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SIGCSE News in Brief

We will open the book. Its pages are blank. We are going to put words on them ourselves. The book is called opportunity and its first chapter is New Year's Day. – Edith Lovejoy Pierce

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

Many of us at this time of year engage in personal reflection, renewal, and rebooting. The last year was intensely challenging; it was filled with uncertainty, loss, disruption, and struggle. It is an appropriate time to reflect on what we have learned, to renew our commitment to who

we want to be, and determine actions we can undertake to have the impact that we value. It is a time to embrace our hard-earned lessons about what worked and jettison the bits that didn't work. Or maybe it's just a time to give ourselves permission to focus on surviving another chaotic academic term while hoping for a brighter new year.

In this issue of the *Bulletin*, there are several articles about SIGCSE members receiving awards: ACM Fellows, ACM Distinguished Members, SIGCSE Special Project Grants, and SIGCSE Awards. There are previews for two SIGCSE conferences: the Technical Symposium and the International Computing Education Research conference. Season 2 of the CS-Ed

Podcast is highlighted.

We wrap up this issue of the *Bulletin* with an interview with Dr. Dennis Bouvier. Dr. Bouvier is currently a Professor of Computer Science at Southern Illinois University Edwardsville and a Distinguished Visiting Professor in the Department of Computing and Cyber Sciences at the United States Air Force Academy. We hope you enjoy this issue of the *Bulletin*.

If you are interested in applying to become the next SIGCSE *Bulletin* co-editor, Karen Davis will complete her 3-year term after the next issue. Please apply at this link by March 1, 2021 to be considered:

<https://forms.gle/is8oMF1EHEcjdN5A>

Upcoming Dates and Deadlines

Conference	Location	Dates	Full Paper Submission Deadline
SIGCSE TS 2021	virtual	March 13-20, 2021	already passed
ITiCSE 2021	virtual	June 26-July 1, 2021	already passed
ICER 2021	virtual	August 16-19, 2021	abstracts March 19; full papers March 26, 2021

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

ACM Fellows and Distinguished Members in SIGCSE

By Adrienne Decker

ACM has recently announced the 2020 Fellows and Distinguished Members. I am happy to share that the following two SIGCSE members were honored as Fellows:

- Susanne E. Hambruch
- Paul Resnick

and five SIGCSE members were honored as Distinguished Members:

- Tiffany Barnes
- Barb Ericson
- Deepak Kumar
- Panagiotis Papadimitratos
- Gloria Childress Townsend

The ACM Fellows program recognizes the top 1% of ACM's worldwide membership and the Distinguished Member program recognizes the top 10% based on professional experience as

well as significant achievements in the computing field.

The full list of this year's ACM Fellows is available here:

https://awards.acm.org/award_winners?year=2020&award=158

The full list of this year's ACM Distinguished Members is available here:

https://awards.acm.org/award_winners?year=2020&award=157

Please join me in congratulating Susanne, Paul, Tiffany, Barb, Deepak, Panagiotis, and Gloria on their well-deserved awards!

SIGCSE Special Projects Grants Awards for 2020

By Laurie Murphy

Special Project Grants of up to US\$5000 are available to SIGCSE members to support projects that will bring some clear benefit to the computing education community in the form of new knowledge, a resource, or good practice in learning, teaching, or assessment.

Submissions are typically considered twice a year in May and November. However, due to the financial impact of the cancellation of the 2020 Technical Symposium on the SIGCSE organization, there was only one round of submissions in 2020.

The SIGCSE Board is pleased to announce SIGCSE Special Projects grant awards for 2020. For this round 30 applications were received. Three projects were chosen for funding. This gave an overall acceptance rate of 10%. The following projects have been funded:

Developing Criteria for K-12 Learning Resources in Computer Science That Challenge Stereotypes and Promote Diversity

Applicants: Sue Sentance and Hayley Leonard, Raspberry Pi Foundation, Cambridge, UK

This project aims to broaden participation in computing and address the needs of diverse learners in K-12 by developing a set of guidelines for teaching resources that are informed by culturally-responsive pedagogy.

Big Ideas of Cryptography

Applicants: Michael Lodi, Marco Sbaraglia and Simone Martini, Alma Mater Studiorum-Università di Bologna, Bologna, Italy

This project aims to build a “Principles of Cryptography” learning path, specifically designed for secondary school students.

Student Communication During Group Projects: Reporting on Gender Bias Language

Applicant: Rita Garcia, University of Adelaide, Adelaide, Australia

The goal of this project is to determine whether gender bias occurs during students' group work communication that might build the barriers that female contributors experience while working on software projects.

Over 100 projects have been funded since the program started in 2003. See the complete [List of Previous Projects](#) for an idea of the range of projects that have been supported. Submissions are typically considered twice per year and projects to be funded are announced to the community in the SIGCSE Bulletin and on the SIGCSE website and SIGCSE-announce forum. The next deadline for submissions will be **May 15, 2021**. Please note the specific requirements for the [SIGCSE Special Projects Grant Application Process](#), including that the applicant must be a SIGCSE member to be eligible. Questions are welcome and should be sent to apply@sigcse.org.

SIGCSE 2021 Award Winners

By Dan Garcia, SIGCSE Vice-Chair

There are three annual awards SIGCSE bestows on its best and brightest, highlighting outstanding contributions to CS education, lifetime service to the CS education community, and a paper that has had “meaningful impact on computing education practice and research” that has stood the test of time. On behalf of the SIGCSE Board, and the SIGCSE Test of Time Awards Committee, it is my pleasure to announce the 2021 SIGCSE Award winners:

The **2021 SIGCSE Award for Outstanding Contribution to Computer Science Education** has been awarded to **Professor Stephen H. Edwards**, Virginia Tech, USA. The supporting letters mention Stephen’s service and leadership as the Technical Symposium and Program co-chair, and his recognition as an ACM Distinguished Educator. They highlight his project Web-CAT (the Web-based Center for Automated Testing) that has become the “leading tool for automated grading and feedback,” having been deployed at ninety institutions. Finally, they make a case for his scholarship, having been recognized as one of the most prolific SIGCSE authors. Overall, it paints a picture of an internationally-known leader, innovator, and researcher who has clearly had an outstanding contribution to CS education.

The **2021 SIGCSE Award for Lifetime Service to the Computer Science Education Community** has been awarded to **Emeritus Professor Cary Laxer**, Rose-Hulman Institute of Technology, USA. The supporting letters reveal how his “skill, insight, leadership, and commitment guided the registration for numerous SIGCSE events for over 20 years.” Anyone who has attended the Technical Symposium in the last two decades can attest to the fact that Cary and his team have been the steady, stoic anchors of registration, always with a smile, a hug, and a patient answer to any question. The letter goes on to remind us of his long-term volunteer work with accreditation as

well, from ABET through CSAB. In summary, it describes a tireless altruist who epitomizes the spirit of the lifetime service award.

The **2021 SIGCSE Test of Time Award** has been awarded to “**The Incredible Shrinking Pipeline**,” authored by **Professor Tracy Camp**, Colorado School of Mines, USA. [Tracy Camp. 1997. The incredible shrinking pipeline. *Commun. ACM* 40, 10 (Oct. 1997), 103–110. DOI: <https://doi.org/10.1145/262793.262813>]

The nomination letter, signed by more than one hundred and twenty others (reading like a “Who’s Who in Computing Education”) discusses the impact the work has had, with “the distinction of being the most-cited paper in gender issues of undergraduate computing.” The paper surfaced, for the first time to a wide audience, how the percentage of women in computing plummeted from 50% (fraction of female high school graduates at the opening of the pipeline) all the way down to 5% (at the end of the pipeline) for female full professors. The author ended with a call to action for all of us -- “what can we, as a community, do to improve the situation?” and provided resources as a starting point. It clearly stands the test of time, in that it led to a snowball effect in the computing education community, who went searching for answers to the questions posed, to “better understand the issues that existed for women in computing and make positive change for the future.”

The awards for Stephen, Cary, and Tracy will be presented at the SIGCSE Technical Symposium being held online from March 13-20, 2021. Please join me (if you haven’t already) in congratulating these outstanding members of the SIGCSE community.

For more information about these awards, including lists of previous winners, please visit <https://sigcse.org/sigcse/programs/awards.html>.

SIGCSE 2021 Technical Symposium

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

The 2021 Technical Symposium is quickly approaching and we could not be more excited to welcome you to the first-ever virtual Symposium! We are equally thrilled by the quality of the program that we have the honor to share with you. The schedule is available at <https://sigcse2021.sigcse.org/schedule/>.

While we are disappointed that we cannot all be together in person, and we look forward to the time that we can be, we are excited for the new opportunities offered by a fully virtual format. For example, most authors have prerecorded presentations that will be available to all attendees roughly two weeks before the Symposium begins and for a full year from that date. We also have expanded our schedule to provide almost two weeks of events and technical sessions in which attendees can participate.

We are especially honored and grateful that the keynote speakers originally scheduled for the 2020 Symposium agreed to fill those roles again this year. Dr. Juan E. Gilbert will give the opening keynote address. He is the Andrew Banks Family Preeminence Endowed Professor and Chair of the Computer & Information Science & Engineering Department at the University of Florida where he leads the Human Experience Research Lab. He is also an ACM Fellow, a Fellow of the American Association of the Advancement of Science, a Fellow of the National Academy of Inventors, and a Senior Member of the IEEE. He will share with us his vision for expanding opportunities through research for societal impacts.

Dr. Valerie E. Taylor, CEO and President of the Center for Minorities and People with Disabilities in IT (CMD-IT), will give our closing keynote address. The vision of the

Center for Minorities and People with Disabilities in IT organization is to contribute to the national need for an effective workforce in computing and IT through synergistic activities related to minorities and people with disabilities. Dr. Taylor will discuss lessons learned from the CMD-IT University Award for the Retention of Minorities and People with Disabilities in Computing as well as other organizations and alliances focused on retention of diverse students and present some challenges to the CS Education community.

More generally, we are excited that the virtual platform gives us the ability to include content planned for the 2020 Symposium that could not be presented then. The senior 2020 Symposium and Program Co-Chairs, Jian Zhang and Sarah Heckman, respectively, are leading a special event before the 2021 Symposium starts called “SIGCSE 2020 Redux.” A selection of some of the best papers and sessions from 2020 will be presented in a format similar to the rest of the 2021 Symposium.

We cannot wait to see you all throughout the month of March online in Pathable for the 2021 Technical Symposium! Make sure to register as soon as possible at <http://sigcse2021.org/register> to get the best possible rates. Then be on the lookout for an email from Pathable in early March to set up your account and start watching the amazing presentations, setting up meetings with other attendees, and getting into the exhibit hall early.

Thanks to everyone in the community for your patience with this entire process of moving the Technical Symposium online. We really appreciate it and are looking forward to showing you what the 2021 Symposium has to offer.



ICER 2021 Preview

By Amy Ko (ACM Senior Member), Renée McCauley (disting), Jan Vahrenhold (ACM Senior Member), and Matthias Hauswirth

You are warmly invited to the 17th Annual ACM International Computing Education Research (ICER) conference (<https://icer2021.acm.org>), held online the week of 16 August 2021.

ICER is the premier international conference for research on computing education. We invite everyone: researchers, educators, policy makers, product designers, organizers, and more, to join us for a vibrant experience that centers around inclusive community building and shared discourse. Online for the second year in a row, we are particularly interested in welcoming first-time attendees, including those new to computing education research, as well as long-time attendees of other SIGCSE-sponsored events who have yet to attend.

This year, we are introducing some changes and updates to make the conference even more polished and accessible. The research track is extending the paper length limit and adopting ACM's new TAPS publication process, to ensure that published works are more universally accessible to all readers on all devices. As always, the conference will also include lightning talks, posters, a doctoral consortium, and a works-in-progress event. Throughout, the conference will focus on building community, while also advancing our theoretical, technical, and practical knowledge about teaching and learning computing.

While we can't promise any of the wonders and intrigue of travel this year, we can promise an inclusive and serendipitous event: we're planning something that everyone can join, for a few hours a day, that prioritizes connection over consumption. We hope you'll join us in your browser in August!

Important dates:

- March 19th, 2021: Research paper abstracts
- March 26th, 2021: Research papers complete
- May 1st, 2021: Doctoral consortium applications
- May 28th, 2021: Lightning talks and posters deadline
- June 5th, 2021: Lightning talk and poster submissions

New friends and colleagues await you somewhere on Earth!



photo credit: NASA/[Unsplash](#)

The CS-Ed Podcast Season 2

By Kristin Stephens-Martinez, Duke University

The CS-Ed Podcast is a podcast about computer science education created and hosted by Kristin Stephens-Martinez from Duke University. Season 2's theme is, "Where should we go from here?" The year 2020 has caused so much disruption and calls for change. But what should those changes be? This season aims to provide some food for thought as our host and guests discuss a major topic and then get concrete on what can be done now, within a year, and within the next five years.

Our first episode launched on January 4, 2021, and new ones will come out every other Monday for a total of 6 episodes. Our guests are:

- January 4: Manuel Perez-Quinones (University North Carolina at Charlotte): How to Support Students of Color
- January 18: Jared O'Leary (BootUp PD): What Can K12 and Higher Education Computer Science Learn from Each Other
- February 1: Nicki Washington (Duke University): Cultural Competency
- February 15: Joe Feldman (Crescendo Education Group): his book *Grading for Equity*
- March 1: Leigh Ann DeLyser (CSforAll): Systemic Change
- March 15: Jacqueline Smith (The University of Toronto): How to Teach a Large Flipped Class

You can subscribe to “The CS-Ed Podcast” in most podcast apps. You can find us online at

- <https://sites.duke.edu/csedpodcast/>,
- Twitter: @csedpodcast, and
- <https://www.facebook.com/csedpodcast/>.



Member Spotlight

In this feature of the *Bulletin*, we highlight members of the SIGCSE community. In this issue, *Bulletin* co-editor Karen Davis interviewed Dr. Dennis J. Bouvier.

Dennis Bouvier first practiced programming on a TRS Model III computer in the classroom of his grandmother's Montessori school in the early 1980s. After earning a degree in Electrical Engineering, he continued to earn Master's

degrees in Engineering and Computer Science, before earning a Ph.D. in Computer Engineering. Dennis has taught collegiate computing courses in nine departments, at eight universities, in seven states; and is currently Professor of Computer Science at Southern Illinois University Edwardsville, and Distinguished Visiting Professor in the Department of Computing and Cyber Sciences at the United States Air Force Academy.



Dennis Bouvier
photo credit: Dennis Bouvier

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

My first teaching position was a one-year contract. Friends from graduate school suggested I attend the SIGCSE Technical Symposium that year to see what teaching positions might be available. Their suggestion bordered on insistence, and they even offered to share their hotel room. So I went.

The year was 1995 and the Symposium was in Nashville. I didn't find a job, but I found the CS education community. Though it was 25 years ago, I remember the experience vividly. Not just because walking around with an ACM badge would prompt people to ask if we were with the Academy of Country Music, but because my eyes were opened to the scholarship of CS education. Thanks to Bill Manaris and Renée McCauley.

I attended a few Symposia after that, and even got involved with the education community of SIGGRAPH in the early 2000s. My participation in the NSF sponsored Bootstrap project transformed me from Symposium participant to Symposium contributor. In total, I believe I've participated in 20 Symposia and more than 10 ITiCSE conferences.

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

I have been involved as a conference presenter, submission reviewer, conference committee member, and ITiCSE workshop member. Perhaps the most meaningful way I've been involved is in bringing what I've learned from the community to the classroom. I learned about Peer Instruction from the SIGCSE Community, and have been using it in my classrooms.

I've been fortunate to be a member of a number of multi-institutional computing education research teams. Many of those teams have been in the form of ITiCSE Working Groups. If you haven't been part of a Working Group, you should! I was part of a Working Group at CompEd in China. I've also had the very good fortune of being part of the Bootstrap and Scaffolding research groups.

I learned a lot from my participation in the "Commonsense Computing" research group. We conducted a series of experiments to investigate what beginning computing students

can do on day one. It was encouraging to see that some students could solve meaningful concurrency problems on their first day in an introduction to computing class. I also have been the beneficiary of participating in a multi-institutional group investigating the use of Peer Instruction in computing courses.

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

Since 1995, I've seen the community grow in the sophistication of the educational research being done. This is great! We could benefit from more replication studies to support (or refute) the results of prior work.

I see efforts being made in creating educational tools using HCI and educational research. I think we'll see the development of cognitive tutoring systems for teaching computing topics.

However, the evolution of computing technology, applications, and degree programs will make the development of tools a constant challenge.

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

Our perennial challenge remains, that of having the attention of all CS faculty, not just those who participate in the computing education community. I don't think we're great at spreading best practices within the community (more replication studies, please). I think we are worse at reaching beyond the community. What would computing education be like if even half of the teachers were using educational practices supported by research?

I believe computer science education is evolving in a number of ways. Though I know little of the specifics of computing education at the K-12 levels, I'm confident that will continue to grow. As a result, colleges will need to adapt to those changes.

A more dramatic, and perhaps more immediate, transition will be in the support of new programs that depend on computing as a core topic. Degree programs such as bioinformatics, data science, and digital humanities will challenge departments to adapt.

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

I'm really not qualified to talk about the equity challenges. I'm a white guy who had access to a personal computer in the late 1970s. Nonetheless, I see some inclusion challenges and have been working to change things through outreach activities; but, I am sure I don't see the whole picture. None of us will solve the equity issues alone, but if all of us do a little more than we have been doing, it could make a big difference. I know I need to become more educated on the topic.

I have the good fortune of working with a number of motivated students at Southern Illinois University Edwardsville. Through the students' efforts, we developed an (almost) annual collegiate hackathon. We realized the hackathon was a promoter of the status quo - white guys staying up all night to be keyboard-heros. We still plan to hold that event, but we also hold an event to introduce high school girls to programming: SheCode. It is our hope that the impact is not just in having 20 girls spend the day learning a little programming, but in the impact of having teachers, parents, and the community hear that women are welcome and encouraged to enter the field.

How has the pandemic affected your teaching?

I am currently serving as a Distinguished Visiting Professor in the Department of Computing and Cyber Sciences at the United States Air Force Academy. The visiting

professor program is designed to be a mutually beneficial relationship. The visitor learns how the Air Force teaches computing (in my case) and the Academy receives feedback on its curriculum and teaching. The Air Force Academy does a wonderful job of preparing new (to the Academy) faculty for the teaching mission of the Academy.

My Air Force Academy experience has been impacted by the pandemic (of course), but it has been a great adventure and a learning experience for me. The courses I am teaching have been conducted remote-synchronously. The challenge, of course, is engagement and interaction. I have enjoyed being a Peer Instruction (PI) evangelist at the Academy; although we haven't fully implemented PI due to the remote-teaching challenges. I hope I've made a little positive impact on the teaching at the Academy. Since they've invited me back for second year, I'm planning to use Peer Instruction in a face-to-face Academy classroom next year.

What do you enjoy doing when you are not working?

I enjoy running, hiking, traveling, listening to Rush, and programming (often while listening to Rush). I feel fortunate being able to mix my hobbies with my profession. SIGCSE conferences have afforded me many excuses to travel as well as run with fellow attendees while there. I also make stained glass panels. This hobby gets a very small fraction of my time. I seem to be averaging about one stained glass panel every two years.