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*Advancing Computing as a Science & Profession*

# SIGCSE 2024

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## Exposing the Hidden Curriculum with a First Year Computing Seminar

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Representation and persistence to graduation for first year students in a computing major is stubbornly disproportionate depending on gender and ethnic background. While this subject has been extensively studied, progress toward changing the overall national graduation ratios has been minimal. Addressing the first-term experience for students has promise to enable progress toward improving the disproportionality.

Self-efficacy has been shown to be an important factor for completing the first programming course at a university. Confidence erosion, lack of peer study groups, and other factors are documented sources of attrition in computing majors. First year seminars are a documented high-impact practice for students that can promote self-efficacy.

In this work we present an effort to introduce a first-year seminar course for all computing majors at the Milwaukee School of Engineering University designed to expose the hidden curriculum specific for computing majors. The seminar is an optional weekly meeting for 50 minutes that gathers first-year students in one place to discuss topics like: building a problem-solving peer network, how to successfully answer software development exam questions, who and how to ask for help, history of computing, how to manage time, and more. We introduce collaborative, motivating examples that expose students to topics relevant to their major but not explicitly taught such as coding exam strategies, regular expressions, and productivity tools. In this session, we will present our seminar structure as well as preliminary data gathered regarding it efficacy toward addressing representation and persistence gaps.

**Keywords:** Computer Science Education; Seminar; Hidden Curriculum; Retention

**DOI:** https://doi.org/10.1145/3626253.3635347

## Enabling Widespread Engagement in DS and AI: The Generation AI Curriculum Initiative for Community Colleges

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The proposed initiative aims to promote broader engagement in data science and artificial intelligence by encouraging the integration of a research-based Generation AI (GenAI) curriculum within community colleges. The GenAI curriculum encompasses interdisciplinary modules, data sets, and educational content relevant to data science, computer science, and artificial intelligence. Community colleges, being vital conduits to a substantial student demographic (as evidenced by 40% of first-time college freshmen commencing their post-secondary education at these institutions), present an opportune environment for enhancing student diversity and, consequently, diversifying the workforce in data science, computer science, and AI.

The GenAI team at The University of Texas at San Antonio endeavor to develop and implement instructor training and curriculum development workshops tailored for community college faculty. Through collaboration, GenAI and community college faculty will establish faculty learning communities, fostering the creation of novel modules and distinctive instructional materials that will seamlessly integrate into the established computer science and data science curricula. At this nascent stage of the project, our team is eager to receive valuable input regarding potential theoretical frameworks, exploration of pertinent existing approaches, and expressions of interest for collaboration, all of which are pivotal in shaping the design and successful implementation of this initiative.

**Keywords:** Artificial Intelligence; Data Science; Higher Education; Underrepresented Minorities; Community Colleges; Experiential Learning

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