

Idaho National Laboratory

Presentation to Idaho Legislature

Mark Peters

Director, Idaho National Laboratory

www.inl.gov



January 22, 2019

Idaho's National Laboratory

- TREAT restart
- 70th Anniversary
- New Faces
- National Reactor Innovation Center



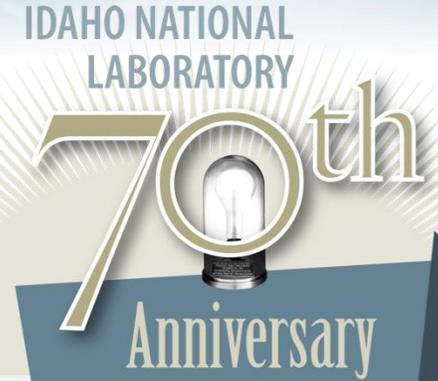
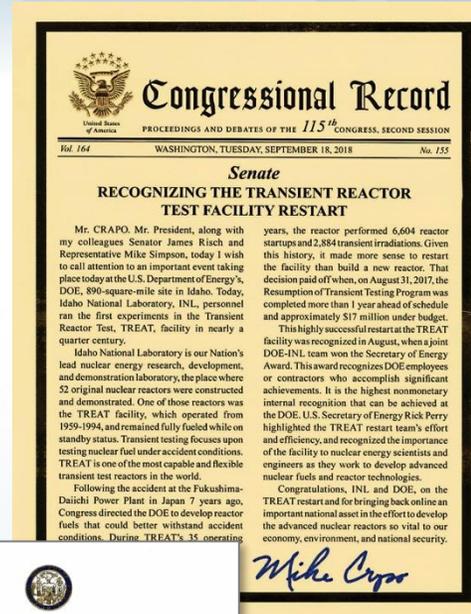
Marianne Walck – Deputy Laboratory Director for Science and Technology and Chief Research Officer



Rita Baranwal – Nominated for U.S. Department of Energy's Assistant Secretary for Nuclear Energy



Leah Guzowski – Industry Engagement



The Idaho National Laboratory Site – A Unique Capability for the Nation

Geography

- 890 square miles
- 1,350 miles of roads
- 21 miles of railroad lines
- 112 miles of electrical transmission and distribution lines

Infrastructure / Mission

- 4 reactors
- Nuclear and radiological facilities
- 2 spent fuel pools
- 400+ buildings
- 3 fire stations
- Mass transit system
- Explosive range
- Landfill
- Museum
- Significant security profile



4,430 Employees

FY18 Business Volume \$1.1 B

...the Nation's Nuclear Laboratory

The National Reactor Innovation Center (NRIC) at Idaho National Laboratory

- Authorized by the Nuclear Energy Innovation Capabilities Act of 2017
- Program to enable the testing and demonstration of reactor concepts to be proposed and funded, in whole or in part, by the private sector
- Enable physical validation of advanced nuclear reactor concepts
- Resolve technical uncertainty and increase practical knowledge relevant to safety, resilience, security, and functionality of advanced nuclear reactor concepts
- General research and development to improve nascent technologies

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AN ACT

To enable civilian research and development of advanced nuclear energy technologies by private and public institutions, to expand theoretical and practical knowledge of nuclear physics, chemistry, and materials science, and for other purposes.

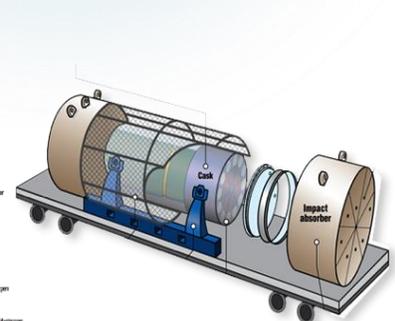
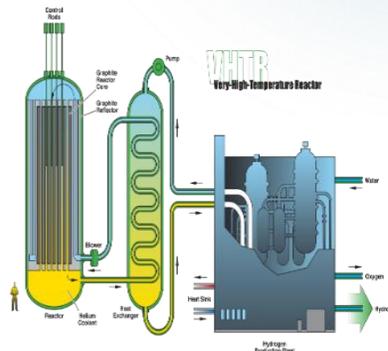
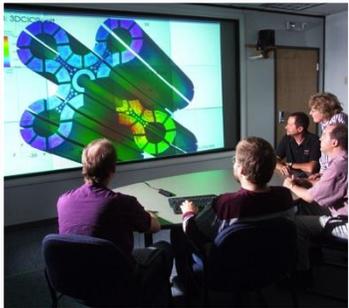
5 "SEC. 958. ENABLING NUCLEAR ENERGY INNOVATION.

6 "(a) NATIONAL REACTOR INNOVATION CENTER.—

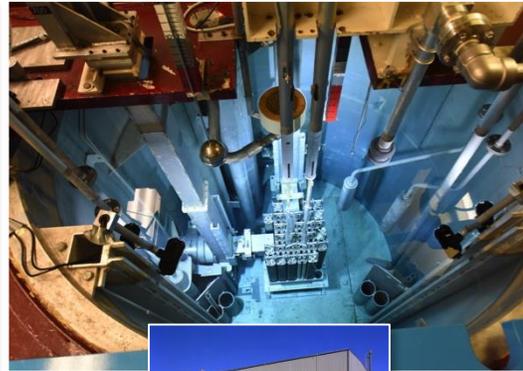
7 There is authorized a program to enable the testing and

8 demonstration of reactor concepts to be proposed and

9 funded, in whole or in part, by the private sector.

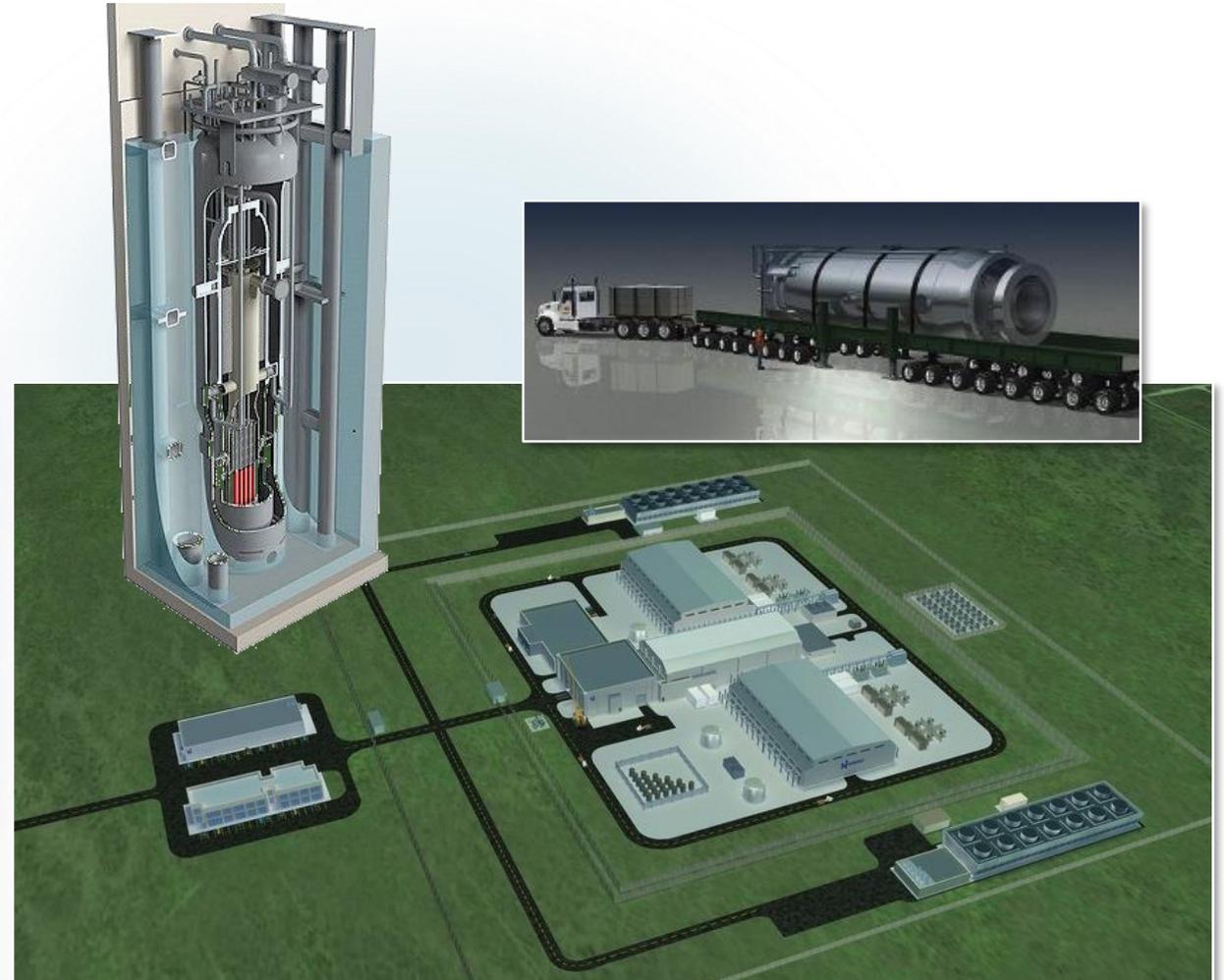
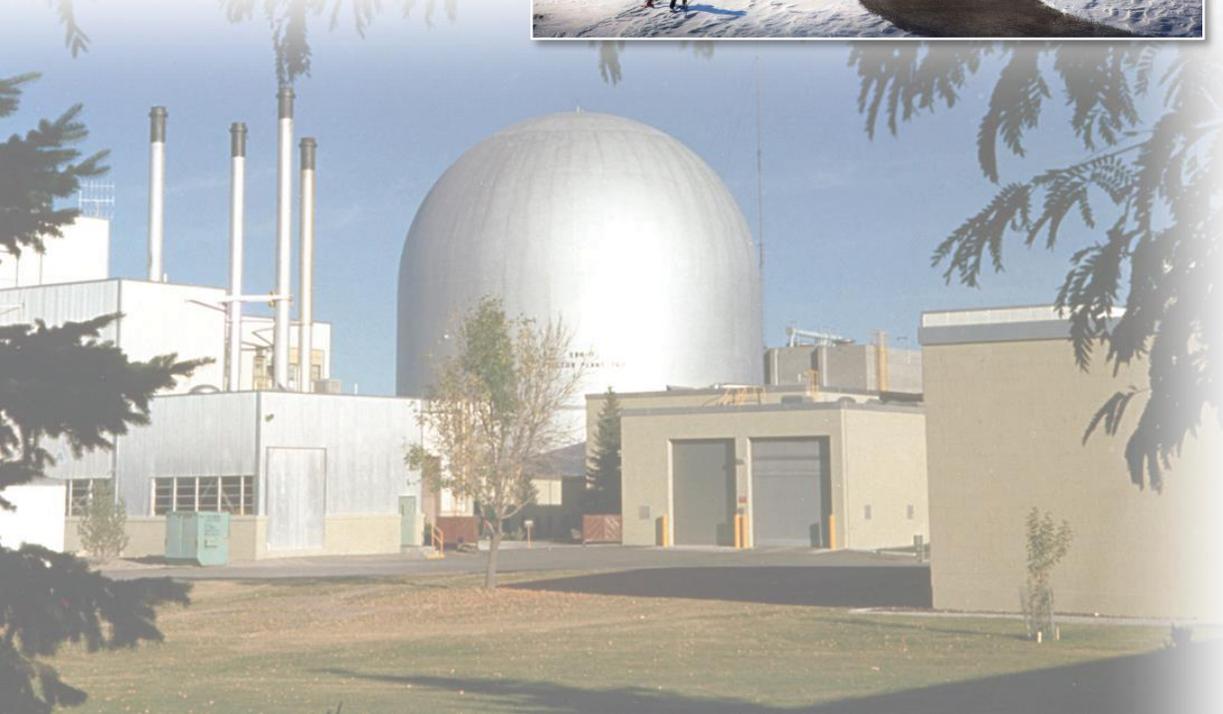


Nuclear Energy Test Bed



Enabling Microreactors and Small Modular Reactors

EBR-II dome being kept for microreactor development and testing



Integrate Energy Sources and Demands to Maximize Flexibility and Economic Performance While Ensuring Reliability and Resilience

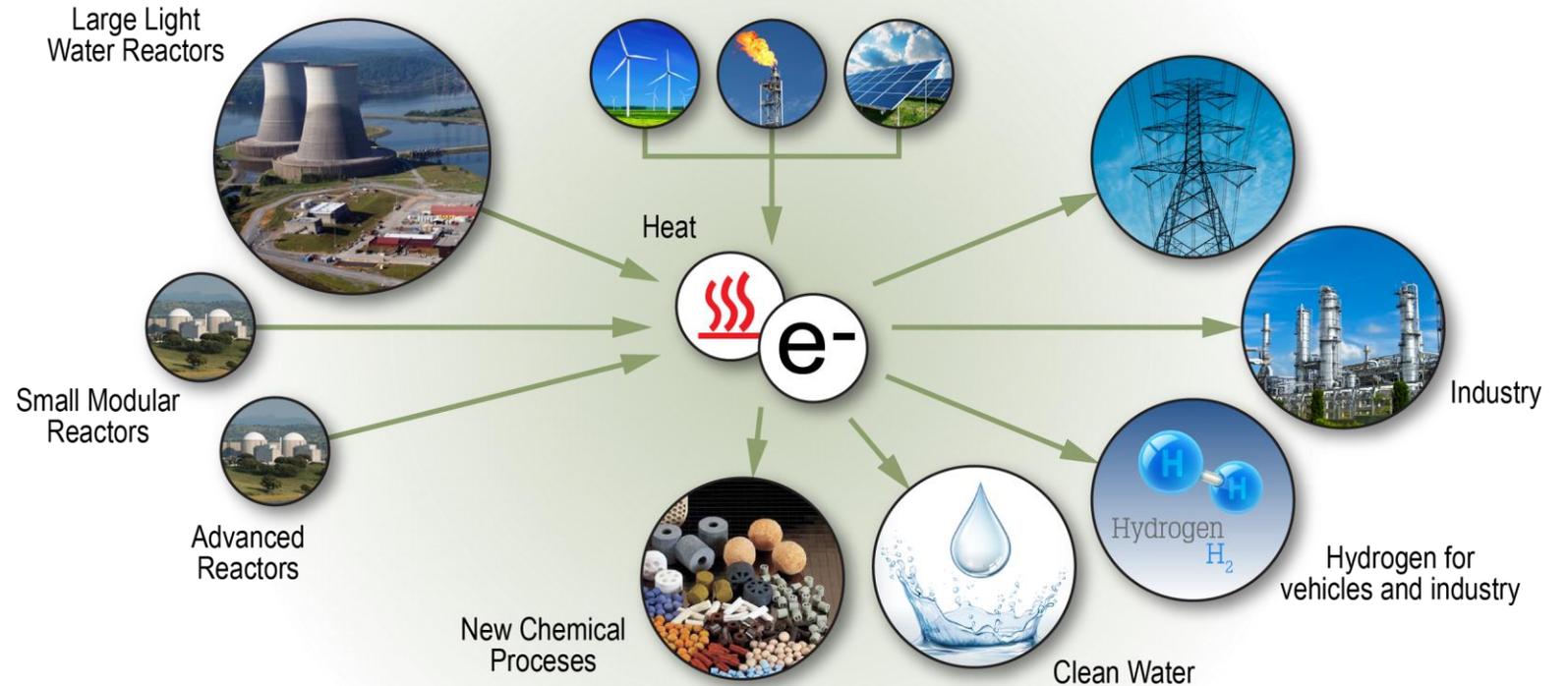
Today

Electricity-only focus



Future

Integrated grid system that leverages contributions from nuclear fission beyond electricity sector



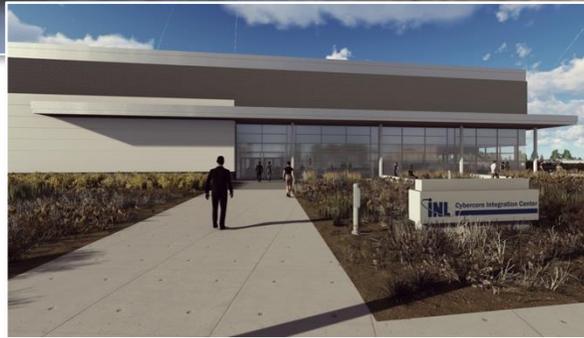
Flexible generators, Advanced processes, Revolutionary design

Cybercore Integration Center and Collaborative Computing Center Status



Cybercore Integration Center

\$44M, 80,000 Sq. ft., in construction, Est. completion by September 2019)



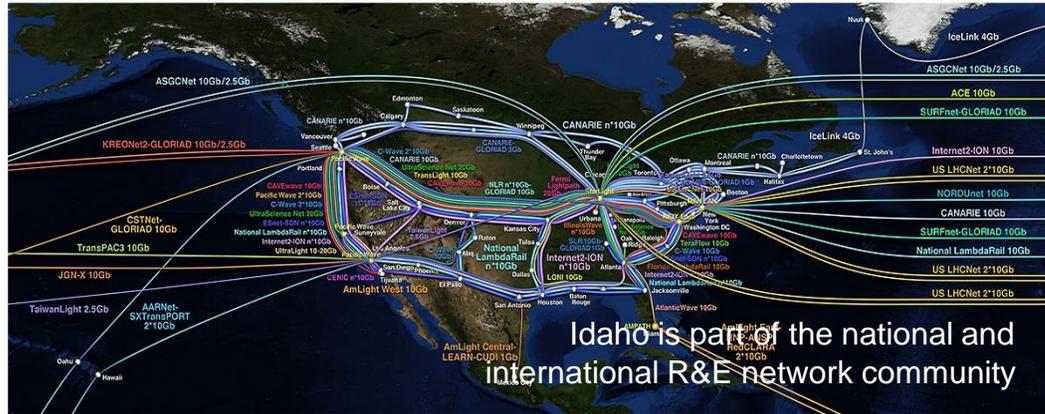
Collaborative Computing Center

\$47M, 67,000 Sq. ft., in construction, Est. completion by September 2019



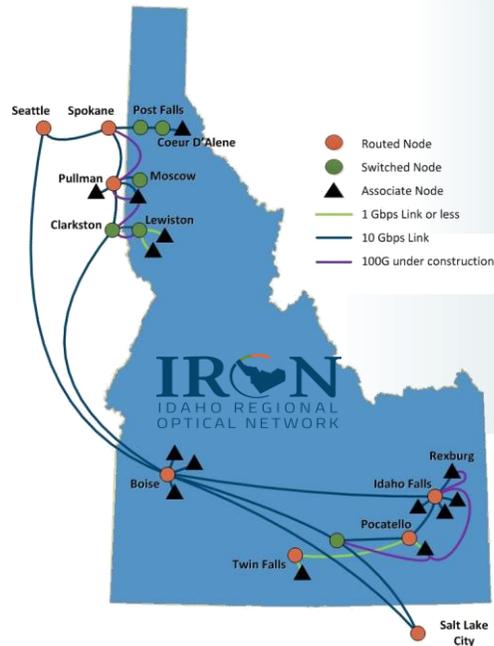
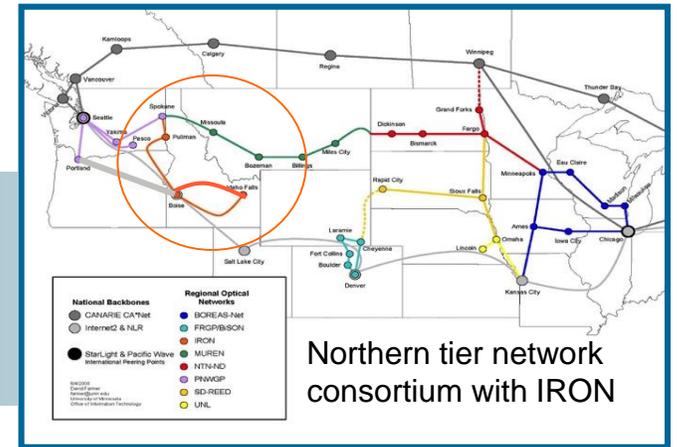
“Collaboration efforts are ahead of the buildings’ completion”

Idaho's Regional Optical Network – IRON



A strategic asset for Idaho enabling collaboration in education, research, government, healthcare and economic development. **Helping Idaho cross the digital divide.**

IRON is the digital fabric that holds INL and Idaho's higher education together focused on workforce development

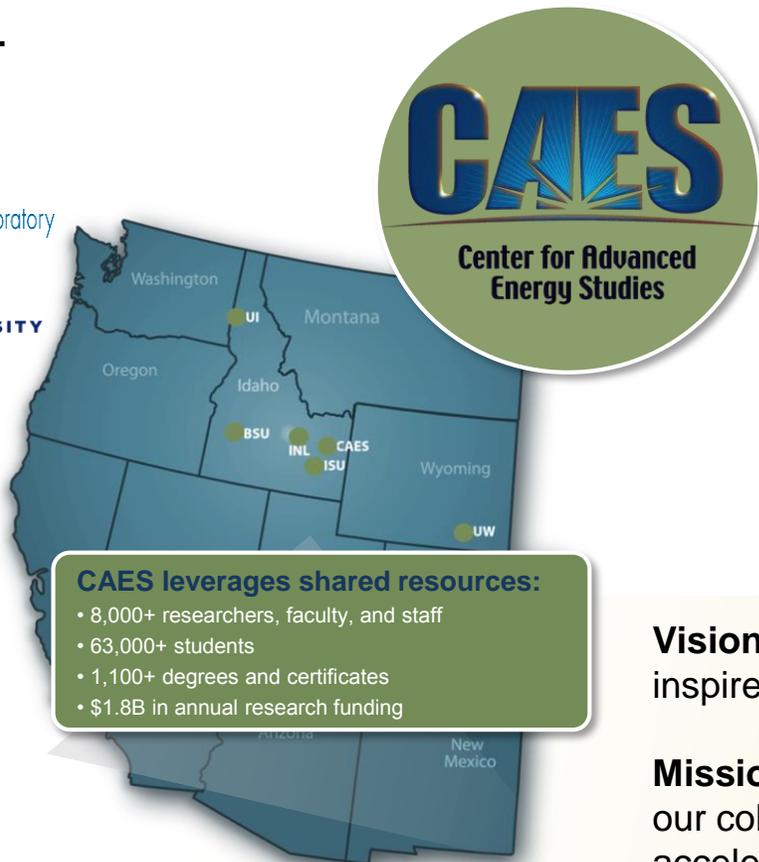


IRON is working with INL, Idaho universities, and colleges to develop an educational ecosystem across Idaho

INL is a participant, facilitator and advocate for IRON's educational ecosystem

Center for Advanced Energy Studies (CAES)

CAES is a research, education, and innovation consortium focused on **collaboration** to solve regional energy challenges that have national impact.



The CAES strategy emphasizes:

- **Research:**
 - Faculty/researcher/student collaboration
 - Interconnected facilities and capabilities
 - Joint proposals, research hubs, centers of excellence
- **Education:**
 - Supplemental educational experiences
 - Joint certificates and degrees
 - Workforce development and training
- **Innovation:**
 - Startup ventures, entrepreneurialism
 - Tech accelerator districts
 - Industry partnerships and tech-to-market

Vision: Our vision is to create a better energy future through collaboration that inspires energy leadership, ignites technology innovation, and catalyzes global impact.

Mission: CAES is the collaboration that inspires innovation and impact by leveraging our collective capabilities to empower students, researchers, faculty, and industry to accelerate energy solutions.

Initiatives to Increase Talent Attraction and Engagement

- In FY18, Idaho National Laboratory's K-12 STEM group led 125 mission-aligned STEM outreach activities, more than half of which reached underrepresented, first generation, rural or remote students.
- INL Team STEMazing volunteers work with schools and community based organizations to bring STEM opportunities into the community. Team STEMazing volunteers led more than 40 events, working with more than 509 teachers and 3,800 students.
- On behalf of Battelle Energy Alliance, INL awarded more than \$302,000 in STEM grants to Idaho educators in FY 2018, with more than \$223,000 supporting Idaho STEM Action Center's mission of engineering innovative STEM opportunities for educators, students, communities and industry to build a competitive Idaho workforce and economy.



INL FY18 Economic Impact Summary

INL is the 6th largest private employer in Idaho – providing high-tech, high paying jobs



- Average base salary of an INL employee in **FY18** was **\$97,893 annually**
- **INL directly employed 4,349** workers in Idaho
- INL spent nearly **\$148,332,000** with **Idaho-based subcontractors**
- BEA corporate office contributed more than **\$618,700 to charitable giving**





Idaho National Laboratory

