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SIGCSE News in Brief

Another great SIGCSE Symposium has passed and we hope you were able to make it. If not, we have plenty of news to share regarding the Symposium including a recap of the event (p. 2), a summary of the SIGCSE Business meeting (p. 3), a spotlight on the winner of the Symposium's best paper award: Claudia Szabo (p. 4), and an article about the five recipients of the inaugural SIGCSE travel grant awards (p. 5). Thinking about SIGCSE 2015 already? Check out the information about the Department Chair's Roundtable Workshop, which will be held there (p. 7).

Beyond the Symposium, Chris Stephenson brings news from the CS Teachers Association on page 7, while Lisa Kaczmarczyk and Renee Dopplick discuss a recent ACM report that urges educators, business leaders, and public policy makers to work together to address the need for expanded and improved CS education.

Looking ahead, we bring you a preview of the upcoming ITiCSE and ICER conferences (p. 8 and 9). We hope to see you in Sweden and Scotland later this year!

Finally, in breaking news, it was just announced that SIGCSE Board Chair Susan Rodger won the 2013 ACM Karl V. Karlstrom Outstanding Educator Award. Congratulations, Susan!

SIGCSE 2014 Recap: Did you experience leverage at SIGCSE?

By John P. Dougherty and Kris Nagel

The annual SIGCSE Technical Symposium, held this year in Atlanta, Georgia USA, was once again a reliable platform for the exchange of ideas about computing and teaching. By the numbers, the conference was quite successful: 1283 registered attendees, 262 works presented as papers, panels, workshops, and a robust and busy exhibit hall with 42 vendors from around the globe.

Each of the four keynote presentations connected with their intended audience, uniquely addressing issues and actions. The SIGCSE Award winner, Bob Panoff of the Shodor Foundation, demonstrated the importance of computational thinking in scientific computing; for example, he noted that 16/64 reduces to ¼ if you simply cancel the sixes (*i.e.,* process counts). SIGCSE Lifetime Service Award winner, Andrea Lawrence of Spelman College, provided a wonderful address about mentoring to our first timers, including the many ways she and her students directly benefited from SIGCSE connections.

Bob Panoff and Andrea Lawrence at SIGCSE.
Photo credit: Cole Rodger photographics

Hadi Partovi of Code.org reviewed the current state of computing education in our classrooms, especially K-12, and invited all to participate in another round of the #HourOfCode in December 2014 for CS Education Week. He also had hats for attendees who asked questions (we are proud to note that each hat was caught!). A.J. Brush of Microsoft Research concluded the conference with a tour of how computing is found in so many more places now, including the home, motivating the need for computing education.

A brand new ACM conference, Learning at Scale, was co-located with the SIGCSE Symposium this year, providing a venue to discuss tools and their to ability to facilitate learning for an enlarging, and sometimes difficult to reach, population. We are excited that this initial offering was quite positive, providing a single program track of presentations to just under 200 attendees (including 60 who attended both conferences).

The Technical Symposium included work in computing education presented via eight parallel sessions across two and a half days of intense discussion, including novel live streaming and timely topics. Claudia Szabo of the University of Adelaide, Australia, was awarded best paper. Her work, "Student Projects Are Not Throwaways: Teaching Practical Software Maintenance in a Software Engineering Course," discusses a novel approach that uses a student codebase for a software maintenance assignment.

There were a number of presentations that explored the recent Computer Science Curricula 2013 guidelines. Other themes included explicit content involving parallelism and multi-core programming, alternatives to lecture, and emerging

technologies in education. For example, the "Experience-IT" booth in the exhibit hall showcased robots, 3D printing and Google Glass, and challenged participants to utilize these emerging technologies as tools for learning.

SIGCSE 2014 also benefitted from the generous contributions of our supporters from industry, many providing not only financial contributions but also tools and materials to further our goals in computing education. There was a very active K-12 presence, especially through the tail end of the conference. It was quite nice to see Kids' Camp at capacity as well.

There were also many more interactive panels that facilitated more dynamic conversation on a topic. One of our favorites involved a panel of students willing to share their experiences about how a disability can impact learning. And there is always the crowd favorite, Nifty Assignments, playing to a packed room of enthralled attendees.

The concluding luncheon featured a reprise of the SIGCSEngers, as well as an invitation to SIGCSE 2015 in Kansas City, Missouri, USA. We were reminded that the Kansas City for next year is not in Kansas!

SIGCSE attendees in between sessions
Photo credit: Cole Rodger photographics

SIGCSE Business Meeting Report
By Judy Sheard, Monash University, Australia, SIGCSE Board Secretary

The annual business meeting of the SIGCSE Board was held on March 7, 2014 at the SIGCSE Symposium.

Susan Rodger, SIGCSE Board Chair, introduced the SIGCSE Board members. She thanked Chairs of the Symposium, ITiCSE and ICER, past, present and future. She also thanked the editors of *ACM Inroads* and the *SIGCSE Bulletin*. Susan encouraged people to consider volunteering for one of the many jobs needed to run SIGCSE. Later in the meeting Tiffany Barnes, SIGCSE Board member, advised that an online form would be created on the SIGCSE website to make it easy for people to volunteer.

SIGCSE Board Treasurer Amber Settle presented the budget and reported a $91,605 profit for fiscal year 2013 and a small profit forecast for 2014. She announced new SIGCSE membership rates which will be effective from July 2014.

SIGCSE Board member Sue Fitzgerald reported on the SIGCSE Special Projects: http://www.sigcse.org/programs/special. Amber Settle reported on the SIGCSE Speakers Fund http://www.sigcse.org/programs/outreach and the inaugural SIGCSE Travel Grant http://www.sigcse.org/travelGrant, announcing the recipients and encouraging people to donate to the Travel Grant fund.

Finally, Becky Bates from Minnesota State University suggested a "common read" program for the SIGCSE 2015. You are invited to read one (or more) of:
- *I, Robot* by Isaac Asimov
- *Ready Player One* by Ernest Cline
- *Bellwether* by Connie Willis

Susan closed the meeting and thanked everyone for coming.

MEMBER SPOTLIGHT

In this feature of the Bulletin, we highlight recent accomplishments of our members. For this issue, Bulletin co-editor David Kauchak interviewed Claudia Szabo from the University of Adelaide, who recently won the best paper award at SIGCSE.

Claudia Szabo

DK: How did you first become interested in computer science education research?

CS: I started teaching in 2011 and really wanted to know more about the research behind what I was doing. Unfortunately, having a PhD in computer science did not guarantee that I could teach. I was also lucky that researchers within my faculty were already doing great quality education research, so I could tap into their knowledge.

DK: You recently won the best paper award at SIGCSE. Can you give a quick summary?

CS: One of my education research areas focuses on understanding and analyzing how software engineers perform maintenance on large software programs. In the SIGCSE paper, I talk about a software maintenance assignment that I've given my students in a software

engineering course. The codebase was developed by senior students, so in terms of quality it varied a lot. The course itself was not focused on software maintenance, but I thought we needed to include software maintenance practice, as this is what our graduates are most likely to do. The findings of the paper showed some gaps in our curriculum but also showed what students thought of such a large codebase (the first they'd seen).

DK: You also have a fairly active CS research program. How do you balance CS Ed research and traditional CS research?

CS: It's a juggling act (like everything, really). I find that having dedicated days works well for me (I need a while to context switch), and I sometimes find I need to work some weekends. I am lucky in that I have a very understanding husband and two cats that love to lounge on my laptop.

DK: What has been your favorite class to teach and why?

CS: I taught a Programming Techniques course in which I snuck in very hard assignments. However, the students were very excited instead of complaining and the overall mood of the course was very pleasant.

DK: What is the most interesting CS education finding/resource you've found recently?

CS: Researchers at my school are currently putting up a MOOC to educate teachers on how to teach computing. I think their effort will benefit the community tremendously. Check it out here:

https://csdigitaltech.appspot.com/preview

It's a very, very exciting time to be doing Edu research!

DK: Are there any CS Ed questions you're currently investigating?

CS: I'm looking at how novice software engineers analyze and understand large codebases. I'm also interested in using Neo-Piagetian theory to analyze curriculum. Our first work in this area focused on a three-course first year offering: we are currently working on extending the analysis to the entire curriculum. This brings a lot of challenges as a lot of degree pathways are possible and various concepts need to be analyzed and coded.

DK: Do you notice a big difference between how people approach the education process in Australia vs. the US?

CS: No, not really. The degrees and pathways are different but the challenges we face are the same.

DK: What is one thing you think everybody should do in the classroom?

CS: Explore various solutions and always ask (and explain) why things happen the way they do.

DK: What do you like to do for fun?

CS: I'm a climber (not very good) and a high altitude mountaineer (better). Unfortunately, Australia is flat so I focus more on climbing and bouldering around Adelaide.

DK: Anything else you'd like to add?

CS: Nope, just thank you for reading!

2014 Travel Grant Program Awards
By Amber Settle, SIGCSE Board Treasurer

SIGCSE inaugural travel grant awardees. Clockwise from top left: Carol Yarbrough, Khalid Khurshid, Meg Fryling, Markus Geissler, Noir Haslinda Ismail.
Photo credits: J. Gregory Yarbrough, Muhammad Ashraf, Dr. Hubert Welp, Siena College Communications Office, unnamed.

The SIGCSE Board is pleased to share the results of the inaugural Travel Grant Program application cycle. The program was envisioned by former Board chair Henry Walker as an opportunity for faculty who had not previously attended the Symposium to do so, and the first round of grants has shown this to be a clear need in the community. Five awards were given from among 21 applications.

Three award recipients attended the 2014 Symposium. Meg Fryling teaches computer science and information systems at Siena College. Meg frequently experiments with new teaching techniques, recently including team-based learning and "flipped" classroom environments. Markus Geissler is a professor and chair in the Computer Information Science Department at Cosumnes River College. He reports that the Symposium opened his eyes to the increasingly interdisciplinary nature of

computer science in unexpected areas such as the liberal arts. Carol Yarbrough teaches high school computer science at the Alabama School of Fine Arts. The chance to network with other computer science teachers and to learn more about computing pedagogy was a large part of the appeal of the Symposium for her.

Unfortunately due to visa deadlines two award recipients were unable to attend the 2014 Symposium. Noir Haslinda Ismail is a lecturer at the Universiti Teknikal Malaysia Melaka (UTeM) in Malaysia. She was looking forward to networking with other computing educators in hopes of starting new research collaborations. Khalid Khurshid is an assistant professor in the Department of Education at Bahauddin Zakariya University in Pakistan. He feels that the Symposium is a chance for him to connect with academics from around the world to talk about technology education and learning. Both of these recipients will defer their awards until 2015, and we look forward to seeing them in Kansas City.

The next round of awards will be given in the fall 2014, and we hope to reach more faculty who have never attended the Symposium and do not have institutional support to attend. The application is completed online and requires some basic demographic information and a two-part essay that includes a brief description of how attendance will benefit the applicant and how the applicant plans to share what he/she has learned with his/her community.

The deadline for the next round of applications is October 15, 2014, and the application form will be posted to the Travel Grant page by August 1, 2014: http://sigcse.org/travelGrant. Please encourage faculty at your institution who could benefit from Symposium attendance to apply.

Training for Department Chairs at SIGCSE 2015

By Sandra J. DeLoatch, Provost and Vice President for Academic Affairs and Former Computer Science Department Chair, Norfolk State University

The role of the department chair is one of the most important, yet most difficult, in the academy. Chairs must navigate the delicate balance that results when changing from a colleague or peer to supervisor. SIGCSE recognized this challenging situation and for several years sponsored special pre-conference workshop training sessions for new department chairs. The last "Roundtable for Chairs" was offered in 2011. SIGCSE plans to resurrect the Roundtable for Chairs at the 2015 Symposium that will be held in Kansas City, MO.

The 2015 session will again be led by a group of veteran department chairs that will make presentations and lead discussions. Administrative issues addressed will include: (1) creating a workplace that fosters excellence, cooperation, and new ideas; (2) managing problem students, faculty, and staff; (3) setting goals and measuring success; and (4) developing good relationships with deans and other upper-level administrators. Additional topics on leadership characteristics, management styles, time management, legal issues, establishing priorities, and communication will focus on best practices that produce efficient and effective chairs.

Resource materials will be provided to participants. In addition to receiving valuable chair training, participants are expected to establish a new network of associates, mentors, and advisors.

If you are a new chair, a veteran chair, or are considering a chair position, please plan to participate in the SIGCSE 2015 Roundtable for Department Chairs. Send questions or expressions of interest to Sandra J. DeLoatch (sjdeloatch@nsu.edu).

CSTA Resources for SIGCSE Members
By Chris Stephenson, CSTA Executive Director

This last year has seen remarkable growth for the Computer Science Teachers Association (CSTA), both in terms of membership and projects and resources of relevance to SIGCSE members.

Again this year, CSTA experienced a 21% growth in membership (to more than 16,000 members) and we believe that much of our continued growth is being driven by the growing presence and engagement of CSTA's regional chapters (http://csta.acm.org/About/sub/CSTAChapters.html). There are now more than 53 CSTA chapters all across the U.S. and in three Canadian provinces. Over the years we have found that one of the best predictors of the vitality of these chapters is the active engagement of post-secondary faculty members. Faculty play a variety of roles in chapters, from mentoring, to hosting meetings, to serving on the executive.

The number of university departments that are institutional member of CSTA has also grown by more than 50%! Institutional membership offers a number of benefits that give members increased access to CSTA's practitioner base and helpful advice (and even match-making) on grant proposals.

Two important new CSTA resources may also prove helpful for SIGCSE members doing outreach projects with a K-12 focus. After 18 months of intensive research to determine the computer science teacher certification requirements and computing course graduation requirements for every

state and published *Bugs in the System: Computer Science Teacher Certification in the U.S.* Both the report and the report site (http://csta.acm.org/ComputerScienceTeacherCertification/sub/StateRequirements.html) contain a report card for each state.

CSTA has also published a series of new documents showing the alignment between the *CSTA K-12 Computer Science Standards* and the STEM Cluster Topics, Partnership for 21st Century Essential Skills for Success, Common Core General Standards, and the Common Core Standards for Mathematical Practice. These documents can be especially helpful for faculty creating new K-12 curriculum or resources and working with states.

Post-secondary faculty working on K-12 projects should also make plans to attend the annual CSTA Conference July 14-15 in St. Charles, IL (just outside of Chicago). The conference will include 10 workshops, 2 keynotes, 20 regular sessions (including two sessions with a new mini-presentation format) and 4-5 vendor-sponsored sessions. It is also the only conference dedicated exclusively to K-12 computer science education and so is the best possible place to network with teachers and administrators and to learn about other computer science initiatives. For more information on the conference see http://csta.acm.org/ProfessionalDevelopment/sub/CSTAConference.html.

ACM Report: Preparing Students for Computing Workforce Needs in the U.S.
By Lisa Kaczmarczyk and Renee Dopplick

A new ACM report confirms that few states are positioned to provide students with the computer science education required for rewarding careers and for ensuring future workforce needs. The report, *Rebooting the Pathway to Success: Preparing Students for Computing Workforce Needs in the United States*, urges state education and business leaders and public policy officials to work together to develop comprehensive computer science education and workforce development plans. The report provides recommends to help these leaders create pathways that will expose all K-12 students to computer science, provide expanded access to more rigorous computer science courses, offer increased opportunities for students to pursue postsecondary degrees, and align pathways with computing careers.

"By 2020, one of every two jobs in science, technology, engineering, and mathematics will be in computing," said Bobby Schnabel, chair of ACM's Education Policy Committee. "This concentration of computing positions in STEM makes it imperative for K-12 students in academic and career technical education programs to gain more opportunities to learn computer science."

The report calls on colleges and universities to play a role in expanding opportunities for computer science education by recognizing rigorous computer science courses in their admissions requirements. Higher education institutions also can reduce barriers to degree completion by adopting system-wide agreements that allow students to transfer course credits to fulfill their computing degrees efficiently.

http://pathways.acm.org

ITiCSE Preview
By Åsa Cajander, Mats Daniels (conference chairs), Tony Clear and Arnold Pears (program chairs)

Welcome to ITiCSE 2014 in Uppsala!

The second ITiCSE was in Uppsala 1997 and one comment late one night was "Mats, could you turn off the sun please". That was in early June and this year the conference will be at a time with even less dark hours as it is close to the Midsummer celebration in Sweden.

There are similarities and differences between the two instances of the conference. We will run the conference dinner at the same "nation" as last time and again having a reception at the university building, reflecting that traditions are important at our University that was founded in 1477. The organizers, being part of one of the newest research groups, Uppsala Computing Education Research Group (UpCERG), calls for a strive for change and the steam train excursion has been updated to a boat trip on Fyris river out to Skokloster castle (perhaps the most beautiful castle in Sweden). The conference will be held at the same campus area, but now at Ångström laboratories (a building that is quite large and in some sense not at all a reflection its name :-p).

The conference continues to be a truly international conference with 164 submissions from 36 countries on six continents (Africa - 3, Asia - 19, Europe - 38, North America - 51, Oceania - 17, and South America - 7). The 53 accepted papers are spread out over 16 different countries on five continents.

The theme of the conference is "Learning for life" and this will be addressed by our two keynote speakers. Yvonne Rogers

from University College London will give a talk titled *New technology, New Learning?*, which will examine the impact design has on the value of technology for learning. Her talk will particularly focus on aspects such as collaboration, mindful engagement, conversational skills and the art of reflection. Jan Gulliksen from the Royal Institute of Technology in Stockholm will talk about how to meet educational challenges in the "digital" era with a holistic perspective.

Six working groups have been accepted over a broad spectrum of topics. The working groups range from general topics such as the role of methodology in education, influences of new technology on education, and pre-university computing education to more specific topics such as peer reviewing and gaming as educational methods and understanding programming exam questions. Participating in a working group is probably one of the most efficient ways to become part of a community. It will provide a unique opportunity to work with people from different countries interested and knowledgeable in the area of the working group.

Skokloster castle

Photo from http://skoklostersslott.se/

Still Time to Contribute to ICER 2104, Glasgow, Scotland

By Quintin Cutts, Beth Simon and Brian Dorn, ICER 2014 Chairs.

This is a quick, but heartfelt, invitation to ICER 2014, the International Computing Education Research Conference, to be held in Glasgow, Scotland from 11-13th August. While the paper deadline has (just) passed, there are three activities you can still take part in or recommend to others:

Doctoral Consortium: The DC will be held on Sunday August 10th, and gives an opportunity for graduate students to gain high quality feedback on their research proposals, as well as making connections with the wider CS Ed research community.

Lightning Talks: These are strictly-timed 3-minute presentations intended to further expand the ICER community and spark discussion among conference participants. They are a great way to get early feedback on a new idea, to demo a new tool or technique, and to find potential collaborators at other institutions.

Critical Research Review (a.k.a. Work-in-progress Workshop): Held after the conference, on August 13-14th, this is a one-day workshop for ICER attendees to provide and receive friendly, constructive feedback on works-in-progress.

The DC has a submission date of May 21st; Lightning Talks and Critical Research Review applications are due on June 16th.

And if these don't fit for you right now, just book a holiday in Scotland in August and add ICER onto the start or end! To find out more about what's on offer, both at the Conference and in Scotland, go to the conference website: http://icer.hosting.acm.org.

Looking forward to welcoming you to Glasgow in August.

Deadline SIGCSE

Here are some upcoming deadlines and dates you won't want to miss!

May 15	SIGCSE Special Project Grants deadline http://www.sigcse.org/programs/special
May 25	Last day for ITiCSE early registration http://iticse2014.it.uu.se/registration.php
June 3	Nomination for ACM Senior Member deadline http://awards.acm.org/senior_member_nom_guide.cfm
June 16	ICER Lightning Talks and Critical Research deadline http://icer.hosting.acm.org
August 1	Nomination for ACM Distinguished Member deadline http://awards.acm.org/distinguished_member_nom_guide.cfm