

Strategic Vision for the 2026 Complex Trait Consortium Meeting

Reinvigorate the core & inspire the future

The 2026 Complex Trait Consortium (CTC) meeting in Portland, Maine hosted by JAX presents a critical opportunity to redefine the consortium's trajectory. For over two decades, the CTC has served as the intellectual home for the rigorous statistical dissection of complex traits. However, the landscape of quantitative genetics has shifted dramatically from simple mapping to high-dimensional systems genetics, integrating transcriptomics, proteomics, metabolomics, and more with increasingly sophisticated computational models. Furthermore, cross species integration with translational and mechanistic arch is critical as animal models face increasing scrutiny. To maintain the relevance and vitality of this influential organization, we must evolve to re-establish the CTC as the premier global forum where foundational quantitative genetics meets the frontier of systems biology, artificial intelligence, and precision medicine. The core of our revitalization strategy rests on a program that while honoring our strength in model organism genetics—rat, mouse, fly, worm, and yeast— must explicitly pivot toward the integration of these models with human data and computational innovation.

The 2026 meeting will focus on the following goals:

Community Expansion: A dual strategy of re-engaging CTC alumni while actively diversifying the speaker roster to reflect the modern scientific community. We aim to exceed 150 attendees, with a demographic shift such that at least 40% are trainees and 25% are first-time participants.

Trainee Prioritization: An investment in the next generation through subsidized attendance, have senior faculty lead mentorship roundtables, and technical workshops.

Return to roots of CTC: Focus on core methods and approaches to high-dimensional systems genetics, explicitly integrating multiomics and human data.

AI/ML Integration: Dedicated sessions focused on the "AI/ML Revolution" to attract computational biologists and bridge the gap between machine learning applications and deep genetic understanding.

Tangible Output: Publish a post-meeting white paper or meeting report in a journal such as *Genetics* or *G3*, outlining the consensus view on the future of complex trait analysis.

Ultimately, the impact of this meeting will be measured by the science it catalyzes. By executing this vision, the 2026 CTC will be the launchpad for the next era of systems genetics.