

OHIO BOARD OF REGENTS

Agenda Item 3.1 Establishment of the Ralph Regula School of Computational Science

RESOLUTION

WHEREAS, Ohio is a leader in the important new area of computational science, with businesses, undergraduate and graduate programs focused on the use of computational science to improve the quality and efficiencies of modeling; and

WHEREAS, a collaborative statewide school of computational science will assist Ohio colleges and universities in meeting the need for students educated in this critical area; and

WHEREAS, Ohio's Board of Regents has been a national leader in establishing multi-institutional collaboratives that create economies and qualities of scale; and

WHEREAS, Ohio's Third Frontier Network and the Ohio Supercomputer Center are two key assets which Ohio will use to further our leadership position in this critical new science; and

WHEREAS, Congressman Ralph Regula has been an energetic and visionary supporter of Ohio's Third Frontier Network, Ohio's Supercomputer Center and computational sciences in Ohio; and

NOW, THEREFORE,

BE IT RESOLVED: the Ohio Board of Regents endorses the creation of the Ralph Regula School of Computational Science as a statewide "virtual" school, based at the Ohio Supercomputer Center, and encourages Ohio colleges and universities, public and independent, to work with the School to provide Ohio students with the most advanced possible education and employment opportunities in computational science.

BACKGROUND

Ralph Regula School of Computational Science

Computational science, the field of study that focuses on using sophisticated computer models and simulations to solve challenging scientific and engineering problems, has the potential to transform Ohio's economy as business and industry learn to employ powerful computational tools to develop new products, processes, and services.

The power of computational science can be illustrated by looking at the automotive industry. Until a few years ago, manufacturers developed new vehicles through an iterative process that started with computer aided design and progressed through the testing of a series of expensive, hand-built physical prototypes. Now, manufacturers are using high-end computer software, as well as leading edge computers, to skip most or all of the physical prototype stage and instead test vehicles by simulating their performance on the computer. This computational science approach, which is vastly more complex than simple computer-aided design, saves huge sums of money and sharply cuts time to market. Unfortunately, only the largest businesses today have the resources—software tools, high performance computers, and especially skilled technicians, scientists and engineers—to take advantage of this dramatic change in the development of products and services.

As the power of simulation and modeling moves from a few large businesses to smaller and medium-sized organizations, the Ralph Regula School of Computational Science will take the lead in meeting the need for skilled personnel (the Ohio Supercomputer Center is working on the related issues of software tools and availability of high end computers).

The Ralph Regula School will not offer degrees or certificates on its own—in all cases this will be done by participating colleges and universities. Instead, it will tap the expertise of Ohio's colleges and universities:

- to develop and maintain curricula for degree programs and certificates;
- to assist (with the help of the Ohio Learning Network) in using technology to deliver courses and programs in the most convenient and effective way for students;
- to ensure that the flow of knowledge is two-way, so that insights gained from the workplace enter the curriculum as quickly as possible; and
- to support innovative ideas for strengthening program effectiveness, such as a Computational Co-Op program that would make it easier for students to work directly with business and industry while actively pursuing a degree.

The final organizational structure of the Ralph Regula School of Computational Science will be determined as participants work together over the coming months. It is expected, however, that the RRSCS will have its administrative home at the Ohio Supercomputer Center and that it will work closely with the

Ohio Learning Network. Regents' staff, as is typical with new undertakings of this sort, will have a very active role in the planning and development stages. The staff will provide the Board with regular reports on the RRSCS' progress and further actions by the Board may be necessary.