# Laboratory Safety in a Hybrid Research and Development Work Environment

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Office of

More than 29,000 Researchers Supported at >300 Institutions and 17 **DOE Labs** 

#### **SC Mission:**

**Delivery of scientific** discoveries and major scientific tools to transform our understanding of nature and advance the energy, economic, and national security of the United States.



Steward **10** of the 17 DOE National labs



More than 38,000 Users of **28** SC Scientific Facilities



### OFFICE OF SCIENCE BY THE NUMBERS

Delivering scientific discoveries and major scientific tools to transform our understanding of nature and advance the energy, economic, and national security of the United States

FY22

#### CORE **SCIENCE PROGRAMS**

- Advanced Scientific Computing Research
- · Basic Energy Sciences
- Biological and Environmental Research
- Fusion Energy Sciences
- · High Energy Physics
- Nuclear Physics

#### **ENGINEERING AND TECHNOLOGY OFFICES**

- Accelerator Research and Development and Production
- Isotope Research and Development and Production
- Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR)

**NATIONAL QUANTUM INFORMATION SCIENCE RESEARCH CENTERS** 

**ACROSS ITS 10 NATIONAL** LABS, OFFICE OF SCIENCE **MAINTAINS APPROXIMATELY** 

24 MILLION **SQUARE FEET OF SPACE** 

1,600 **BUILDINGS**  38,000

**ACRES OF** LAND OWNED **SUPPORTS** RESEARCH **SPANNING** 

**16** DOE **NATIONAL LABS** 

**50** STATES, PUERTO RICO, AND WASHINGTON, D.C.

>340

**UNIVERSITIES AND HIGHER-LEARNING INSTITUTIONS** 

#### **STEWARDS**

**10** 

**DOE NATIONAL LABORATORIES** 

**World-Leading** Supercomputers

**ESTIMATED RESEARCHERS** SUPPORTED

10,300 Permanent PhDs

3,200 Postdoctoral Associates

**4.900** Graduate Students

9,000 Other Scientific Personnel

**OVER** 

38,500

**USERS AT** 

**28** 

OFFICE OF SCIENCE **FACILITIES** 

**10** SITE OFFICES

CONSOLIDATED **SERVICE CENTER** 

**NOBEL PRIZES** 

**OVER** 

**100** 

#### \$7.5 BILLION

**OVERALL OFFICE OF SCIENCE BUDGET** 

#### \$857 MILLION

**USER FACILITY** CONSTRUCTION

#### \$291 MILLION

**SCIENCE LABORATORY INFRASTRUCTURE** 

**BIOENERGY** RESEARCH **CENTERS** 

**ENERGY** INNOVATION HUB **PROGRAMS** 

**ENERGY FRONTIER** RESEARCH CENTERS

## What Distinguishes a DOE National Laboratory?

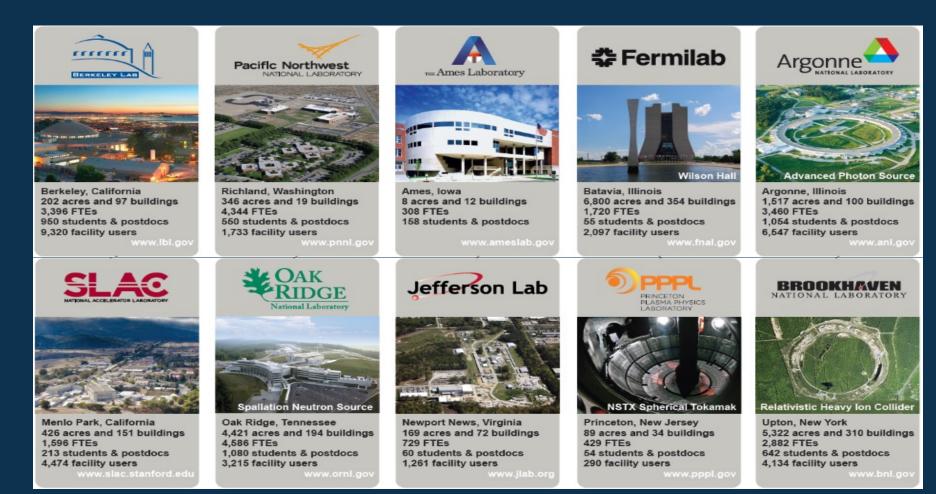
A DOE national laboratory is distinguished by most, and typically all, of the following characteristics:

- Mission driven, providing sustained support to further one or more long-term goals in support of the DOE mission.
- Science-of-scale, comprising large-scale, long-term projects and programs.
- *Multi-disciplinary teams*, integrating personnel across a broad suite of scientific and technical disciplines to execute the complex DOE missions and solve national problems.
- **Distinctive, powerful research facilities**, hosting one or more major DOE-designated scientific user facilities which are made available to national and international research communities.
- **Safe and secure operating environments**, managed to conduct research involving special operating considerations (e.g., operation of facilities that conduct hazardous, sensitive or classified research essential to national interests).

DOE's national laboratory system represents the most comprehensive research system of its kind in the world. The laboratories perform R&D that is not well suited to university or private sector research facilities because of its scope, infrastructure, or multidisciplinary nature, but for which there is a strong public and national purpose.



#### DOE SUPPORT FOR SC NATIONAL LABORATORIES





Energy.gov/science

## Safety Principles, Musings, Meaningful Cliches

Communication

## **Leadership Matters**

Accountability

Risk Management

**Versus** 

Risk

**Aversion** 

Integrated Stewardship Model

**Avoid Tunnel Vision** 

Sense of Urgency

**NEWSFLASH** 

Don't try to be the smartest person in the room

Continuous Learning

Evaluating Risk is a Living Exercise

Be Your Own
Devil's Advocate

Complacency is the Enemy

Mentoring is part of your job

What is the downside to the upside?

Risk Registry

**Signal and Noise** 

**Questioning Attitude** 

**Proactive rather than Reactive** 

**Nullius in verba** 



## THANK YOU

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