Research Issues Around Preparing Computing Educators

Mark Guzdial, Professor & Computing Education Researcher
Georgia Institute of Technology

Abstract: Preparing teachers to teach computing is more than a matter of re-purposing existing courses for computer science majors. The tasks, knowledge, and skills of a CS teacher are dramatically different than that of a software developer. To meet the worldwide need for computing teachers, we must design new kinds of learning opportunities that address the needs of teachers. In this talk, I review research questions being asked about public policy, strategies for teaching and learning, and how to develop sustainable infrastructure for computing education, like teacher professional development.

Bio: Mark Guzdial is a professor in the School of Interactive Computing in the College of Computing at Georgia Institute of Technology. He studies how people come to understand computing and how to make that more effective. He leads the CSLearning4U project to create ebooks that help high school teachers learn computer science. Along with UMass Amherst professor emeritus Rick Adrion, Guzdial is a principal investigator for Expanding Computing Education Pathways (ECEP), a National Science Foundation (NSF) Broadening Participation in Computing Alliance (BPC-A), which seeks to increase the number and diversity of students in the pipeline to computing and computing-intensive degrees by promoting state-level computer science education reform. Guzdial invented “Media Computation,” which uses media as a context for learning computing. With his wife and colleague, Barbara Ericson, he received the 2010 Association for Computing Machinery (ACM) Karl V. Karlstrom Outstanding Educator award. He is an ACM Distinguished Educator and a Fellow of the ACM.