Computational Science Minor:
Enhancing the academic portfolio

Students at nine Ohio college and university campuses began adding valuable computational science skills to their academic portfolio with the August launch of a new, virtual minor program being coordinated by the Ralph Regula School of Computational Science.

Computational scientists use computers – especially supercomputers – to create mathematical models that help them simulate and understand complicated mechanical and natural processes. Computational science has produced enormous advances in areas such as product prototyping, DNA sequencing, behavioral modeling, global climatic predictions, drug design, financial systems, and medical visualization.

One well-known example of computational science is modern weather forecasting, where vast amounts of data are combined with sets of mathematical formulas in a computer program called a weather model to develop forecasts. These forecasts are far more accurate and timely than were possible before computer modeling was available.

Another important example is the use of computer models to simulate and test new products prior to manufacturing. The use of "virtual prototypes" sharply reduces or even eliminates the slow and expensive process of building and testing physical prototypes.

"Computational science and the use of modeling and simulation have been cited by prominent federal committees and panels as key to continued United States competitiveness in science and engineering," said Steve Gordon, Ph.D., director of the Ralph Regula School.

The Ralph Regula School of Computational Science is a statewide, virtual school, administered by the Ohio Supercomputer Center, that serves as a coordinating entity for a variety of computational science education activities. The Ralph Regula School does not offer degrees or program certificates on its own, but instead draws upon the resources and expertise of Ohio's colleges and universities to develop and offer coursework for academic programs and certificates.