



Contents

SIGCSE News in Brief	1
SIGCSE Board Chair Welcome	2
The Growth of Computing Education Doctoral Research.....	3
ICER 2016 Review	4
Highlights of Broadening Participation Research at RESPECT'16	5
MEMBER SPOTLIGHT	6
SIGCSE 2017 Chairs Roundtable ...	7
Deadline SIGCSE.....	8

Notice to Contributing Authors to SIG Newsletters

By submitting your article for distribution in this Special Interest Group publication, you hereby grant to ACM the following non-exclusive, perpetual, worldwide rights:

- to publish in print on condition of acceptance by the editor
- to digitize and post your article in the electronic version of this publication
- to include the article in the ACM Digital Library and in any Digital Library related services
- to allow users to make a personal copy of the article for noncommercial, educational, or research purposes

However, as a contributing author, you retain copyright to your article and ACM will refer requests for commercial use directly to you.

SIGCSE News in Brief

With an exciting summer of conferences coming to an end, in this October issue of the Bulletin we discuss many of the summer highlights and upcoming community changes. We begin with a welcome from the new SIGCSE board chair – Amber Settle.

Three successful conferences occurred this summer including ITiCSE, ICER, and RESPECT. In case you missed them we have retrospectives from the conference chairs which summarize the events for ICER (p. 4) and RESPECT (p. 5). The ITiCSE retrospective will be in our January bulletin. We also give a preview of the upcoming Department Chairs Roundtable to be held in conjunction with SIGCSE 2017.

One of the major shifts in our community is the rapidly growing community of Ph.D. students focused on computer science education research. A hallmark of this growth is the growth of the Doctoral Consortium held in conjunction with ICER (p. 3).

Finally, our member spotlight this issue is on outgoing SIGCSE Bulletin co-editor David Kauchak. We thank him for his service and encourage you to read more about his involvement in SIGCSE (p. 6). We hope the fall term is going well for you and you have travel for SIGCSE 2017 (March 8-11, Seattle, WA) already in mind.

Newsletter Credits

- Editors: Maureen Doyle, and Leo Porter
- Contributors: Tiffany Barnes, Leo Porter, Mary Lou Maher, Jamie Payton, Anthony Robins, Amber Settle, R. Benjamin Shapiro, Judy Sheard
- Photo credits: Brian Dorn, Evis Mezini, Ben Shapiro, Judy Sheard

SIGCSE Board Chair Welcome

By Amber Settle, SIGCSE Board Chair

As of July 1, 2016 the SIGCSE membership elected a new Board, and as the new Chair I'm excited to begin work. I'm happy to welcome back Judy Sheard, Sue Fitzgerald, and Susan Rodger and pleased to have Adrienne Decker, Michelle Craig, Briana Morrison, and Mark Weiss join us. Although not voting members of the Board, we're also looking forward to all that Maureen Doyle and Leo Porter will bring as co-editors of the SIGCSE Bulletin.

The new Board has many things to consider in the next three years. Chief among them is guiding the direction of our conferences. The SIGCSE Symposium is the biggest and serves a broad cross-section of people. Making sure that the needs of existing constituencies are met while also allowing for growth and outreach to new groups is an on-going challenge.

The ITiCSE conference will be back in Europe for the near future after a successful conference in Peru in July. There is strong global interest in SIGCSE, especially in emerging countries like India and China, but our outreach to new areas cannot come at the cost of our dedicated ITiCSE attendees.

Finally, the computing education research community is growing, which has resulted in strong interest in ICER in the past several years. The resulting competitive acceptance rates are good thing for the conference and community. But maintaining the unique nature of ICER while also finding outlets for all the quality research produced by our community will require new ideas.

Of course, overseeing conferences is only part of what the Board does. Other important issues include fostering the development of computing education doctoral students, ensuring that computing education practitioners find value in our community, supporting access to our conferences for students, and finding ways to promote computing education at the K-12 level in multiple countries around the world.

The main purpose of the SIGCSE Board is to represent the interests of you, the SIGCSE membership. To address all of the issues mentioned above, as well as to recognize others that need attention, we need to hear from you. Please contact me or another member of the new Board if you have ideas on anything that SIGCSE can or should do:

<http://sigcse.org/sigcse/about/board>. We want to know what you find important and what you think will help the SIGCSE community evolve.

And since the SIGCSE community is only as strong as its (many) volunteers, we encourage you to let us know how you want to help. You can find ideas for how to get involved with SIGCSE on the Get Involved page of the web site: <http://sigcse.org/sigcse/membership/get-involved>. If something catches your eye, please complete a volunteer form.



Amber Settle,
SIGCSE Board Chair



Participants in the ICER 2016 Doctoral Consortium (photo Ben Shapiro)

The Growth of Computing Education Doctoral Research

By Anthony Robins and R. Benjamin Shapiro

Computer Science has been experiencing rapid growth in undergraduate and K-12 participation. This growth underscores the need for an improved understanding of the teaching and learning of computing topics, or in other words for progress in Computer Science Education (CSEd) and Computing Education Research (CER).

As noted in a recent *Computing Research Association* white paper: “Parallel to increased CER faculty support and building up CER as a research area, fostering a healthy community of CER doctoral students is important” [1]. Anecdotal evidence suggests that the number of doctoral students is indeed increasing. From a similarly recent report of a panel discussion: “A number of universities have determined that this is a good time to invest in CER; there is a strong crop of new PhDs in the field...” [2].

One indirect measure of the growth of CER at a doctoral level is the growing popularity of the Doctoral Consortium (DC) associated with the *International Computing Education Research (ICER)* conference. Table 1 shows the number of students attending every DC since they began in 2008. For the two most recent years the number of applicants is also shown in brackets (not all applicants are

accepted or eventually able to attend). The table also shows the location of the conference, which alternates between the USA and other countries.

Table 1. ICER DC Participation

Year	Location	Total	DC
2016	Melbourne	84	17 (20)
2015	Omaha	118	20 (28)
2014	Glasgow	84	17
2013	San Diego	78	12
2012	Auckland	61	15
2011	Providence	67	7
2010	Arhaus	38	5
2009	Berkeley	51	3
2008	Sydney	56	9

While the consortium numbers must be seen in the context of the growth of the conference itself, it is clear that we hit an inflection point around 2012, with continued signs of growing interest. The consortium numbers are particularly pleasing given that conferences outside the USA tend to be smaller. Based on the experience of the ICER Doctoral Consortium, it appears that CER doctoral research is undergoing a most timely and welcome renaissance.

References

- [1] Cooper S., Forbes J., Fox A., Hambrusch S., Ko A., & Simon B. (2016). The Importance of Computing Education Research: A white paper prepared for the Computing Community Consortium committee of the Computing Research Association. <http://cra.org/ccc/resources/ccc-led-whitepapers/>
- [2] Libeskind-Hadas R., Franklin D., Guzdial M., Klemmer S., Ko A., & Shapiro R. B. (2016). Why CS Departments Should Embrace Computing Education Research. <http://cra.org/cs-departments-embrace-computing-education-research/>

ICER 2016 Review

By Judy Sheard

The 12th International Computing Education Research conference was held in early September in Melbourne, Australia. The conference venue was downtown in the Monash University Law Building. At ICER this year we had a record number of submissions (102), highest attendance ever in Australasia and second highest overall. ICER is in a healthy state and is growing!



ICER 2016 Conference Dinner (photo Judy Sheard)

A great start to the conference was the keynote presentation by Richard Buckland of the University of New South Wales. Richard encouraged us to transform our practice to teach in the affective domain. His lively presentation finished with a magic trick. Keeping with the ICER tradition the conference was single track with plenty of opportunity for lively discussion.

The conference dinner was held in the middle of the Melbourne Zoo. A walk along a winding path led to the Bong Su room where people dined and competed enthusiastically in a quiz to identify famous people from the world of computing. There were a variety of interesting and thought provoking papers presented. Two



ICER 2016 Chair's Award (photo Brian Dorn)



ICER 2016 John Henry Award (photo Brian Dorn)

papers deserve special mention. The Chairs' Best Paper Award was presented to Alex Lishinski, Aman Yadav, Jon Good, and Richard Enbody, from Michigan State University. Their paper, "Learning to Program: Gender Difference and Interactive Effects of Motivation, Goals, and Self-Efficacy on Student Performance" reports a study that investigated aspects of self-regulated learning in a single unified model. The paper makes some new and important observations about how self-efficacy influences student performance in programming and how students 'self-correct' their self-efficacy estimates over time. Their study revealed some interesting differences based on gender.

The John Henry Award for the paper that in the judgement of the conference participants attempts a task that may seem impossible and pushes "the upper limits of our pedagogy" was presented to Elizabeth Patitsas, Jesse Berlin, Michelle Craig, and

Steve Easterbrook from the University of Toronto for their paper “Evidence that Computer Science Grades are not Bimodal”. As is traditional with this award Elizabeth was presented with a “typical” local hat, an Australian bushman’s hat – complete with swinging corks.

An important event associated with ICER is the Doctoral Consortium. This year Anthony Robins and Ben Shapiro assisted by five discussants convened the Consortium on the day before the conference. Seventeen students participated and then presented their work at two dedicated poster sessions during the conference.

Prior to ICER, 10 people participated in an NSF funded workshop “Understanding and Propagating the Essence of Successful CS Education Research Projects” (UP CS Ed) that explored the space for successful CS Education projects. Post ICER, 9 people attended the now established Work in Progress workshop receiving in-depth feedback on their proposals for computing education research projects from the conveners, Colleen Lewis and Sally Fincher.

At the beginning of spring the weather in Melbourne is variable but there were some fine days either side of the conference for sightseeing. Conference attendees enjoyed exploring Melbourne’s laneways packed with restaurants and coffee shops, the Yarra river precinct, Federation Square, the Port Phillip Bay area, and the many parks and gardens surrounding the city. Others took excursions to the scenic Great Ocean Road, Phillip Island to see the penguins, and Healesville Sanctuary to see our wonderful Australian animals.

We look forward to ICER 2017 in Tacoma Washington in 17-21 August next year!

Highlights of Broadening Participation Research at RESPECT’16

By Tiffany Barnes and Jamie Patent, RESPECT General Chairs

RESPECT’16, the second international conference of the IEEE Computer Society Special Technical Community on Broadening Participation, was held this August in conjunction with the STARS Celebration in Atlanta, GA.

Themes from the conference provide research and experience reports on efforts to broaden participation (BP) in computing. This year, several research papers examined high school computing interventions, including Computer Science Principles (the new Advanced Placement course), NCWIT’s Aspirations in Computing program, and Chicago’s “A Taste of Computing.” Several papers addressed lessons learned and methods and tools for improving participation of students with disabilities or learning differences. Others reported on ways to support faculty careers and help them design sustainable interventions and curricular pathways that promote equity. Still others investigated boot camps, STEAM interventions, Kodu, and MineCraft – and what universities should NOT do when facing our current enrollment boom. The RESPECT’16 proceedings are published in IEEE Xplore and the ACM Digital Library.

RESPECT’16 was made possible by NSF grant no. 1042372, the STARS Computing Corps, technical co-sponsorship by IEEE Computer, and in-cooperation status with ACM SIGCSE. The IEEE Computing in Science and Engineering journal will publish a 2017 Special Issue on The Best of RESPECT for peer-reviewed contributions by RESPECT’16 authors.

MEMBER SPOTLIGHT

In this feature of the Bulletin, we highlight members of the SIGCSE community. In this issue, Bulletin co-editor Maureen Doyle interviewed David Kauchak, outgoing SIGCSE Bulletin co-chair.

MD: How did you first get involved with the CS education community?

DK: For both undergraduate and graduate school, I went to big state schools and didn't make much of an effort to explicitly learn about teaching and education (which I regret!). When I started my first full-time teaching position as a visiting assistant professor at Pomona, I became aware of SIGCSE from some of my colleagues and was excited to see people making an active effort towards better educational practices. That spring, I attended my first SIGCSE symposium in Milwaukee, WI.

MD: What have you learned since getting involved with the CS education community?

DK: For me, sometimes it's easy to forget that there is a lot going on outside of my little bubble (whether that bubble is the department, college, country, research community, etc.). One thing I really grew to appreciate was that people everywhere are struggling with many similar issues, regardless of institution type and location.

In a similar vein, I learned to be careful not to reinvent the wheel. I discovered that there are great resources being produced and made available, ranging from full courses to individual assignments to code frameworks. And, if the resources aren't available, there is a great community out there that is willing to respond to almost any question a person might have!

And of course, the conference is called the "SIGCSE Symposium", not SIGCSE :)

MD: What advice might you share to someone thinking about serving the CS education community?

DK: Do it!, but be active about it. There are many, many ways that you can get involved, either through the organization, related conferences or in some of the great initiatives that are currently going on. If you're going to put your time into it, do it with a purpose and find activities that are interesting to you and that will also benefit you.

Additionally, people often think of the CS education community and SIGCSE as synonymous. SIGCSE is a great organization and community, but there are others out there, e.g. I have also been involved with EAAI (Educational Advances in Artificial Intelligence). Look around and consider getting involved in SIGCSE, but also some of these other communities.

MD: You are currently an Assistant Professor at Pomona College in Claremont California. Would you recommend other Assistant Professors get involved with SIGCSE service? If so, why?

DK: I think the advice above should go doubly for anyone at the assistant professor level.

MD: You worked to ensure the Bulletin is now hosted on ACM's server instead of one of the co-editors, which is a great move to stabilizing it. What do you wish you had done, but didn't have time to do with the Bulletin?

DK: The most immediate would be a change in the formatting and distribution of

the Bulletin. We got some great feedback from the community, but didn't have a chance to make a formal push to change it.

I see the Bulletin as serving two key purposes. First, the Bulletin is a good distribution channel for "official" SIGCSE business and news. Second, it's an opportunity for the SIGCSE community to share information (and often these two overlap). I think we could be more aggressive in the latter, by more actively soliciting article ideas and contributions from the community.

MD: What do you enjoy doing besides being a Professor at Pomona College?

DK: I love good food and good drinks (both at home and out and about). To counteract all of the eating, I recently took up mountain unicycling.



David Kauchak (photo Evis Mezini)

SIGCSE 2017 Chairs Roundtable

By Mary Lou Maher, Chair of the Software and Information Systems Dept in the College of Computing and Informatics, UNC Charlotte.

What are the challenges that Department Chairs face? How would you design the ideal Department Chair? What are the features of a great Department Chair? What are the issues in having a poor Department Chair? The summary at the end of this article demonstrates the challenges that face anyone that takes on this critical role.

If you are a new Chair, an experienced Chair, thinking about becoming a Chair, or if you have stories to tell about awesome or terrible Department Chairs, then you should participate in this roundtable. The discussions and insights from this Roundtable should improve the quality of the Department Chair experience: whether you are a Chair or not, this session will be helpful in navigating your academic career.

The Roundtable will feature a panel of diverse and experienced Department Chairs to lead a series of design charrettes¹. The charrettes will tackle topics such as the significant administrative and personnel issues that chairs must handle; leadership and management styles, time management, legal issues, establishing priorities, and communication.

The final hour of the Roundtable will have a special focus on how to encourage the adoption of innovative teaching practices. Changes in attitudes toward teaching and learning are intertwined with the availability

¹ A design charrette is an intense period of design or planning activity, usually done in rotating small groups with focused activity on specific challenges or needs.

of new technologies that challenge faculty to change the way they teach. How can the Department Chair provide an organizational climate that encourages and rewards innovation in CS education?

Many people don't appreciate the many duties and roles that is part of the Department Chair experience. Here is a summary of the most common expectations from a Department Chair:

- Leader: visionary, internal advocate, internal intermediary, external liaison, curriculum leader, role model.

The Chair should be a transformational leader capable of creating space for change and generating consensus among the faculty.

- Administrator: fiscal overseer, schedule coordinator, report generator, staff supervisor.

The Chair monitors the department budget to ensure that the department's work is within budget. This role increasingly requires the Chair to find creative ways to extend the budgets, including external fund raising.

- Personal facilitator: counselor, coach, mediator, climate regulator.

The Chair needs to be accessible, establish relationships, and be willing to listen to concerns to create an environment that will encourage faculty productivity and harmony.

- Resource developer: faculty recruiter, faculty mentor, faculty evaluator, resource provider.

The Chair hires new department faculty, provides faculty with professional development opportunities and mentoring to ensure their professional success and retention; provides evaluations for annual merit raises, retention, promotion, and tenure decisions; and finds resources that faculty need to do their jobs.

Send questions or expressions of interest to [Mary Lou Maher](mailto:m.maher@uncc.edu), m.maher@uncc.edu.

Deadline SIGCSE

Upcoming dates you won't want to miss!

Oct 15	SIGCSE Travel Grant Applications due for 2017 Symposium http://sigcse.org/sigcse/programs/travel-grants
Oct 21	SIGCSE Symposium 2017, Birds of a Feather, Demos, Lightning Talks and Poster submissions due http://sigcse2017.sigcse.org/docs/cfp-sigcse-2017.pdf
Nov 15	SIGCSE Special Project Grant proposals due http://sigcse.org/sigcse/programs/special/
Mar 8-11	SIGCSE Symposium Seattle, Washington http://sigcse2017.sigcse.org
Jul 1-5	ITiCSE 2017 Bologna, Italy https://eventi.unibo.it/iticse2017
