

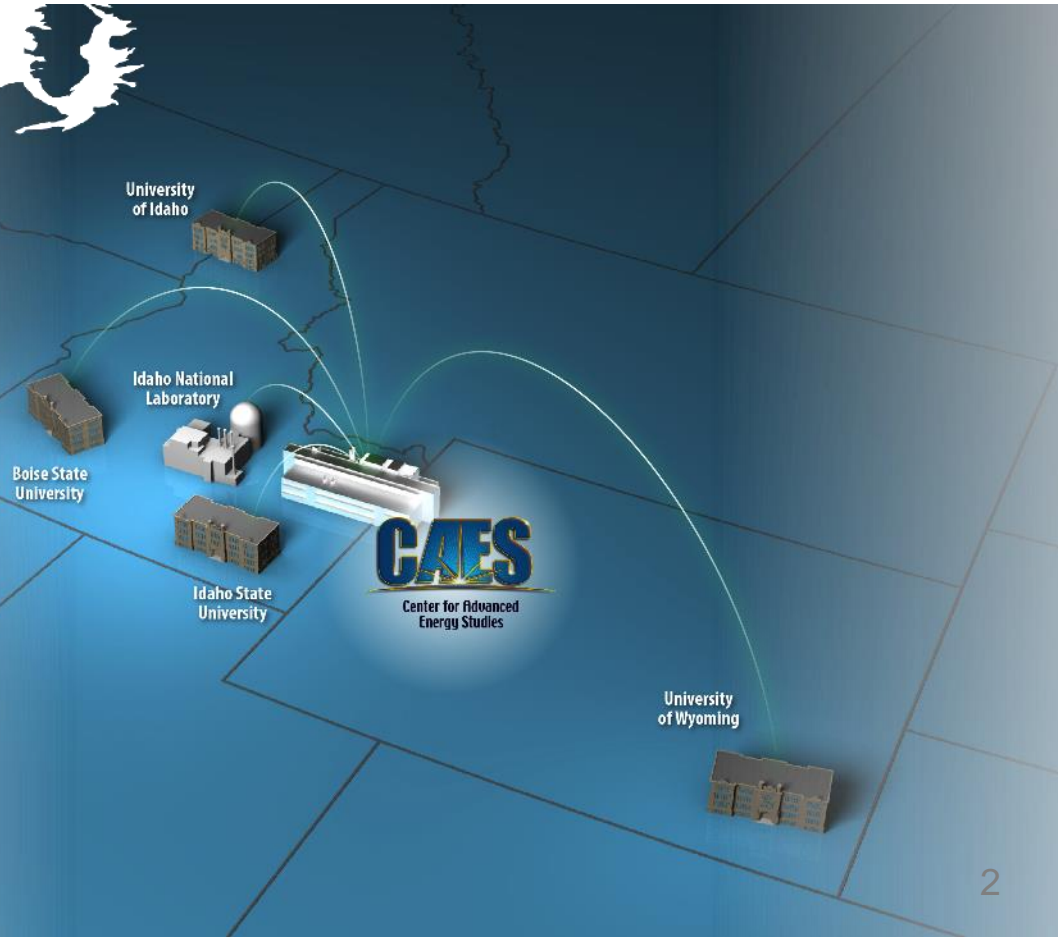
CAES UPDATE TO LINE COMMISSION

Noël M. Bakhtian, Ph.D.
Director

May 24, 2018

Outline

- About CAES
- Stakeholder Value
- Recent Successes
- Path Forward



What is CAES?

The Center for Advanced Energy Studies (CAES) is a research and education consortium that solves regional energy challenges that have national impact.



**BOISE STATE
UNIVERSITY**



Idaho National Laboratory



**University
of Idaho**

**Idaho State
UNIVERSITY**



**UNIVERSITY
OF WYOMING**



What is CAES?

The Center for Advanced Energy Studies (CAES) is a research and education consortium that solves regional energy challenges that have national impact.



Major Historical Highlights

2005: CAES announced as part of BEA contract

2006: MOU establishing CAES is signed

2007: Groundbreaking

2008: Energy Policy Institute established

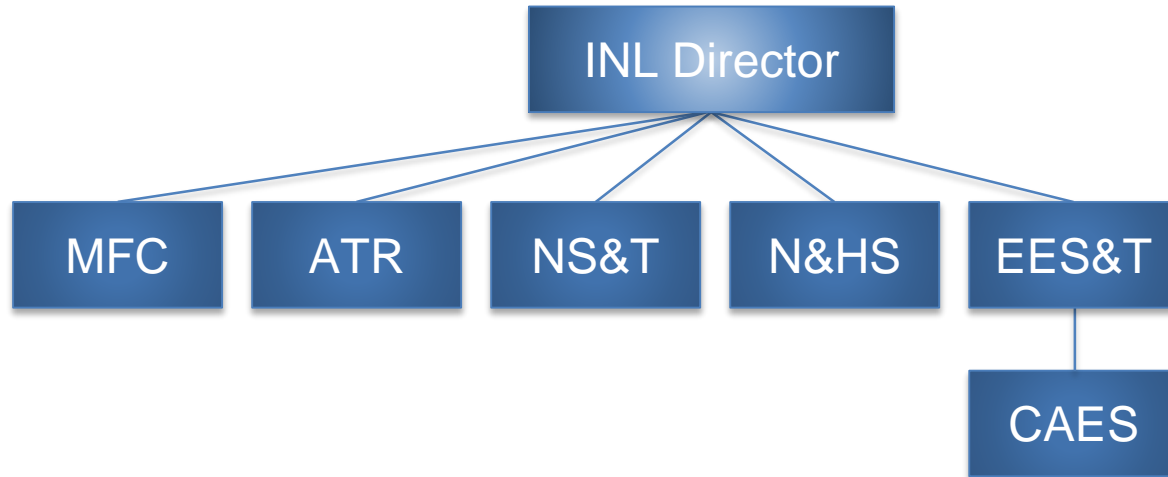
2009: Grand opening

2014: University of Wyoming joins CAES

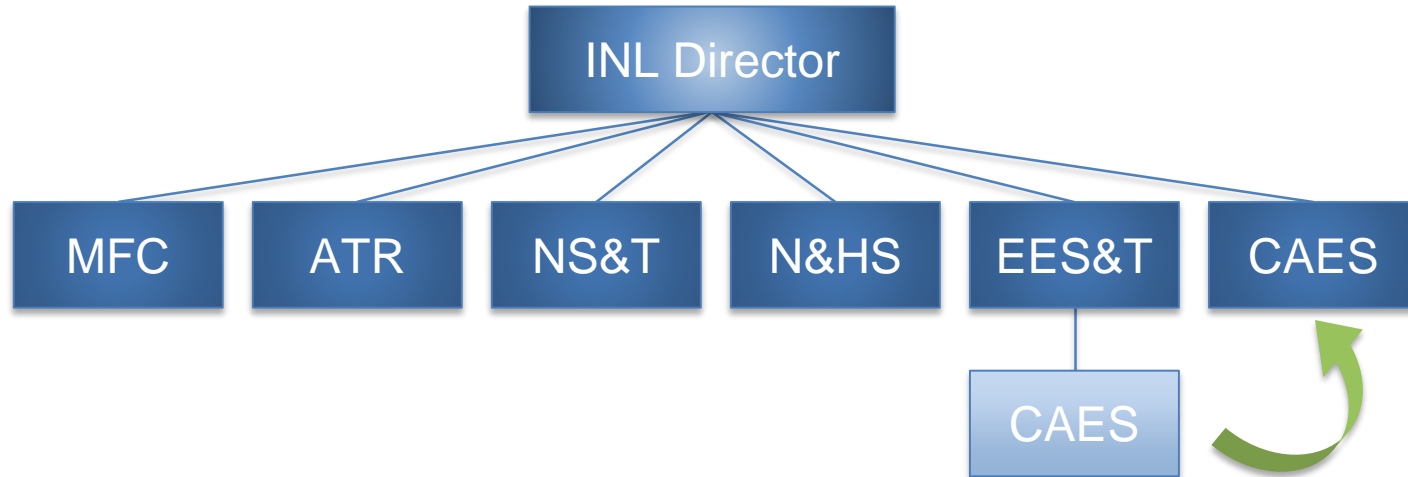
2019: 10-year anniversary



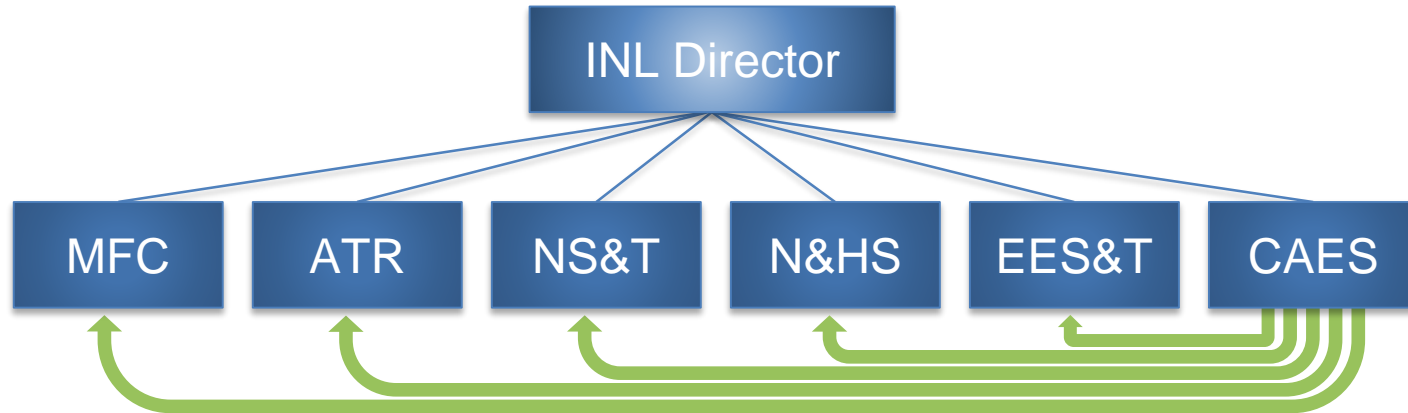
INL Organization - January 2017



INL Organization - May 2017



INL Organization - May 2017



CAES Today



Key Leadership



Dr. Noël Bakhtian
Director



Anita Gianotto
Chief Operations Officer



Ethan Huffman
Communications &
Legislative Affairs



Leah Guzowski
Industry Research
& Development



Jana Pfeiffer
Research Operations
Lead



Jeff Benson
Business Specialist



Donna Wuthrich
Executive Administrator



Dr. Amy Moll
Associate Director
Boise State University



Dr. Dick Jacobsen
Associate Director
Idaho State University

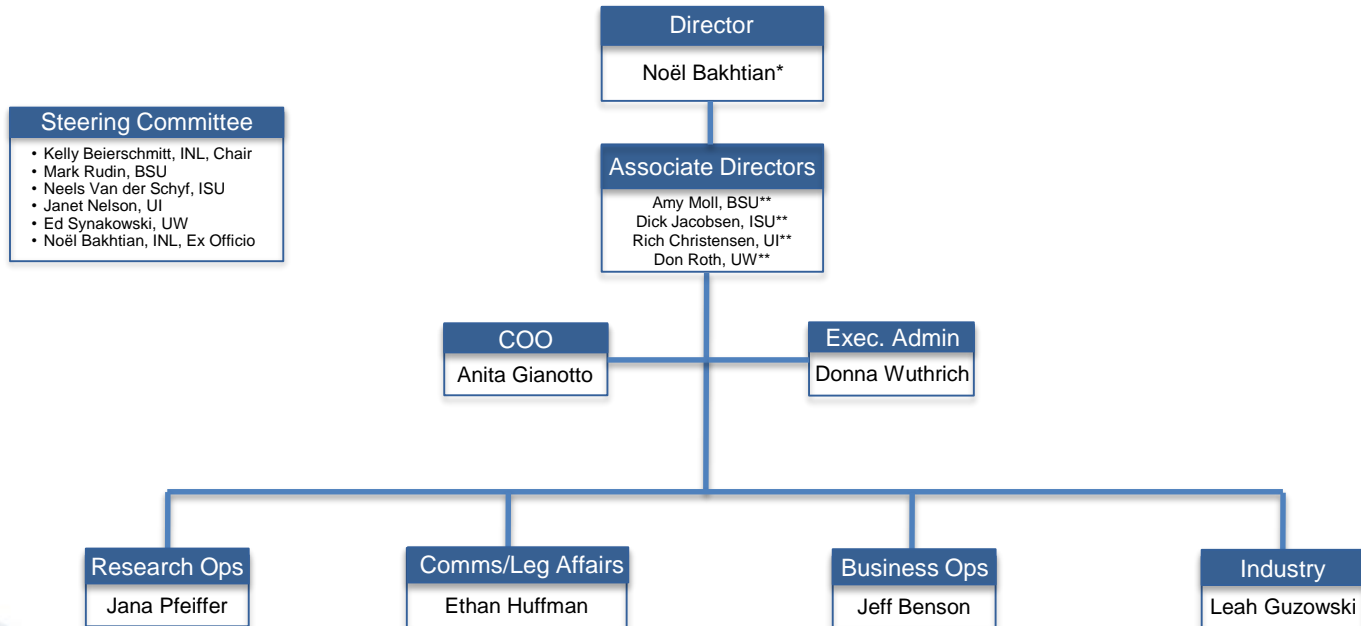


Dr. Rich Christensen
Associate Director
University of Idaho



Dr. Don Roth
Associate Director
University of Wyoming

Leadership Structure



* Executive Board Chair
** Executive Board Members

CAES is a consortium of INL, BSU, ISU, UI, and UW
CAES is embedded in the organizational structure of these five entities and is a shared effort.

Org chart current as of April 2018

Statistics from 2017

INVESTMENTS

\$3M

STATE OF IDAHO INVESTMENT IN CAES

\$7.7M

IDAHO NATIONAL LABORATORY'S INVESTMENTS IN CAES OPERATIONS AND INFRASTRUCTURE

\$788,308

LABORATORY DIRECTED RESEARCH AND DEVELOPMENT

\$493,009

CAVE EQUIPMENT UPGRADES

OUTREACH

130

CAES PUBLICATIONS AND PROCEEDINGS

9

COLLABORATIVE PLANNING MEETINGS HOSTED BY CAES

1,119

VISITORS TO THE CAES CAVE 3-D IMMERSION RESEARCH ENVIRONMENT

STUDENT IMPACT

76

STUDENTS FROM CAES UNIVERSITIES INTERNEED AT INL IN AREAS INCLUDING NUCLEAR ENGINEERING, BIOLOGICAL SCIENCES, COMPUTER SCIENCE AND MECHANICAL ENGINEERING, PLUS:

12 JOINT APPOINTMENTS FROM CAES UNIVERSITIES

5 INL GRADUATE FELLOWS FROM CAES UNIVERSITIES

3 POSTDOCTORAL RESEARCHERS FROM CAES UNIVERSITIES

Value to Idaho

Providing Hands-On Education Through Collaboration Leading to Employable Skills

- **Economic Forecast:**
 - In 2009, there were 100,000 Idahoans out of work due to the Great Recession
 - Today, some parts of Idaho have a less than two percent unemployment rate
 - Idaho is the fastest growing state in the country
 - A need and an opportunity exists to create a next-generation workforce for Idaho jobs
 - CAES' collaboration model is helping develop these skills across Idaho and into Wyoming

- **How?**
 - Strengthening quality of research and student impact
 - Attracting future employees and strengthen existing workforce
 - Providing win-wins for everyone through collaboration

Value to Universities

Strengthening Quality of Research and Student Impact

- Students receive:
 - Hands-on experience through internships, postdocs, fellowships
 - Job opportunities at INL, or at organizations with mutual benefit
 - Access to high quality mentors, research advisors, thesis committee members
- Faculty receive:
 - Enhanced potential for joint appointments
 - Ability to transfer laboratory/industry knowledge into the classroom
 - Diverse and informed opinions, big ideas, retention/relevancy benefits
 - Input on curriculum for higher impact and strengthened talent pipeline to INL

Value to Idaho National Laboratory

Attracting Future Employees and Strengthen Existing Workforce

- Talent pipeline:
 - CAES students become future INL/regional/national/international workforce
 - INL “preview” of student abilities and quality
 - CAES can offer joint appointments to INL strategic hires seeking academia
 - Diversity of CAES students fulfills INL’s Culture of Inclusion
- INL workforce receives:
 - Access to degrees through university connections
 - Enhancement of coursework tailored for INL employees
 - Access to non-FFRDC funding sources (*NSF, USDA, EPSCOR*)
 - Access to industry contacts that exist at universities

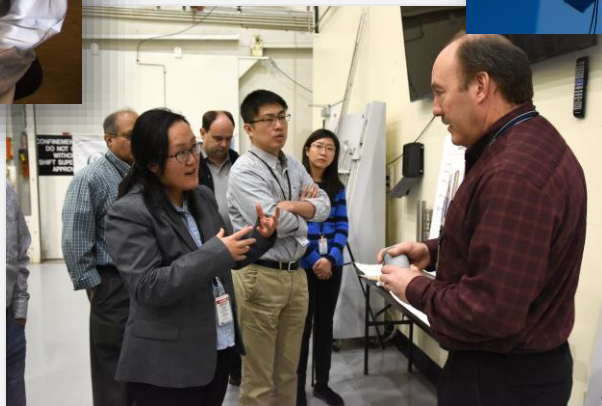
Value to All

Providing Win-Wins for Everyone Through Collaboration

- Examples:
 - Ability to jointly leverage resources, capabilities, facilities, equipment, expertise
 - Access to new funding
 - Broaden industry/government network
 - Elevate regional, university, and laboratory stature

- What can we do together?
 - Major proposals (e.g. IUCRCs, EFRCS, STCs)
 - Joint degrees
 - Mega user facility
 - Innovation ecosystem

Recent Successes

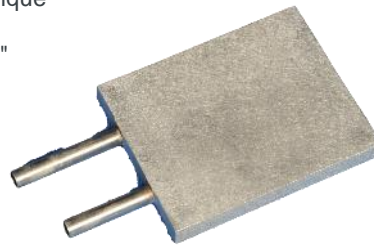


Case Study: Sakae Casting

The University of Idaho, Boise State University, and Japan-based Sakae Casting were awarded a one-year IGEM grant to development of an innovative used nuclear fuel storage cask.

"Sakae Casting opened its Idaho Falls office...they have been busy collaborating with CAES to bring their unique technology to bear in the nuclear industry—it could greatly impact how we handle storage of spent fuel."

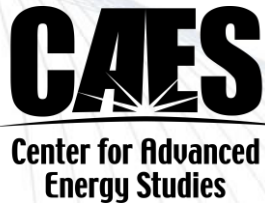
- Mayor Rebecca Casper, 2018 State of the City



Case Study: Food Northwest

The Center for Advanced Energy Studies (CAES) and Food Northwest are working to establish a research, development, and education center for the food processing industry.

The new center intends to reduce energy consumption at food facilities by 25 percent. It will be managed by the University of Idaho.



Case Study: 2018 Collaborations

CAES recently held three collaborative research planning meetings to further strengthen relationships and research activities between our four affiliated universities and senior INL research staff.

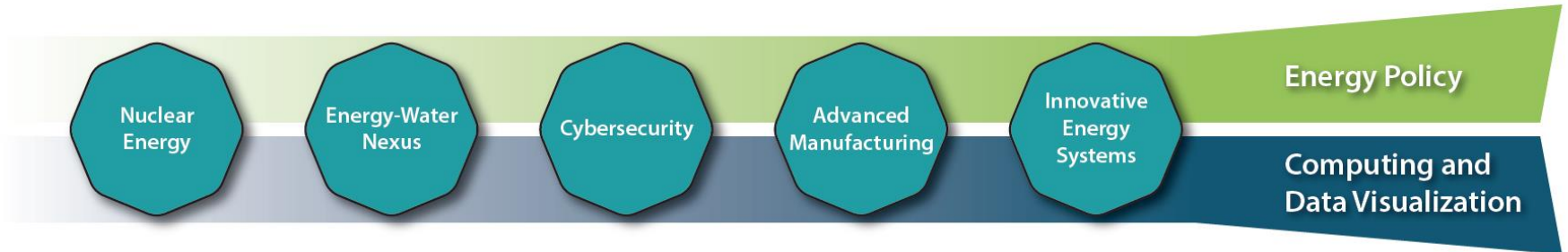
The meetings are part of our FY18 strategic planning, and resulted in over 20 new collaborative projects that have received internal, exploratory funding.

Highlights

- Pilot hub/spoke laboratory at BSU (advanced manufacturing)
- Certificate in nuclear security or nonproliferation (cybersecurity)
- Visiting summer faculty program (crosscut)

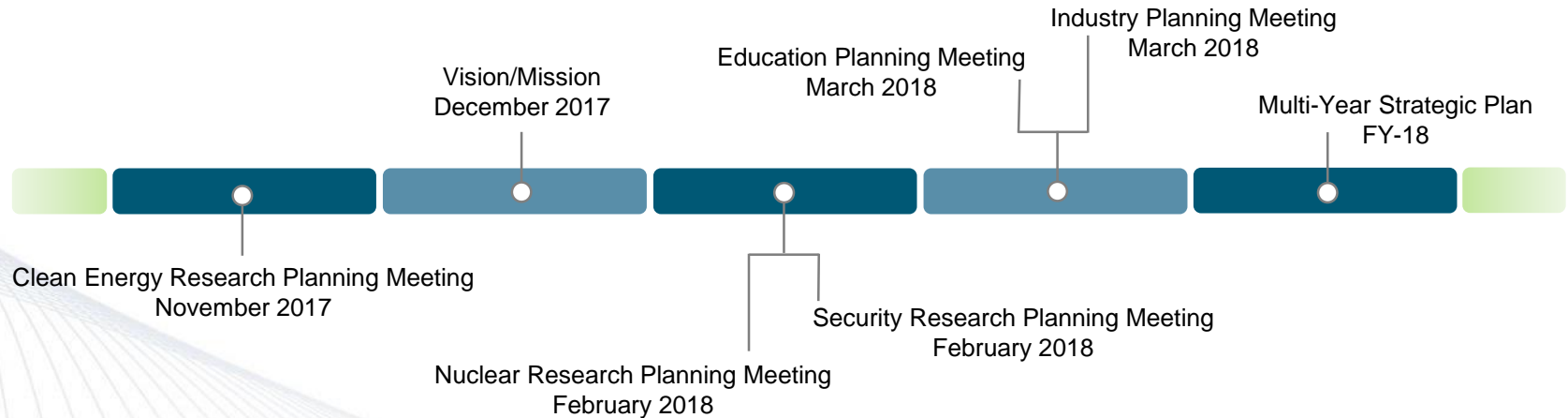


Major Focus Areas



How can you help?

CAES is currently developing our next multi-year strategic plan. We want your feedback and assessment on our current initiatives, future focus areas, and overall operations.



Questions?

