SIGCSE *Bulletin*
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SIGCSE News in Brief
By Julie M. Smith and Charles Wallace, Bulletin co-editors

This issue contains updates about Koli Calling, the SIGCSE TS, and CompEd conferences. We are also pleased to feature a piece focused on the ethics work of Benjamin Xie and on the sustainability work of Samuel Mann. This issue also has a contribution from SIGCSE Board member Rodrigo Silva Duran outlining the new ACM open access publishing policy.

In addition to the usual updates about the SIGCSE community and its events, this issue of the Bulletin includes a memorial to Brett Becker, a leader and shining light in the SIGCSE community who was serving as the Board Vice-Chair at the time of his passing. We are pleased to be able to share the tributes that his colleagues have offered for this issue.

We are always happy to receive brief news items that are of interest to the SIGCSE community; please contribute to future issues of the Bulletin by contacting either co-chair.

Upcoming Dates and Deadlines

Conference	Location	Dates	Submission Deadline
SIGCSE TS	Pittsburgh, PA, USA	26 February – 1 March, 2025	-----
ITiCSE	Nijmegen, Netherlands	30 June - 2 July, 2025	Abstracts due 12 January; papers due 19 January
RESPECT	Raleigh, NC, USA	14 July - 16 July, 2025	Abstracts due 31 January; papers due 7 February
ICER	Charlottesville VA, US	3 August - 6 August, 2025	Abstracts due 14 March; papers due 21 March
CompEd	Gaborone, Botswana	23 October - 25 October, 2025	Abstracts due 17 March; papers due 24 March

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

New ACM Open Publishing Policy
By Rodrigo Silva Duran, SIGCSE Board member

In June 2020, the ACM Council voted to transition ACM's Publications program to a 100% sustainable Open Access model within 5 years with the ultimate goal of making all ACM-published articles open access upon publication. This deadline is fast approaching, and for some ACM-published conference articles the new model is already active. ACM is revamping its publication model with its new ACM OPEN policy. ACM has discussed the potential benefits (open articles are downloaded 100-150% more and cited 70% more frequently) and the challenges of this model in depth. Instead of discussing the merits of the model, we would like to present to our community in concrete terms the impacts of this new publication model for authors: What will change when I publish in a SIGCSE-related conference from 2025 onwards when ACM transitions to a 100% Open Access publication model?

After the transition, all articles published in the ACM Digital Library (DL) will be freely accessible to read and download. If your institution has joined ACM Open there will be no cost to you as an author. As of today, approximately 1,650 universities, government research institutions, and corporations have joined ACM Open with hundreds more expected to join before ACM's transition at the end of 2025. The new model will give more visibility to our work, but it comes with a price: for authors from institutions not covered by agreements with ACM, there will be an Article Processing Charge (APC) of $700 for papers if you are an ACM or SIGCSE member. For non-members, the price will be $1,000, although ACM is working on a transition plan to make the cost more affordable for authors during the first few years of the transition. This transition will be phased, as follows:

(1) As from January 1, 2024, ACM has already started requiring some International Conference Proceedings Series (ICPS) conferences to publish articles on a fully Open Access basis. Exceptions were granted for those conferences that already issued Calls for Papers prior to January 1, 2024. ACM in cooperation conferences published in ICPS fall into this category. These changes affect articles published in conference articles that are

published in cooperation with SIGCSE (e.g., Koli Calling, ACE, etc.).

(2) As from January 1, 2025, all remaining ICPS conferences that did not transition in 2024 will transition to full Open Access in 2025, including in cooperation conferences not sponsored by ACM.

(3) As from January 1, 2026, all ACM Publications, including ACM Sponsored Conferences, Journals, and Magazines will transition to 100% Open Access Publication. This includes the Technical Symposium, ITiCSE, etc. For the 2026 ACM Sponsored Conferences, papers that are submitted in 2025 will be subject to the new requirements.

For those concerned about the cost of APCs, there are some important things to note: First, not every publication is subject to an APC: abstracts, editorials, invited talks, etc. are exempt. As a rule of thumb, every research publication longer than two pages (i.e., a research paper for the DL) will be subjected to an APC. Second, APC is based on the corresponding author. If a corresponding author is from an institution with an agreement with ACM, no APC will be requested. Remember that the corresponding author does not need to be the first author of a publication. During the publication process, any of the authors can be named as the corresponding author and there is an opportunity to change the corresponding author up until the author eRights process is completed. This will be a very important step in publishing your papers. We emphasize that currently there are several agreements on the verge of completion, including nationwide agreements. We suggest authors always check the most up-to-date information on ACM's website.

If the corresponding author's institution does not have an agreement with ACM, the next step is to check if the country of origin of the corresponding author's institution is one of the countries eligible for a waiver. Corresponding authors from low-income, or part of the EIFL and Research4Life consortia countries will receive a full waiver. Authors from lower middle-income countries will receive a 50% discount off Member or Non-Member APC prices (i.e. both the member and country discount can be applied). It is less expensive to join ACM as a Member and receive the Member pricing than to pay the full list price APC. If none of the criteria applies to the corresponding author, it is still possible to request a waiver directly from ACM, however granting discretionary waivers is the exception, not the rule, so please do not request a waiver without a compelling reason.

As a general rule, graduate students from Upper Middle Income or High Income countries that are affiliated with computer science or engineering departments from large research institutions and are co-authoring their papers with faculty members at those institutions are unlikely to receive waivers. ACM is expecting to provide automatic and discretionary waivers for approximately 5~10% of papers ACM publishes each year. If the waiver request cannot be accepted, the author(s) will have to pay the APC. ACM is also expecting that ~70% of all papers published in 2026 will be affiliated with ACM Open institutions, and will not require APC payments from authors, so APCs are the exception and not the rule. This percentage will vary slightly based on the individual conference.

Nevertheless, we understand that some community members will be affected by this new model and will have to pay an APC. For example, a preliminary study from ACM estimates that close to 20% of the Technical Symposium articles from 2024 would have to pay the APC if the policy started today. This number might be significantly lower, in fact, since only the first authors were considered and other authors may have been eligible for a waiver. We are closely monitoring the situation, including a more reliable measure of the number of articles actually impacted by ACM Open and potential actions to mitigate its effects on members of our community. If your institution

is not already a member, reach out to your library (and perhaps your computer science department) to see about interest in an institutional ACM Open membership. The cost of institutional membership is divided into tiers based on institutional article output.

If you have further questions, please use our SIGCSE Board suggestion box.

In Memoriam: Brett Becker
Compiled by Julie M. Smith

The SIGCSE community was saddened by the recent loss of Brett Becker (1976 - 2024). He had been serving as vice-chair of SIGCSE. He was an assistant professor in the School of Computer Science at University College Dublin, founder and chair of the Ireland SIGCSE chapter, and associate editor of ACM TOCE. He was also the inaugural chair of the ACM Global Computing Education conference.

Brett Becker at ITiCSE 2024 in Milan. Photo credit: Dennis Bouvier.

"Brett was a really close colleague, and a great friend. He was one of the most productive researchers I've ever known, always striving for excellence. Being on stage at ITiCSE 2023 with some of my best friends, including Brett, for the closing keynote is a (now bittersweet) career highlight for me. I sorely miss him. I'm lucky to have known him, and I'll forever be inspired by his dedication to computing education." – Juho Leinonen

Brett had earned nine awards for best paper, two for best presentation, and one for best poster. His research interests included metacognition, novice

behavior, sense of belonging, heterogeneous high performance computing, and generative AI in education.

"The Third Level Computing Forum would like to share our sorrow and sympathy at the passing of Brett Becker. Brett was a stalwart member of our group, always willing to assist in any way he could and to share his extensive knowledge and research findings. He helped us to prepare for and embrace the inevitable advances of Gen AI in education. Brett will be sadly missed. May he rest in peace." – Ted Parslow, TLCF Chairperson


Brett Becker with Jane Waite at UKICER 2024. Photo credit: Troy Astarte.

Brett had recently co-authored the textbook *Computer Science for Leaving Certificate*, and he had noted in a podcast that "some of the most enjoyable chapters of the book that I wrote were on the societal impacts of computing."

"I knew Brett better than many (and not as well as a few). He and I met at ITiCSE 2016 in Peru. I quickly learned of his passion for high-quality computing education research. His drive for research and ability to bring teams of researchers together around a topic resulted in many best paper awards. I found him generous with his time and talent. His energy made positive impacts on the SIGCSE organization and several of the conferences. He credited his aunt for inspiring his love of travel and appreciation for many cultures. We also bonded over a love of music and an appreciation for fast cars." – Dennis Bouvier

Members of the SIGCSE community honored Brett both for his keen intellect as well as his personal qualities – qualities that made him a treasured member of the community who took seriously the charge to mentor those new to the field as well as to push the edge of knowledge. Greg Nelson observed that, "Brett was always welcoming, curious, and deeply kind." Michael Kölling noted that "Brett was a valued member of our community, energetic and active, helpful and supportive of others. He was a friend." And Rob O'Conner remarked that Brett "was always a joy to deal with – warm, friendly and incredibly well-informed."
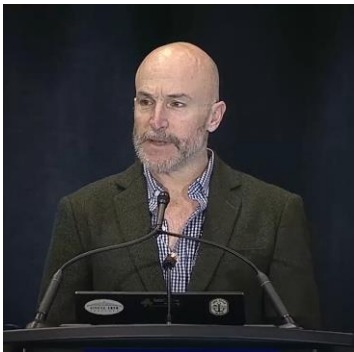
Brett Becker announcing the SIGCSE Award Keynote, Susan Rodger, in March 2023 (source: video posted by Susan Rodger)

"Brett Becker was a great friend and colleague who helped make the new ACM CompEd Conference happen. When I was first working on creating this conference, someone mentioned that Brett Becker could help. Our first conference was going to be in China, and he taught in China for several months each year. Brett was so enthusiastic about the conference, he was put on the first steering committee for ACM CompEd as Chair. We had to create everything, the location, the committee, the logistics, even the name for the conference! Brett was fantastic to work with! He came through strong and did a lot of the logistical work to make the first ACM CompEd Conference happen in May 2019 in Chengdu, China. And he continued to lead us through a pandemic, and help make the second CompEd Conference happen in December 2023 in Hyderabad, India. Brett, it was so great to work with you. I was also so pleased in March 2023 when you, as Vice Chair, were the one to award me the SIGCSE Outstanding Educator

Award at SIGCSE 2023. I put that video on YouTube and watched it again recently. In the first two minutes, as you fight against some noise in the background, that part shows your kindness, humor and fun side. You were also so proud to be the Vice Chair as a volunteer for SIGCSE. I miss you and miss working with you!" – Susan Rodger

Amruth Kumar shared this: "I am happy to say, Brett was a good friend of mine. He was everything, everywhere, all at once. He was conscientious and flawless at everything he did – whether it was in an area (curriculum, LLM use in computer science, computer science education research, to mention but a few), on conferences (SIGCSE Technical Symposium, hosting ITiCSE, steering CompEd, to name a few), or in service (SIGCSE Board, conference committees, and my favorite – CS2023). He was the 'usual suspect' - one of the first names that came up when anyone in the community wanted anything done well. He was a global citizen (Ireland, China, USA, Australia to mention just a few countries). But, he always took pride in being a 'Jersey boy,' with roots in New Jersey (USA). This was an in-joke we shared, since I also happen to be a 'Jersey boy.' I am sad to say, Brett was a good friend of mine."

"I first met Brett in 2018 during a week-long summer school at UCD as part of a post-grad course for aspiring Computer Science teachers. The course was on 'How Computers Work,' and from the moment it began, I was struck by how warm and engaging Brett was. His enthusiasm and passion for making Computer Science accessible and interesting played a big role in my decision to pursue teaching this wonderful subject at second level. . . . When I began my doctorate, Brett was incredibly generous with his time and advice. He encouraged me to submit and present my work at conferences, pushing me to achieve things I hadn't thought possible for myself. I will miss Brett dearly. His passing is a huge loss to the CS education community. Rest in peace Brett." – Irene Stone

Brett Becker with Simon, Michael Kölling, Michael E. Caspersen, and Laurie Malmi at ITiCSE 2022 in Dublin, which Brett chaired. Photo credit: Catherine Mooney.

Brett will be missed. We send our deepest sympathies to his family and friends.

"It is with heavy hearts that we write this memorial for Brett; he was both a dear friend and a tremendous research collaborator; a pillar of our group. We all first bonded with Brett over one of his favorite topics – programming error messages – but it was his enthusiasm for generative AI and its impact on computing education that will be our enduring memory of him.

Brett's intellectual sharpness was matched only by his passion. We would receive all kinds of enthusiastic updates from him at all hours, from the latest papers to new collaboration opportunities, and it was impossible to spend time with Brett and not end up feeling completely energized and inspired. He had a talent for finding humor in every situation, even during difficult times. He cared deeply for his friends and anyone new he met was simply not yet a friend.

Brett was an incredibly productive scholar, one of the most prolific in our field, with an immense wealth and depth of knowledge. He worked harder than anyone we know and always shared credit for his many successes. A highlight of our collective careers was sharing the keynote at the ITiCSE conference as a group in 2023 – a culmination of two years exploring generative AI in computing education. Brett has told us how proud he was of this moment; we are grateful to have shared the stage with him. Of all of us, Brett was perhaps the most visionary, regularly discussing and prognosticating on what the future might hold. His aim was to rise to meet it; and he did.

We miss Brett as one of the most influential leaders in our field. He served as Vice-Chair for SIGCSE, Deputy Editor-in-Chief of ACM TOCE, and served in many other impactful ways, such as fostering more global participation at the SIGCSE Symposium through his pioneering International Buddy Program. Brett has led numerous ITiCSE Working Groups and Dagstuhl Seminars, with others in the pipeline, including a Dagstuhl Seminar scheduled for mid-2025 where he remains listed as an organiser, in memoriam; this is just one of many upcoming events where Brett's loss will continue to be felt for a long time to come.

Of the many cherished memories we have of Brett, one that remains vivid is captured in the last voicemail he left us. We were working against a tight paper deadline, and Brett recorded a short update of his progress that day. Calm, collected and cool under pressure, it was typical Brett Becker – he was going to rest for a bit, but would be back to wrap up his section soon.

We will forever carry Brett's memory with us, inspired by his work ethic and passion for advancing computing education." – James Prather, Juho Leinonen, Paul Denny

James Prather, Brett Becker, Paul Denny, and Juho Leinonen at SIGCSE 2023. Photo credit: Cindy Zastudil.

ITiCSE Announcement
By Erik Barendsen, Jim Paterson, and Keith Quille

The 30th annual ACM Conference on Innovation and Technology in Computer Science Education (ITiCSE) will be held at

Radboud University in Nijmegen, Netherlands, from 30 June to 2 July 2025. ITiCSE is a computing education conference held annually, typically in Europe, sponsored by ACM SIGCSE and in collaboration with ACM Europe Council and Informatics Europe.

Nijmegen is the oldest city in the Netherlands, with a city center full of important historical locations. Nijmegen was founded by the Romans as an important base because of its strategic location. The city is exciting, interesting, and has a turbulent history. And it's not just a rich cultural history that Nijmegen has to offer. Nijmegen is a lively city with many cozy restaurants, bars and terraces that give the city a young vibe. Furthermore, you can find examples of modern architecture. For instance, a spectacular water management project 'Room for the River' was completed a few years ago, involving a change of the course of the river and the creation of an artificial island.

Nijmegen is well-connected: traveling to Amsterdam takes just a bit more than one hour. There are direct trains to and from Amsterdam and Amsterdam Schiphol Airport.
The green campus of Radboud university is located outside the city center of Nijmegen and is easily accessible by bike or public transport. Radboud University is a broad university where research and education go hand in hand. Students and staff members feel connected to each other, to society, and to the world around them. For the conference, we are happy to welcome you at the Faculty of Science, in the modern Huygens Building.

The 2025 conference will follow a similar format to recent editions with working groups, an integral feature of ITiCSE, meeting for three full days before the conference from June 27-29, with the conference taking place June 30 to July 2. ITiCSE 2025 will be an in-person conference.

The call for participation is available on the conference website, https://iticse.acm.org/2025/.

Full papers are submitted at two deadlines, a week apart, with abstracts due by January 12 2025 and the complete paper due a week later for dual-anonymous review. Proposals for working groups are also due by January 19 2025 while submissions for panels, posters, the doctoral consortium, and tips, techniques, & courseware will be due by March 2025.

Please visit the conference website https://iticse.acm.org/2025/ for updates and more information over the coming weeks and months. We look forward to meeting you in Nijmegen!

Koli Calling 2024 Conference Recap
By Juho Leinonen and Andreas Mühling

Koli Calling is a long-running conference for researchers, educators, and practitioners in computing education, providing opportunities for presenting research and networking in a unique natural setting. The conference is a single-track event and covers a wide range of topics within computing education. The 24th Koli Calling International Conference on Computing Education Research (Koli Calling 2024) took place from November 14-17, 2024, in the beautiful Koli National Park in Eastern Finland. This year, there was a pre-conference workshop on November 13th and a Doctoral Consortium on November 12th-13th, with both events taking place in Joensuu, Finland, about 60 kilometers from the Koli National Park. The conference was held in cooperation with the ACM and SIGCSE and was organized by the University of Eastern Finland, Aalto University, and the Leibniz Institute for Science and Mathematics Education (Germany).

Photo credit: Juho Leinonen

We welcomed a total of 62 attendees in person at Koli and 13 online. Out of the in-person attendees, approximately half attended either the doctoral consortium, chaired by Nick Falkner, or the pre-conference workshop, organized by Matti Tedre and Ismaila Sanusi. The attendees enjoyed hearing a keynote by Professor Lauri Malmi on "24 years of Koli Calling – reflections on the conference and the development of computing education research as a research field." In addition to the keynote, there were a total of 23 paper presentations, nine poster/demo presentations, and eight doctoral consortium presentations at Koli. Eight papers and three posters/demos were presented asynchronously online. For social activities, participants were able to participate in the usual Koli activities of going to the sauna and spa, board games, as well as a wine tasting organized by Nick Falkner.

The best paper award went to Fabian Pfütsch and Frank Höppner for "Estimating and Differentiating Programming Skills from Unstructured Coding Exercises via Matrix Factorization." The best in-person poster award was voted on by the participants. There was a tie between "Introducing Block-Based Testing in Scratch" by Siegfried Steckenbiller, Patric Feldmeier, Gordon Fraser, Ute Heuer, and Florian Obermüller, and "Thinking Beyond the Familiar with the Research Alternatives Exercise" by Nickolas Falkner and Rebecca

Vivian, so both posters were awarded the best poster award.

The conference could not have been held without the efforts of the local organizing committee, including Ilkka Jormanainen, Samuel Yigzaw, and Ismaila Temitayo Sanusi. The conference is also grateful to Otto Seppälä for his support in configuring the online environment and helping with social activities such as board games and the traditional nature walk. We are truly thankful for the service of all the organizers to the Koli community.

We look forward to welcoming everyone back to Koli in 2025, which will once again feature a Doctoral Consortium alongside the traditional conference program.

SIGCSE Technical Symposium 2025: Information for Attendees
By Jeffrey A. Stone and Timothy Yuen, SIGCSE TS 2025 Symposium Co-Chairs, and Samuel A. Rebelsky, Libby Shoop, and James Prather, SIGCSE TS 2025 Program Co-Chairs

The 2025 SIGCSE Technical Symposium will soon be upon us! The Technical Symposium will take place in Pittsburgh, Pennsylvania from February 26 to March 01, 2025. We are looking forward to welcoming the SIGCSE community at the David L. Lawrence Convention Center on the banks of the Allegheny River. Our theme for this year is "Leading the Transformation."

Registration is now open for all attendees (https://sigcse2025.sigcse.org/attending/Registration+)

We encourage you to register by January 10, 2025, to take advantage of the early registration rate.

The 2025 SIGCSE Technical Symposium program is now live (https://sigcse2025.sigcse.org/program/program-sigcse-ts-2025/) and includes both in-person

and online attendance options. Similar to last year's symposium, the 2025 program will include programming that extends into late Saturday afternoon. Wednesday will continue to be a day for affiliated events and tutorials as well as some supporter sessions. Please remember that advanced registration is required for tutorials and many of the affiliated events. Registration for tutorials is available while registering for the Technical Symposium. Registration instructions for Affiliated Events can be found by clicking on their entries in the online program. Thursday and Friday will again be full of presentations, panels, and other sessions. Thursday's programming will begin with a keynote presentation by Dr. Cecilia Aragon, the CTO of Traffigram and the director of the Human-Centered Data Science Lab at the University of Washington. Dr. Aragon's talk is entitled "What is Human-Centered AI and Why Does It Matter?" Saturday's program will again run until 3:00pm with Tutorials following at 3:30pm. The Saturday program will begin with a keynote presentation by Dr. Jamika Burge, the CEO and Co-Founder of blackcomputeHER.org, INC. Dr. Burge's keynote is entitled "Intersectionality is Computer Science Education." We encourage you to plan your stay so that you can enjoy the entire set of Saturday programming, including the "Nifty Assignments" session at 1:45pm.

For those who will be attending the Technical Symposium in person, Pittsburgh is a vibrant city bursting with excellent restaurants, abundant shopping, historical sights, and a diversity of cultural events. Public bus transportation is available from Pittsburgh International Airport, and rail transportation is available to a variety of areas. Hotel rooms can now be reserved using the information found on the SIGCSE TS 2025 site (https://sigcse2025.sigcse.org/attending/Hotels.

We have five conference hotels, all within walking distance of the David L. Lawrence Convention Center. This year's official conference hotels are the Omni William Penn Hotel, the Courtyard Pittsburgh Downtown, the Drury Plaza Pittsburgh Downtown, The Westin Pittsburgh, and the AC Hotel Pittsburgh Downtown. The Westin Pittsburgh is attached to the convention center by an enclosed walkway. If you don't have a preference regarding hotels we'd ask that you please consider staying at the Omni William Penn Hotel as that is the property where we are currently furthest from meeting our booking obligations.

For those interested in attending online, our hybrid offering will be similar to 2024. An online registration fee will provide access to a subset of the Technical Symposium's content, including live online streaming of two keynote presentations, three plenary sessions, the first-timers lunch presentation, an awards presentation, the Nifty Assignments session, five panel sessions, three special sessions, and 15 papers that are being presented remotely by their authors. There will also be one online tutorial. Please note that no recorded content will be available. As in prior years, the SIGCSE Coffee Break show will all be live during many breaks. Please check out the Technical Symposium site (https://sigcse2025.sigcse.org/) to learn more.

Thank you for supporting the SIGCSE Technical Symposium. We hope to see you in Pittsburgh in February!

CompEd Announcement
By Michelle Craig and Samuel Mann (CompEd Programme Chairs) and Ethel Tshukdu (2024 CompEd Chair), on behalf of the CompEd Steering and 2024 Committees

An ACM SIGCSE conference, CompEd is held outside of North America and Europe every other year. ACM CompEd 2025 will be hosted by the University of Botswana.

At the intersection of computing and the learning sciences, the event seeks to promote global computing education development.

The 2025 conference will take place in person in Gaborone, Botswana. We encourage your participation in this emerging community and welcome you to share your innovative ideas for computing syllabi, laboratories, teaching, pedagogy, and education research with a global audience.

The CompEd conference series focusses on building a community of computing education researchers across the world. The conference has fully dual anonymous reviewing with an expected acceptance rate of between 25 and 35% and publication in the ACM Digital Library. This third conference follows in the footsteps of successful conferences in Chengdu, China and Hyderabad, India.

Planning for CompEd 2025 is well underway. The conference will be hosted by the University of Botswana on 23rd - 25th October 2025 with Working Groups 21st - 22nd October. The website https://comped.acm.org is updated with further information about the CompEd 2025 conference, and the exciting opportunity to travel to Botswana later this year. Some important deadlines are nearing. Submit your paper abstracts before 17th March and full papers, panels and working group proposals before the deadline of 24th of May.

Panels are running a bit differently this year, with proposals for panel topics due 24th March with later nominations for panellists.

Other new initiatives are an option for Phased Paper submission, and Partnership Projects. (See the website for details).

Botswana is a landlocked country in Southern Africa, it embodies tranquillity and safety amidst breathtaking natural landscapes. Renowned for its peaceful environment, it offers a haven for travellers seeking serenity and adventure alike. Botswana boasts a rich cultural tapestry, with vibrant traditions and warm hospitality.

Above all, Botswana is renowned for its safety and stability, providing peace of mind for visitors from all corners of the globe. Whether exploring the wilderness or unwinding in luxury lodges, guests can revel in the beauty and tranquillity of this remarkable country, making memories to last a lifetime. Welcome to Botswana, where every moment is a testament to the harmony between humanity and nature.

The University of Botswana has a vision of being a "leading centre of academic excellence in Africa and the World". The mission of "improving economic and social conditions for the Nation while advancing itself as a distinctively African university with a regional and international outlook" aligns perfectly with CompEd's goal of promoting global computing education development.

We hope to see you in Botswana in October!

Equity Spotlight: Benjamin Xie
By Julie M. Smith and Charles Wallace, *SIGCSE Bulletin* Co-Editors; Benjamin Xie

Dr. Benjamin Xie is a Postdoctoral Fellow at the Stanford Human-Computer Interaction Group & Graduate School of Education and an Incoming Assistant Professor at the University of Denver Computer Science Department

You co-authored a literature review about teaching ethics in computing. What led to your interest in ethics?

During my PhD at the University of Washington Information School, two courses in particular broke my brain: Critical Data Studies taught by Dr. Anna Lauren Hoffmann and Value Sensitive Design taught by Dr. Batya Friedman. These two courses challenged my prior assumptions of

computing as neutral, objective, or even good. To more deeply explore my ponderings about computing disparately impacting societies, I joined the Stanford Institute for Human-Centered Artificial Intelligence and McCoy Family Center for Ethics in Society as an Embedded Ethics Fellow in 2022. In this role, I would work with philosophers, CS faculty and CS teaching assistants to design lectures, activities, assignments, and assessments that embedded ethics and social responsibility into 11 undergraduate CS courses. Prior to starting this position, I connected with co-first author Dr. Noelle Brown (Assistant Professor, Lecturer in the Kahlert School of Computing at the University of Utah) at ICER 2022 to better understand what we already know about computing ethics education.

Dr. Benjamin Xie. Photo credit: Lotus Pod Designs

What finding in that lit review most surprised you?

Interest in computing ethics education is exponentially growing! While our analysis included 100 research articles published over two decades (1983-2022), half of the papers were published in only the last five years. However, most papers did not provide a conception of what "ethics" meant in their course. This is quite problematic because there isn't one singular definition of ethics! Borrowing from engineering education, we can consider ethics at micro and macro levels. Micro ethics involves individual responsibility,

whereas macro ethics considers group or collective responsibility. While many codes of professional conduct (e.g. ACM Code of Ethics and Professional Conduct) tend to focus on micro ethics, realizing equity-oriented goals typically requires a macro perspective on ethics (e.g. an organization or community's moral responsibility).

What did you learn about the intersection of ethics and equity?

The intersection between ethics and equity is fruitful, but under-realized. Few computing ethics education papers made clear connections between ethics and equity. Those that did considered the social impact of computing, such as gender bias in hiring algorithms, inequitable impacts of self-driving cars, and accessibility issues with AI. Other studies investigated interdisciplinary collaborations in computing courses through service learning and community engagement. Other studies used counter-narratives and ethical speculation to consider how computing and the select organizations that develop technologies impact societal power structures. Ongoing work that I excitedly follow includes Dr. Nikki Washington's research on cultural competency in computing, co-author Dr. Casey Fiesler's research on ethics in computing projects, and efforts to embed ethical and equitable perspectives throughout computing and informatics courses at institutions such as Stanford, University Washington Seattle, Harvard, Georgetown, and Northeastern.

What have you learned about ethics and equity that might be of use to those teaching CS?

Adapting computing education experiences to integrate ethics and strive towards equity typically involves considering existing courses, students' perspectives, and institutional cultures. Consider these factors when articulating learning objectives which connect computing with social impact, engaging with cross-disciplinary expertise, and designing pedagogies

and assessments. Articulating a clear learning objective with a relevant conception of ethics enables instructors to justify their integration of ethics into a course or major to colleagues, departmental leadership, students, and themselves! I encourage CS instructors to look beyond dominant Western notions of ethics to conceptions of ethics, such as feminist care ethics and Ubuntu philosophy.

Many disciplines have thought about ethics and equity for longer than CS, so there are opportunities to engage with philosophers, critical scholars, and other cross-disciplinary experts for guest lectures, curriculum development, and co-instruction. Because ethics expertise will likely vary amongst teaching teams, defining clear rubrics can support instructional design and assessment. How to engage and assess students will vary, but instructors can look to existing resources for inspiration, such as EngageCSEdu's Ethics & Computing Repository, Computing Ethics Narratives, and Stanford's Embedded Ethics repository.

As a CS educator, how do you think we can address inequity issues that exist in the field?

We have to PLURALIZE how we teach computing! We must pluralize what CS is: engineering and math, as well as social science. We must pluralize where CS happens: in CS departments and technology companies, as well as in communities and government agencies. We must pluralize who "does" CS: CS students, along with humanities and social science students, community members, and policy makers.
We must pluralize what CS produces: theories, systems, tools, as well as socio-technical designs and disparate social impacts. We must pluralize what's taught in CS courses: theory, math, systems, software engineering, along with design, ethics, and cultural competency. We must pluralize the goals of CS: scaling, efficiency, and profit, along with more equitable societal structures. We must pluralize what CS costs: money, time, electricity, hardware, along with hidden human labor and environmental degradation.

If we can pluralize CS, we can build students' capacities to engage with powerful ideas and tools which they can use to unseat individual and collective social oppressions!

Member Spotlight: Samuel Mann
By Julie M. Smith and Charles Wallace, *SIGCSE Bulletin* Co-Editors; Samuel Mann

Dr. Samuel Mann is a Professor at Otago Polytechnic in Dunedin, New Zealand, focused on computing and sustainability. He was a leader in developing the ACM's draft statement on Education for Sustainability.

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

I am a geographer turned software engineer who stumbled into computing in the mid-90s as I could see computing as a lever for making a difference. I was jointly working at the regional council in land-management, researching sustainable computing, and teaching computing. When Otago Polytechnic was first accredited to teach the Bachelor of Information Technology, I moved there (from the university on the same campus) with a mission of developing a research culture. I found a national group that actually cared about teaching enough to research it (thank you Alison and Tony Clear), and within a year was running New Zealand's national conference on computing education research.

Dr. Samuel Mann. Photo credit: Otago Polytechnic

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

Computing's lever is lengthened by education - the potential of helping CS graduates learn how to make the world a better place keeps me energised. I developed the concept of the sustainable practitioner and have spent much of the last 20 years working out what this means for computing - and how to teach it. This is embedded in NZ computing curricula, and it is pleasing to see these ideas now getting traction in international documents. I was chair of CITRENZ (NZ's national computing education body) and in that role led the national review of computing qualifications. I led the development of a 4th generation professional doctorate, the Doctor of Professional Practice. Many of my learners in the DPP are computing professionals, adding a rigorous critical curiosity to their practice as they make a difference in their practice. My most recent focus is on decolonising computing education.

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

While I think there will always be a role for conventional taught programmes, for ten years I

have taught computing in a school of work-based learning and professional practice. This is based on heutagogical principles (processes of learning over focus on content, facilitators as co-learners over lecturers as experts, and so on). This goes beyond "self-directed" to "self-determined" – "where do I want to go, and how do I want to get there?" As such, I developed an entirely project-based degree, the Bachelor of Leadership for Change, where learners define their own graduate outcomes, pathways, and negotiate how they will evidence this learning. In this way, if they want to be, say, an app developer for micro-finance in the Global South, they don't have to choose between CS, finance and sociology – they create their own project-based pathway. As static career structures tumble – in computing and elsewhere – we need to better prepare CS graduates for fluid careers of change.

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

I initially read "community" here as "wider society" rather than "CS education community", but sticking with my accidental direction, I think CS education is beset by a CS profession that doesn't know who it is or why it exists. When asked for the underlying values of their profession, every nurse will tell you something about an "ethic of care", but CS professionals will fudge about making money, or intellectual challenge, or enabling business. The problem is that computing's apparent lack of values does not mean technology is benign, rather that we have come to presume that efficiency, speed and productivity are values that match societal aspirations. So, as the CS education community, we need to lead discussions about going beyond efficiency and turn our graduates' attention to the

real world of ambiguity, wicked problems, and uncertain outcomes. We need to foster creativity, empathy, and human connection to ensure that progress aligns with societal well-being.

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

The first step is to recognise that computing is a colonising force – acting in support of structural colonisation, and in its own right – imposing universal logic and encoded systems. The world, particularly the Global South, is not a problem to be solved by an app for a Seattle coffee shop. Yet every university library has stacks of identical CS books. Missing are local models of practice, local stories of everyday life – contexts that go beyond efficiency to decolonise, re-indigenise, and localise. We need to value and empower these diverse stories - both for the sake of providing a welcoming home for more diverse CS learner and professional communities, and for moving the dial on what can be achieved with a computing education.

What do you enjoy doing when you are not working?

I'm an open-water swimmer. My goal for this (Southern Hemisphere) summer is the Otago Harbour in both directions, 44km.