

# Welcome to NREL

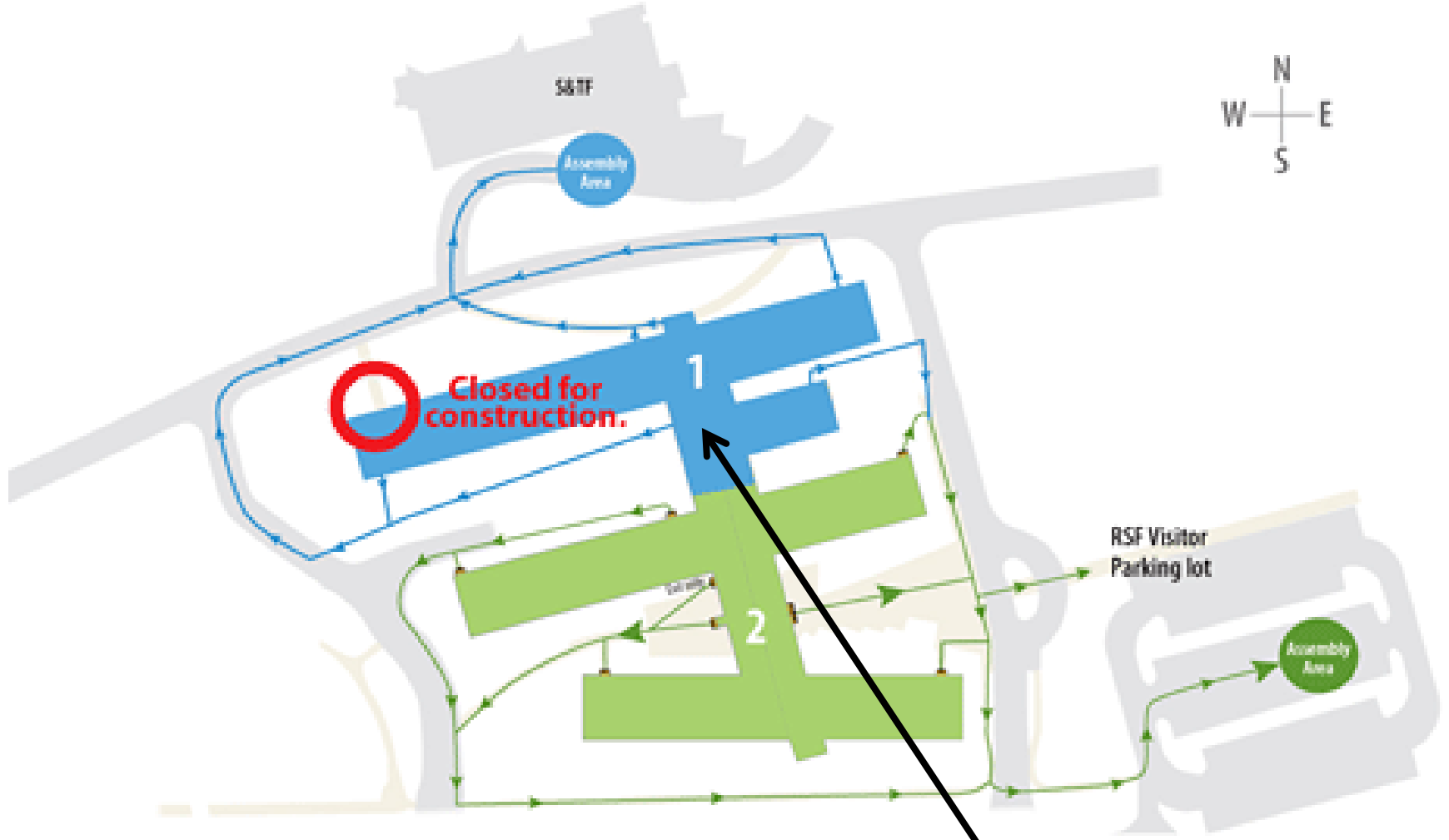


## Biogas and Fuel Cells Workshop

11 June 2012

**Dale Gardner**  
*Associate Lab Director  
Renewable Fuels &  
Vehicle Systems*

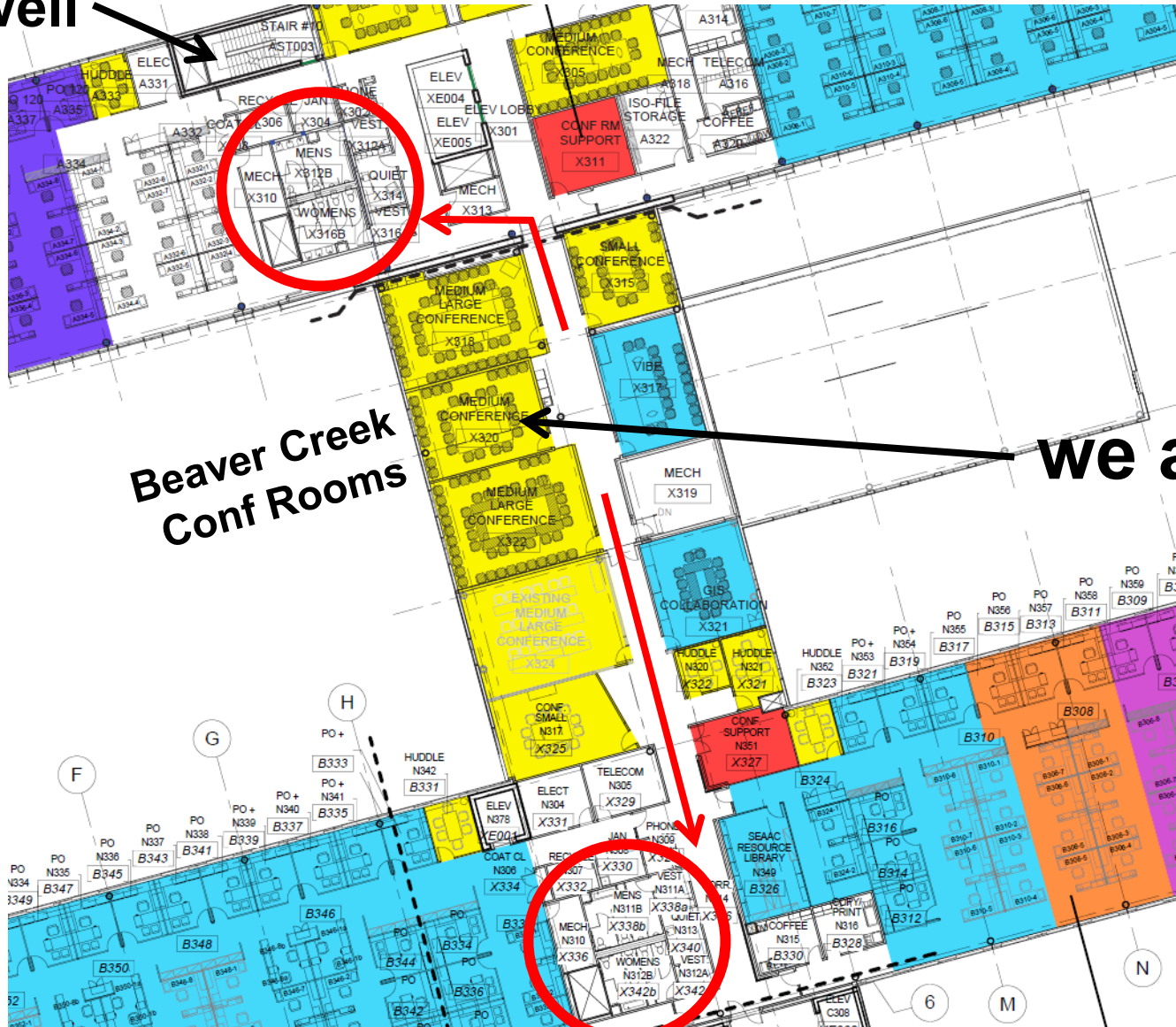
# Emergency Evacuation



**We are here,  
on 3<sup>rd</sup> floor**

# “facilities”

stairwell

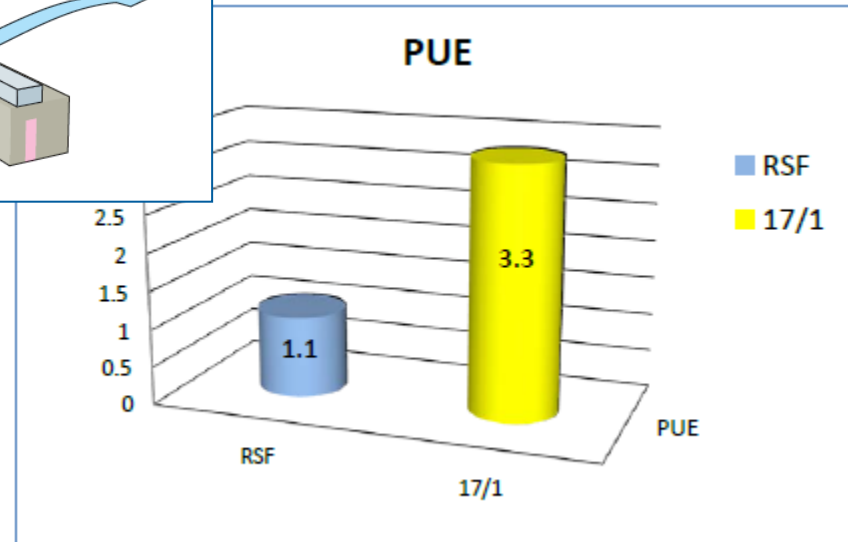
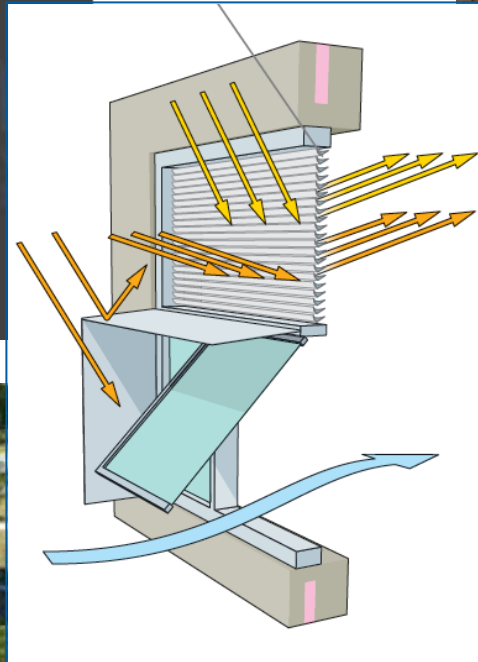


Beaver Creek  
Conf Rooms

We are here

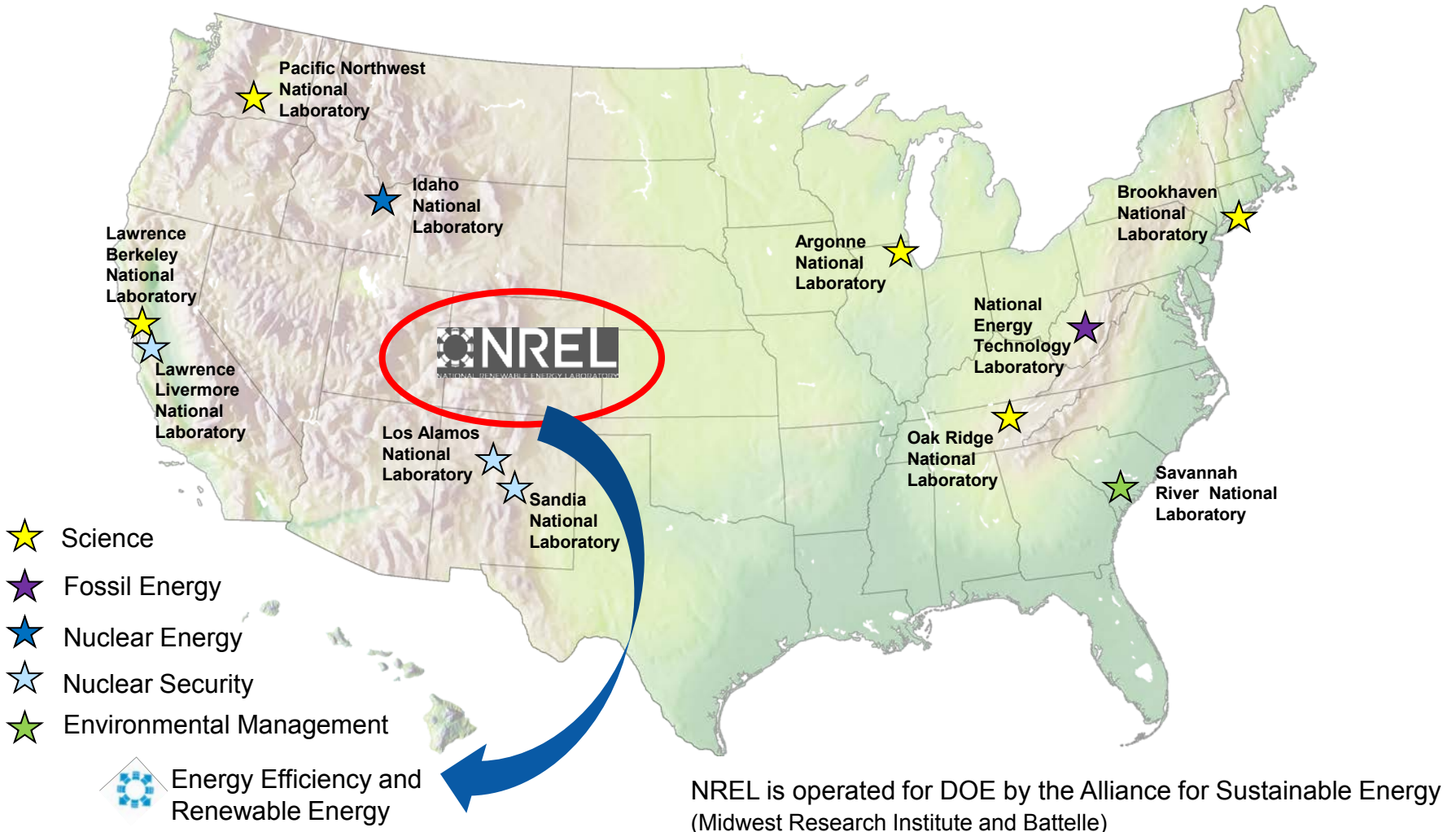


# The RSF



# U.S. Dept of Energy National Labs

NREL is the only DOE National Laboratory dedicated to renewable and energy efficient technologies



# NREL Governance

*Partnering with Excellence*



**STANFORD  
UNIVERSITY**



**Colorado  
State  
University**

**Colorado**  
University of Colorado at Boulder



**Massachusetts  
Institute of  
Technology**



# NREL's Mission

**“NREL develops renewable energy and energy efficiency technologies and practices, advances related science and engineering, and transfers knowledge and innovations to address the nation's energy and environmental goals.”**

**Dr. Dan Arvizu**



# NREL Activities for FCTP and OBP

## Fuel Cells & Hydrogen



 NREL National Renewable Energy Laboratory

- Fuel Cells R&D
- H2 Production from Renewables
- Technology Validation
- H2 Storage and Delivery
- Safety, Codes, & Standards
- Market Transformation
- Manufacturing R&D
- Analysis

- Biochemical Conversion
- Thermochemical Conversion
- Cellulosic Ethanol
- Advanced Biofuels
- Pathway Technoeconomic Analysis
- Synthetic Biology
- National Advanced Biofuels Consortium



U.S. Department of Energy  
**Energy Efficiency and Renewable Energy**  
Bringing you a prosperous future where energy is clean, abundant, reliable, and affordable

## Biomass



 NREL National Renewable Energy Laboratory



U.S. Department of Energy  
**Energy Efficiency and Renewable Energy**  
Bringing you a prosperous future where energy is clean, abundant, reliable, and affordable



# NREL R&D Locations

**South Table Mountain**



**“Main Site”**

**National Wind Technology Center**



**“Wind Site”**

# NREL EE&RE – Leading by Example

- **NREL Onsite Renewable Electricity** -- PV > 4 MW, Wind > 5 MW



**Renewable Fuel Heating Plant**  
-- displaces 70% of natural gas use

**Science and Technology Facility**  
-- first U.S. Federal LEED Platinum building



**Vehicle Fleet** -- >75% alternatively fueled

**Research Support Facility**  
– net-zero energy (1,250 personnel in 330,000 ft<sup>2</sup>)







Thanks for Being Here !