

Introduction to Volume 7 Issue 1

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Forward

This issue presents articles that provide a theoretical basis for computational science education as well as some practical tools that can be used in those endeavors. In addition there are two student articles detailing the results of their learning experiences.

The article by Osman reviews the relationships between modeling and simulation and the literature on cognitive psychology. He goes on to discuss a training program for K-12 STEM educators and the impacts of that training on instructional uses of modeling and simulation in their classrooms.

The article by Gordon, Cervenec, and Durand discuss the release of a curriculum focused on teaching urban hydrology concepts using a combination of physical and computer models. Links are provided to the curriculum and a web-based water runoff model along with exercises that can be implemented in the classroom.

Viera, Penmetcha, Magana, and Matson provide a framework for assessing the design of computer learning experiences. It was applied to an exercise using robotics and provides an approach to gauging the success of that exercise.

There are two articles detailing the projects and impacts of student internships. The article by Catlett and Toth focuses on the revision of a parallel computing learning experience tied to the Blue Waters Internship program. The article by LePain and Durach discusses the simulation that calculates electromagnetic fields in a nanostructure. Their work was also supported by the Blue Waters Internship program as well as support from Georgia Southern University.