



# ALCF

# Advanced Topics in AI

# for Science



Student Training Series

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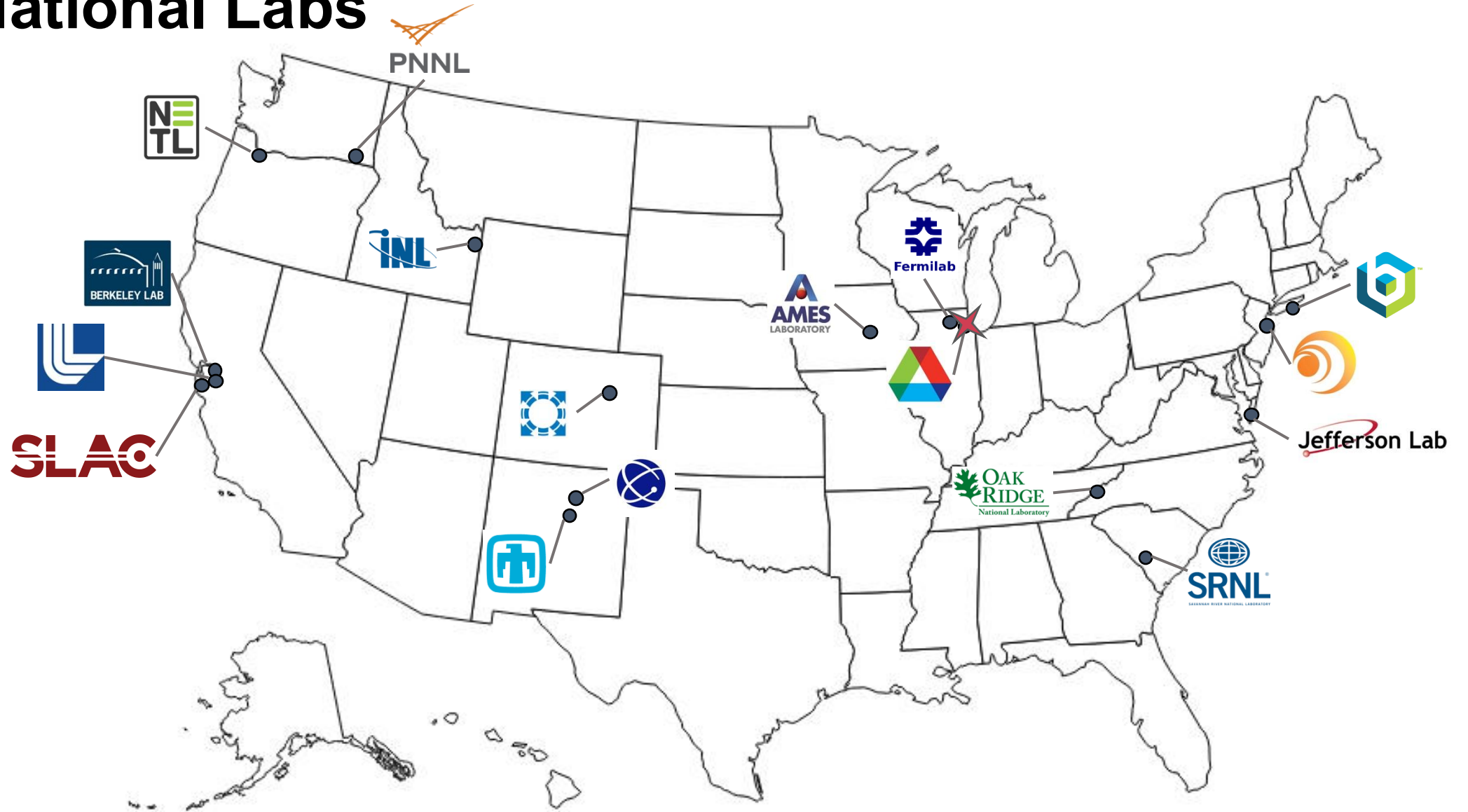
# An Intro to Argonne and ALCF

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Outreach Lead

October 14, 2025



# U.S. National Labs



**National labs deliver world-class research, technologies and new knowledge that aim to make an impact – from the atomic to the human to the global scale.**



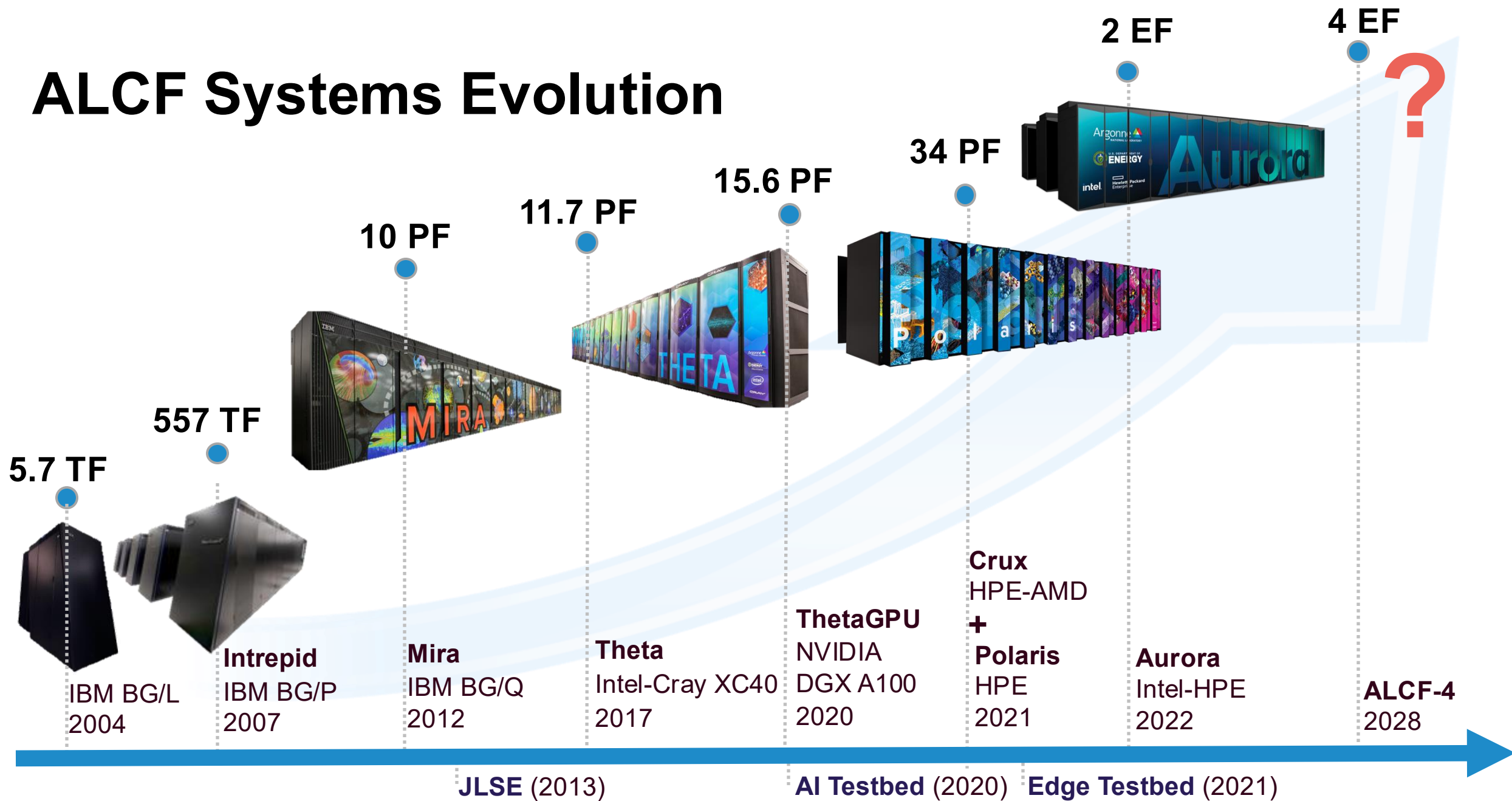


# Argonne Leadership Computing Facility

The ALCF enables breakthroughs in science and engineering by providing supercomputing resources and expertise to the research community.

- Users pursue scientific challenges
- In-house experts to help maximize results
- Resources fully dedicated to open science

# ALCF Systems Evolution



# What will you learn during this series?

- Foundational concepts of distributed data parallel training of large models
- Coupling simulation and AI for scientific applications
- Applications of inference workflows to enable science
- Examples of AI accelerators enabling science

# Weekly Session Agenda

**3:00 – 4:10 pm CT: Session Content + Hands-on**

**4:10 – 4:20 pm CT: Science talk with Argonne Scientist**

**4:20 – 4:30 pm CT: Q/A with Argonne Scientist**

# Series format and expectations

## Session Logistics

- Change Zoom name to first and last name
- Ask questions on **Slack**, not Zoom chat

## Materials

- Guides, session material, and hands-on exercises on **GitHub**
  - How to submit homework
  - How to access ALCF systems
  - Using Jupyter Notebook
- Recordings** and **slides** posted at the end of the week after each session



# Series format and expectations

## ALCF user accounts

- Any questions about accounts should be directed to the **#alcf-helpdesk** Slack channel for prompt responses

## Weekly Homework

- Complete and submit hands-on activities with **Microsoft From** by Nov 25 (two weeks after final session to receive credit towards **ALCF Advanced AI digital badge**)

# Series Guidelines

- Be curious and ask questions
- Be respectful to all participants
- No one has a monopoly on wisdom

Student Training Series

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# A Deep Dive into AI at Scale - Part 1

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October 14, 2025

