

SIGCSE FY16 Annual Report
July 2015 - June 2016
Submitted by: Susan H. Rodger, Chair 2013-2016

This report concludes my final year as SIGCSE Chair. I want to thank the members of the 2013-2016 SIGCSE Board: Paul Tymann, Vice-Chair, Judy Sheard, Secretary, Amber Settle, Treasurer, Renee McCauley, Immediate Past-Chair, Tiffany Barnes, Sue Fitzgerald and Alison Clear. I'd also like to thank our publication editors: John Impagliazzo, Mark Bailey, Laurie Smith-King, Leo Porter, Maureen Doyle, Dave Kauchak and Christine Alvarado, and our ACM contacts Irene Frawley and April Mosqus for their support.

SIGCSE Mission Statement:

SIGCSE is to provide a forum for educators to discuss issues related to the development, implementation, and/or evaluation of computing programs, curricula, and courses, as well as syllabi, laboratories, and other elements of teaching and pedagogy.

1. Awards that were given out:

The SIGCSE Award for Outstanding Contribution to Computer Science Education was presented to Jan Cuny, Program Officer of CISE BPC at the National Science Foundation, for her vision and principled leadership that has transformed computer science education and has moved the United States closer to making computing education accessible to everyone.

The SIGCSE Award for Lifetime Service to the Computer Science Education Community was presented to Barbara Boucher Owens, Emeritus Professor of Computer Science from Southwestern University, for her extraordinary record of service to the computing education community for working relentlessly to grow the effectiveness of SIGCSE as a global leader in computer education.

2. Significant papers on new areas that were published in proceedings

ICER 2015 had two best paper awards. The Chair's award is selected by the organizing committee and was presented to:

Briana B. Morrison, Lauren E. Margulieux, and Mark Guzdial. Subgoals, Context, and Worked Examples in Learning Computing Problem Solving, ICER '15, Proceedings of the eleventh annual conference on international computing education research, pages 21-29, 2015.

The ICER 2015 John Henry Award is selected by the conference delegates and was presented to:

Kristin A. Searle and Yasmin B. Kafai, Boys' Needlework: Understanding Gendered and Indigenous Perspectives on Computing and Crafting with Electronic Textiles,

ICER '15, Proceedings of the eleventh annual conference on international computing education research, pages 31-39, 2015.

The best paper selected at ITiCSE 2016 was:

Suzanne Dazo, Nicholas Stepanek, Robert Fulkerson and Brian Dorn, University of Nebraska at Omaha, USA, An Empirical Analysis of Video Viewing Behaviours in Flipped CS1 Courses, 21st Annual Conference on Innovation in Computer Science Education (ITiCSE), p. 106-111, 2016.

Two papers at ITiCSE 2016 were given Commendation Best Paper:

Veronica Catete, Tiffany Barnes and Erin Snider, Developing a Rubric for a Creative CS Principles Lab, 21st Annual Conference on Innovation in Computer Science Education (ITiCSE), p. 290-295, 2016.

Jennifer Campbell, Diane Horton, and Michelle Craig, Factors for Success in online CS1, 21st Annual Conference on Innovation in Computer Science Education (ITiCSE), p. 320-325, 2016.

One paper at ITiCSE 2016 was given a Commendation Best Presentation:

Andrew Luxton-Reilly, Learning Programming is Easy, 21st Annual Conference on Innovation in Computer Science Education (ITiCSE), p. 284-289, 2016.

The best paper selected at SIGCSE 2016 was:

Leo Porter, Beth Simon, University of California, San Diego; Dennis Bouvier, Southern Illinois University, Edwardsville; Quentin Cutts, University of Glasgow; Scott Grissom, Grand Valley State University; Cynthia Lee, Stanford University; Robert McCartney, University of Connecticut; and Daniel Zingaro, University of Toronto, Mississauga; A Multi-institutional Study of Peer Instruction in Introductory Computing, Forty-seventh SIGCSE Technical Symposium on Computer Science Education, p. 76-81, 2016.

3. Innovative programs which provide service or broadened participation to some part of your technical community

SIGCSE Special Projects Fund provides grants up to \$5000 per project and has calls in November and May each year. The November 2015 call funded three projects for a total of \$10,337. One award was made to David Musicant of Carleton College for \$4,737 for developing a new Git client named Elegit that is a subset of Git commands to help students understand Git's organizational structure. A second award was made to Daniel Krutz of Rochester Institute of Technology for \$2,400 for creating a publicly accessible oracle of mobile apps which contain well-defined vulnerabilities and steps on how to exploit each vulnerability. A third award was made to Bruce Maxim of the University of Michigan-Dearborn for \$3,200 for creating a serious game that allows students to create agile process models and to experiment with process improvement practices.

The May 2016 call funded three projects for a total of \$11,451. One award was made to Richard Ladner at the University of Washington for \$4,064 for making Block Languages

accessible to blind children by extending the open source Blockly language and building on touchscreen phone applications. A second award was made to Mark M. Meysenburg at Doane University for \$3000 for creating a role-playing game on Charles Babbage and the Difference Engine to encourage students to study computing. A third award was made to Chun Wai Liew at Lafayette College for \$4,387 to develop a web based tutoring system to help students learn top-down insertion and deletion algorithms in balanced trees, specifically red-black trees.

ITiCSE 2016 had seven working groups on the topics of 1) Latin American Perspectives to Internationalize Undergraduate Information Technology Education, 2) Game Development for Computer Science Education, 3) Teaching Model-Driven Software Development, 4) Ground Rules for Academic Integrity in Computing, 5) Gender Equity in Computing Programs, 6) Novice Programmers and the Problem Description Effect, and 7) Game Jam Junior. Many of the working groups start projects that continue collaborations.

We held the second New Educator's Workshop on Wednesday March 2, the day before the SIGCSE Symposium 2016, organized by Andrea Danyluk and Dave Reed. This workshop will be held every other year at the SIGCSE Symposium. In 2014 there were ten participants. In 2016 this workshop had a much larger attendance with thirty-five participants (graduate students and faculty) and seven speakers including the organizers. SIGCSE provided travel grants for eleven of the graduate student attendees, and the food for participants.

On alternate years, the SIGCSE Board runs a workshop for future or present Department Chairs the day before the SIGCSE Symposium. The next such workshop will be held at SIGCSE 2017.

The 2016 SIGCSE Symposium held twenty-nine three-hour workshops for professional development. In addition, the SIGCSE Symposium provided the meeting space for ten pre-symposium events for educators that included the SIGCSE Sponsored New Educator's Workshop, Web Development with the MEAN Stack, Pogil Activities, Fulbright for CS Education, Posse Roundup, SIGCAS Workshop, Computing Principles and Computation Exemplars from China, Creating Classroom Activities, Computing Ethics, and Teaching in K-12.

A Doctoral Consortium was run by Mark Guzdial and Anthony Robins on August 9, 2015, the day before ICER 2015 and attended by twenty graduate students in computer science education and five discussants. SIGCSE provided travel grants to the graduate students. The students presented their work at the workshop and also at the conference.

SIGCSE has a Travel Grant Program for faculty who have never attended the SIGCSE Symposium. Five awards were made for SIGCSE Symposium 2016 that included two high school teachers and one international member.

SIGCSE provides grants to non-ACM conferences that are in-cooperation with SIGCSE to bring one or more speakers from a recent SIGCSE Symposium, ITiCSE or ICER conference to repeat their presentation. Grants were provided for three conferences

this past year. The 22nd Annual Consortium for Computing Sciences in Colleges Central Plains Conference (CSCC-PC) received a grant for Libby Shoop and Joel Adams to present a Pre-Conference Workshop entitled "Teaching Parallel and Distributed Computing with MPI" on April 1-2, 2016. The 21st Western Canadian Conference on Computing Education (WCCCE) 2016 received a grant for Dan Garcia to give a Keynote entitled "Transforming High School Computer Science: The Beauty and Joy of Computing (BJC)" on May 6-7, 2016. The Twenty-Third Annual Conference of the Midwest region of the Consortium for Computing Sciences in Colleges (CCSC-MW 2016) received a grant for October 2016 for two speakers, "Modality Matters: Understanding the Design of Introductory Programming Environments" by David Weintrop and "Beyond Code: Progressing from Plain Text to Blocks Based Computing" by Jens Monig.

4. **2-3 Key Issues for the next few years:**

One key issue is the growth of our smallest conference of computer science education researchers, ICER. In August 2015, ICER had its largest attendance ever with around 120 attendees and 20 participants in the Doctoral Consortium that was held the day before ICER. We hope to continue to grow this conference and to support those graduate students in computer science education research.

A second issue is growing computer science education around the world. We are looking at several issues on this theme. A) In Europe, SIGCSE is working with several other organizations (ACM-Europe, Informatics Europe) and conferences (WiPSCE, ISSEP, CSERC, and possibly others) on creating a computing education conference or a federated conference in Europe in the future. B) ITiCSE was held in Europe for its first twenty years, but in 2016 it was held in Arequipa, Peru. By going to Peru we have generated interest from several other countries who would like to host an ITiCSE conference, including India, China and Canada. We have decided to keep ITiCSE in or near Europe for the next five years, but are considering creating a new ITiCSE-like conference that would go around the world.

5. **SIGCSE's Volunteer Development Process**

SIGCSE's volunteers are recruited at conferences and on the SIGCSE listserv. Board members all attend the annual SIGCSE Symposium and encourage attendees to consider volunteering in some way. At SIGCSE.org we have a volunteer signup page with a list of SIGCSE positions that one can express interest in. New volunteers are chosen from this list. Volunteers for a particular role are trained by the person previously in that role. Many of our positions are overlapping rotating positions such as for the SIGCSE Bulletin where two people work together, one experienced and one new.