

## Babinkostova, Kandadai and Subbaraman Awarded Prestigious Air Force Summer Faculty Fellowships

College of Engineering faculty Liljana Babinkostova, Nirmala Kandadai and Harish Subbaraman were recently honored with prestigious Air Force Summer Faculty Fellowships. During these 10 week fellowships, Kandadai and Subbaraman will be conducting research at Wright-Patterson Air Force Base in Ohio. Babinkostova will join the Research Laboratory on Quantum Computing Theory and Simulation.

According to the program website, "The U.S. Air Force Research Lab Summer Faculty Fellowship Program offers hands-on exposure to Air Force research challenges through 8- to 12-week research residencies at participating Air Force research facilities for full-time science, mathematics, and engineering faculty at U.S. colleges and universities."

To learn more, visit: <https://afsffp.sysplus.com/SFFP/about/>



Liliana Babinkostova, Ph.D.

Nirmala Kandadai, Ph.D.

Harish Subbaraman, Ph.D.

## Events/Announcements

### New Employees:

Dr. Sheng Cheng  
MaCS Senior Research Associate

Dr. Yu Lu  
MaCS Research Associate

Dr. Ching-Heng Shiau  
MaCS Postdoctoral Scholar

Jacob Placido  
CAES EPI Business Manager

Stephanie Moran  
Research Administrator

Rachel Piazza  
CAES Admin Assistant 2

### Employee Highlights:

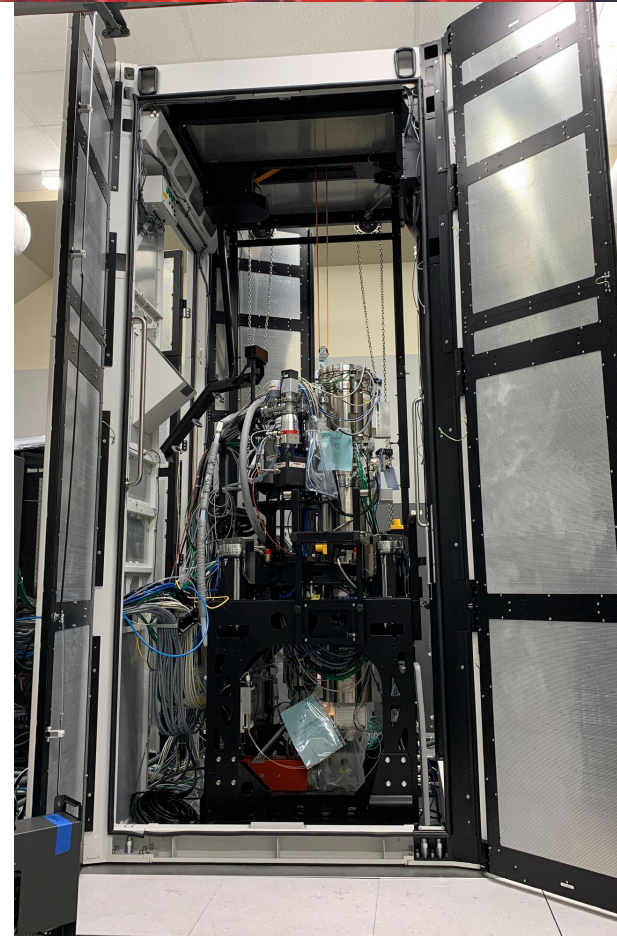
Leisa Faler  
Promoted to Business Manager

Yaqiao Wu  
10 Years at MaCS

## CAES Holds Virtual Groundbreaking Ceremony for New Transmission Electron Microscope

The Center for Advanced Energy Studies (CAES) held a virtual groundbreaking ceremony on July 16 for a \$5M project to install a new Transmission Electron Microscope (TEM). This state-of-the-art piece of equipment will enhance the research capabilities and further enable collaboration at CAES. The new TEM is more technologically advanced than any of the current TEM resources at INL in several ways, including:

- Better energy resolution (0.2 eV compared to 0.8 eV)
- Improved spatial resolution at low accelerating voltages enables analysis of light elements such as carbon, nitrogen, oxygen
- Equipped to better capture the behavior of dynamic materials, including phase changes and crystallization in harsh environments such as a reactor core
- Broader electron energy range enables research on a wider range of materials







## **Eight Principal Investigators from MaCs Awarded for Their Rapid Turnaround Experiment Research Proposals**

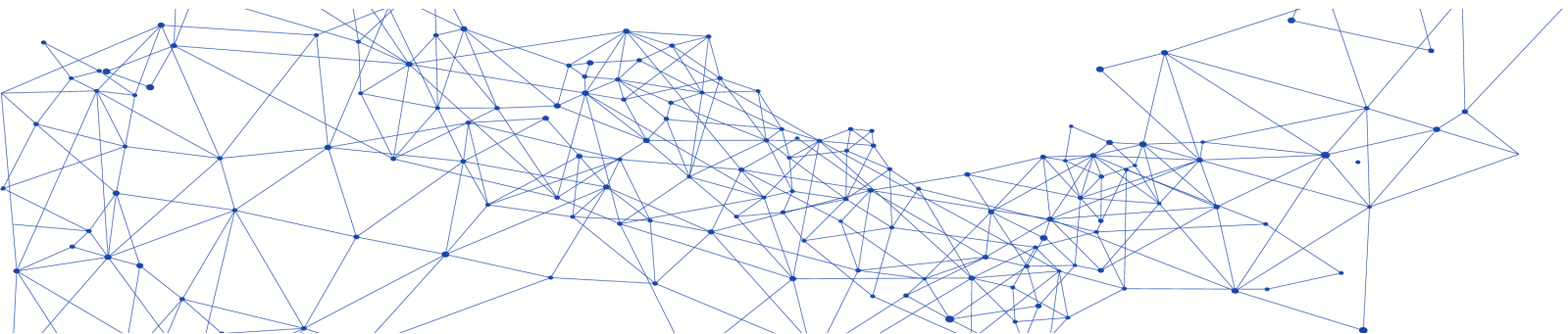
IDAHO FALLS -- The U.S. Department of Energy - Office of Nuclear Energy (DOE-NE) Nuclear Science User Facilities (NSUF) has selected 29 new Rapid Turnaround Experiment (RTE) projects, totaling approximately \$1.14M. These project awards went to 13 principal investigators from universities, nine from national laboratories, four from industry, and three foreign universities. The NSUF competitively selected these projects from a pool of high-quality RTE proposals submitted during the solicitation period. Each proposal was evaluated based on a variety of factors including technical approach, mission relevance, and scientific-technical merit.

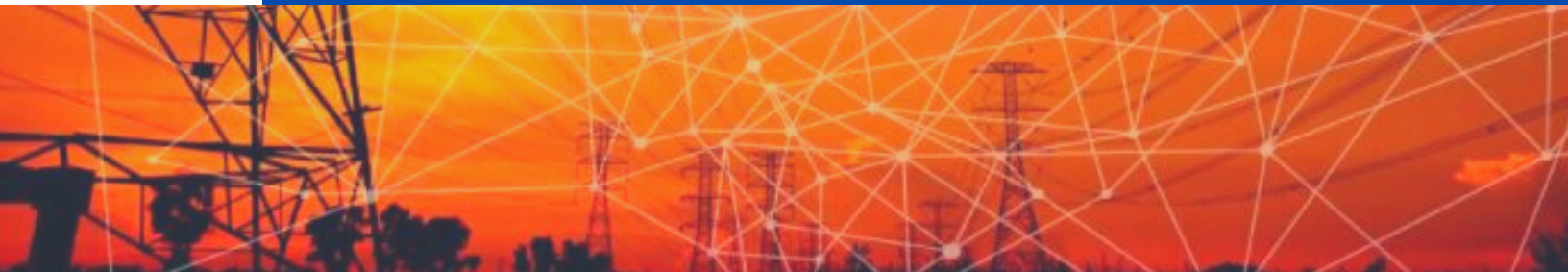
**Learn more about MaCS here:**  
**[MaCS Overview](#)**

The NSUF, managed by Idaho National Laboratory (INL), provides unparalleled opportunities for nuclear energy researchers. Through the RTE solicitation, a researcher can apply for no-cost access to NSUF's capabilities located across the United States. These capabilities encompass irradiation, post-irradiation examination, beamline, and high-performance computing equipment and expertise necessary to advance the understanding of irradiation effects in nuclear fuels and materials in support of DOE-NE's mission.

The NSUF is currently planning on opening another RTE call this fiscal year. Please stay tuned for more details.

See below for more information regarding our eight awardees and their research projects.



**Benjamin Dacus**

Massachusetts Institute of Technology

Microstructural Evolution in Model & Real RPV steel due to Thermal Aging and Low-Dose Irradiation using Atom Probe Tomography

Center for Advanced Energy Studies - Microscopy and Characterization Suite (MaCS)

**Cody Dennett**

Idaho National Laboratory

Defect generation and phase stability in single crystal mixed uranium-thorium actinide oxides

Center for Advanced Energy Studies - Microscopy and Characterization Suite (MaCS) and University of Michigan - Michigan Ion Beam

Laboratory (MIBL)

**Donna Guillen**

Idaho National Laboratory

Microstructural Examination of Irradiation Effects on Metal Matrix Composite Neutron Absorber

Center for Advanced Energy Studies - Microscopy and Characterization Suite (MaCS)

**Francis Garner**

Texas A&M University

The effects of stress on void superlattice formation during Cr<sup>+</sup> self-ion-irradiation of chromium

Center for Advanced Energy Studies - Microscopy and Characterization Suite (MaCS) and Texas A&M University - Accelerator

Laboratory

**Pengyuan Xiu**

University of Michigan

The sink strength and radiation parameter effects on microchemical evolution in dual-ion irradiated additively manufactured and wrought HT9

Center for Advanced Energy Studies - Microscopy and Characterization Suite (MaCS)

**Przemyslaw Klups**

University of Oxford

Comparison of Solute Cluster Formation and Evolution in Neutron-Irradiated ATR-2 to Thermally-Aged Low-Alloy Steels

Center for Advanced Energy Studies - Microscopy and Characterization Suite (MaCS)

**Rajiv Mishra**

University of North Texas

Ion Irradiation and Examination of Additive Friction Stir Manufactured 316 Stainless Steel Component

Center for Advanced Energy Studies - Microscopy and Characterization Suite (MaCS) and Texas A&M University - Accelerator

Laboratory

**Somayeh Pasebani**

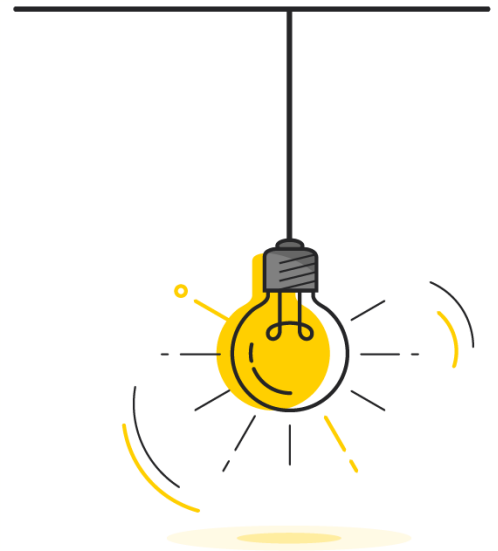
Oregon State University

Ion Irradiation and examination of 304 Stainless Steel and 304 ODS Steel Additively Manufactured via Selective Laser Melting

Center for Advanced Energy Studies - Microscopy and Characterization Suite (MaCS) and Texas A&M University - Accelerator Laboratory

## Plug Into CAES

The Center for Advanced Energy Studies is a research, education and innovation consortium that brings together students and faculty from the public research universities in Idaho, along with Idaho National Laboratory researchers to conduct cutting-edge energy-research, educate the next generation of scientists and collaborate with industry to advance competitiveness.



### Contact Information:

(208) 426-6164 • [caes@boisestate.edu](mailto:caes@boisestate.edu)

1910 University Drive, Mail Stop 2091, Boise, ID 83725-2091

**More information for CAES & MaCS:** <https://www.boisestate.edu/caes/>

**To Subscribe to the CAES Newsletter, email us at:** [caes@boisestate.edu](mailto:caes@boisestate.edu)

