# Community Input for CS2023: Society, Ethics and Professionalism

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# ABSTRACT

The current ACM/IEEE-CS/AAAI Computer Science Curricula is approaching ten years old. The CS2023 Steering Committee began efforts to update this important document in spring 2021. The aim of this session is to seek feedback from the community on an advanced draft of the Society, Ethics and Professionalism (SEP) knowledge area. Much has transpired in the last decade within these domains including the role of social media in our daily lives, professional roles and even our elections. Today, fake news, data leaks, hacks and scandals involving personal information are rife. The impact of computing on society has never been more highstakes, our ethics have never been tested in these ways, and the need for professionalism has never been greater. In this light we seek to gather as many diverse views as possible to help us shape an SEP knowledge area that can serve the community and our students for the next decade.

# **KEYWORDS**

AAAI; ACM; Broadening Participation; CS2013; CS2023; Curricula; Curriculum; Ethics; IEEE; IEEE-CS; Model Curricula; Model Curriculum; Professionalism; Society

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CS2013 [2] continued a long history of ACM<sup>1</sup>/IEEE-CS<sup>2</sup> (and more recently /AAAI<sup>3</sup>) efforts to establish international curricular guidelines for undergraduate CS programs every decade, starting with Curriculum 68 [1] 55 years ago [2]. CS2023<sup>4</sup> will be the successor to CS2013 and is intended to guide the curricula of undergraduate programs through the early 2030s. This presents a challenge given the pace of change in CS and its impact on daily life, particularly for topics in the Society, Ethics & Professionalism (SEP) knowledge area (KA). Indeed, in 2013 it would have been hard to forecast the impact of fake news; the Cambridge Analytica scandal; the influence of social media on elections; the successes (and shortcomings) of AI; and the complex intertwining of computing, science, and society that has resulted in the fallout of a pandemic. Although more predictable, the prevalence of high-profile hacks and data leaks involving billions of users and their personal information, money, and safety have only increased in frequency as has their negative impact on modern society and individual lives.

**1 SIGNIFICANCE & RELEVANCE** 

We strive to gauge the future learning needs of computing students and educators in this rapidly changing landscape where computing will continue to impact society, ethics, and professionalism, likely in unexpected ways. Complicating matters, societal factors, ethical issues, and professional considerations will impact computing, resulting in a complex scenario where computing shapes these domains while at the same time these domains shape computing. While we cannot hope to make every student an expert in these complex domains, we do aim to reinforce a solid baseline of understanding to help prepare the next generation of technologists to shoulder this growing responsibility.

### 2 EXPECTED AUDIENCE

Our expected audience comprises educators who are interested and/or have experience in the societal, ethical, and professional

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<sup>&</sup>lt;sup>1</sup>Association for Computing Machinery: acm.org

<sup>&</sup>lt;sup>2</sup>IEEE Computer Society: computer.org

<sup>&</sup>lt;sup>3</sup>Association for the Advancement of Artificial Intelligence: aaai.org <sup>4</sup>csed.acm.org

demands computing graduates face. We can accommodate up to 70 participants, as a maximum 1:10 discussion leader:participant ratio, in our experience, would be both productive and manageable. However, based on 2022 BoFs we expect fewer participants and believe that lower numbers would still yield useful feedback at a good level of depth. An increased leader to participant ratio will enhance discussion with a smaller group. We hope that this BoF will draw participants from across a spectrum of specialisms, as the broad topics of SEP have applicability in many aspects of computing. Additionally, these specialisms affect SEP topics. Activities like this will help ensure that the SEP working group can more faithfully represent the needs of students and educators, and allow us to highlight areas of significance and their overlaps. We are particularly interested in topics and viewpoints that we may have overlooked or not considered to-date. We detail plans to enhance future connections between the participants in Section 3. We believe this is suitable for a BoF because a wide range of computing educators should all share an interest in society, ethics and professionalism. Moreover, this is one area where lived experiences matter greatly, and diverse values could shape expectations in important ways. We believe that moving towards a more inclusive SIGCSE means soliciting from the community a more complete vision for what constitutes professionalism and ethics in the discipline than what has been traditionally held up.

# **3 PROPOSED ACTIVITY**

Participants will be briefed on the CS2023 SEP KA (current draft available at<sup>1</sup>) [~10 min] followed by a Q&A [~10 min]. Then a group discussion leader will guide groups through the draft seeking three forms of feedback [~10 min each]:

- (1) missing or incomplete KUs
- (2) how to improve existing KUs, and
- (3) feedback on structure, clarity and any other comments that are not about missing KUs or improving existing ones.

Participants will have access to an online form to submit feedback during and/or after the BoF and will be given feedback instructions during the briefing. Feedback will also be captured by discussion leaders' notes.

In addition to immediate feedback, discussion leaders hope to enlist participants to remain engaged in this process as a guiding community to the SEP subcommittee. Finally, the SEP subcommittee will have need for named Special Advisors to focus on specific SEP KUs, and we hope to recruit some of these from participants.

It is challenging to design curricular guidelines that result in computing graduates with strong ethical principles, solid senses of professionalism, and robust appreciation for the impacts that the computing artifacts they create will have on society. Ultimately the aim of this BoF is to help achieve that.

#### 4 DISCUSSION LEADERS

**Brett Becker** *CS2023 SC & SEP subcommittee chair*: Brett is the SIGCSE Board Vice-chair, a member of the ITiCSE and CompEd Steering Committees, and served as Global Liaison for the SIGCSE Technical Symposium (TS) for three years where he developed the TS Buddy Program which seeks to improve engagement from outside North America. He has led two SIGCSE Special Project

Grants investigating computing curricula and the relationships between computing and society. He is also an Associate Editor for ACM *Transactions on Computing Education* and in 2020 was awarded Ireland's most prestigious national individual teaching and learning award.

**Richard Blumenthal** *CS2023 SC, SEP subcommittee, & Algorithms and Complexity subcommittee chair*: Rick is a member of the Executive Board of the ACM Special Interest Group on Computers and Society (SIGCAS) and a member of the ACM Committee on Professional Ethics (COPE). He is also the Editor-in-Chief of ACM Computers and Society and participates actively in Computing for the Social Good in Education (CSG-Ed). Richard is the Chair of the Computer and Cyber Sciences department at Regis University and teaches across the CS curriculum.

**Mikey Goldweber** *CS2023 SC, SEP subcommittee, & Data Management subcommittee chair:* Mikey is a past chair of the ACM Special Interest Group on Computers and Society (SIGCAS) and still serves as a member of its Executive Board. Mikey is one of the founders of the Computing for the Social Good in Education (CSG-Ed) initiative. A past member of the ITiCSE Steering Committee, Mikey is also currently an ACM Inroads Associate Editor. Finally, and rather against his better judgment, Mikey is Chair of the Department of Computer Science at Xavier University.

**James Prather** *SEP subcommittee*: James is an Associate Professor of Computer Science at Abilene Christian University where he teaches introductory programming, human-computer interaction, and capstone. In addition to the PhD in Computer Science, James also holds two graduate degrees in theology and utilizes that training to bring professional ethics to the center of his capstone course. He also serves on the ICER and ITiCSE program committees. For the past three years, James has also been a Senior UX Researcher with iHeartMedia.

**Susan Reiser** *CS2023 SC. SEP subcommittee, & Graphics and Interactive Techniques subcommittee chair*: Susan is the co-chair, with Fay Cobb Payton, of the ACM Diversity, Equity, and Inclusion in Computing Education Task Force, a member of the ACM Education Board, and the SIGGRAPH 2023 and 2024 General Submissions Chair. She is one of the six collaborative co-founders of STEAM Studio, where she teaches courses that link human-centered design with digital fabrication. At UNC Asheville, she is a Senior Lecturer and serves as the Senior Advisor to the Provost.

**Michelle Trim** *SEP* subcommittee: Michelle is Senior Lecturer II and Director of the Informatics undergraduate degree program in the Manning College of Information and Computer Sciences at the University of Massachusetts Amherst. Michelle teaches undergraduate and graduate courses in ethical considerations and social impacts of computing. She regularly leads projects that increase access to computing education for those historically marginalized due to their race, class and/or gender, and a new project targeting community college transfer and first-generation college students via a recently funded NSF S-STEM grant.

**Titus Winters** *CS2023 SC, SEP subcommittee, & Software Engineering subcommittee chair*: Titus has been at Google since 2010 where he has focused on education and practice for C++ and Software Engineering broadly. He is the lead author of the *Software Engineering at Google* book, and a champion for professionalism at Google and across the industry. Community Input for CS2023: Society, Ethics and Professionalism

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