

Montana Tech Library

## Digital Commons @ Montana Tech

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National Lab Day

Lectures

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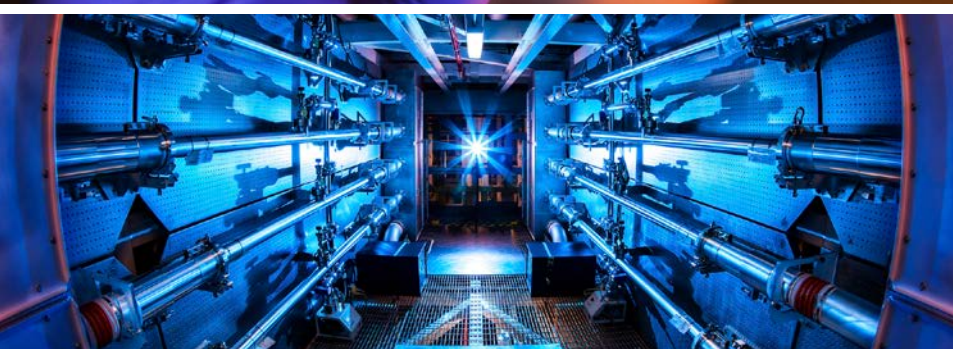
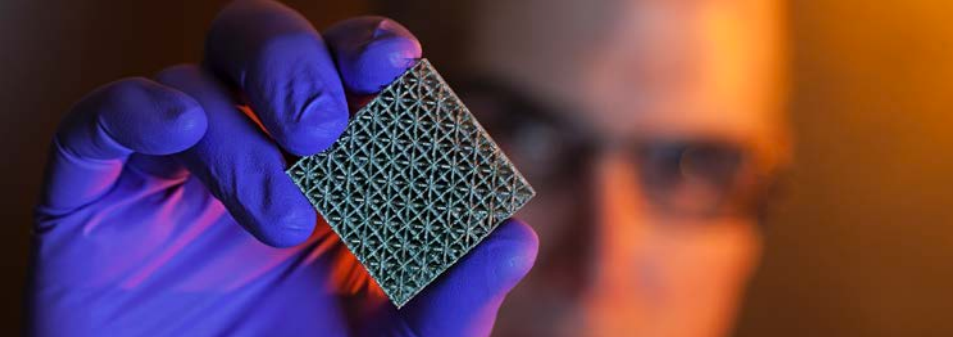
10-8-2019

### Education, Outreach, Diversity and Advancing the Frontier at DOE Labs

Patricia Falcone

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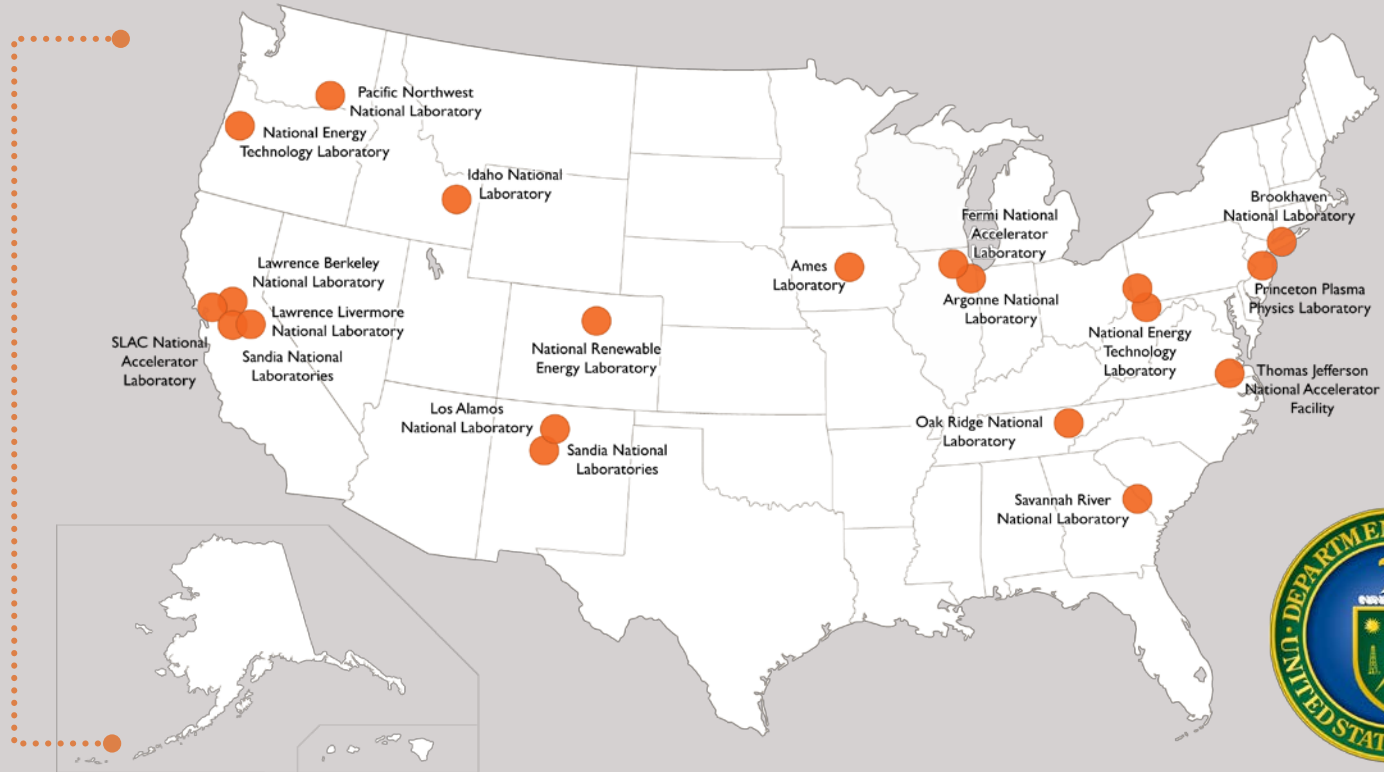
# Education, Outreach, Diversity, and Advancing the Frontier at DOE Labs



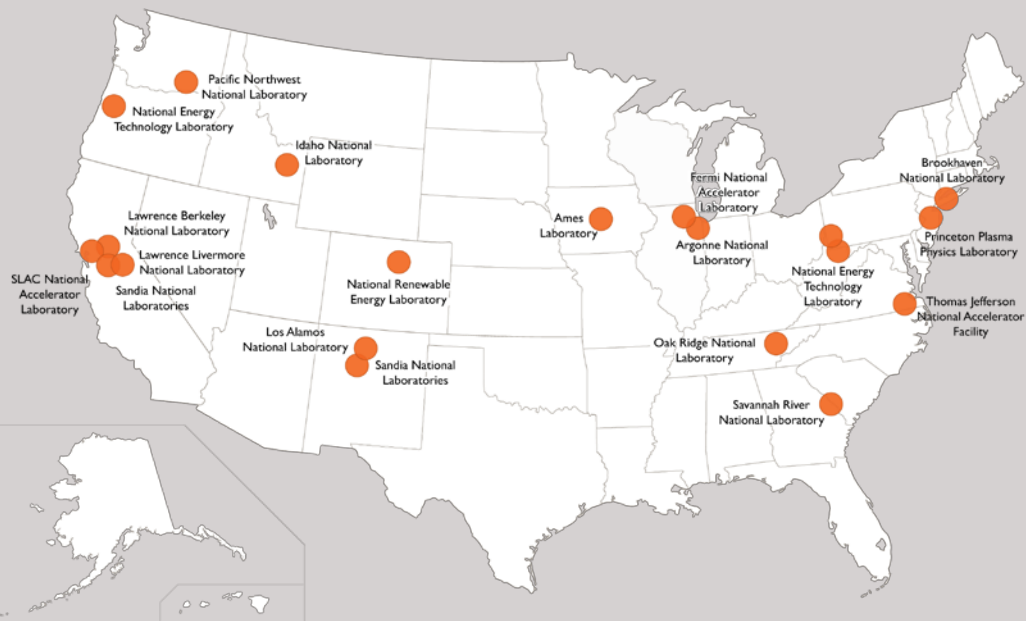
Patricia Falcone  
Deputy Director for Science and  
Technology  
Lawrence Livermore National Laboratory

# Department of Energy national laboratories are located across the nation

17



# DOE labs employ nearly 70,000 people



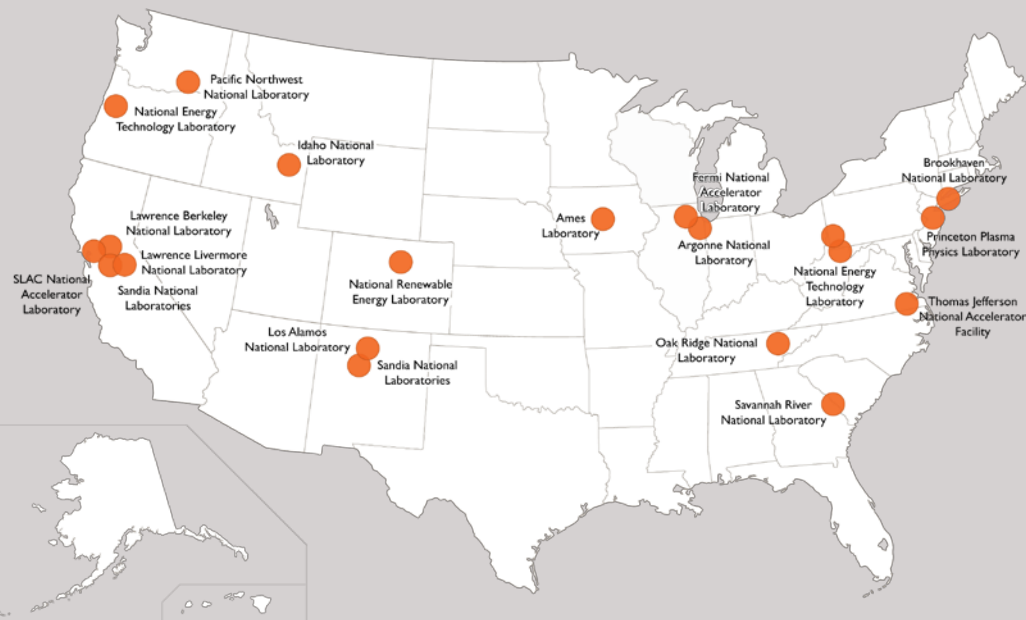
## DOE Labs' Overall Demographics – 2019

68,146 total employees

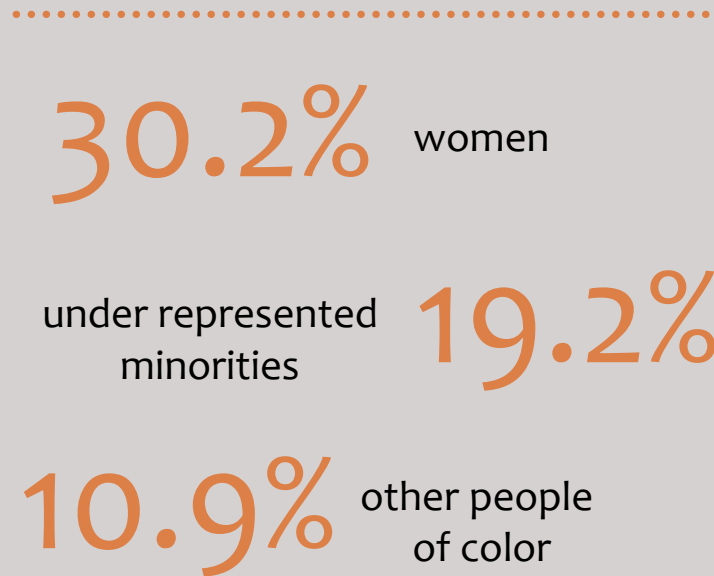
technical research staff 25,095

9,051 postdocs and grad/undergrad students

# Increasing diversity at the labs



## DOE Labs' Overall Demographics – 2019



# Education at the national labs is a part of supplying our future workforce and the nation's

- Internships
- Faculty collaborations
- Lab institutes and centers
- Student programs
- STEM outreach (K-12)



# LDRD enables cutting-edge R&D and keeps DOE labs at the forefront of science and technology

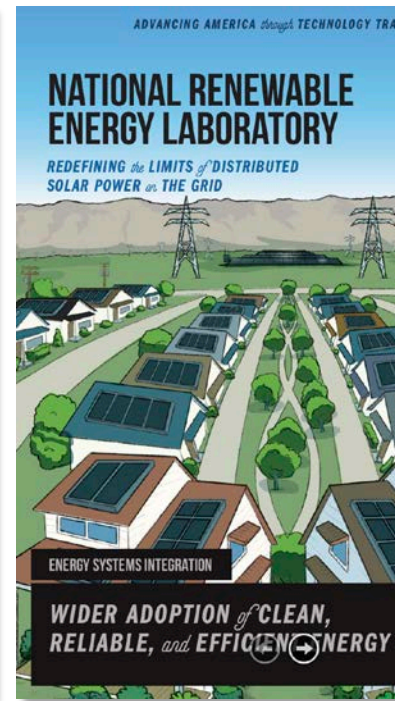
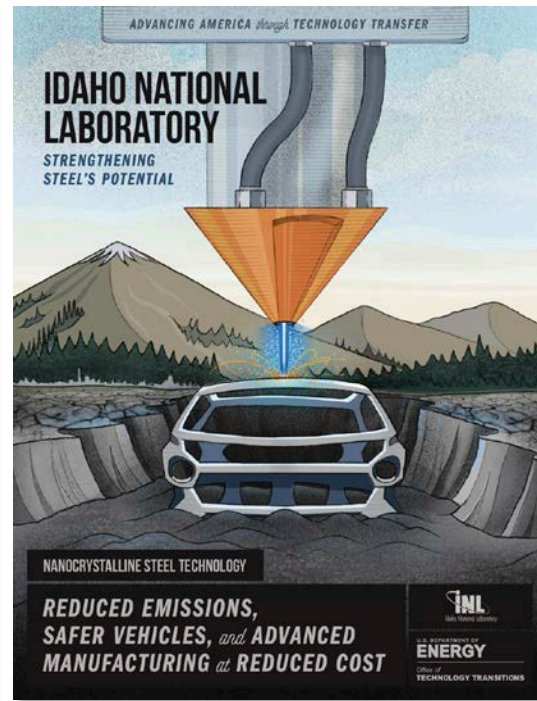
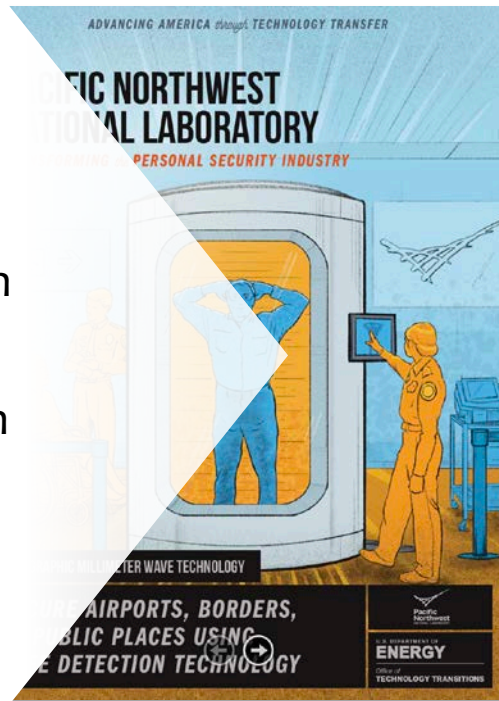
- Authorized by Congress; overseen by DOE
- Sized at 2-8% of direct funds as determined by labs and DOE
- Competitive and peer reviewed proposal processes
- Can engage postdocs, students, and faculty



Laboratory Directed Research  
and Development Program

# DOE technology transfer to U.S. industry

- Targeted DOE programs
- Tools for commercialization
- Engagement with stakeholders
- Advancement of best practices





- Established in 1952
- ~ 6,800 LLNS employees
- 1 square mile
- 526 facilities
- Annual budget: ~ \$2.1B
- Operated by LLNS, LLC  
(University of California and Bechtel,  
BWXT, AECOM, Battelle)



# At LLNL, science-based stockpile stewardship is rooted in challenging predictions with experiments

High-performance computing, modeling, and simulation



**Sierra**

#2 on  
Top 500 List\*

95 petaflops  
sustained

125 petaflops  
peak

Experimental challenge and validation

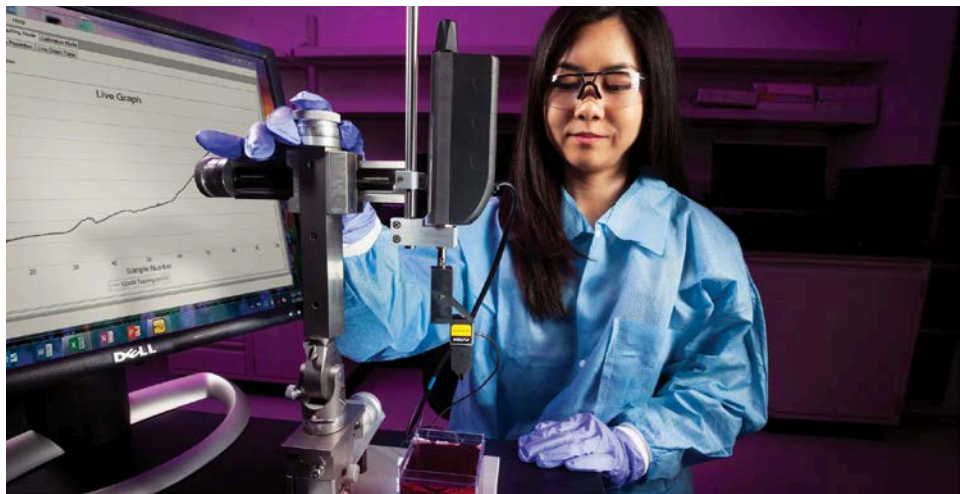
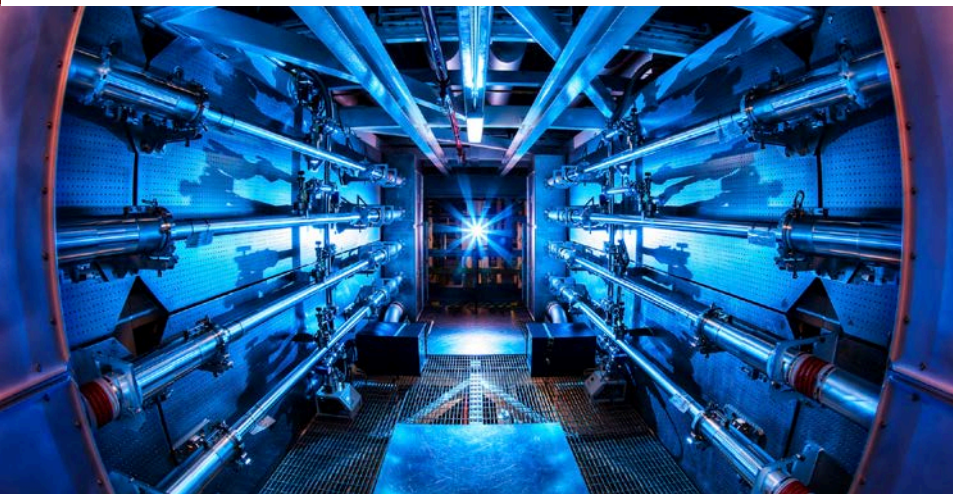
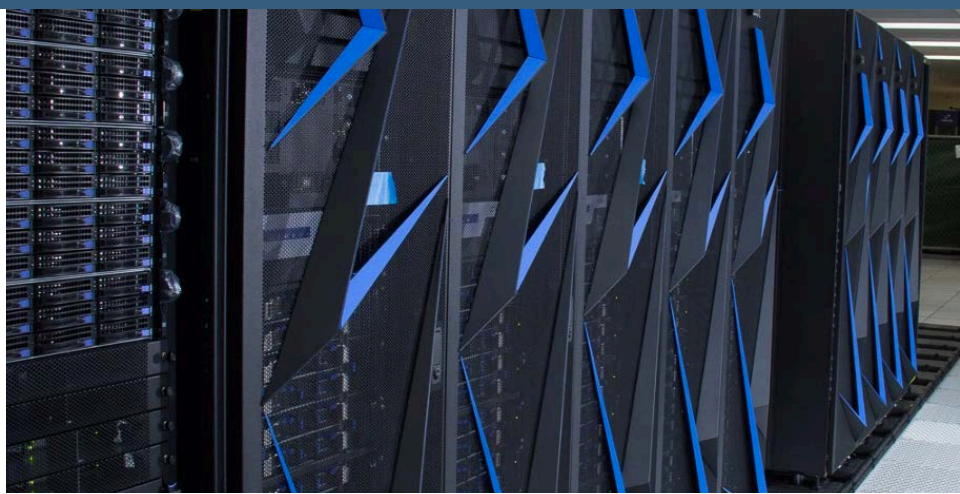
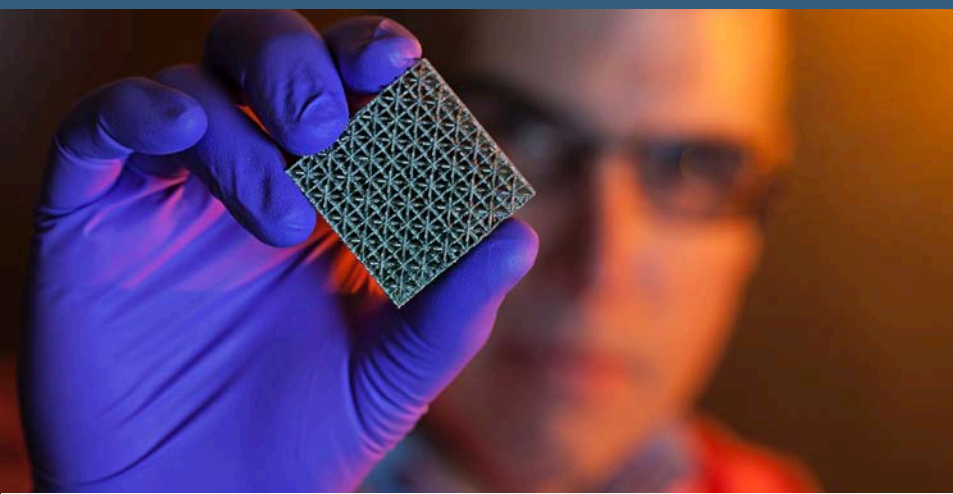


**National Ignition Facility**

192  
laser beams

500 terawatts  
power output

2.15 MJ  
to target





# Science and Technology on a Mission



Lawrence Livermore  
National Laboratory

<https://st.llnl.gov/>