BEST OF RESPECT 2016

6 Guest Editors’ Introduction
Adrienne Decker and Kurt Eiselt

8 Does a Taste of Computing Increase Computer Science Enrollment?
Steven McGee, Randi McGee-Tekula, Jennifer Duck, Ronald I. Greenberg, Lucia Dettori, Dale F. Reed, Brenda Wilkerson, Don Yanek, Andrew M. Rasmussen, and Gail Chapman

The Exploring Computer Science (ECS) high school curriculum is designed to foster deep engagement through equitable inquiry around computer science concepts. A study shows that students find ECS courses personally relevant, are increasing their expectancies of success and perceived value for the field of computer science, and are more likely to take another computing course.

20 A Framework for Levels of Student Participation and Stages of Relevant Curriculum
Helen H. Hu and Patricia B. Campbell

After seven instructors adopted POGIL activities for first-year CS courses, students were significantly more comfortable with computers but not more interested in taking CS classes. This led to the development of a framework to make classrooms more inclusive and curricula more relevant. This framework increased instructors’ interest to make their course content more relevant.

30 Multiple Factors Converge to Influence Women’s Persistence in Computing: A Qualitative Analysis
Wendy DuBow, Alexis Kaminsky, and Joanna Weidler-Lewis

Previous research has suggested that access and exposure to computing, social supports, preparatory privilege, a sense of belonging in computing, and a computing identity all contribute to women pursuing computing as a field of study or intended career. A recent study explores what helps young women persist in computing despite the obstacles they encounter.

40 Exploratory Research to Expand Opportunities in Computer Science for Students with Learning Differences
Sarah Wille, Jeanne Century, and Miriam Pike

The computer science (CS) education field is engaging in unprecedented efforts to expand learning opportunities in K–12 CS education, however, one group of students is often overlooked: those with specific learning disabilities and related attention deficit disorders. As CS education initiatives grow, K–12 teachers need research-informed guidance to make computing more accessible for students who learn differently.

HIGH-PERFORMANCE COMPUTING

52 With Extreme Computing, the Rules Have Changed
Jack Dongarra, Stanimire Tomov, Piotr Luszczek, Jakub Kurzak, Mark Gates, Ichitaro Yamazaki, Hartwig Anzt, Azzam Haidar, and Ahmad Abdelfattah

On the eve of exascale computing, traditional wisdom no longer applies: high-performance computing is gone as we know it. A range of new algorithmic techniques is emerging in the context of exascale computing, many of which defy the common wisdom of HPC and are considered unorthodox but could turn out to be a necessity in the near future.

For more information on these and other computing topics, please visit the IEEE Computer Society Digital Library at www.computer.org/csdl.
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