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SIGCSE News in Brief

Welcome to the third issue of the SIGCSE *Bulletin* in 2021.

By the time many of you read this issue, you will probably be preparing to return to school. I’m sure many of us were hoping that everything would have returned to the “pre-pandemic normal” by now, but it has become apparent to me that we should not be striving for that. There should not be a “new normal,” but rather we need to be agile and adaptable to each situation. We have seen so many changes to our world in the past 18 months that will have long-term effects on how we live and how we do our jobs. Instead of striving to return to how we did things prior to the pandemic, let’s strive to do things

better than we did prior to, and during, the pandemic. I have enjoyed my time working from home, but I am looking forward to returning to in-person instruction with some remote components mixed in.

In this issue of the *Bulletin*, we hear about the upcoming Koli Calling that will be held in November 2021 and get a recap of ITiCSE 2021 and the SIGCSE Technical Symposium 2021.

The SIGCSE Board will be holding elections for the 2022 incoming board, and Amber Settle, the SIGCSE Election Committee Chair, explains the process.

Continuing our regular column on equity issues in computer science education, Richard Ladner from the University of Washington gives his perspective on the connections between equity and innovation.

And we wrap up the issue with our Member Spotlight column on our outgoing SIGCSE *Bulletin* Co-Editor, Karen Davis. It was a pleasure for me to work with Karen over the past two years, and I knew I wanted to spotlight her as soon as I could. Her guidance since I became a Co-Editor has helped to form the *Bulletin* into what you see today.

Now even though we are saying goodbye to Karen, we are also welcoming Charles Wallace as our incoming Co-Editor. Charles is on the faculty at Michigan Technological University, where he also is the Associate Dean for Curriculum and Instruction in the College of Computing. Although this is the first issue with which Charles has worked, I can already see how his contributions will continue to carry the *Bulletin* into the future.

We hope you enjoy this issue of the *Bulletin*.

Upcoming Dates and Deadlines

Conference	Location	Dates	Full Paper Submission Deadline
ICER 2021	virtual	August 16-19, 2021	already passed
Koli Calling 2021	virtual	November 17-20, 2021	already passed
SIGCSE TS 2022	Providence, Rhode Island	March 2-5, 2022	August 13, 2021
ITiCSE 2022	Dublin, Ireland	July 8-13, 2022	not yet announced

Other conferences operate in cooperation with SIGCSE and are posted on the SIGCSE web site at <https://sigcse.org/sigcse/events/incoop.html>.

Koli Calling is Online: Call for Participation

By Seppälä Otto and Andrew Petersen



Photo Credit: Seppälä Otto

Koli Calling is a single-track international conference dedicated to the scholarship of teaching and learning and to education research in computing. The conference is known for its moderate size, intimate atmosphere, and lively discussions.

This year, due to ongoing concerns about travel, Koli is prioritizing engagement with scholars everywhere in the world and **will be held virtually from November 17-20, 2021**. We hope you will take this opportunity to see what Koli has to offer. We are strongly committed to maintaining the essence of the Koli experience, facilitating sustained online interactions between participants and multiple opportunities for engagement with authors.

We expect to have a strong program this year, with submissions covering computing education topics in contexts ranging from higher education to K-12 to informal educational settings. The conference will begin with a keynote by Dr. Sue Sentance, Chief Learning Officer at the Raspberry Pi Foundation.

The deadline for full paper submissions has passed, but there is still time to submit a poster or demo paper or to enroll in the affiliated Doctoral Consortium "*AI Education for All*". These contributions feature interactive presentations of emerging ideas for research,

teaching practice, or tools and are published as 2-page extended abstracts. See <https://www.kolicalling.fi/call-for-papers-2021/> for information about submission.

Registration for the conference is open from September 21 to November 11. The deadline for student conference grants is September 22.

For more information, please see the conference website <https://www.kolicalling.fi/> or contact Otto Seppälä and Andrew Petersen at chair@kolicalling.fi. We hope to see you at Koli!

ITiCSE 2021 Recap

By Carsten Schulte and Brett Becker

ITiCSE 2021 was held virtually, in Paderborn, Germany from June 26th to the 1st of July. In addition to a record 275 paper submissions, we were thrilled to have 380 registrants with a peak attendance in one room of 139 for the working group presentation, and a peak parallel attendance of 156 across four parallel sessions.

This year there were 5 working groups that, as always, were a highlight of ITiCSE along with a successful Doctoral Consortium. We also enjoyed three spectacular keynote presentations:

- Under Co-construction: Toward the Social Design of Explainable AI Systems - Katharina Rohlfing (Paderborn, Germany)
- Learning about Security – Who, What, When, Why and How? - Angela Sasse (Bochum, Germany)
- Data Feminism: Teaching and Learning for Justice - Catherine D'Ignazio (MIT, USA)

Global participation was particularly strong. A total of 214 registrants were from outside the USA, including 29 from Canada, 26 from the UK, 23 from Germany, 18 from Ireland, 10 each from the Netherlands and Sweden, 9 from New Zealand, 6 each from Australia and Finland, and

77 from other countries on all six permanently inhabited continents!

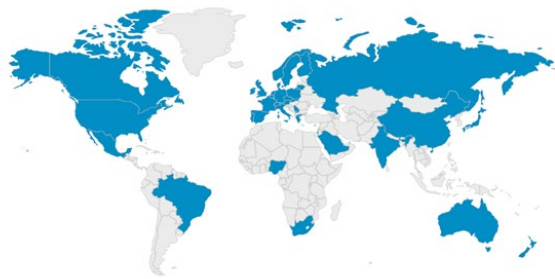


Image Credit: Felix Winkelkemper

The technical program was busy and exciting. There were awards for exemplary contributions in the paper, poster, and TT&C categories. Check them out at <https://iticse.acm.org/best-paper-award/>.

Social activities were very popular and included a virtual tour of the Heinz Nixdorf Museums Forum - the world's largest computer museum; lean coffee sessions starting each day, hanging out in the virtual hotel lobby, bar, and many other rooms. In addition, we had a virtual tour through Paderborn City.

We were delighted with the positive feedback from our participants. Many stated that, by virtual conference standards, there were many opportunities to interact and meet people, while some wished for more support in getting into contact with other participants. Overall, attendees saw some advantages for virtual conferences, but also looked forward to on-site conferences. Although we are still very much finding our way through this new landscape, we feel that ITiCSE 2021 was a great step forward.

We'd like to thank one more time, all of the organizers, supporters, participants, and attendees who made ITiCSE 2021 a success, particularly those working behind the scenes and at the edges. We can now look forward to

ITiCSE 2022 which will be held in Dublin, Ireland! Dates and more information at <https://iticse.acm.org/2022>.

SIGCSE 2021 Technical Symposium Recap By Mark Sherriff and Larry Merkle, SIGCSE TS 2021 Symposium Co-Chairs, Pam Cutter, Alvaro Monge, Judy Sheard, SIGCSE TS 2021 Program Co-Chairs

We would like to take this opportunity to thank everyone in the community for everything that you did to support the 52nd SIGCSE Technical Symposium on Computer Science Education, our first (and hopefully only) fully-online Technical Symposium! From presenting papers and posters, to being session chairs, to simply participating, everyone engaged with the Symposium with a desire to make it work. And because of you - it did!

We were thrilled that we had 1645 registrations for the 2021 Technical Symposium. This number does not include the complementary registrations and logins that we issued to our supporters and exhibitors. At our peak on the first day of the Technical Symposium, we had nearly 2000 distinct devices log in to Pathable! Throughout the week, we continued to have impressive engagement from the community, with most sessions averaging at least what we normally would have during an in-person SIGCSE TS with around 50-70 participants. During the week, we totaled nearly 250,000 pageviews throughout Pathable and even today, several months later, attendees are continuing to login to Pathable and catch up on sessions that they missed or going back to watch some of their favorite moments.

Remember - Pathable will be online and available to all SIGCSE TS 2021 participants until February 2022! So, if there are sessions you still want to revisit, you have that opportunity.

As always, we would like to thank our supporters who stood by us and graciously worked with us in this new format: Google, GitHub Education, Microsoft, Codio, NSF, AWS Educate, Codegrade, IBM, ZyBooks, TuringsCraft, Gradescope, repl.it, Pearson, Oracle for Research, TwilioQuest, AdaCord, AnitaB.org, and Intel.

Our sincere thanks to the organizing and program committees, the APCs, and all the reviewers. Without your work, the Technical Symposium simply wouldn't have existed! The hours you volunteered during this difficult time meant so much to us.

We can't wait to celebrate being back together again in Providence, RI, USA, in a new hybrid experience that will combine the best of in-person and online!



2022 SIGCSE Board Election

By Amber Settle, SIGCSE Election Committee Chair

Every three years SIGCSE holds elections for seven positions on the Executive Board overseeing the organization, namely Chair, Vice-Chair, Secretary, Treasurer, and three At-Large members. The previous SIGCSE Chair serves on each Executive Board as the Immediate Past Chair. A description of each position is found in the SIGCSE by-laws: <https://sigcse.org/policies/bylaws.html>.

The next election for SIGCSE will take place in May and June 2022, and the SIGCSE election committee invites nominations of professional members of ACM and SIGCSE for the positions. The term of elected service is July 2022 through June 2025, and nominations should be received by the end of the day October 1, 2021 AOE and be sent to asettle@cdm.depaul.edu.

Each nomination should include: the candidate name, institutional affiliation (or an indication that there is none), and email address; identification of the position(s) for which the candidate wishes to be considered; a curriculum vitae; a statement of involvement in SIGCSE and/or other organizations related to computing education; a brief statement (1500 characters maximum) indicating how the candidate intends to contribute to the SIGCSE Board and global SIGCSE community if elected.

The committee would like to see a diverse set of candidates for the election slate, with broad representation of geography, sex/gender, race/ethnicity, and institutional type. Self-nominations are highly encouraged, and all nominations will be treated confidentially.

The SIGCSE election committee members are:
Aleata Hubbard Cheuoua, West Ed, USA (ahubbar@wested.org)
Michelle Craig, University of Toronto, Canada (mcraig@cs.toronto.edu)
Adrienne Decker, University at Buffalo, USA (current SIGCSE chair, adrienne@buffalo.edu)
Amber Settle, DePaul University, USA (SIGCSE immediate past chair and SIGCSE election committee chair, asettle@cdm.depaul.edu),
Simon, The University of Newcastle, Australia (simon@newcastle.edu.au)
Neena Thota, University of Massachusetts Amherst, USA (nthota@cs.umass.edu)
Jan Vahrenhold, WWU Münster, Germany (jan.vahrenhold@uni-muenster.de)
Please contact any of the committee members if you have questions.

As a CS Educator, How Do You Think We Can Address Inequity Issues That Exist in the Field?

By Jeffrey Miller and Charles Wallace, SIGCSE
Bulletin Co-editors, Richard Ladner

We have been inviting CS education researchers to offer brief remarks to spark discussion and provide ideas for actions we can all take to address inequity issues.

Richard Ladner, University of Washington

Most of us think of equity as a social justice issue, an issue of fairness. This is true, but as a computer science educator I take it on in an additional way, namely, equity leads to innovation. There are many examples of this, including innovations by and for people with disabilities. In a data compression course I created some years ago, in the very first lecture, I introduced the students to Grade 2 Braille which was invented in the early 1900s. Grade 2 Braille is a compressed form of English. For example the word “the” is represented by one Braille character and the word “mother” by two. Why is compression done for Braille readers? First, reading and writing Grade 2 Braille is faster than reading and writing uncompressed Braille, once you learn the Grade 2 rules. Second, printing Grade 2 Braille takes less paper than printing uncompressed Braille. This is what data compression is all about: speeding up transmission and reducing storage. Data compression was important even before computers existed.

I think it is important as computer science educators to bring into our courses examples like this. Where did personal texting and video chat come from? Early technologies supporting these were for access to remote communication by deaf people. Where did speech recognition come from? Early speech recognition was designed for computer users whose mobility did

not allow them to use a keyboard (this was before the mouse was invented). Where did optical character recognition and speech synthesis come from? In part, they came from the need for blind people to read printed books. Now all these innovations are used in the mainstream.

Member Spotlight

In this feature of the *Bulletin*, we highlight members of the SIGCSE community. In this issue, *Bulletin* co-editor Jeffrey Miller interviewed Dr. Karen Davis, Associate Professor in the Department of Software Engineering and Computer Science at Miami University in Oxford, OH. Dr. Davis received a B.S. degree in Computer Science from Loyola University, New Orleans in 1985 and an M.S. and Ph.D. in Computer Science from the University of Louisiana, Lafayette in 1987 and 1990, respectively. She was a Professor in the Electrical Engineering and Computer Science Department at the University of Cincinnati prior to joining the faculty at Miami in 2017. Her research interests include data modeling, query optimization, and computing education. In 2016, she received the ASEE Sharon Keillor Award for Women in Engineering Education. In 2021, she received Miami’s MAC Outstanding Faculty Award for Student Success.



Karen Davis
photo credit: Karen Davis

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

My first Technical Symposium experience was in 2002. I think I was asked by Renée McCauley, one of the symposium co-chairs, to help with local arrangements since I was at the University of Cincinnati and the symposium was in northern Kentucky, just across the Ohio River. It opened up a whole new world to me. It was wonderful to meet people who cared so much about teaching and to learn about best practices in both pedagogy and computing education research.

I became a co-editor of the *SIGCSE Bulletin* with Leo Porter in 2018 and finished my 3-year term in 2021 with Jeff Miller. Working with authors who were conference organizers or on the SIGCSE Board really broadened my understanding of the work that goes on behind the scenes to make all of those wonderful events happen. Attending SIGCSE Board meetings was a real privilege. Ordinary SIGCSE members (like me) might be surprised to see how much time, energy, passion, and thought the Board invests in the wide range of activities they undertake on our behalf.

In 2019, I attended my first ITiCSE conference as part of a Working Group. That was a fantastic experience. I really loved being a part of a writing team. I loved having homework to do before we arrived, then working closely together for about 8 hours a day all week long, and finally completing a really good paper that we all contributed to and worked together on. There is nothing like the intensity of that experience. My WG leaders and co-authors were awesome. I hope to have the chance to do it again in person sometime.

Can you describe some of the ways you have been involved in developing and enhancing computer science education?

The first thing I think of is active learning, and in particular, flipped classrooms. I've seen remarkable improvement in my students' test scores by comparing similar exam results before and after flipping my database course. I've observed positive engagement and better in-class participation when I introduced guided practice activities to be completed before class. I learned about guided practice activities in a SIGCSE Technical Symposium paper in 2018 and I followed up with a study of my own in an ASEE 2019 paper. The most recent thing I've introduced into my classes is exam wrappers. There were two SIGCSE Technical Symposium papers (2016 and 2017) that didn't find any impact on exam scores, but I found some other research that showed that there were big gains for the lowest performing students. That was what I found, too, in addition to positive impacts on student behavior (ASEE 2021 paper.) I don't believe there is any downside to using them, and most of the engineering and computing education research shows benefits to students in terms of their preparation and planning for exams. Several authors drew parallels with professional practices such as agile retrospectives or engineering after-action-reviews.

The second thing I think of is that I've been added as a co-author to the 4th edition of the textbook *Databases Illuminated*, with Catherine Ricardo and Susan Urban. We've been working together on a weekly basis for more than a year, and we just submitted the last of 16 chapters to the publisher. We had a terrific time together, and of course we are proud of our work. To our knowledge, it's the only multi-author database textbook written only by women.

I've also been involved in a few different efforts toward broadening participation in computing. I had support from NSF to bring undergraduate engineering and computing students into inner city high school math and science classrooms to teach computing-related lessons that they developed. I've been a co-organizer of TriWiC,

working with the dedicated team of Maureen Doyle, Jan Pearce, and Cindy Bragg. I've accompanied students to OCWiC, TriWiC, and Grace Hopper several times, thanks to the generous support of my department head, dean, and Miami's Center for Career Exploration and Success. We had 18 students attend the most recent in-person GHC.



Miami University at GHC 2019
photo credit: Karen Davis

Where do you think computer science education is headed in the next 5-10 years?

I'm not really a visionary, I don't have a good answer for this. Based on the news, I think secure computing and addressing bias in artificial intelligence are the most impactful areas that need creative and effective solutions.

In the short term, I think many of us are still reeling from the rapid switch to remote learning and all of the ongoing effects of the pandemic, like illness, loss, and changes to how we live and work. I hope we are beginning to recover and reboot, and figuring out what good can come of what we learned.

What do you think are the biggest challenges facing the community?

I think attracting and nurturing a diverse student population is our greatest challenge. There are

more jobs than there are graduates to fill them, and these are rewarding, useful, and interesting jobs. The barriers to entry and the obstacles to retention need our attention.

What can CS educators do to help encourage diversity?

Miami's Center for Teaching Excellence included a link in their most recent newsletter for an article that appeared in *The Chronicle of Higher Education* in July 2019 entitled "How to Make Your Teaching More Inclusive." It describes some easy to adopt techniques that can help all students learn better. Some of the advice has to do with course design, like making sure there is plenty of low stakes practice that includes typical test questions. I think this helps to reduce test anxiety, and it also helps students to engage more with the material in the ways that they are going to be assessed.

The article emphasizes that structure is really important—don't leave learning to chance. Make sure assignments to prepare for class are not optional, and provide structure for in-class activities. Give clear instructions and rules of engagement (put your phones away during a discussion, for example.) Lecture less, engage more. Allow anonymous participation. I love [Mentimeter](#) polls. I used them during remote learning to collect all kinds of anonymous feedback, and I plan to continue it in the face-to-face classroom. People who might not otherwise speak up in class have a voice, and students are more comfortable texting their responses sometimes. The authors of the article said that inclusive teaching increased interest in their courses and narrowed achievement gaps. My experience and analysis bear this out, too.

Another great resource is the tip sheets at [CSTeachingTips.org](#). There is one on inclusive departments and another on reducing bias.

What do you enjoy doing when you are not working?

I'm a lifelong reader. I generally have an audio book and a paper book underway all the time. I really love science fiction, but I read other fiction that my book club picks out (generally not science fiction – they go for literary works either by female authors or featuring female characters.) My current favorite series is the *Murderbot Diaries* by Martha Wells. Murderbot is cranky and wants to be left alone to consume entertainment media in peace. Very relatable! I'm also a lifetime member of the Jane Austen Society of North America. When I retire I plan to finally attend a JASNA Annual General Meeting.

My husband and I have been playing and collecting board and card games since before we were married (we're approaching the 40th anniversary of our first date soon.) We think we have about 300 games now. In pre-pandemic times, we would attend a few board game conventions a year with our daughter, Evie. Our favorites are Origins (Columbus, OH) and GenCon (Indianapolis, IN), and we would typically come home with a dozen or so new games. This past year, we've been playing on BoardGameArena.com with friends and family. I had three senior capstone projects develop games for the site.

When I was returning from Portland after the Technical Symposium was cancelled, I vowed to go outside for a walk every day for at least 30 minutes during the quarantine period. I didn't know what the coming weeks or months would hold, but I thought that getting out of the house and moving around would be important for mental health. After a month of walking every day, I started running again. Now I run 2.5 miles every other day, and I have an unbroken streak of 496 days. I feel fortunate to be able to have this outlet as a coping mechanism.