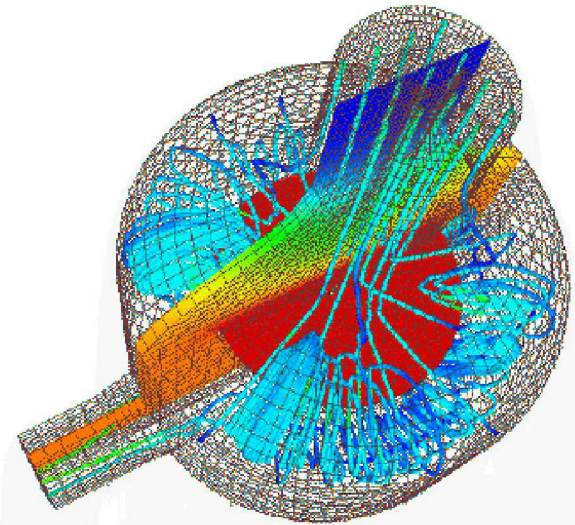
Sandia: Early Years (1997-2001)

Lessons Learned:

- ❖ Always re-educate yourself when you have the opportunity (something I should have done more during grad years)
- ❖ Be flexible and willing to transition into something new – you may find you like it!
- ❖ Be persistent and communicate with your management – was able to be hired during a very difficult time



Sandia
National
Laboratories



Sandia Years: Middle Years (2001-2010)

Lessons Learned:

- ❖ Again, always be open to change:
 - Unforeseen change
 - ✓ Budget
 - ✓ Priority
 - New Opportunities
 - ✓ Technical
 - ✓ Programmatic
 - Good for growth!
- ❖ Sandia gives you the opportunity to transition to different things and wear different “hats”
 - If it doesn’t work for you – have the ability to transition back



Sandia Years: Later Years (2008-Present)

Converted to Primary Member of Technical Staff
Continue technical and programmatic lead on the QASPR project

- Programmatic and research

Developing skill set for management

- Begun bidding on management positions in 2014

Why management?

- Higher level impact
- Helping others succeed

Hired as manager of Electrical Models and Simulation org. in October of 2014



Lesson Learned:

18+ years at Sandia I've transitioned to areas I never would have predicted at the beginning of my career. I look forward to the continuing opportunity and change!

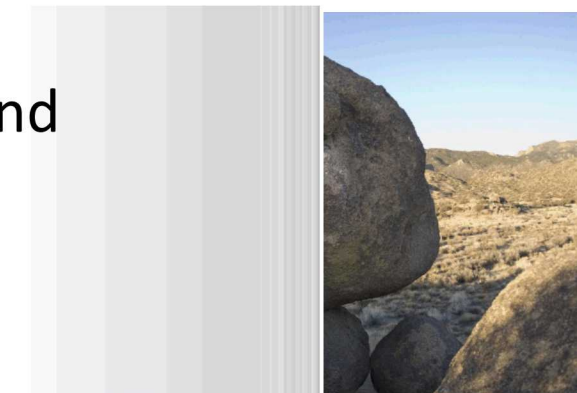
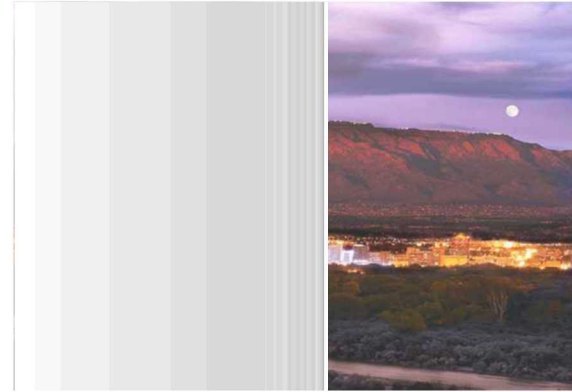
Working at Sandia / Living in New Mexico

■ Working at Sandia:

- Diversified portfolio and work opportunity
- Great amount of freedom
- Many opportunities for self-investment
- Meaningful work
- Good work/life balance

■ Living in New Mexico

- Gorgeous scenery and year-round outdoor activities
- 300 days of sunshine
- Unique culture



Nathan Heermann (MS ISYE Class 2013)

- Hometown: Albuquerque, NM
- Undergrad: University of New Mexico EE
- Graduate: University of Wisconsin-Madison ISYE
- Favorite food at UW: Wings at the Library



My Career at Sandia



Internship

Critical Skills
Master
Fellowship

Quality
Engineer

Internship 2008-2012

- Explosives (for national security: packing into laptops, liquid explosives of common household liquids to measure yield)
- Photovoltaic reliability (database and analysis work)
- Fault Trees
- Power Sources



Critical Skills Masters Program

- Fully funded master's of science degrees are available through Sandia's Critical Skills Master's Program. Successful applicants will become full-time Sandia employees, work at Sandia for at least two months, and then enter graduate school full-time. While in school, participants will receive benefits and a stipend from Sandia. Upon graduating with their master's degrees, participants are placed in a regular position at Sandia.

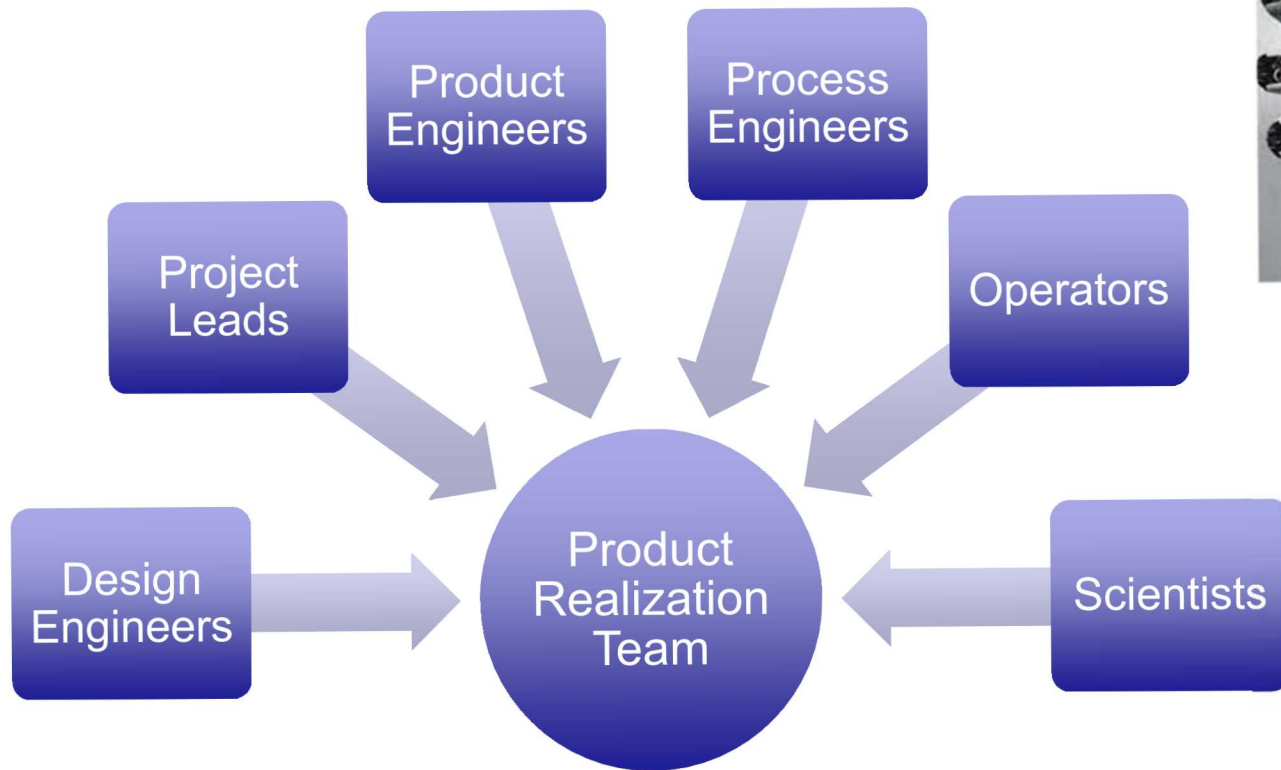


What I do at Sandia National Labs

- Quality Engineer for nuclear weapon components
- Variety of components on many different systems
- Work with all stages: concept, feasibility, design, development, production, and dismantlement
- Surety of components



Great people to work with



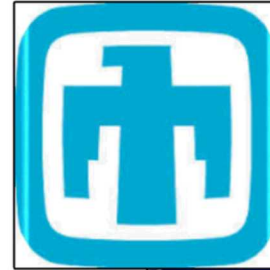
With ~10,000 people at Sandia there is someone who knows the answer!

Developing my skill set



Undergrad + Graduate
School

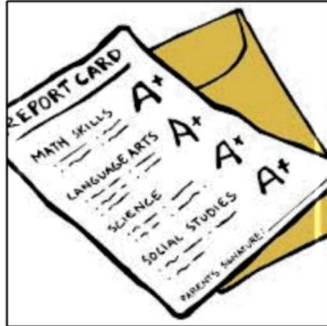
- Continuous Improvement
- Quality Systems
- Circuits
- Power Systems
- Senior Design Project



Sandia National Labs

- HALT & HASS
- Defect Prevention
- Product Qualification
- Government Systems Operations

How to prepare for a career at Sandia



GPA

Applicable
course work/
knowledge base



Internship/ work
experience

Questions?





Employment Opportunities

Internships

Features

- 16+ yrs to PhD
- Variety of majors
- Technical institute programs (8)
 - Perform leading-edge research
 - Guidance of a Sandia research mentor
 - State-of-the-art equipment and facilities
- Tours, workshops, seminars

Requirements

- U.S. citizenship for positions that require clearance
- Full-time enrollment status
- GPA: 3.5 grad, 3.2 undergrad



Fellowships & Postdocs

Features

- Ph.D.-level candidates
- Harry S. Truman
 - Salary: 110K
- Alexander Hollander Distinguished
 - Focus on life, biomedical, and environmental sciences
- John Von Neumann Postdoctoral
 - One-year
 - Applied/computational mathematics

Requirements

- U.S. citizenship for positions that require clearance
- GPA: 3.7 grad, 3.5 undergrad
- Research in areas of interest to national security



Full-time

- U.S. citizenship for positions that require clearance
- 13 majors listed on website
- Work-life balance
- Diversity programs, community outreach, 401(k) matching, patent royalties, wellness programs



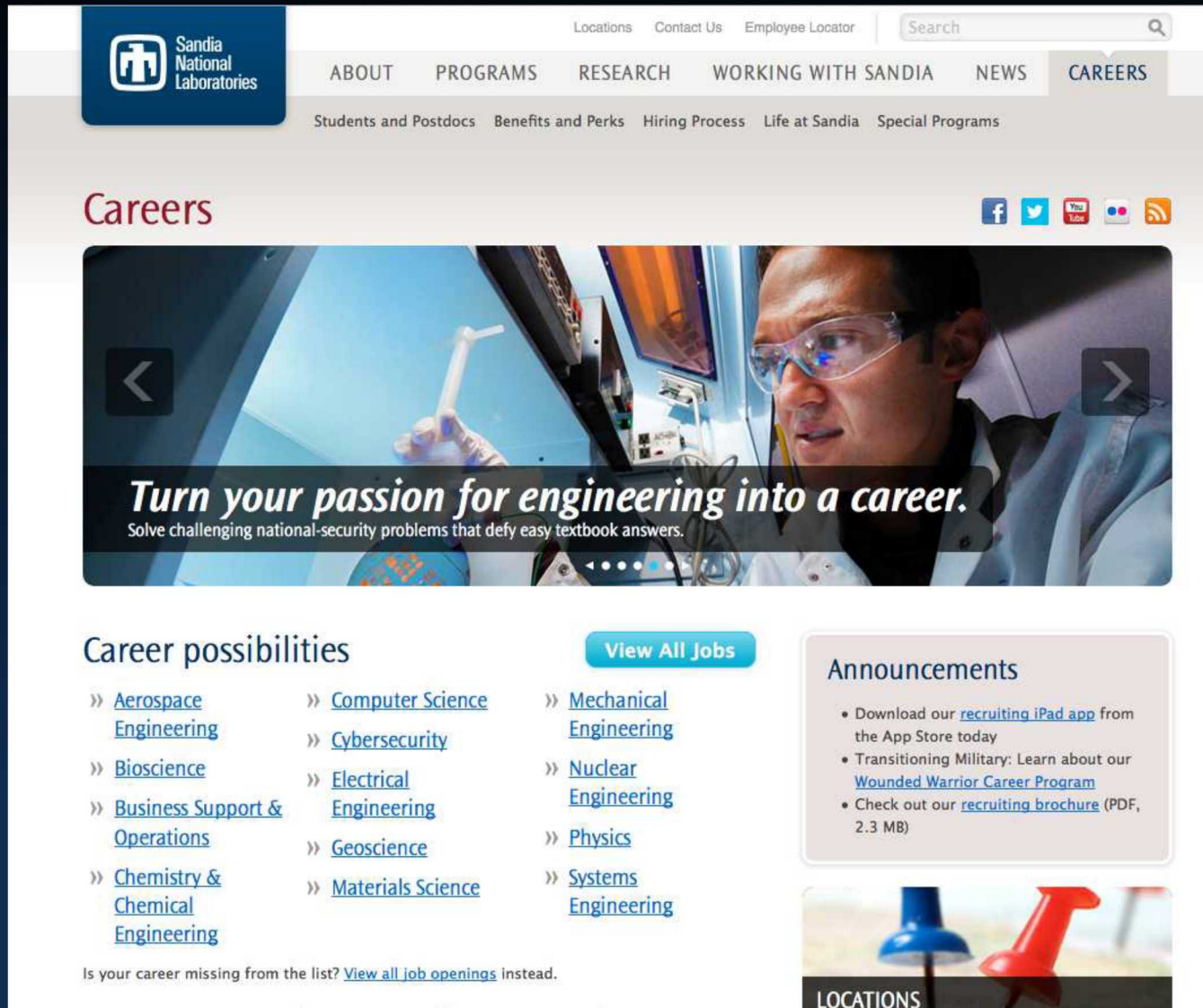
Wounded Warrior Career Development Program

- A unique limited-term career development employment opportunity that enables veterans to acquire career-based skills at Sandia through training, mentoring and real-world work experience while supporting mission success.



- Actively pursue an appropriate college degree
- Continue to develop and refine job related skills through training
- Share experiences to improve understanding of combat theater and enhance connections with Sandia work

Apply Online! sandia.gov/careers



The screenshot shows the Sandia National Laboratories careers website. At the top, there is a navigation bar with links for Locations, Contact Us, Employee Locator, and a search bar. Below this is a secondary navigation bar with links for ABOUT, PROGRAMS, RESEARCH, WORKING WITH SANDIA, NEWS, and CAREERS. The CAREERS link is highlighted. Under the CAREERS link, there are sub-links: Students and Postdocs, Benefits and Perks, Hiring Process, Life at Sandia, and Special Programs. The main header area features the Sandia National Laboratories logo on the left and social media icons (Facebook, Twitter, YouTube, LinkedIn, RSS) on the right. Below the header is a large banner image showing a scientist in a lab coat and safety glasses working with equipment. Overlaid on the banner is the text: "Turn your passion for engineering into a career." and "Solve challenging national-security problems that defy easy textbook answers." Below the banner is a section titled "Career possibilities" with a "View All Jobs" button. This section lists various career fields in three columns: Aerospace Engineering, Bioscience, Business Support & Operations, Chemistry & Chemical Engineering, Computer Science, Cybersecurity, Electrical Engineering, Geoscience, Materials Science, Mechanical Engineering, Nuclear Engineering, Physics, and Systems Engineering. To the right of the career possibilities is an "Announcements" section with three bullet points: "Download our recruiting iPad app from the App Store today", "Transitioning Military: Learn about our Wounded Warrior Career Program", and "Check out our recruiting brochure (PDF, 2.3 MB)". At the bottom right, there is a section titled "LOCATIONS" with an image of two pushpins, one blue and one red.

Sandia National Laboratories

Locations Contact Us Employee Locator Search

ABOUT PROGRAMS RESEARCH WORKING WITH SANDIA NEWS CAREERS

Students and Postdocs Benefits and Perks Hiring Process Life at Sandia Special Programs

Careers

Turn your passion for engineering into a career.
Solve challenging national-security problems that defy easy textbook answers.

Career possibilities

[View All Jobs](#)

- » [Aerospace Engineering](#)
- » [Bioscience](#)
- » [Business Support & Operations](#)
- » [Chemistry & Chemical Engineering](#)
- » [Computer Science](#)
- » [Cybersecurity](#)
- » [Electrical Engineering](#)
- » [Geoscience](#)
- » [Materials Science](#)
- » [Mechanical Engineering](#)
- » [Nuclear Engineering](#)
- » [Physics](#)
- » [Systems Engineering](#)

Announcements

- Download our [recruiting iPad app](#) from the App Store today
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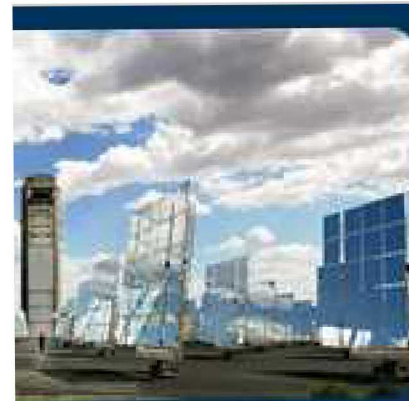
Is your career missing from the list? [View all job openings](#) instead.

LOCATIONS

in the national interest



Thank You



Backups



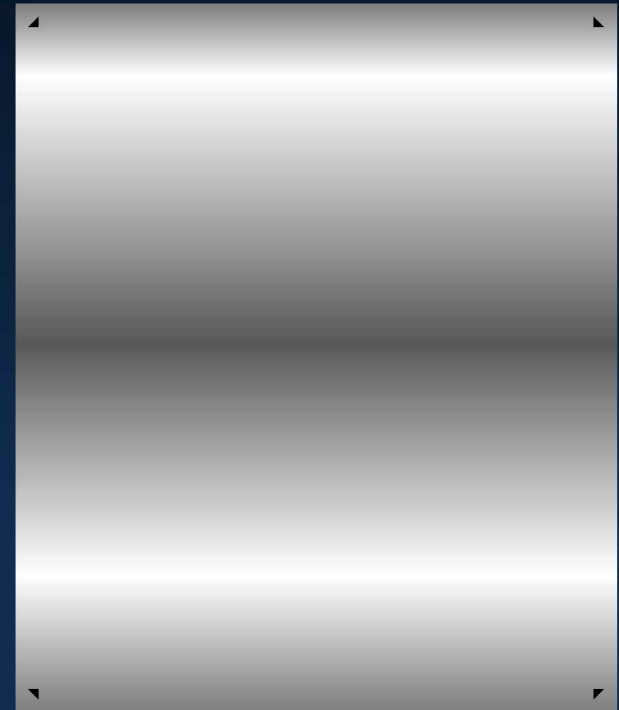
Internships



Encourages qualified students to develop interests in critical skills areas related to our mission, with the ultimate objective of developing our pipeline for our future. Available for Summer, Year Round and Co-op.

Eligibility Criteria

- Min. cumulative GPA (3.2 Undergrad/3.5 Grad)
- Have U.S. citizenship for positions that require clearance or as stated in the job posting
- Full-time enrollment status at an accredited college, university, or local high school
- At least 16 years of age

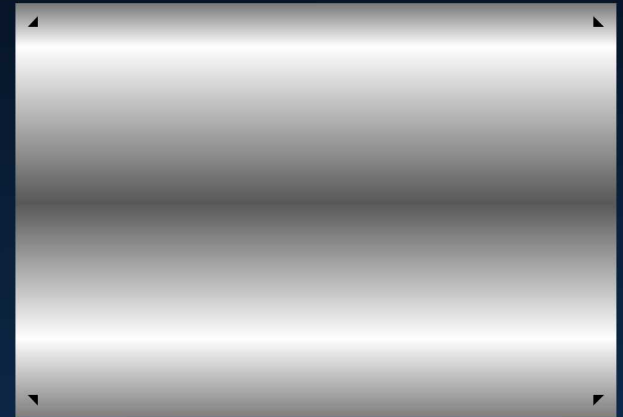


Technical Institute Internships

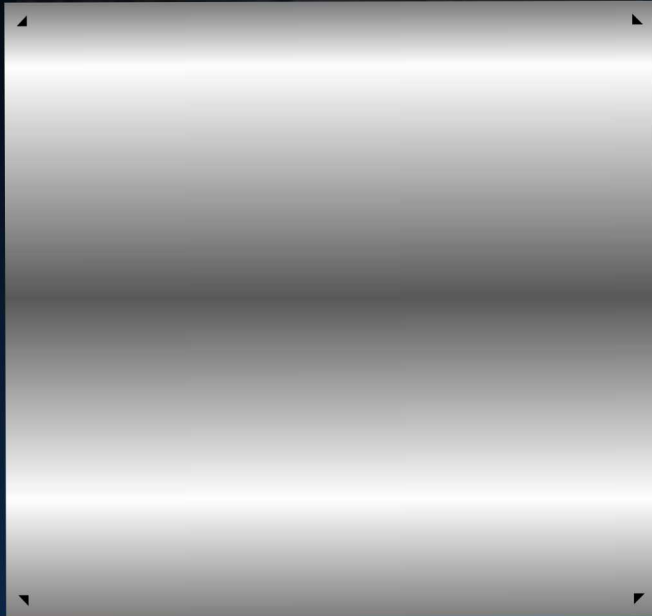


Technical institute interns perform leading-edge research under the guidance of Sandia research mentor and use world-class equipment and facilities.

- Computer Science Research Institute (CSRI)
- Enabling Predictive Simulation Research Institute (EPSRI)
- National Security Engineering Institute (NSEI)
- Physical Sciences Institute (PSI)
- Sandia Institute for Modeling and Simulation (SIMS)
- Science of Extreme Environments Research Institute (SEERI)
- Energy Surety Incubator (SENTINL: ESI)
- Interns for Security, Arms Control, and Force Protection Engineering (SENTINL: iSAFE)
- Center for Analysis Systems and Applications (TITANS: CASA)
- Center for Cyber Defenders (TITANS: CCD)
- Monitoring Systems and Technology Intern Center (TITANS: MSTIC)



Post-doc Opportunities



Key areas for post-docs at Sandia:

- Biosciences and biotechnology
- Chemistry and materials science
- Combustion
- Computational mechanics
- Computer science
- Hydrogen
- Microelectronics and microfluidics
- Nanotechnology
- Physics

Eligibility Criteria

- A recent PhD (awarded within the past five years) or the ability to complete all PhD requirements before beginning
- No previous post-doc appointments at a national laboratory

Special Degree Programs & Fellowship Opportunities



Special Degree Programs

- Critical Skills Master's Fellowship Program
- Master's Fellowship Program

Ph.D. Level Fellowships

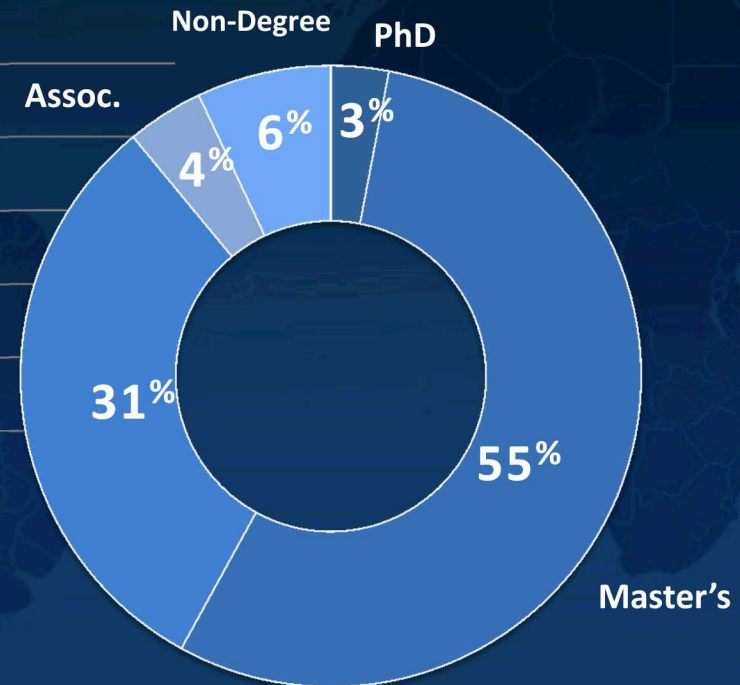
- Harry S. Truman Fellowship
- John Von Neumann



Business & Operations Staff



Degree levels for all our non-management professions including those not represented



Top 10 job families shown , Regular exempt non-management employees only

SNL Ipad Site



YouTube Site



Facebook Site



Careers Site



Twitter Site



LinkedIn Site

