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# OSC Research Symposium

## About the OSC Research Symposium

Interaction amongst individuals in the research community is central for the advancement of computational methods within and across disciplines and institutions.

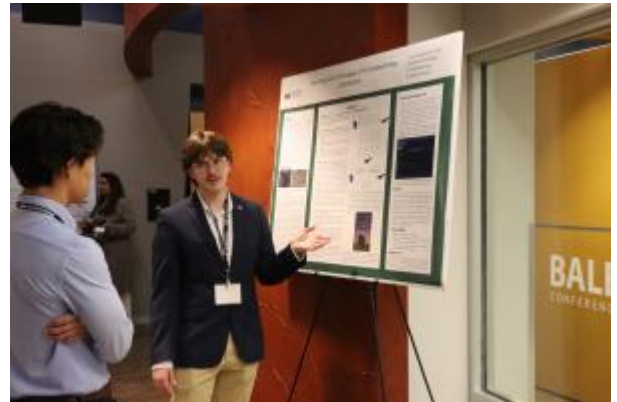
At the OSC Research Symposium, OSC invites our users and non-users to contribute valuable information through various means, including posters, talks and discussion sessions.

The Symposium also allows OSC to collect feedback so the Center can continue to provide a productive environment for research.

### 2025 Research Symposium

Date: Tuesday, April 8, 2025

Time: 9 a.m. to 3:30 p.m.



The OSC Research Symposium meets once a year in the spring and all are welcome to attend.

The event will feature discussions and presentations from participants at colleges, universities, research organizations and companies across Ohio and beyond on a variety of topics.

The Research Symposium will feature hybrid and in-person components, including a complimentary catered lunch (for in-person attendees only) at the Ohio Technology Consortium facility at 1224 Kinnear Rd., Columbus.

## Event Registration

**Registration is now open** for the Research Symposium through our registration portal. In-person attendees will receive a complimentary lunch. OSC has free, on-site parking and is conveniently located on the west campus of The Ohio State University.

In-person registration will close at noon on Thursday, April 3, 2025. Virtual registration will close at noon on Monday, April 7, 2025. The link to join the event virtually will be sent that afternoon.

## Agenda

**8:30–9 a.m.: Check-in and Morning Snacks**

**9–10 a.m.: Poster Session 1**

- (In-person) **Godstand Aimiuwu**, The Ohio State University, Experimental and computational investigation of mixing dynamics in millifluidic jet mixing reactors
- (Virtual) **Kelechi Amamba**, Kent State University, Credit Card Fraud Classification Using Applied Machine Learning – A Comparative Study
- (In-person) **Alex Buga**, The Ohio State University, Novel VR Analysis Methods to Quantify Military-Relevant Shooting Performance During Sleep Deprivation with Exogenous Ketones
- (In-person) **Jessica Cloud**, The Ohio State University, Differential prediction of cognitive performance by brain-age difference measures in adults
- (In-person) **Jillian Graham**, The Ohio State University, Differential relationships between cardiorespiratory fitness and cortical thickness across the adult lifespan
- (In-person) **Mohammad Umar Farooq Khan**, The Ohio State University, Microstructure Influence on the Intergranular Corrosion of Al Alloys by Integrated Computational Materials Engineering
- (In-person) **Sultana Nahar**, The Ohio State University, Spectral features of lanthanides for kilonovae emission using large scale atomic data
- (In-person) **Venkata Rohit Punyapu**, The Ohio State University, Supercomputing for Catalysis: First-Principles Approaches to Material Discovery
- (In-person) **H Rainak Khan Real**, The Ohio State University, Machine Learning-based Spatio-Temporal Assessment of LULC Change in Barishal of Bangladesh between 1988 and 2024
- (In-person) **Carrie Salmon**, Kent State University, Substituting the oligomeric chlorophosphazenes: probing the initiation step with DFT computation
- (In-person) **Paul Toth**, The Ohio State University, Molecular Insights into DNA Cleavage by Novel Bacterial Topoisomerase Inhibitors
- (In-person) **Ankit Upadhyay**, Rensselaer Polytechnic Institute, Encounter-based Individual Animal ID
- (In-person) **Mustafa Usta**, Cleveland State University, Hydrodynamic Analysis of Rotating Permeable Discs for Separation

## 10–noon: Brief Bytes Session 1

- (In-person) **Ritav Das**, The Ohio State University, Effects of Chirality and Solvent Strength on Model Polycatenane Network Shapes
- (In-person) **Zachary Drake**, The Ohio State University, DMS-Fold: Deep-Learning Structure Elucidation from Deep Mutational Scanning Experiments
- (Virtual) **Sachit Kshatriya**, Case Western Reserve University, Easily Parallelising Python Across Nodes Using MPI
- (Virtual) **Jabir Nalicho**, Dar Es Salaam University College of Education, In-Silico Investigation of Curcumin's Structure, Stability, and Solubility in Water and Organic Solvents
- (In-person) **Akshaya Narayanasamy**, The Ohio State University, Ion mobility guided Monte Carlo-based docking pipeline for predicting protein complexes
- (Virtual) **Aditi Singh**, Cleveland State University, Agentic Retrieval-Augmented Generation: A Survey on Agentic RAG
- (In-person) **Mahmoud Suleman**, University of Cincinnati, Use of HPC Services in University Settings: A Usability Case Study of the UC's HPC Clusters
- (Virtual) **Hang Yi**, Wright State University, Hemodynamic risks on secondary intracranial aneurysm generation: a cohort study using anatomical and phantom models
- (Virtual) **Vasiliy Znamenskiy**, City University of New York, Molecular AI on Base of Hydrogen Bonds: Attempts of Simulation

**Noon–12:45 p.m.: Lunch****12:45–2:30 p.m.: Brief Bytes Session 2**

- (In-person) **Evelyn Arrey**, The Ohio State University, Improving Legacy Industrial Optimization Applications with Benchmarking
- (In-person) **Dominic Kolonay**, The Ohio State University, Computational Approaches Reveal Cardiac Cell-Specific Functions of the Mediator Complex
- (Virtual) **Lori Kumler**, Denison University, Increasing campus OSC use among faculty and students at a small liberal arts college
- (Virtual) **Christine Morales**, University of Mount Union, Engaging Undergraduates in a Search for Environmentally Relevant Quantum Chemical Descriptors of Polyfluoroalkyl Substances (PFAS)
- (Virtual) **Anurag Rayarala**, Youngstown State University, Optimizing Graph Neural Network Inference for Particle Tracking in High-Energy Physics
- (In-person) **Negar Vakili**, Youngstown State University, A Framework for Understanding AI's Capabilities and Limitations in UX Design
- (In-person) **Yuan Xue**, The University of Akron, Exploring Mechanistic Pathway of Gas-Phase Reactions in InN MOVPE Through DFT Calculations
- (In-person) **Mahdi Yazdanpour**, Northern Kentucky University, AI-Driven Neuroprosthetic: Brain-Controlled Prosthetic Arm with Sensory Feedback and Hybrid Brain-Computer Interface
- (Virtual) **Jen Ziemke**, John Carroll University, 911 EMS Data: What explains the variation in response times by dispatched call type?

**2:30–3:30 p.m.: Poster Session 2**

- (In-person) **Ali Barooni**, The Ohio State University, Emergent ferromagnetic insulating state in epitaxially strained LaCoO<sub>3</sub>
- (In-person) **Jacklynn Beck**, The Ohio State University, Soil Moisture Data Value Study Sensitivity Analysis in the Upper Missouri River Basin
- (In-person) **Sydney Decker**, The Ohio State University, Analysis of high-resolution data leads to an improved understanding of yellow bat evolutionary history
- (In-person) **Matthew Deutsch**, Kent State University, Fast Nonlinear Finite Element Elastodynamics Integrated with Molecular Dynamics for Multiscale Modeling
- (In-person) **Olivia Horn**, The Ohio State University, Subjective and objective physical activity and episodic memory in aging: A specification curve analysis
- (In-person) **Andrew Paluch**, Miami University, Investigating the structure and equilibrium solubility of paracetamol in pure solvents: a molecular simulation study
- (In-person) **Jelmer Poelstra**, The Ohio State University, Bioinformatics computing by the MCIC core facility at OSC
- (In-person) **Rachel Price**, The Ohio State University, Optimizing NBA Fantasy Basketball Lineups Using Regression Analysis
- (In-person) **Mustafa Usta**, Cleveland State University, Computational Insights into Shear-Dependent von Willebrand Factor Conformations Mediated by Extracellular Vesicles
- (In-person) **Danushka Walisinghe**, Bowling Green State University, Photoisomerization Dynamics in Archaelhodopsin-3 and Pathways to Design Fluorescently Enhanced Variants
- (In-person) **Niko Zuppas**, The Ohio State University, Developing Deep Learning Methods for Population Genetics: Transfer Learning Across Human Populations

**3:30 p.m.: Adjourn**

## The OSC Community

The success of the Ohio Supercomputer Center and, in turn, our community depends upon the participation of Ohio's researchers. Anyone who utilizes OSC resources and services is a part of the OSC community and can engage in the community by:

- advising on computational and large data resources and software applications acquisitions
- assisting in establishing policies (i.e., scheduling, quotas, etc.)
- advocating institutional concerns and needs to OSC
- championing OSC initiatives at home institutions
- assisting in developing collaborative inter-institutional activities, including research and funding opportunities, that promote and provide mutual benefits.
- attending the annual fall Community Briefing event

Find more resources for engaging below. If you have additional questions please contact Brian Guilfoos.



### Make use of AVAILABLE SERVICES

- View a summary of OSC's Services
- Get more details on available Client Resources
- See the list of Available Software
- Learn about using OSC in your Classroom Project Resource Guide



### Learn about OSC'S IMPACT

- See OSC's impact By the Numbers
- Read Annual Research Reports
- Use the OSC Citation in your papers
- Learn about openondemand.org



### Help shape FUTURE PLANS

- Read About the Ohio Supercomputer Center
- Reach out to OSC leadership
- Provide feedback on the OSC Client Portal



### Find ways to ENGAGE WITH OSC

- Encourage others to Get an OSC account
- Attend one of OSC's events
- Propose a Research Proposal Partnership

- Fill out the Share Your Media Coverage Form
- Follow us on LinkedIn, Facebook and X.

## Past Event Agendas and Meeting Minutes

Until 2024, the OSC community was primarily organized and supported by the OSC Statewide Users Group (SUG). SUG has transformed into the OSC Research Symposium and the OSC Community Briefing, aiming to cultivate community engagement in new, more adaptive ways.

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[View the 2024 Research Symposium agenda.](#)

[SUG Meeting Minutes and Agendas](#) dating back to January 10, 2013 are available online.