

4 researchers named 2021 Laboratory Fellows



Baolian Cheng, Elizabeth Hunke, David A. Smith and Blas Uberuaga have been named 2021 Los Alamos National Laboratory Fellows.

“To be a Fellow at the Laboratory is to be a leader in our workplace and within the scientific community at large,” said Lab director **Thom Mason**. “I am honored to recognize these four fellows and thank them for their extraordinary contributions and accomplishments.”

The 2021 Fellows

Baolian Cheng

Cheng, of the Plasma Theory and Applications Group, has made sustained high-level contributions to national security and the Lab’s mission over the past 25 years. Her discoveries have fundamentally affected the methodology for weapons certification. Throughout her career, Cheng has made vital contributions to hydrodynamic instabilities and mix, pit lifetime studies, primary certification metrics, primary boost metrics, and thermonuclear ignition metrics for inertial confinement fusion. Furthermore, she is a global expert on boost and ignition metrics, and is known for her strong foundational and first principles theoretical developments.

Elizabeth Hunke

Hunke, of the Lab's Fluid Dynamics and Solid Mechanics Group, is internationally recognized as the world's leading modeler of sea ice. Hunke leads the CICE Consortium, an international collaboration of sea ice modelers, and is a senior member the Lab's climate modeling team, which contributes cutting-edge research and development for the Department of Energy's Energy Exascale Earth System Model (E3SM) project. She has been a key force in mentoring two generations of climate team members. She also serves as the program manager for the Earth and Environmental Systems Sciences Division in DOE's Office of Science, a \$30 million portfolio of experimental and modeling research.

David A. Smith

Smith, of the Space and Remote Sensing Group, has made groundbreaking contributions to the fundamental understanding of natural and human-made radio-frequency signatures. He led the transfer and implementation of these discoveries into an array of satellite-based electro-magnetic pulse (EMP) sensors for the U.S. Nuclear Detonation Detection System. He is also a highly effective leader of complex and high-consequence space systems. His foundational work in lightning physics includes the discovery of a new class of lightning. He developed advanced techniques for classifying EMP signatures, which enabled the automated separation of nuclear detonation signatures from lightning and other natural and human-made signatures.

Blas Uberuaga

For more than 20 years, Uberuaga, of the Materials Science in Radiation and Dynamics Extremes Group, has contributed to the field of atomistic modeling of radiation effects in materials where he performed pioneering research in complex oxides and nanomaterials. He is the director of DOE's Fundamental Understanding of Transport Under Reactor Extremes (FUTURE), which researches the extreme conditions of irradiation and corrosion that impact materials in nuclear reactors. His scientific work to understand these effects continues to showcase the Laboratory's expertise. Additionally, he's shown exceptional leadership in the mentoring of 27 postdoctoral researchers and six graduate students.

About the Laboratory Fellows

A Fellow appointment at Los Alamos is an honor bestowed in recognition of outstanding achievement in science and/or engineering, recognizing the full breadth of Laboratory accomplishment from basic research to applied missions. Nominations are assessed on the basis of three criteria:

- Sustained, high-level achievement and/or leadership in advancing science, technology, engineering or mathematics (STEM) or its application.
- One or more STEM discoveries, inventions or breakthrough applications of STEM that have made significant advances to a field of discipline, bringing widespread acceptance and recognition.

- Having become a recognized authority in a field or discipline as evidenced by citations, awards, Fellowships in prestigious societies and/or engagement at the national/international level because of their expertise.