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SIGCSE Board

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SIGCSE News in Brief

Welcome to the July 2022 issue of the *SIGCSE Bulletin*. Most universities have just held commencement ceremonies where our graduates are transitioning to the next part of their lives, whatever that may be. Some will continue to graduate school, others will be moving into the professional world, while others may be taking some time off. As educators, we also transition at the end of each academic year, even if we are staying in our current position. Transitions are a time for reflection on the past and excitement for the future.

As this is my last issue as co-editor of the *Bulletin*, I will be transitioning to another co-editor for the next issue. We are fortunate to have Charles Wallace continuing and becoming the

senior co-editor. My time working with Charles has been professional, fulfilling, and an overall joy. I have no doubt that the *Bulletin* is in good hands and will continue to thrive.

In addition, I made the decision to transition to another university and position, leaving the University of Southern California (USC), where I have served as a faculty member and head of the Information Technology Program, to Southern Utah University (SUU), where I will be serving as the Dean of Engineering and Computational Sciences. In our column on equity, I asked Prof. Kendra Walther, one of my colleagues from USC, and Prof. Shalini Kesar, one of my new colleagues at SUU, to answer our question concerning what we can do to address inequity issues that exist in the field. This is a column I started in the *Bulletin* during my time as co-editor, and I have enjoyed hearing so many different perspectives with each issue.

Although my time as co-editor is ending, my membership in SIGCSE will continue. I hope you enjoy this issue of the *Bulletin*, and I look forward to seeing you all at a SIGCSE event in the future.

We are happy to present the new members of the SIGCSE Executive Board. We are grateful to these individuals and the full slate of candidates

for their willingness to serve our community, and also to the SIGCSE members who participated in the election.

There is still time left for submissions to the Koli Calling conference in November; conference co-chairs Andrew Petersen and Ilkka Jormanainen provide details. In addition, submissions for the SIGCSE Technical Symposium are due in August; co-chairs Leen-Kiat Soh, Brian Dorn, and Lina Battestilli provide a summary of deadlines and requirements.

Monica McGill of CSEdResearch.org invites researchers in K-12 CS education to a webinar on problems of practice that K-12 teachers have reported in an extensive survey. This is an opportunity to gain insights into the real challenges faced by these educators.

Kendra Walther of the University of Southern California and Shalini Kesar of Southern Utah University share ideas on how to address issues of inequity within CS education.

Finally, our SIGCSE Member Spotlight features Mats Daniels of Uppsala University. He describes his varied and successful partnerships with education researchers across the globe and provides some insights on the future of computing education.

Upcoming Dates and Deadlines

Conference	Location	Dates	Full Paper Submission Deadline
ITiCSE 2022	Dublin, Ireland (hybrid)	July 8-13, 2022	(Passed)
ICER 2022	Lugano, Switzerland	August 7-11, 2022	(Passed)
Koli Calling 2022	Koli, Finland (hybrid)	November 17-20, 2022	July 22, 2022
SIGCSE TS 2023	Toronto, Canada (hybrid)	March 15-18, 2023	August 12, 2022

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

Introducing the 2022-2025 SIGCSE Executive Board

By Amber Settle, SIGCSE Past Chair

The 2022-2025 SIGCSE Board has been elected, and the following Board members will take office on July 1, 2022:



Chair: Alison Clear, Eastern Institute of Technology, New Zealand (*photo: Dr. Sam Ekundayo*)



Vice-Chair: Brett A. Becker, University College Dublin, Ireland (*photo: Catherine Mooney*)



Secretary: Dan Garcia, University of California Berkeley, USA (*photo: CSTA 2017*)



Treasurer: Jill Denner, Education, Training, Research, USA (*photo: Edward Jin*)



At-Large: Rodrigo Silva Duran, Federal Institute of Mato Grosso do Sul, Brazil (*photo: Rodrigo Duran*)



At-Large: Yolanda A. Rankin, Florida State University, USA (*photo: Florida State University*)



At-Large: Judithe Sheard, Monash University, Australia (*photo: Gregory Sheard*)



Immediate Past Chair: Adrienne Decker, University at Buffalo, USA (*photo: With Imagination Photography*)

This Board has membership from five countries and four continents and is more than 60% female. While most members of the new Board are associated with post-secondary institutions, the newly-elected treasurer works at a non-profit. The Board has two Latino members and one Black member. The Board includes four people who have served on previous Boards, including the new chair who will be serving on her fourth Board.

Please join me in congratulating and welcoming the new Board! I look forward to seeing all that they will do for SIGCSE in the next three years. Finally, my deepest thanks to all the people who ran in the 2022 election. The many members of SIGCSE who are willing to step up for leadership positions are one of the biggest strengths of our SIG.

Koli Calling 2022: Call for Submissions and Participation

By Andrew Petersen and Ilkka Jormanainen, Koli Calling 2022 Co-Chairs

Just a reminder: the deadlines for the 22nd Koli Calling International Conference on Computing Education Research (Koli Calling 2022) are coming up soon!

Koli Calling is one of the leading international conferences dedicated to the scholarship of teaching and learning and to education research in the computing disciplines. It is known for its moderate size, intimate atmosphere, and lively discussions. We invite you to submit a paper or poster. While we hope you will be able to join us at Koli, virtual participation opportunities are being planned.

- *Submission deadline (research, system/tool, short papers):* Midnight AOE Friday, 22 July
- *Notification of acceptance (papers):* Monday, 12 September
- *Registration opens:* Monday, 12 September
- *Submission deadline (posters, demo papers):* Midnight Friday, 23 September
- *Submission of revised manuscripts (all categories):* Midnight Monday, 10 October
- *Koli:* In-person and virtual 17-20 November

For more information of the paper types, please visit our online CFP and submission guide at <https://www.kolicalling.fi/> If you have questions, please contact Andrew Petersen and Ilkka Jormanainen at chair@kolicalling.fi.

We look forward to welcoming you to Koli!

SIGCSE Technical Symposium 2022: Call for Submissions

By Leen-Kiat Soh, Brian Dorn, and Lina Battestilli, SIGCSE-TS 2022 Co-Chairs

The SIGCSE TS is a forum for educators and researchers to share new results and insights around developing, implementing, or evaluating computing programs, pedagogy, curricula, and courses. The conference is planned to be held in Toronto, Ontario and will offer hybrid participation.

We invite submissions on topics including but not limited to: broadening participation; strengthening diversity, equity, and inclusion; K-12 and novice learners; improved and scalable pedagogies; leveraging data and analytics; peer learning and instruction; novel outreach; events and engagement strategies; involving students in solving social and global challenges; advanced CS topics; and education research – including qualitative and quantitative, instruments, null and negative results. The SIGCSE Technical Symposium provides many ways to share ideas, including papers, panels, special sessions, workshops, the ACM Student Research Competition, Birds of a Feather (BoFs), demos, lightning talks, nifty assignments, posters, and pre-symposium events.

We invite colleagues to contribute to, review for, and attend SIGCSE TS 2023. *Once papers are accepted and finalized for publication, the official publication date is the date the proceedings are made available in the ACM Digital Library. This date may be up to two weeks prior to the first day of the conference. The official publication date affects the deadline for any patent filings related to published work. At least one author of an accepted work must register and attend the conference.*

Key submission deadlines are:

- Friday, August 12, 2022: Paper Abstracts, Affiliated Events

- Friday, August 19, 2022: Full Papers, Panels, Special Sessions, Workshops
- Friday, October 14, 2022: ACM SRC, BoFs, Demos, Lightning Talks, Nifty Assignments, Posters

CSEdResearch.org: Upcoming Webinar on Teachers' Problems of Practice Teaching CS

By [Monica McGill](#), CEO and Founder of [CSEdResearch.org](#)

Need some ideas for tackling research problems that are critical for K-12 teachers who teach CS? Our next webinar will highlight many problems of practice that K-12 teachers experience in the classroom. Speaker Dr. Michelle Friend will be covering results from our recent study on problems of practice, in which we received nearly 400 responses from teachers around the world. We will also be bringing 2-3 K-12 teachers into this discussion to provide authentic context to these problems and to answer your questions.

This one-hour webinar will be held July 26th, 2020 at 11am Central Standard Time. To register for this event, visit our [registration link](#).

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, [Kendra Walther](#), University of Southern California, [Shalini Kesar](#), Southern Utah University

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.

Kendra Walther, Associate Professor of Practice, Information Technology Program, University of Southern California:

I've been acutely aware of inequities in CS ever since my experience as the only female in my undergraduate networks class. In the 90s, addressing inequity mostly meant increasing female participation to achieve better gender

parity. While CS educators have made strides in addressing gender inequity, we need to continue to think about gender as we simultaneously combat racial, ethnic, and (dis)ability inequities; addressing intersectionality and focusing research on teaching and learning CS in a more culturally competent and relevant way, in classrooms from K-12 through graduate levels. We can start by critically examining our course content, classroom policies and norms, the examples and people we highlight, and how much of our curriculum incorporates universal design. We can continue to think about how we provide instruction and leverage best practices in educational design and instruction, including peer-learning and guided inquiry approaches. And we can pause, asking questions and listening to the underserved individuals we have reached and those we have not yet reached; reflecting on what is working, and what is not, and continue to refine our practices; because, as Maya Angelou said, "Do the best you can until you know better. Then when you know better, do better."

Shalini Kesar, Professor, Computer Science & Information Security Department, Southern Utah University:

The gender gap is one of the biggest inequity issues in the STEM field. As an educator, probably one of the best and most important ways to address this issue is to develop STEM hands-on activities that engage young girls and allow us (educators) to "listen" to what they say about their challenges and desires in this field. Providing more exposure to positive role models and mentors where young girls both relate to and aspire to be can impact a path forward in terms of turning an interest in STEM and computer science into success in school and in a career. Providing a support system for K-12 teachers to develop strategies to engage students who are afraid to ask questions, be wrong, or ask for additional help can also contribute to a great classroom environment that addresses existing inequity and helps in building confidence among the young girls.

Member Spotlight

By Jeffrey Miller and Charles Wallace, SIGCSE
Bulletin Co-Editors, Mats Daniels, Uppsala University

In this feature of the *Bulletin*, we highlight members of the SIGCSE community. In this issue's spotlight we hear from Mats Daniels, Professor in Computing Education Research and Distinguished University Teacher in the Department of Information Technology at Uppsala University in Sweden.

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

I don't think there is a "first" here. I've always been interested in education and when I enrolled as a PhD student it was at a time when we had to be course-responsible teachers right from the start. My start also coincided with starting a degree program in computer science (I will in the following use the term "computing" rather than "computer science" as I think that better reflects the area today). These circumstances made me reflect on computing education, both in general and in my own teaching. Eventually I took on the role as director of studies at the department, and had to attend meetings where decisions were made about courses and degree programs. The way decisions were made was at times frustrating and I wanted a better foundation for making decisions. I also attended a people-to-people trip to China, where I met people involved in the SIGCSE community. Attending the SIGCSE Technical Symposium became an excellent way to being better foundations for making suggestions for changes to our education and to meet friends. I felt right at home in the SIGCSE community with its focus on being curious, helpful and genuinely interested in improving computing education.

Though my friends in the SIGCSE community, and especially Vicky Almstrum, Boots Cassel, and Bruce Klein, I got the opportunity to go to the first ITiCSE conference in Barcelona as a preparation for hosting the second conference together with Boots Cassel in Uppsala in 1997.

I've continued to be involved with ITiCSE conferences, for instance as program chair at both the Dublin conference in 1998 and the one in Krakow 1998. I was also conference chair, together with Åsa Cajander, when the conference was held in Uppsala for the second time 2014. The perhaps most rewarding task was to be site coordinator from 2005 to 2018, where I scouted out potential sites for the conference together with Alison Clear, Michael Goldweber, and Bruce Klein. This meant visiting places and discussing the conference and the premises with a wide variety of interesting people.

An important subpart of the ACM computing education community is the Australasian community. A community I met regularly from my first Australasian Computing Education (ACE) conferences in 1997. Being part of that community, also in its organisation, was very inspirational and important for my development. The welcoming into the community was an essential aspect for me, some especially important contacts from early on were Tony Greening, Ray Lister and Simon.

I also want to point out the IEEE based community. It has surprisingly little overlap, even though it has grown over the years. To me this community offers a slightly broader view of computing education as it brings in aspects from engineering education. I want to mention Trond Clausen from Norway, who help establish a Nordic Education Society Chapter. This community also gave me opportunities to meet people with a long experience with education, like Russ Meier, Steve Seidman, Karl Smith, and perhaps especially John Heywood, who in his mid-nineties is still active in the community and publishing books.

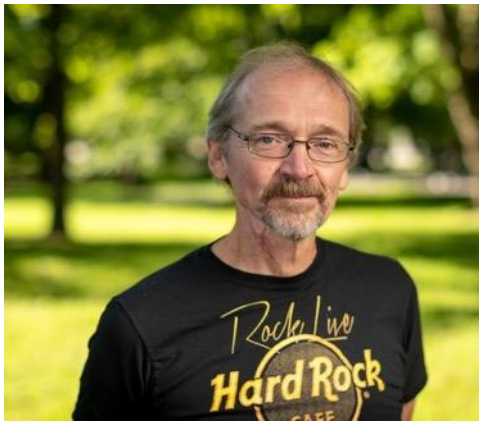


Photo: Mikael Wallerstedt

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

The computing education community, and especially attending conferences, has been instrumental in regard to my involvement with enhancing education. An early example is meeting Tony Clear at the 1998 ITiCSE conference in Dublin, which led to a student collaboration between his students at Auckland University of Technology, New Zealand and my students at Uppsala University. Getting international collaboration to function was challenging and we investigated some approaches on how to support such a collaboration. This resulted in some joint publication and an ongoing collaboration regarding computing education, including him spending a sabbatical with us.

Another example is the development of the Open-Ended Group Project (OEGP) concept. The roots come from the Runestone project, where each year roughly 100 students at Grand Valley State University, USA and Uppsala University collaborated. The Runestone project was run on a Swedish national grant and I was the project leader, where a side-effect was that Anders Berglund, Marta House and Mary Last all based their PhD theses on studying the project. The Runestone project is still ongoing in Uppsala even though partners have changed. We have collaborated with Rose-Human Institute of Technology, USA, Tongji University, China and

University of Turku, Finland, and are currently running the course in collaboration with Hanoi University of Science and Technology, Vietnam. The ability to continue this project has to a large extent been possible through the computing education community. The Runestone project and other project courses I was involved with worked well, but also had educational challenges. I was struggling with expressing arguments for educational benefits and identifying essential components in the educational set-up, when I met Christine Faulkner and Ian Newman at a conference 2001. We shared similar experiences and after many and long discussions we wrote a couple of papers on the OEGP concept. For both Christine and me that was the basis for our respective PhD theses.

The OEGP concept has been developed and evaluated over the years, and has been shared at many venues, both locally in Sweden and in the international arena, hopefully sparking many ideas and progression of computing education. I have combined the international collaboration aspect with the OEGP concept in especially the IT and Society course. This is a semester long half-time project course run in collaboration with the health care sector. In 2005 we brought in students from Rose-Human Institute of Technology through a collaboration with Cary Laxer, another contact met at conferences. Both Cary and later Steve Frezza from Gannon University, USA, who also had students collaborating, have spent sabbatical semesters at Uppsala. I think such collaborations are an important avenue to spread practices influencing the future of computing education. One method to deal with assessment and motivational challenges in OEGP type courses are using reflections, which was further developed in collaboration with Roger McDermott and Brian von Konsky, both of whom I met at ITiCSE 2010 in Ankara, and my co-teacher Åsa Cajander.

In parallel with this I have worked on the competence concept, since I have become convinced that it is useful in capturing learning

goals in courses and especially for degree programs. I have been involved with two ITiCSE working groups focusing on modeling competencies, which I think is one of the most effective arenas for influencing the computing education community. This work is getting into ACM/IEEE curricula, where persons like Alison Clear, John Impagliazzo, Arnold Pears and Mihaela Sabin have been instrumental. They have all been on longer visits in Uppsala. I believe that a better understanding of the competence concept and especially in relation to its context is essential for the development of computing education to prepare our students for the grand challenges of society of today. One particular challenge with bringing in the competence concept is the complexity it encompasses, especially aspects that are not purely about knowledge. These aspects are more difficult and less understood when it comes to assessing them and they are for many computing educators not seen as computing. Work on identity by Anne Peters and on role models by my PhD student Virginia Grande are of high importance in order to understand resistance, challenges and opportunities when it comes to integrate development of well-rounded professional competencies in computing education.

The above are some of the areas where I have been involved with regard to developing and enhancing computing education. I think they are all important, but my most important contribution is, as I see it, my engagement in building a computing education research community. This started in the mid-90's when I tried to be more scholarly in the development of computing education and searched for others doing research on computing education. I found efforts done at University of Monash, Australia, Open University, UK, University of Kent at Canterbury, UK, and University of Texas at Austin, USA. Anders Berglund and I, and shortly thereafter Arnold Pears, started the Uppsala Computing Education Research group, [UpCERG](#), in collaboration with people at the

other research groups. Over the years we have developed and established computing education research (CER) as a discipline and at Uppsala University CER is now a research program with full professors and an associated research education. We have graduated eight PhD-students, with two more expected next year and published roughly 350 research papers. CER is a research field as any other, but it provides results that informs the advancement of computing education and thus contributes to a scholarly discussion to base decisions regarding computing education on. That is, to conduct and enable CER, interacting in the general computing education community and influence educational stake holders is probably my main contribution to computing education.

One special effort in building a CER community has been establishing a national center for pedagogical development in technology education in a societal and student-oriented context, [CeTUSS](#). The vision for the center is to identify key educational challenges and developing and disseminating scholarship and innovations that make technology education personally meaningful, socially relevant, interdisciplinary and based in collaboration (both local and international). In CeTUSS we ran a project to include international collaboration in the IT and Society course, and ran a seminar series with participants from higher education institutions in Sweden. The main activities were done in the period 2004 - 2008, but the community we created is still active today.

On a different note, but with some impressive impact, has been a recently ended three-year capacity building project with Anders Berglund, where our part was to promote teaching practices based on active student learning. We had nine partners in Indonesia, Thailand, and Vietnam, and the basic idea was to build a community supporting localized ways to teach the teachers. The pandemic put some wrenches in our planning, but overall it was a great project, with

much optimism and creativity. For instance, national courses were held in Indonesia and Thailand, and there were over 2000 participants in the courses offered in the project. We have applied for a new grant with a focus to reach “underprivileged” higher institutions in South East Asia to promote collaboration in the development of STEM education.

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

That is quite a challenging question. For instance, I think the integration of computing into pre-university education is going to increase, both as a subject on its own and in being integrated in other subjects. The latter will blur the boundary of what computing education is, and I believe that this blurring of boundaries will also appear in higher education, not least due to the impact computing competency has on nearly all endeavors. The usefulness of computing will hopefully lead to an integration of competencies, such as ability to collaborate in heterogeneous teams and to communicate in different contexts. I hope that the recent ACM/IEEE curricula development, where a competence model is used to describe computing education set-ups will have an impact regarding broadening the scope of computing education.

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

Maybe the biggest challenge facing the community is the expansion of the community, or perhaps rather the need for expansion. The sub-areas of computing, for instance the relative new area cyber-security, are growing and will form communities of their own. I don't think this is bad in itself, but I believe it will be a challenge for the computing community. Another challenge is the continuation of the way computing is relevant in a large variety of context. It is similar to the expansion of the sub-areas of computing, and perhaps even more difficult to handle as new communities probably will feel alien to members of the computing

community. A different type of challenge is related to the next question, that is dealing with diversity, equity, and inclusion.

What are the biggest challenges for diversity, equity, and inclusion in CS education today? And what can CS educators do to help encourage diversity?

Maybe the complexity of the challenge is the hardest thing to deal with. In the western world it seems like the norms regarding who should study computing is cemented. Much research and findings are related to the male-female difference, but diversity, equity, and inclusion challenges are of course related to wider issues than that. Common themes are, as I see it, are issues related to not feel included and generally feeling questioned. Much of this is rooted deeply in culture and certainly not easy to change, but it is essential that we try. Virginia Grande's work on role modeling can be used to increase awareness of issues with diversity and provide ideas for how to act to address these issues.

The way we are as teachers and education developers are important in addressing these challenges. An example of how we as education developers can act in order to provide a more inclusive environment is to broadening computing education through a focus on competencies and relating learning to dealing with complex real-world challenges. Creating real world educational settings in, for instance the healthcare sector, and thus providing collaboration with a broader set of people might make students feel more at home with computing education. Using computing competence to address grander challenges, such as global warming and sustainability in general, could also be an approach to make computing education relevant for a more diverse set of students.

What do you enjoy doing when you are not working?

This is a question where the answer is more about wishes than actual doing. I do like cross-

country skiing, but the winters aren't that well suited for doing that where I live. Now and then I have made the effort of preparing for, and participating in, the Vasalopp, a 90km ski race from Sälen to More (where I grew up). This race has typically over 15.000 participants and the last couple of times I participated I was starting in the rearmost starting gates, one year in the tenth and very last cohort. Not being enough prepared it has been more of an experience than something enjoyable. To be skiing in the woods with good skis is otherwise an excellent and joyful exercise.

Something I manage to do on a more regular basis is to read (real) books in English. Depending on the mood it is normally popular science, fantasy, or science fiction. I do enjoy this and especially the ideas I get from the popular science books and I hope that reading in English is useful for my ability to community with computing education community.