

U.S. Department of Energy's INCITE program seeks proposals for 2022

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The U.S. Department of Energy's Innovative and Novel Computational Impact on Theory and Experiment, or INCITE, program is seeking proposals for high-impact, computationally intensive research campaigns in a broad array of science, engineering and computer science domains. The deadline is June 18, 2021.

INCITE's open call provides an opportunity for researchers to pursue transformational advances in science and technology through large allocations of computer time and supporting resources at the Argonne Leadership Computing Facility, or ALCF, and the Oak Ridge Leadership Computing Facility, or OLCF, both DOE Office of Science user facilities.

"INCITE is the flagship program for the LCFs and it's how we deliver on our mission to produce high-impact open science," said Katherine Riley, INCITE's project manager. Riley serves as director of science at the ALCF and was one of the facility's first hires in 2007, becoming a key contributor to its strategic vision while also assisting with the design and development of ALCF supercomputers. Judith Hill, INCITE's previous project manager, joined Lawrence Livermore National Laboratory earlier this year.

Open to researchers from all institutions – including those from academia, industry and government agencies – the INCITE program focuses on large-scale scientific computing projects that require the power and scale of DOE's leadership-class supercomputers. The program will award up to 60% of the allocable time on Summit, the OLCF's 200-petaflop IBM AC922 machine, and Theta, the ALCF's 12-petaflop Cray XC40 system.

In 2022, a new supercomputer will also be available to researchers for the first time: the ALCF's Polaris, a GPU-accelerated system. DOE's upcoming exascale resources, Aurora at ALCF and Frontier at OLCF, will be added to the 2023 INCITE program.

In addition to seeking traditional simulation-based projects, the call for proposals is open to projects that involve applications in the areas of data science, such as big data and data-intensive computing, and machine learning like deep learning, neural networks,

discovery of patterns and reduced models for scientific data. Crosscutting proposals targeting the convergence of simulation, data and learning are also encouraged.

“We are looking for high-impact computational science proposals across the full gamut of scientific disciplines, home institutions and computational methodologies,” said ORNL’s Bronson Messer, who is OLCF’s director of science. “We are especially looking for proposals that – for whatever reason – cannot be carried out on any other resource in the world.”

Proposals will undergo a peer-review process to identify projects with the greatest potential for impact and a demonstrable need for leadership-class systems to deliver solutions to grand challenges. Additionally, applications will be evaluated for computational readiness to determine how effectively each proposed project will use the requested systems.

INCITE is also devoting 10% of its allocatable compute time in 2022 to a new Early Career Track. This program aims to encourage the next generation of high-performance computing researchers by focusing on principal investigators who are within 10 years of earning their doctorate degrees, on or after December 31, 2021. Applicants’ projects will go through the regular INCITE Computational Readiness and Peer Review process, but the INCITE management committee will consider meritorious projects in the Early Career Track separately.

To submit an application or for additional details about the proposal requirements, visit the INCITE website: doeleadershipcomputing.org.

Proposals will be accepted from Monday, April 12, 2021 until 8 p.m. EST on Friday, June 18, 2021. Awards are expected to be announced by November 2021.

The Argonne Leadership Computing Facility provides supercomputing capabilities to the scientific and engineering community to advance fundamental discovery and understanding in a broad range of disciplines. Supported by DOE’s Office of Science, Advanced Scientific Computing Research (ASCR) program, the ALCF is one of two DOE leadership computing facilities in the nation dedicated to open science.