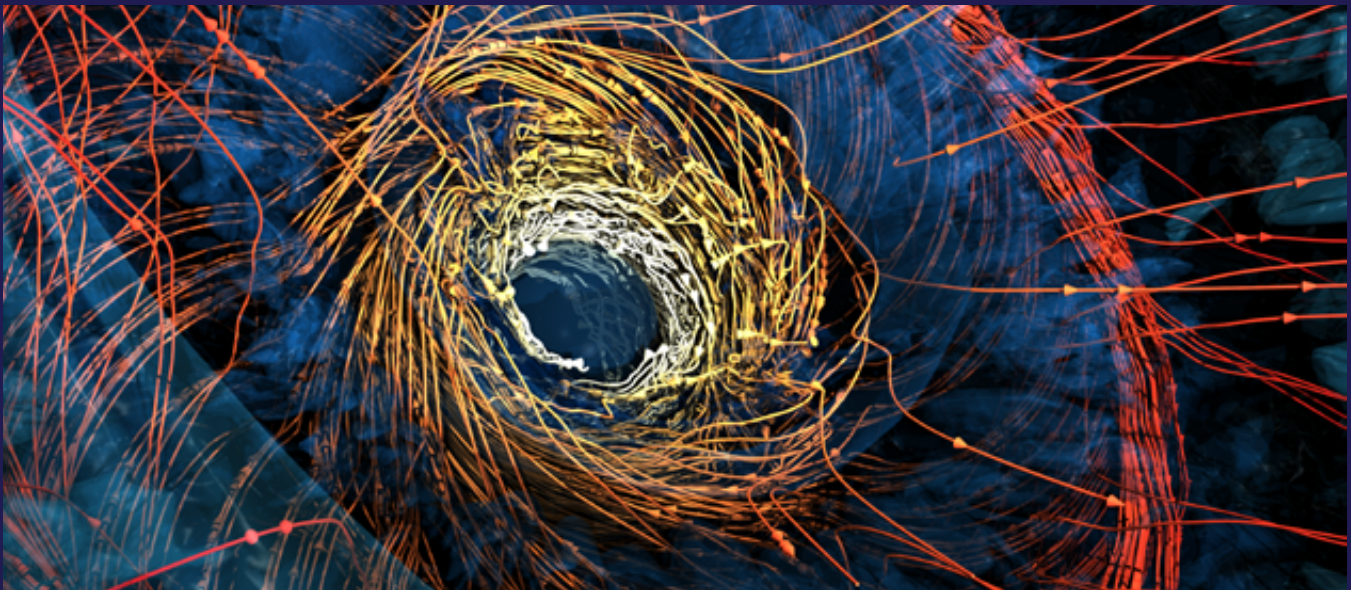


# Argonne Leadership Computing Facility

The ALCF's supercomputing and AI resources enable researchers to pursue breakthroughs in science and engineering.



A team led by researchers from the Kavli Institute for Theoretical Physics is using ALCF supercomputers to perform radiation hydrodynamic simulations of massive stars with rotation. *Image: ALCF Visualization and Data Analysis Team; Yan-Fei Jiang, Center for Computational Astrophysics, Flatiron Institute; Lars Bildsten, Kavli Institute for Theoretical Physics, University of California, Santa Barbara*

The Argonne Leadership Computing Facility (ALCF), a U.S. Department of Energy (DOE) Office of Science user facility at Argonne National Laboratory, provides supercomputing and AI resources to the scientific and engineering community to accelerate the pace of discovery and innovation in a broad range of disciplines.

## Breakthrough Science and Engineering

The ALCF's unparalleled combination of resources and expertise is helping scientists advance their research in many fields, enabling high-impact scientific discoveries and transformative technologies.

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Biological Sciences

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Energy Technologies

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Chemistry

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Engineering

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Computer Science

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Materials Science

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Earth Science

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Physics



Theta is the ALCF's Intel-Cray XC40 supercomputer.

### World-Class Supercomputing

The ALCF's leadership-class supercomputers support large-scale computing projects aimed at solving some of the world's most complex and challenging scientific problems. The facility's high-performance storage and networking infrastructure is designed to efficiently handle massive amounts of data. The ALCF also hosts an AI testbed and a visualization and analysis cluster to help researchers accelerate data-driven discoveries.

### Simulation, Data, and Learning

The ALCF is opening the doors to new areas of scientific computing research through its efforts to support advanced data analytics, artificial intelligence, and machine learning techniques alongside traditional modeling and simulation campaigns.

### Entering the Exascale Era

The ALCF's next-generation system, Aurora, is slated to be one of the nation's first exascale supercomputers. Designed in collaboration with industry leaders Intel and HPE, Aurora will help ensure continued U.S. leadership in high-end computing for scientific research, while also cementing the nation's position as a global leader in the development of extreme-scale computing systems.

### Accessing ALCF Resources

The ALCF is available to any researcher in the world with a large-scale computing problem. Researchers gain access to ALCF systems through competitive, peer-reviewed allocation programs supported by DOE and Argonne National Laboratory, and publish their findings in high-impact journals and publications.

### Expertise and Support

The ALCF's team of computational scientists, performance engineers, visualization experts, and support staff has the skills and expertise to ensure users get the most out of the facility's high-performance computing systems.

Multidisciplinary Scientific Expertise

Innovative Computational Methods

Code Porting, Tuning, And Scaling

Data Sciences

Visualization And Data Analysis

HPC Systems Administration

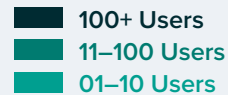
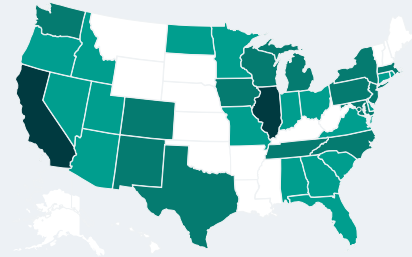
Technical Support

User Training

**CONTACT**  
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## 2021 BY THE NUMBERS

### U.S. ALCF Users by State



### Compute Time (Node-Hours)

# 34M

### Active Projects

# 375

### Facility Users

# 1,168

### Publications

# 249

### 2021 ALCF Users by Affiliation

