



Research Computing 2030 Task Force

Chair: **Todd Palmer**, Professor, School of Nuclear Science and Engineering, College of Engineering
Members:

- RO Representative: **Anthony Koppers**—AVP for Research Advancement and Strategy
- UIT Representative: **Vijay Thiruvengadam**—Chief Data Officer, University Information Technology
- Computationally Intensive Faculty: **Jim Lerczak**—Professor, College of Earth, Ocean, and Atmospheric Sciences
- AI Faculty or Data Science: **Stefan Lee** – Assistant Professor, School of Electrical Engineering and Computer Science, College of Engineering
- Computationally Intensive Faculty: **Ben Dalziel**—Associate Professor, Integrative Biology, College of Science
- Computationally Intensive Faculty: **Bogdan Strimbu** – Associate Professor, Forest Engineering, Resources & Management, College of Forestry
- Computationally Intensive Faculty: **Taal Levi**—Associate Professor, Fisheries, Wildlife and Conservation Sciences, College of Agricultural Sciences
- Computationally Intensive Faculty: **Jessica Garwood**—Assistant Professor, College of Earth, Ocean, and Atmospheric Sciences
- Center/Institute Representative: **Brent Kronmiller** – Assistant Director of Bioinformatics and Data Science, Center for Quantitative Life Sciences; Assistant Professor, College of Agricultural Sciences
- Cascades Representatives: **Patrick Donnelly**, Assistant Professor, Computer Science; and Evan Forsythe, Assistant Professor, Biology

The Research Computing 2030 Task Force is appointed by and advisory to the Provost and Vice President for Research.

Purpose

OSU is striving to dramatically expand the scale, quality, and impact of its research enterprise in the next few years, with researchers maximizing collaboration around contributing solutions to large transdisciplinary challenges of critical national and international importance. To achieve this goal and support researchers' success, it's essential that OSU has a state-of-the-art enterprise-wide model and strategy for the university's computing-intensive (high performance computing) and data-intensive support services and infrastructure. This is especially urgent given the radical innovations occurring in research computing, emerging compliance and cybersecurity requirements, and our current aging on-campus research clusters.

Tasks

The Research Computing Task Force will explore OSU's emerging and future research computing capacity and capability needs, including, but not limited to, HPC and data storage. In the course of

this work, it will examine the capabilities and practices of aspirational peer universities that have significant HPC resources much like those we anticipate in the CIC. The Task Force will look at these universities and their organizational models and address the following issues:

- How does the university relate its HPC services and infrastructure to research and innovation investments in disciplinary expertise, particular computational methods, or in areas of computational and data science?
- What HPC support services does the university offer?
- How does the university's HPC service model accommodate diversity in project sizes, diversity in internal versus external users, and diversity in purpose, from research to instruction, basic and use-based research, and transdisciplinary research?
- How does the university align a variety of funding sources to support the HPC resources?
- How does the university align direct or indirect support behind the model?
- How does their model build scale of services? Does it focus available resources on researcher support, rather than technical operations?
- How does their model support a diversity in computational resource types?
- How does their model support external engagement with corporate HPC partners and participation in national or international research cyberinfrastructure projects?
- How does their model balance enterprise versus coordinated distributed resources?
- How does the university move from organically grown, inconsistent support of HPC—that is largely college driven—to one that is strategically designed with central and distributed components working in concert to efficiently meet the needs of faculty and students working in the computational domain?

As a baseline for comparing OSU with these universities, the task force should answer the same questions about OSU, and it should conduct an inventory of research computing at OSU, identifying the groups or individual people responsible, accountable, consulted and/or informed (aka RACI chart) about research computing services and infrastructure across OSU's central university IT services, campuses, colleges, academic departments, research centers and institutes, core facilities, and federally-funded large facilities and research laboratories.

Based on this analysis, the Task Force will recommend operating models for OSU that it believes best fit plans for OSU's research goals for 2030. For each proposed model their strengths and weaknesses should be described. It would be important to provide value weights if more than one model is provided.

As the Task Force identifies viable operating models, a separate group of IT unit leaders supporting research computing at OSU will be conducting their inventory of the IT Research Ecosystem. That team will be led by the Vice Provost and CIO. Findings from and information provided by the IT Research Ecosystem team will assist the Task Force in helping create potential roadmaps, starting with the current Research IT Ecosystem at OSU to an optimized version in the future. More directly, the IT Research Ecosystem team will not only provide a reality check on Task Force options, but also lay out a path towards that envisioned future. **The IT Research Ecosystem Team** will have the following members:

Chair: Andrea Ballinger, Vice Provost, and CIO

Members:

- RO Representative: Anthony Koppers—AVP for Research Advancement and Strategy
- UIT Representative: Vijay Thiruvengadam—Chief Data Officer
- C&I Representative: Kathryn Higley—Interim Director Center for Quantitative Life Sciences
- Enterprise Cluster Management (Science, Ag, Health): CJ Heist, UIT
- College of Engineering: Christopher Thompson—Director of IT
- College of Forestry: Terralyn Vandetta—Director of IT
- College of CEOAS: Chris Sullivan—Director, CEOAS Research and Academic Computing Services

Timeline

The Task Force will convene working groups and listening sessions and consult with other universities as needed to gather expertise. If additional resources are needed (consultants, staff, travel etc.), the Chair should submit a request to CIO, Andrea Ballinger. The Task Force recommendation will be first reviewed by a group of Deans, plus the Provost's Senior Advisor for Strategic Initiatives and the CIO. A final report with recommendations will be submitted to the Provost and Vice President for Research by March 1, 2024.

Next Steps

The products of the Task Force will be used to design and begin implementation of a model in FY25-26.