



ICER RESOURCES

General information: icer.msu.edu

Questions/assistance: contact.icer.msu.edu



ICER's Mission

ICER Resources

ICER provides free access to high performance computing platforms, outstanding user support, and consultation with staff experienced in scientific computing.



When might you need ICER?

ICER Resources

Our goal is to support work you cannot do on your own computer in a reasonable time frame:

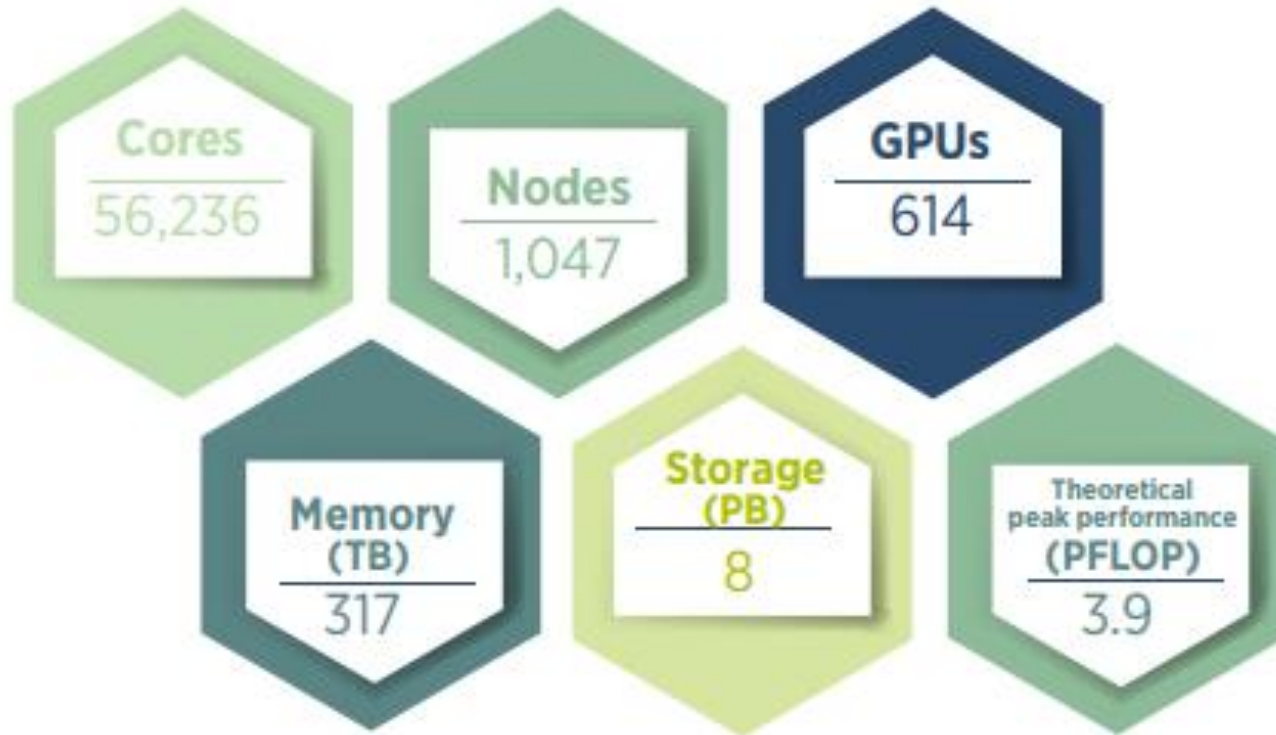
- You need more computational horsepower than is available on your own computer
 - Dataset sizes too large to analyze (or analysis is too slow)
 - You need to run many permutations of a model/simulation/analysis for statistical or replication purposes
 - You need to do large-scale or parallel computation, or need specialized hardware
- You **suspect** that more computing resources might be able to help your research, even if you are not quite sure how

Contact us via contact.icer.msu.edu.



ICER Hardware/Software

High Performance Computing Platforms



ICER provides a variety of software packages (1255+). We also assist researchers with installing new software. We can install both open source and licensed software upon request.



ICER Training

User/PI Support

Offer training for *new and advanced* ICER users:

- In-person workshops:
 - Conducted by ICER personnel
 - Host external workshops by XSEDE, Nvidia, etc.

<https://icer.msu.edu/upcoming-workshops>

- Self-paced D2L courses:

<https://icer.msu.edu/education-events/desire2learn>

We are always interested in suggestions for new workshops!



Educational Support

User/PI Support

Resources and support available for educational activities such as courses, workshops, and other one-off activities (*e.g.*, hack-a-thons):

- Workshops provided by ICER personnel on how to use OnDemand, Intro to HPCC, etc.
- Provide custom activity-specific Python or R environments installed with specified software via OnDemand
- Host large shared datasets on the HPCC for activities
- Reserved computing resources or disk space for activities

<https://wiki.hpcc.msu.edu/display/ITH/ICER+HPC+Classroom+Support>



ICER Grant Support

User/PI Support

- Letters of support for grants
- Template facilities statements, data management plans, budget justifications (NSF and NIH)
- REU Supplemental templates (NSF and NIH)
- <https://icer.msu.edu/user-services/research-consulting>



Project-specific Support

Consultation

Help you improve your computational research

- Application and programming support (*i.e.*, help desk)
- One-on-one training with your group members
- Identifying research needs
- Optimizing computational workflows
- Installing specialized software
- Help transitioning to larger-scale resources if necessary

Conduct advanced computational research for your projects

- Assisting with study design
- Producing publishable quality computational research



Academic Research Consulting Services

Consultation

Assist with and complete your computational research:

- Development services
- Training services
- Specialist services
- Project and grant development

<https://icer.msu.edu/icer-academic-research-consulting-services-arcs>



ICER Resource Availability

ICER Resources

General access is available to all MSU researchers at no cost. Additional storage/priority access to compute resources available via a buy-in program where faculty purchase hardware at cost and ICER provides and maintains at no extra cost.



<http://contact.icer.msu.edu/account>



User Support

ICER Resources

Support specifically for users who prefer to access the HPCC via graphical interfaces (*i.e.*, not via a command line interface)

Web-based interfaces include:

- OnDemand access to HPCC resources
 - Jupyter Notebook
 - RStudio
 - Matlab
 - Other programs upon request
- Globus for easy file transfer





ICER RESOURCES

General information: icer.msu.edu

Questions/assistance: contact.icer.msu.edu



Typical Workshops

User/PI Support

The following is a list of typical workshops conducted by ICER:

- ICER HPCC Resources and Concepts
- OnDemand
- Introduction to Linux using ICER's HPCC
- Introduction to ICER's HPCC using Linux
- DMZ Globus
- Jupyter Notebook Basics
- Matplotlib

<https://icer.msu.edu/education-events>



Academic Research Consulting Services

User/PI Support

Development services:

- Software and platform development
- Creation of workflows for HPCC and commercial Cloud

Training services:

- Creation of course modules and courses
- Development and deployment of discipline-specific training

Specialist services:

- Protein, plasma, and multi-scale atomistic modelling
- Genomic analysis using bioinformatics pipelines
- Quantum mechanical and molecular dynamics simulations
- Machine Learning for Time-Series Analysis

<https://icer.msu.edu/icer-academic-research-consulting-services-arcs>



Research Facilitation Network

Consultation

Research facilitation network resources:

- Research technology and service catalog, a browsable way to find computational/tech-related research support:
<https://tech.msu.edu/service-catalog/research-technology-collaboration/>
- Research Consulting service for if you know you need something but are unsure what: <http://go.msu.edu/research-consulting>, also available from the service catalog
- Research CyberInfrastructure page:
<https://tech.msu.edu/faculty/research-cyberinfrastructure/>
- Data Storage Finder page which will assist users in finding the correct place to store their data (based on data type, amount, and desired use of the storage):
<https://data-storage-finder.tech.msu.edu/>

