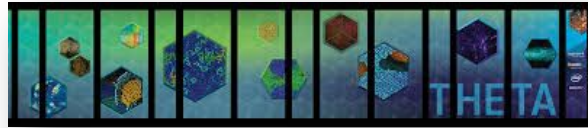# Introduction to the Oak Ridge Leadership Computing Facility (OLCF)

ORNL is managed by UT-Battelle LLC for the US Department of Energy

We are one of the DOE's Office of Science computation user facilities

- DOE is leader in open high-performance computing

- Provide the world's most powerful computational tools for open science

- Access is free to researchers who publish

- Boost US competitiveness

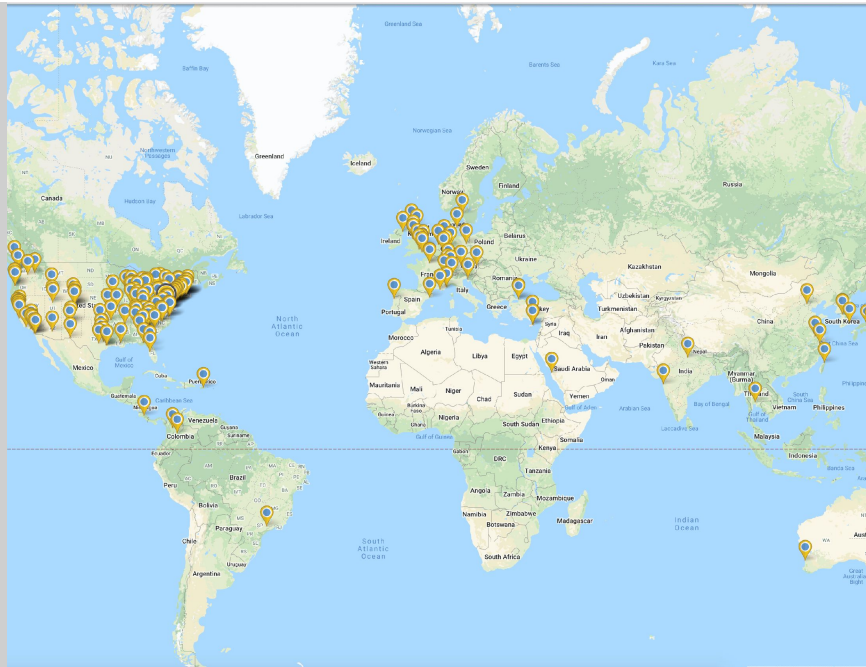- Attract the best and brightest researchers

What is a Leadership Computing Facility (LCF)?

- Collaborative, multi-lab DOE initiative (2 centers / 2 architectures)

- Mission: Provide an ecosystem that enables capability computing opportunities to solve the most challenging problems.

- Administer and support two highly competitive user allocation programs

  - Innovative and Novel Computational Impact on Theory and Experiment (INCITE)

  - ASCR Leadership Computing Challenge (ALCC)

  - Computational allocations typically 100x larger than generally available in university, laboratory, and industrial (scientific and engineering) environments.
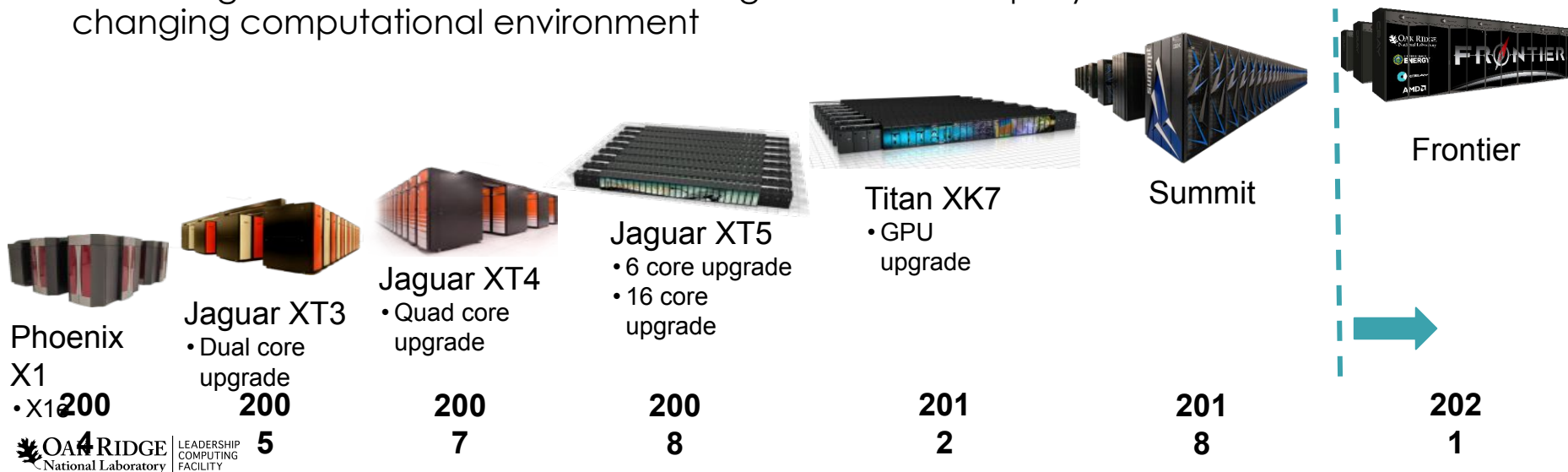
OLCF Users

- The OLCF averages about 1,500 unique users who are located around the world

- OLCF users come from academia, industry, and govt institutions

- Users are attached to projects which run up to 3 years in duration. We average about 250 research projects per year.

- OLCF resources are allocated through three highly competitive allocation programs requiring peer reviewed proposals

The OLCF has Successfully Delivered Six Systems Since 2004

- Frontier will be system number seven and will provide an increased capability of over 80,000x

- Large part of success has been strong user partnerships to scale & refactor codes/methods

- Partnering has been essential to delivering science in a rapidly changing computational environment

Frontier

Summit

Titan XK7
- GPU upgrade

Jaguar XT5
- 6 core upgrade
- 16 core upgrade

Jaguar XT4
- Quad core upgrade

Jaguar XT3
- Dual core upgrade

Phoenix X1
- X1e

| 2004 | 2005 | 2007 | 2008 | 2012 | 2018 | 2021 |

Opportunities at ORNL

Oak Ridge National Laboratory has numerous scientific and technical positions available in HPC, AI, Computational Science and Mathematics

- For a complete listing of positions available in Computing and Computational Sciences visit, https://jobs.ornl.gov/go/Computational-Sciences-Jobs/4534300/

- Internship Opportunities at ORNL: https://education.ornl.gov/

- Pathways 10-week summer program that provides undergraduate students with learning opportunities in computer science, computational science, and mathematics. https://www.zintellect.com/Opportunity/Details/ORNL-PCIP-2022

OAK RIDGE
National Laboratory | LEADERSHIP COMPUTING FACILITY

Questions?