OSC

Driving computational research across Ohio

Empower. Partner. Lead.

The **Ohio Supercomputer Center** is a shared statewide resource that provides supercomputing services and computational science expertise to Ohio researchers in academia and industry. As a centralized asset, OSC provides students, scientists, engineers and clinicians with far better computational resources than their organizations could acquire and maintain on their own.

OSC empowers Ohio researchers to new innovations and discoveries; partners with Ohio industries to use supercomputing and computational science as a competitive force; and collaborates with Ohio's colleges and universities to educate Ohio's workforce.

OPEN OnDemand

OSC deploys powerful web portal across the nation

In 2017–18, OSC developed and launched Open OnDemand, a National Science Foundation-funded, open-source, single-point-of-entry web portal. Currently, OnDemand provides OSC and 40+ HPC centers across the nation with seamless, flexible access to high performance computing and storage services.

Client Communities

3,185 researchers

23 Ohio universities
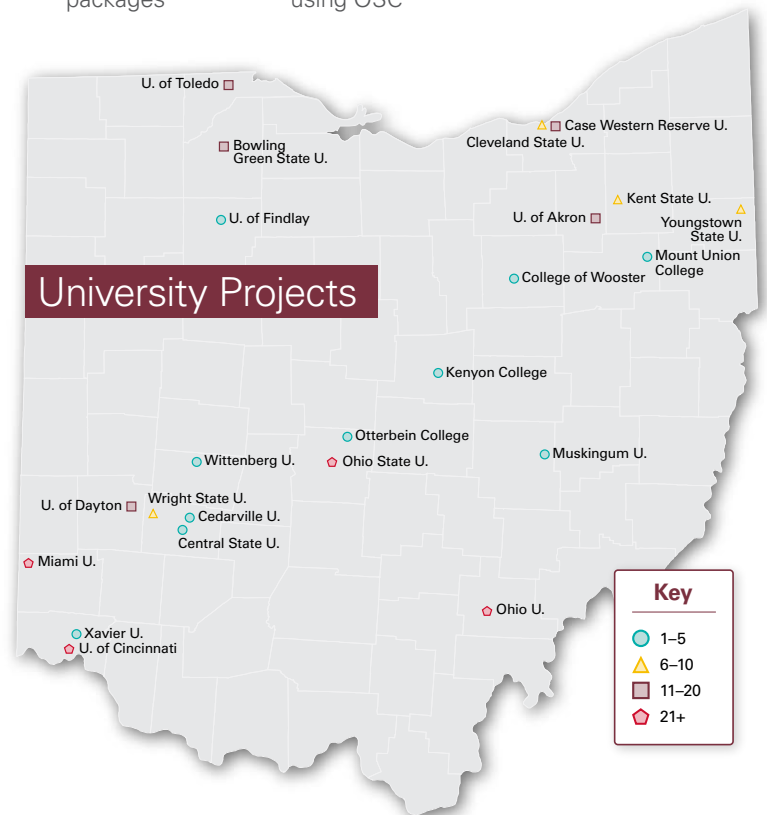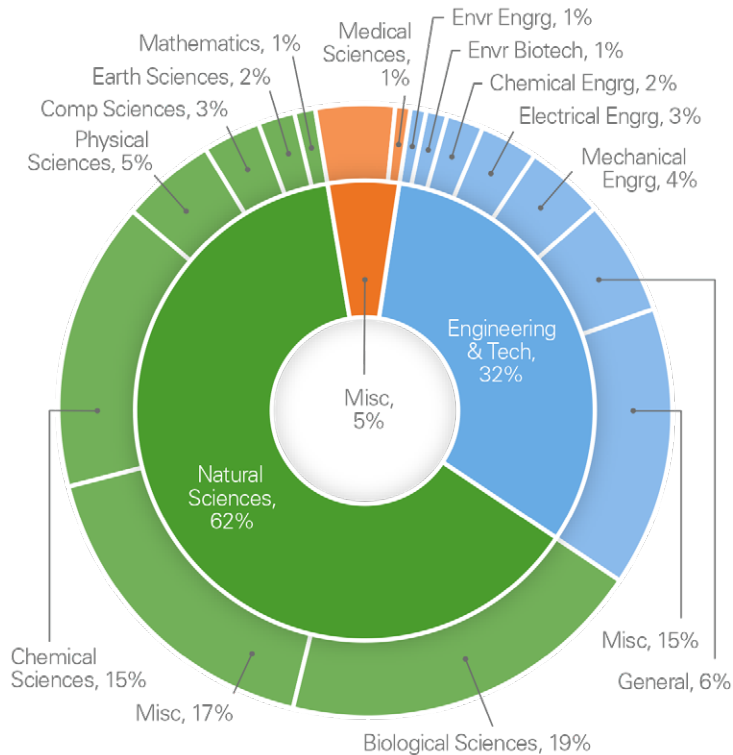
92 companies and other universities

130 software packages

48 college courses using OSC

315 trainees

University Projects

U. of Toledo
Bowling Green State U.
U. of Findlay
Case Western Reserve U.
Cleveland State U.
Kent State U.
U. of Akron
Youngstown State U.
Mount Union College
College of Wooster
Kenyon College
Otterbein College
Muskingum U.
Wittenberg U.
Ohio State U.
U. of Dayton
Wright State U.
Cedarville U.
Central State U.
Miami U.
Ohio U.
Xavier U.
U. of Cincinnati

Key
- ○ 1–5
- △ 6–10
- ☐ 11–20
- ⬠ 21+

Ohio Supercomputer Center

osc.edu

Mathematics, 1%
Earth Sciences, 2%
Comp Sciences, 3%
Physical Sciences, 5%
Medical Sciences, 1%
Envr Engrg, 1%
Envr Biotech, 1%
Chemical Engrg, 2%
Electrical Engrg, 3%
Mechanical Engrg, 4%

Engineering & Tech, 32%
Misc, 5%
Natural Sciences, 62%

Chemical Sciences, 15%
Misc, 17%
Biological Sciences, 19%
General, 6%
Misc, 15%

3,200,000+
computational jobs completed

↑**45%**
increase over 3.5 years

3,044 TF
computational power available

↑**800%**
increase over 3.5 years

3,114 TB
computational storage utilized

↑**219%**
increase over 3.5 years

All data January 2018–December 2018

OSC Impact

Example client stories from recent OSC Research Reports.

Designing new flying devices

Boeing's GoFly program challenges engineers to create personal flying devices. TotalSim US and the Ohio Supercomputer Center teamed up to provide contestants with TotalSim's TS Aero app, which allows users to upload vehicle designs and test digital prototypes.

Combating soybean disease

Stephanie Karhoff, Ph.D., a former Ohio State University graduate student, leveraged Ohio Supercomputer Center resources to search for a genetic answer to a soybean water mold that causes Phytophthora root and stem rot, a pathogen that can severely limit yields.

Researching autism, cancer

At the Cleveland Clinic's Genomic Medicine Institute, Dr. Charis Eng turned to the Ohio Supercomputer Center to study why the protein encoded by a cancer-fighting gene can mutate to cause cancer or autism spectrum disorder.

Enhancing solar power

The world's largest manufacturer of thin-film solar panels is using Ohio Supercomputer Center resources to predict and optimize semiconductor properties. Through First Solar's R&D, large-scale solar farms can deliver energy to utilities at prices lower than fossil fuels.

Sequencing tick DNA

Through next-generation sequencing at the Ohio Supercomputer Center, Josh Benoit, Ph.D. and his University of Cincinnati team are researching tick biology. They estimate ticks more than doubled in one year and are studying how ticks survive stressful environmental conditions.

Prototyping dam turbines

Central State University's Subramania Srithrahan, Ph.D., is using Ohio Supercomputer Center systems to research cross-flow turbines within non-powered dams. He aims to design, install and monitor a prototype in a Miami River dam.