



APS / CELS Town Hall



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A common vision for the future

Argonne is well poised to employ advanced computing to maintain a world-leading position in the synchrotron light source community. The APS has a world-class photon science program with a large and diverse user base, and the computing divisions within the Computing, Environment, and Life Sciences directorate (CELS) are home to world-leading supercomputing infrastructure and computational expertise. This collocation provides an unprecedented opportunity for collaboration in exciting and innovative areas and to explore how advanced computing and APS-U can together create the leading synchrotron light source instrument worldwide and enable discoveries that would otherwise not be possible.

Develop a *common vision* of the big challenges and opportunities associated with computing in the APS-U era, the capabilities needed to address those challenges and opportunities, and how the APS and CELS can work together to provide those capabilities.

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Outcome

The primary outcome is a *vision and roadmap* detailing work that must be undertaken over the next decade as well as near-term steps required to get started.

Form breakout groups focusing on main topical areas:

1. New algorithms, math, and AI/ML
2. Scalable software tools
3. Workflow and orchestration
4. The APS-CELS computing architecture
5. Sustainable and discoverable data repositories
6. Networking

Breakout groups should identify and prioritize challenges, opportunities, and timelines.

Participation is open to the APS and CELS, APS Collaborative Access Teams (CATs), and the larger interested Argonne community.

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Logistics

- Meetings will be held remotely, beginning in December 2020.
- Plenary session followed by six breakout groups distributed over multiple days.
- Each breakout group will have one co-chair from the APS and one co-chair from CELS.
- Co-chairs for each breakout working group will lead discussions and are ultimately responsible for generating and reporting the group's output.
- Pre-reading material will be made in advance of the plenary session.
- Prior to each breakout, short documents describing current capabilities will be solicited for brief presentations at the beginning of each breakout to provide participants with a baseline and foster discussion.
- A final report will be completed by mid-February 2021.