



Best of RESPECT 2016

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Welcome to this special issue of *Computing in Science & Engineering* showcasing the best of the RESPECT 2016 conference. RESPECT 2016 is the second conference focused on Research on Equity and Sustained Participation in Engineering, Computing, and Technology to be hosted by the IEEE Special Technical Community on Broadening Participation. We had the privilege of being program co-chairs for this event in its second year, and we were very lucky to have a good number of high-quality submissions showcasing the great research happening around broadening participation in computing and related disciplines.

It isn't new information that the growth of computing and STEM-related jobs continues, but the diversity of those inhabiting those jobs has not. Diversity in the workforce can be measured in many ways, including gender, ethnicity, sexual orientation, socioeconomic status, and persons with disabilities (physical, learning, psychological). This issue features articles that touch on these different types of diversity and the unique challenges that exist in broadening the pipeline for that spectrum of the population.

In "Does a Taste of Computing Increase Computer Science Enrollment?," Steven McGee and his colleagues look at outcomes from students engaged with the Exploring Computer Science (ECS) curriculum. Their work sought to determine if personal relevance had impacts on students wishing to continue further

study in computer science. The results show that while relevance might be important, a more important factor was whether students were left with a feeling that they could achieve success.

In “A Framework for Levels of Student Participation and Stages of Relevant Curriculum,” Helen Hu and Patricia Campbell detail the results of incorporating POGIL (Process-Oriented Guided Inquiry Learning) into classrooms. The authors found that simply changing methodology in the classroom often isn’t enough to promote inclusivity and that certain steps might need to be made to ensure a productive experience. In the second offering of the course, instructors considered not just the pedagogical and POGIL issues but also how to increase the relevance of the exercises to students, which could ultimately lead to increased engagement with more diverse students.

In “Multiple Factors Converge to Influence Women’s Persistence in Computing: A Qualitative Analysis,” Wendy DuBow, Alexis Kaminsky, and Joanna Weidler-Lewis present the results of a qualitative analysis of 64 in-depth interviews with young women who expressed interest in computing by looking into NCWIT’s Aspirations in Computing Award while they were in high school. The interviews spanned three years and followed these young women as they chose paths either into or out of computing disciplines. The study found that students with multiple and redundant support as well as a bolstered sense of belonging were the most likely to persist.

Finally, in “Exploratory Research to Expand Opportunities in Computer Science for Students with Learning Differences,” Sarah Wille, Jeanne Century, and Miriam Pike tackle the difficult problem of engaging and teaching computing concepts to students with learning disabilities and/or attention deficit disorders. With the push to bring CS For All into all K–12 schools, this is a hidden, underrepresented group in computing and an important one to recognize. With a focus on the new Advanced Placement (AP) Computer Science Principles curriculum, this study gives exemplars of how to modify lessons for this group and recommendations for how to make sure lessons are inclusive.

The articles in this issue represent a unique and important snapshot of the work currently being done to broaden participation in computing and related disciplines. It’s our hope that work like

this will continue and even more researchers will participate in venues such as RESPECT to showcase the work happening in this rapidly growing and important area of computing education. ■

Acknowledgments

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