



Association for
Computing Machinery

Advancing Computing as a Science & Profession

NEWS RELEASE

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Computer Science Educators from around the World to Present Latest Research at SIGCSE 2018 Symposium

“CS for ALL” and Surging Enrollments Take Center Stage at this Year’s Gathering

New York, NY, February 7, 2018 – The Association for Computing Machinery’s Special Interest Group on Computer Science Education (ACM SIGCSE) will hold its 49th annual [SIGCSE Technical Symposium](#) in Baltimore from February 21-24, 2018. SIGCSE is the largest computing education conference in the world and will attract more than 1,500 participants this year for leading-edge research in computer science pedagogy, discussion of the field’s challenges, sharing of best practices, and advocacy. This year, SIGCSE will showcase the largest program in its history, with 17 parallel tracks covering a broad array of computing education topics in K-12 and higher education.

“The theme for SIGCSE 2018 is CS for All,” explains SIGCSE Symposium Co-chair Tiffany Barnes of North Carolina State University. “We encouraged research submissions that offer ideas on broadening participation and diversity, pedagogies that assist underrepresented groups, or novel outreach and engagement strategies. We are delighted that this year [RESPECT 2018](#), the conference on Research on Equity and Sustained Participation in Engineering, Computing and Technology, will be co-located with the SIGCSE Symposium.”

“The SIGCSE program always reflects the most pressing issues in the field,” adds Symposium Co-chair Dan Garcia of the University of California, Berkeley. “This year, the enrollment surge in computer science at colleges and universities is a major topic in the field, and SIGCSE 2018 reflects that. Some of the presentations address practical considerations faced by educators, such as how to effectively assess student work in the face of burgeoning class sizes. At the same time, educators are trying to meet student demand for new courses in emerging areas such as artificial intelligence and data science. As a consequence, our program includes presentations on model curricula in these areas as well as best practices for introducing new coursework.”

Presentations of research findings, research posters, panel discussions, special session and workshops will focus on computing education tailored to higher education, K-12/novice learners, diversity, advanced topics, and learning/instructional styles.

SIGCSE 2018 HIGHLIGHTS:

Keynote Speakers

- ***Brenda Darden Wilkerson, President and CEO, AnitaB.org***
“The Evolution before the Revolution”

Wilkerson founded the original Computer Science for All initiative in the Chicago Public Schools. In her keynote, Wilkerson will show how educators can expect to reap the fruits of their labor and will spotlight the historic role of women and people of color in technology and computer science.

- ***Eric Roberts, Charles Simonyi Professor of Computer Science (emeritus), Stanford University***
“Teaching Computer Science in a Time of Opportunities and Challenges”

Roberts is being awarded the 2018 SIGCSE Award for Lifetime Service to the Computer Science Education Community, for outstanding service to computing education, making significant contributions to computing curricula and pedagogy, and generously sharing his knowledge and wisdom through mentoring and guidance to others in the computing education community. For his keynote, Roberts argues that academic computer science is at a critical juncture that offers both challenges and opportunities. He will offer advice on how to make the most of the opportunities that are intrinsic to teaching in such a vibrant field.

- ***Tim Bell, Professor, Department of Computer Science & Software Engineering, University of Canterbury, New Zealand***

“What’s the Big Idea with CS Education in K-12?”

Bell is being awarded the 2018 SIGCSE Award for Outstanding Contribution to Computer Science Education, for significant and lasting impact on computing education internationally through the development of innovative resources and activities, such as "CS Unplugged," that inspire and engage students and teachers at all educational levels. His Computer Science Unplugged project is widely used internationally, and the supporting materials (books and videos) have been translated into more than 20 languages. In his keynote, Bell will explore reasons why young students should become engaged with computer science, illustrated using an Unplugged perspective.

- ***Ruthe Farmer, Chief Evangelist, CSforAll Consortium***
“CS for ALL: Nodes and Networks for National Impact”

Farmer was Senior Policy Advisor for President Obama’s Computer Science for All initiative. In her keynote, Farmer will offer examples and opportunities for all SIGCSE attendees to contribute to the CS for ALL movement and become nodes in the distributed national network of organizations and initiatives that will make CS for ALL a reality.

Best Paper Awards

The SIGCSE 2018 Program Chairs selected three [three best papers, first, second, and third, from each of the three paper tracks](#) for their accomplishment of high quality, novelty and broad appeal to reviewers. Here we list the top paper from each track.

- **CS Education Research BEST PAPER**

“The Persistent Effect of Pre-College Computing Experience on College CS Course Grades”

By Christine Alvardao, Gustavo Umbelino, and Mia Minnes

The authors conducted a study to determine whether grade differences exist between students who have pre-college experience vs. those who don't. Among other findings, they found that students who took AP Computer Science received significantly higher average grades, by up to a half-grade.

- **Experience Reports and Tools BEST PAPER**

“Computational Thinking for All: An Experience Report on Scaling up Teaching Computational Thinking Skills to All Students in a Major City in Sweden”

By Fredrik Heintz and Linda Mannila

Heintz and Mannila followed a three-year effort to train teachers (grades 1-9) in techniques for imparting programming and computational thinking concepts to their students.

- **New Curricula, Programs, Degrees, and Position Paper BEST PAPER**

“Upward Mobility for Underrepresented Students: A Model for a Cohort-based Bachelor's Degree in Computer Science”

By Sathya Narayanan, Kathryn Cunningham, Sonia Arteaga, Joe Welch, Leslie Maxwell, Zechariah Chawinga, and Bude Su

The authors discuss how CSin3, a cohort-based, three-year computer science Bachelor's degree program, has increased graduation rates of students from groups traditionally underrepresented in computer science.

[The full SIGCSE 2018 program is available here.](#)

About the SIGCSE Technical Symposium

The [SIGCSE Technical Symposium](#) is SIGCSE's flagship conference. It has been held annually in February or March in the United States since 1970. We look forward to our 50th SIGCSE Symposium in 2019, where we expect over 1500 to attend. The symposium provides a diverse selection of technical sessions and opportunities for learning and interaction.

About SIGCSE

The [Special Interest Group on Computer Science Education](#) of the Association for Computing Machinery (ACM SIGCSE) is a community of approximately 2,600 people who, in addition to their specialization within computing, have a strong interest in the quality of computing education. SIGCSE provides a forum for educators to discuss the problems concerned with the development, implementation, and/or evaluation of computing programs, curricula, and courses, as well as syllabi, laboratories, and other elements of teaching and pedagogy.

About ACM

ACM, the Association for Computing Machinery (www.acm.org), is the world's largest educational and scientific computing society, uniting computing educators, researchers and professionals to inspire dialogue, share resources and address the field's challenges. ACM strengthens the computing profession's collective voice through strong leadership, promotion of the highest standards and recognition of technical excellence. ACM supports the professional growth of its members by providing opportunities for life-long learning, career development and professional networking.

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