

What is the Ralph Regula School of Computational Science?

The Ralph Regula School of Computational Science (RRSCS) is a statewide, virtual school focused on computational science, and specifically computer modeling and simulation. It is a collaboration between the Ohio Board of Regents, Ohio Supercomputer Center, the Ohio Learning Network, and Ohio's colleges and universities. The school will act as a coordinating entity for a variety of computational science education activities aimed at Ohio students at the high school through master's degree levels and to workers obtaining industry-needed skills. The Ralph Regula School will not offer degrees or certificates on its own. Instead, it will tap the resources and expertise of Ohio's colleges and universities. For a list of participating institutions, please visit www.rrscs.org.

RRSCS initiatives in computational science:

- A statewide undergraduate minor curriculum
- A statewide associate degree curriculum
- Certificate and college co-op programs
- A high school elective that fits with the Ohio Project Lead the Way curriculum
- Online tools to help researchers in the classroom and in the lab



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Contact Information

For more information about the Ralph Regula School of Computational Science, please visit our website

www.rrscs.org

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Ohio Supercomputer Center

Ralph Regula School of Computational Science



Ensuring that Ohio has the skilled people needed to support new approaches to innovation.



Why is a statewide school needed?

A statewide school ensures that all partners develop computational science programs together to maintain curricula standards and reduce duplication of facilities and expertise. The value of statewide partnerships has been demonstrated by Ohio's shared library organization (OhioLINK), distributed learning system (Ohio Learning Network), and shared network (OARnet). OSCnet allows the state's educational institutions to develop and deliver multi-institutional, interdisciplinary computational science programs.

What is computational science and how is it different from computer science?

Computational science is a fairly new area. Unlike computer science, which is primarily focused on the study of computer technology and algorithms, computational science describes computing applications, especially high performance computing (HPC), to solve scientific and engineering problems. Computational scientists use computers to create mathematical models that help them simulate and understand natural and mechanical processes, as well as to visualize these models.

An example where computational science is commonly used is weather forecasting, where vast amounts of data are combined with sets of mathematical formulas in a computer program called a weather model and used to develop forecasts. These forecasts are far more accurate and timely than were possible before computer models were employed.

Why is computational science important?

Ohio and the U.S. can no longer effectively compete for manufacturing jobs when low wage nations produce the same items much more cheaply. The U.S. does have an advantage in innovation – new products are greatly enhanced by the use of computational modeling in design and discovery. OSC introduced Blue Collar Computing to help with U.S. industry's needs for computational resources and expertise.

Ohio Supercomputer Center

Established by the Ohio Board of Regents, the Ohio Supercomputer Center (OSC) serves Ohio by connecting high performance computing, the nation's foremost state-of-the-art research network, and a deep pool of expertise dedicated to advancing research in the public and private sectors. OSC plays a key role in fueling Ohio's emerging high tech economy by enabling front-line research, cutting-edge information technology, and new industrial growth. For more information about OSC, visit www.osc.edu.

Blue Collar Computing™

Blue Collar Computing (BCC) is an OSC initiative that provides high performance computing to industries that do not currently have the expertise or time to be an HPC incubator or research new HPC applications. HP programming languages, training, and collaboration are required to improve capabilities and increase competitiveness for business, science, and engineering users. As the BCC initiative grows, so too will the need for the Ralph Regula School to train additional computational scientists to meet the rising demand of industry.

OARnet

OARnet is a dedicated high-speed, fiber-optic network linking Ohio colleges and universities with research facilities to promote research and economic development. More than 1,850 miles of fiber provide the network backbone, connecting colleges and universities, K-12 schools, public broadcasting stations and academic medical centers.