

ALCF/CPS Committee

Intent: The purpose of the committee is to improve communication between ALCF and CPS regarding current and future activities of Catalyst staff, monitor overall tasking and progress in Catalyst activities, and, more broadly, discuss long-term strategies for supporting scientific applications on DOE Leadership Computing Facility resources. The committee will also provide input, as may be required, to senior management (ALCF & CPS) on technical strategies.

Operation: The committee will meet on a biweekly basis to discuss topics including, but not limited to, ongoing Catalyst activities in support of ALCF and potential long-term activities that are mutually beneficial to ALCF and CPS, as well as collecting feedback from ALCF and Catalyst team members regarding ongoing activities.

Constraints:

- Balance science goals with HPC project and future architecture project goals
- CPS Catalysts publish
 - HPC work, science drivers, results enabled, work w/LCF-funded postdocs
 - Collaborate with LCF activities in areas of mutual interest (e.g., AI/ML, data-intensive applications, large-scale IO, etc.)

Working together, the committee will identify metrics by which progress on various activities can be measured and a satisfactory state assigned, for example:

- INCITE project progressing without technical issues
- Development of mini-app for application X in programming model Y with additional focus on HPC benchmarking
- N x reduction in time-to-solution measured with newly developed algorithm for application Z
- Technical report on long-term app/capability development (preferably a formal ALCF tech report, and preferably the basis for a publication)

Ongoing and possible long-term activities of mutual benefit to ALCF and CPS include:

- CPS Catalysts develop applications and capabilities valued by ALCF with long-term, in-depth commitment to becoming expert in
 - Specific applications—become go-to person to jump into projects/opportunities with these apps
 - Code porting and performance tuning
 - Code refactoring
 - Algorithm development
 - Computational method ecosystem
- Provide support of active ALCF projects (e.g. INCITE, ALCC, ADSP) including preparation of science highlights
- Support for internal ALCF activities (committees, reviews, etc.)

- New project development: working with potential future LCF users, Catalysts develop themselves as active liaisons for different communities and serve as a bridge to other Argonne Divisions (this is part of a broader CPS mandate)
- Support of A21-related activities (active participation in NRE WGs, Apps WG, porting applications in support of ESP and ECP projects, --)
- Development, performance tuning, documentation, and porting of relevant mini-apps to diverse computing hardware and programming models in connection to future Argonne computational resource procurements
- As part of a broader CPS activity, investigating and porting applications important to Argonne (e.g. historically important ALCF & LCRC apps; ESP & ECP apps; important apps identified for each division at Argonne)
- Application-specific training and documentation for LCF users