

Exceptional service in the national interest



Sandia National Laboratories

An Overview

Sandia's History

THE WHITE HOUSE
WASHINGTON

May 13, 1949

Dear Mr. Wilson:

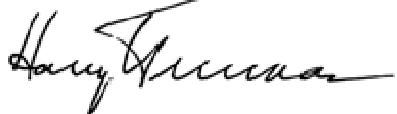
I am informed that the Atomic Energy Commission intends to ask that the Bell Telephone Laboratories accept under contract the direction of the Sandia Laboratory at Albuquerque, New Mexico.

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.

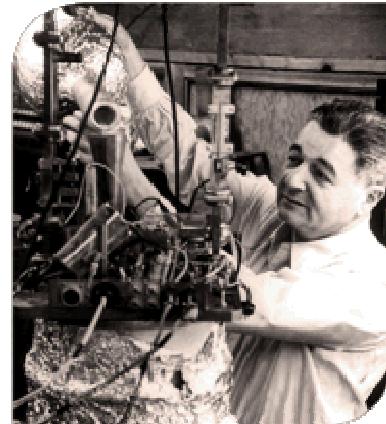
I hope that after you have heard more in detail from the Atomic Energy Commission, your organization will find it possible to undertake this task. In my opinion you have here an opportunity to render an exceptional service in the national interest.

I am writing a similar note direct to Dr. O. S. Buckley.

Very sincerely yours,



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



Sandia
National
Laboratories

Sandia's Governance Structure



**Government-owned
contractor-operated**



Sandia Corporation

- AT&T: 1949–1993
- Martin Marietta: 1993–1995
- Lockheed Martin: 1995–present
- Existing contract expires: Sept. 30, 2012
- One-year contract extension: Sept. 30, 2013

**Federally funded research
and development center**



Sandia's Sites

Albuquerque, New Mexico



Carlsbad, New Mexico



Tonopah, Nevada



Livermore, California



Amarillo, Texas



Kauai, Hawaii



Our Core Values



- Serve the nation
- Deliver with excellence
- Respect each other
- Act with integrity
- Team for great results



Nuclear Weapons

Pulsed power and radiation effects sciences



Warhead systems engineering and integration

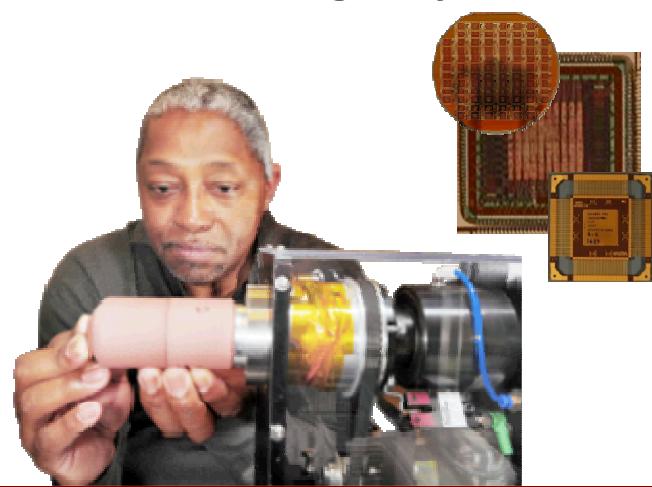


Design agency for nonnuclear components

- Neutron generators
- Arming, fuzing and firing systems
- Safety systems
- Gas transfer systems

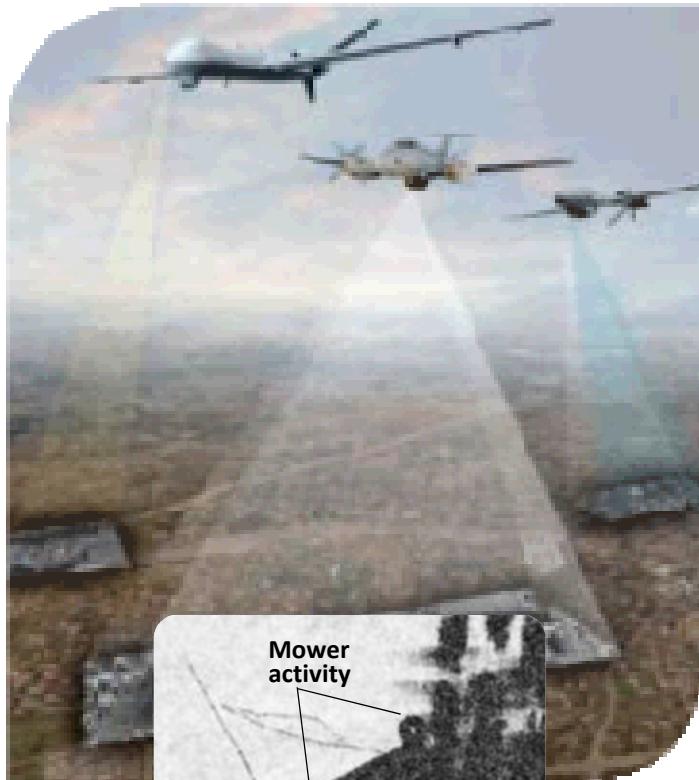


Production agency



Defense Systems and Assessments

Synthetic aperture radar



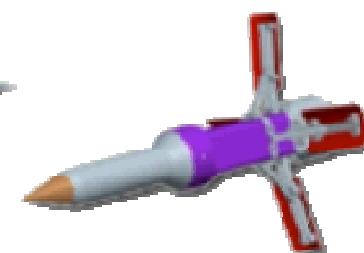
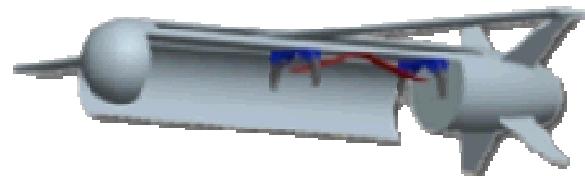
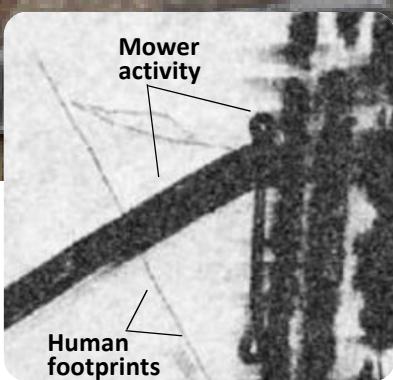
Support for NASA



Support for ballistic missile defense



Ground sensors for future combat systems

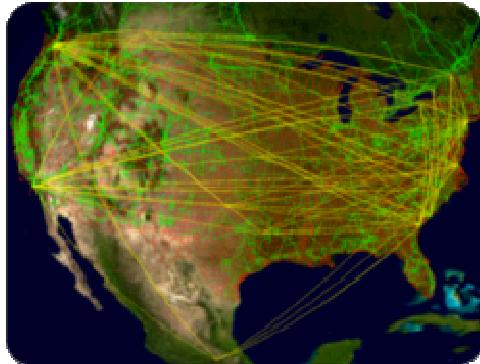


Energy, Climate, and Infrastructure Security

Energy



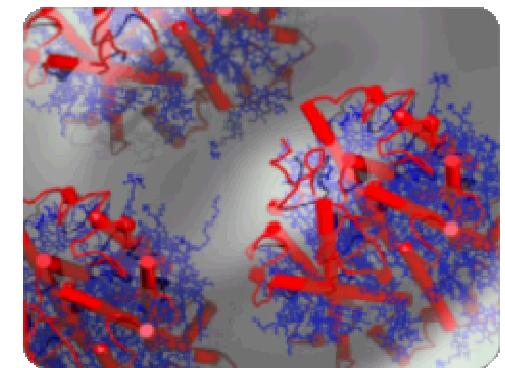
Infrastructure



Crosscuts
and enablers



Climate



International, Homeland, and Nuclear Security

Critical asset protection



Homeland defense and force protection



Homeland security programs



Global security

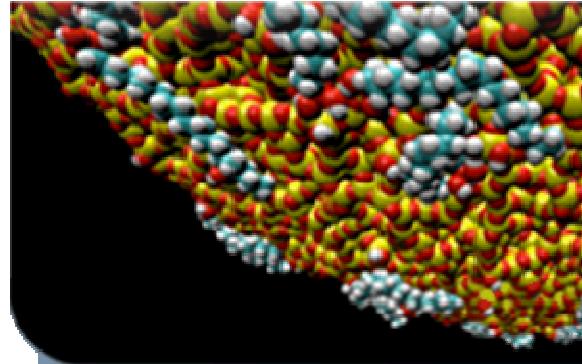


Science and Engineering Foundations

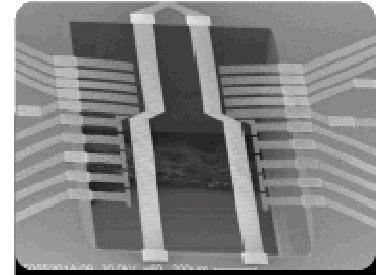
Computing and information science



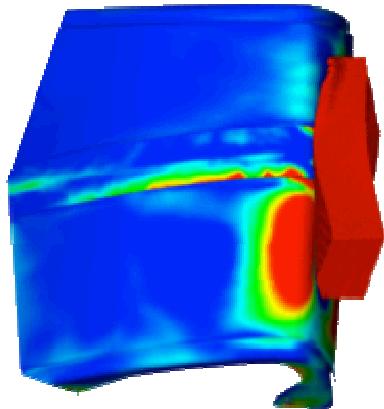
Materials science



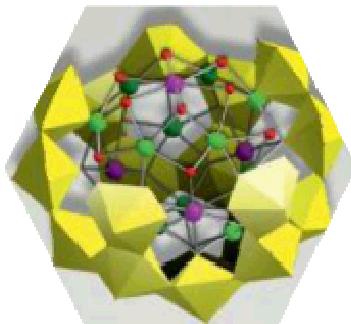
Nanodevices and microsystems



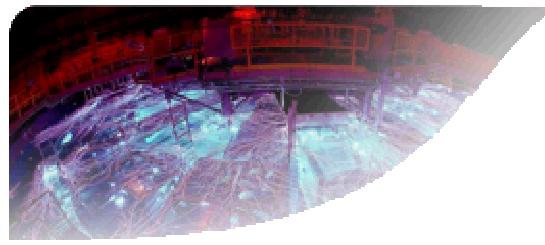
Engineering sciences



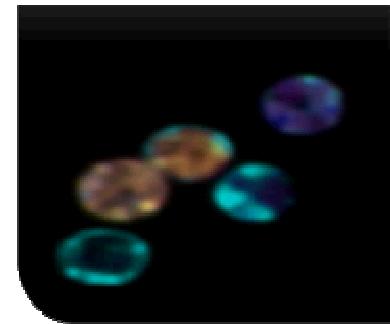
Geoscience



Radiation effects and high-energy density science



Bioscience

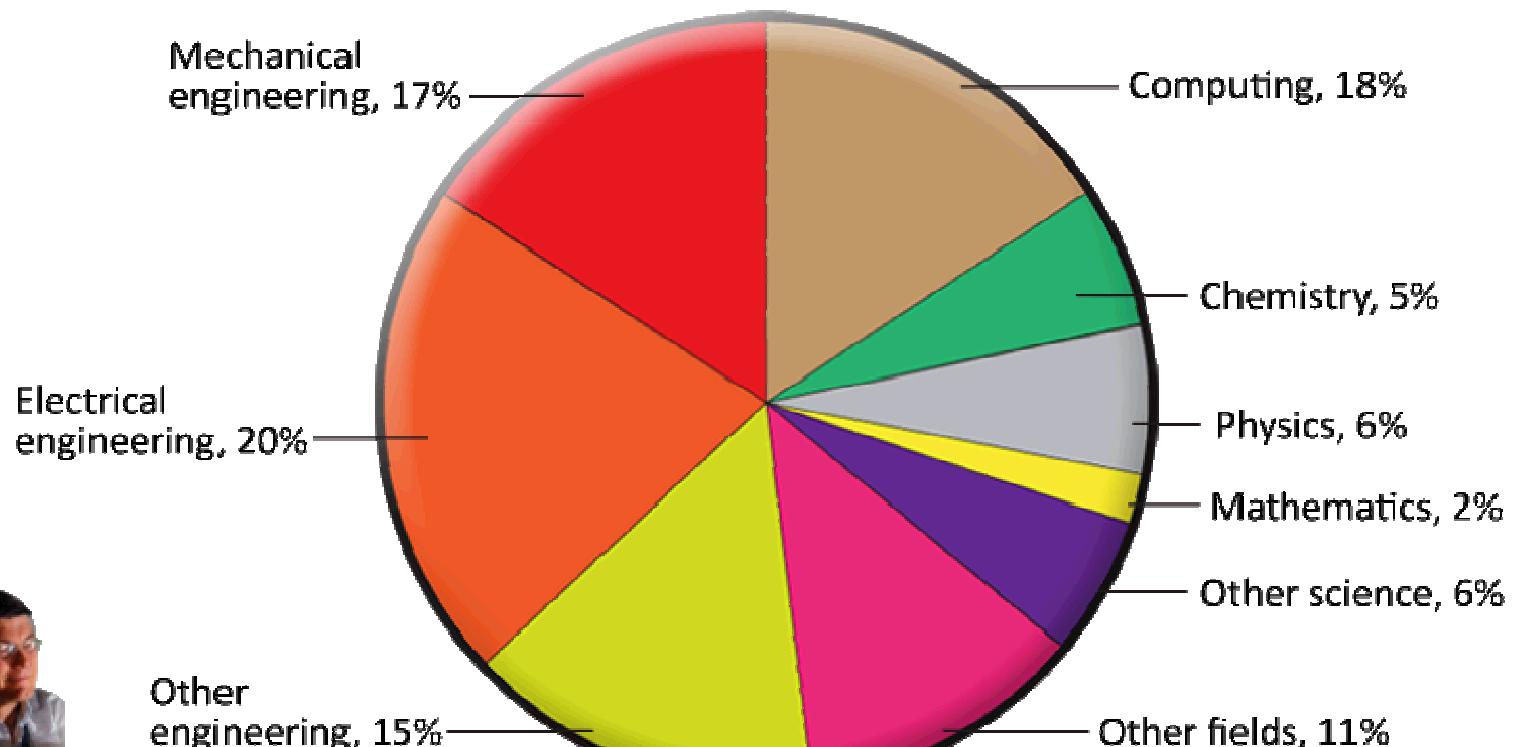


Our Workforce

- Onsite workforce: 11,711
- Regular employees: 9,238
- Gross payroll: ~\$981M

Data for FY12 through end of September

Research & Development staff(4,682) by discipline



Exceptional Service to the Community

- United Way in 2011
 - New Mexico: >\$4.6M
 - California: >\$265,000
 - Participation
 - 2011 – 71.8%
 - 2010 – 70.3%
- Lockheed Martin donations to nonprofit organizations – \$1.4M
- Volunteer hours in 2011 – 108,000
- K-12 education partnerships
- Began work on our 12th Habitat house in April 2012



Sandia's Employee Resource Groups (ERGs)



Outreach Committees (OC)

American Indian OC
Asian Leadership OC
Black Leadership OC
Disabilities Awareness OC
Hispanic Leadership OC
Military Support Cmte
Sandia Women's Action Network

Networking Groups (NG)

Christians in the Workplace NG
Sandia Gay, Lesbian, Bi-sexual, Transgender NG

Sandia's GLBT Networking Group



Promoting an Open and Honest Workplace for the Gay, Lesbian, Bi-sexual and Transgender Community

The Gay Lesbian Bi-sexual Transgender Networking Group (GLBTNG) was founded in July of 1996 and serves the Sandia community through the dissemination of information and resources that foster an inclusive workplace, free of personal or professional discrimination.

Over the years, the GLBTNG has worked to enhance the workplace equality of Sandia's GLBT members of the workforce in the areas of retirement and domestic partner benefits, as well as the overall work environment.

- There are currently over 80 members on the email distribution list
- We meet for lunch once a month in the cafeteria
- We host diversity cinema in June
- We host a recruitment booth at ABQ PRIDE
- Social events throughout the year

Sandia GLBT NG has a website and informational flyer



Exceptional service in the national interest

Sandia National Laboratories



Sandia's GLBT Networking Group

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Over the years, the GLBTNG has worked to enhance the workplace equality of Sandia's GLBT members of the workforce in the areas of retirement and domestic partner benefits, as well as the overall work environment.

- There are currently over 70 members
- We meet for lunch on the first Thursday of the month in the Thunderbird cafeteria
- The networking group fully supports the goals and objectives of Sandia's Diversity Leadership Program

When we go to a foreign country and don't know the language, our anxiety is high. For many people, sexual orientation and gender identity are foreign languages.

— Brian McNaught

For more information, please visit <http://info.sandia.gov/glbng> or contact Matthew Allen (mallen@sandia.gov)

www.sandia.gov

Anyone can be an Ally ...

What is an ally?

An ally is someone who is not GLBT, but personally advocates for GLBT equal rights and equal benefits. Straight allies are some of the most effective and powerful advocates for the GLBT community. Straight allies are invaluable and increasingly important in advocating for GLBT equality. Indeed, their voices often have been heard while those of GLBT people have been ignored. An ally ...

- ✓ Speaks up with composure and confidence
- ✓ Is clear and concise, but also welcoming and encouraging
- ✓ Doesn't blame or guilt-trip, but also doesn't back down

Food for thought ...

- 48% of college-educated gay people are closeted at work
- 73% of closeted gays are likely to change jobs within 3 years
- 39% of lesbian, gay, bisexual, and transgender workers reported experiencing some sort of workplace discrimination or harassment

Learning the correct words ...

- Use the term sexual orientation, not sexual preference
- Use the terms life partner, spouse, boyfriend/girlfriend, husband/wife; not roommate
- Being gay is not an alternative lifestyle; it's a life
- A transgender person is not a "he-she," or a "tranny," but instead a transgender man or transgender woman
- Gay is who I am, not what I do; it's not a choice

Things we can all do ...

- Develop cultural competence
- Use inclusive language
- Speak up!
- Personalize it



Other Available Resources

- GLBTNG Website** – info.sandia.gov/glbng
- FLAG (Parents, Families and Friends of Lesbians and Gays) Helpline:** 873-7373
- Out and Equal** – Providing support and advocacy to the lesbian, gay, bisexual and transgender community in the workplace www.outandequal.org
- A Manager's Guide to Sexual Orientation in the Workplace**; Bob Powers and Alan Ellis; 1995; Tech Library / CA&NM
- Gay Issues in the Workplace**; Brian McNaught; 1995; Tech Library / CA&NM



U.S. DEPARTMENT OF ENERGY **NASA**

Sandia National Laboratories is a multi-program laboratory managed and operated by Sandia Corporation, a wholly owned subsidiary of Lockheed Martin Corporation, for the U.S. Department of Energy's National Nuclear Security Administration under contract DE-AC04-94AL85000. SAND NO. 2011-XXXXP

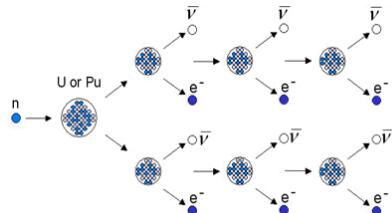
Sandia National Laboratories

Work in Radiation Detection

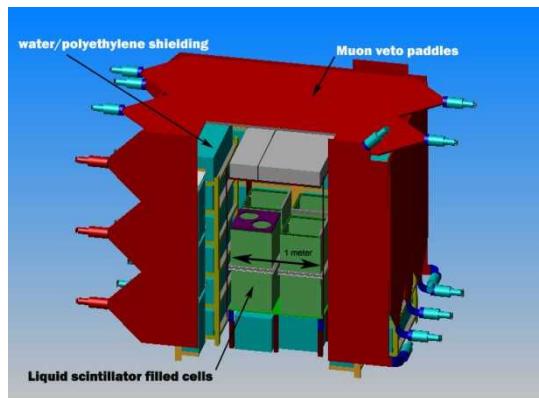
Reactor Monitoring with Anti-neutrinos

Sandia/CA, 2005

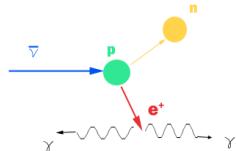
Number of anti-neutrinos produced from beta decay of Pu fission fragments is less than that from U fission fragments



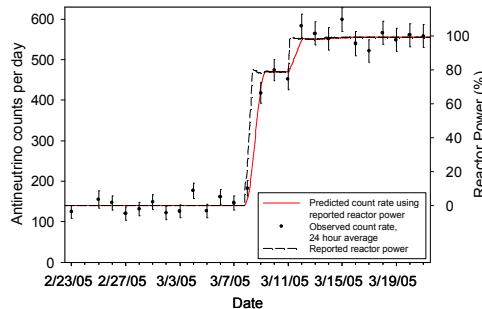
San Onofre Nuclear Generation Station



Inverse beta decay detector



Detection of both positron annihilation and neutron capture in Gd is indication of antineutrino.



- Tendon gallery is ideal location
 - Rarely accessed for plant operation
 - As close to reactor as you can get while being outside containment
 - Provides ~20 mwe overburden
- 3.4 GWth $\Rightarrow 10^{21} \text{ v / s}$
- In tendon gallery $\sim 10^{17} \text{ v / s per m}^2$
- Around 3800 interactions expected per day ($\sim 10^{-2} / \text{s}$)

Work in Radiation Detection

Congressional Fellow
Washington DC, 2007-2009

- Cmte Homeland Security requested a Nuclear Fellow
- Reported for duty Feb. 2007



Peter King (R-NY)
Ranking Member

Bennie Thompson (D-MS)
Chairman

Primary job was to draft legislation for the members, prepare public statements, and interface with science components of DHS (S&T, DNDO, OHA)

Work in Radiation Detection

Congressional Fellow
Washington DC, 2007-2009

House passage of HR 5531,
“Next Generation Radiation
Screening Act of 2008”
7/30/2008



After passage in the House, the bill went to the Senate
where it was ignored and finally died a quite death.

Work in Radiation Detection

Congressional Fellow
Washington DC, 2007-2009

- Nuclear Forensics and Attribution Act of 2010
- Codified the National Technical Nuclear Forensics Center into law within DHS and provided for student/faculty fellowships in fields of nuclear forensics.



111TH CONGRESS
1ST SESSION

H. R. 730

To strengthen efforts in the Department of Homeland Security to develop nuclear forensics capabilities to permit attribution of the source of nuclear material, and for other purposes.

IN THE HOUSE OF REPRESENTATIVES

JANUARY 27, 2009

Mr. SCHIFF (for himself, Mr. McCARTHY, and Mr. ISRAEL) introduced the following bill, which was referred to the Committee on Homeland Security, and in addition to the Committee on Foreign Affairs, for a period to be subsequently determined by the Speaker, in each case for consideration of such provisions as fall within the jurisdiction of the committee concerned:

A BILL

To strengthen efforts in the Department of Homeland Security to develop nuclear forensics capabilities to permit attribution of the source of nuclear material, and for other purposes.

- 1 *Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,*
- 2 **SECTION 1. SHORT TITLE.**
- 3 This Act may be cited as the “Nuclear Forensics and
- 4 Attribution Act”.
- 5

Signed by President Obama on Feb. 16, 2010
Public Law 111-140

Work in Radiation Detection

Rad Detection Scientist

Albuquerque, NM 2009 - present

- I now work on a variety of projects
 - Basic science of radiation detection
 - Conversion electrons from n capture in Gd
 - Novel detector materials (CLYC)
 - Alternatives to He-3 detectors
 - Applied work for federal agencies
 - Custom made detectors for specific applications
 - Data analysis of measurements from the field
 - 1-d, 3-d modeling of radiation transport physics to validate detector efficacy
- The laboratory has a broad range of technical capabilities which we apply to a broad range of scientific and national security challenges.
- It is an exciting place to work!

Questions?