
Achieving Diversity in Computing: The Benefits of a Collaborative Approach

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When I began my scholarly career nearly 30 years ago, I was motivated by the potential of research to document and correct educational inequities. In particular, I was troubled by longstanding gender gaps that I witnessed in math and science fields, not just through my own experiences as a gender minority in advanced math and sciences classes, but eventually through analysing nationwide data that documented persistent gender gaps in a variety of science, technology, engineering, and math (STEM) fields.

In reflecting on myself as a researcher, I will admit that, early on, I had imagined that simply documenting the extent of inequity would catalyse change—that necessary modifications to practice would naturally follow. While the early research certainly attracted attention for documenting the extent of the problem, it is not clear what impact it had on practice. In more recent years, I have learned that achieving meaningful and sustained change requires a more intentional collaboration and shared reflection between researchers and practitioners, an understanding that reflects the mission and vision of Centre of Excellence for Equity in Higher Education (CEEHE).

I had the pleasure of serving as a Visiting Scholar at CEEHE in 2017 when I was in the early phases of a research project that has proven to me the value of the research-practice collaboration. The project is known as BRAID (Building Recruiting and Inclusion for Diversity) and reflects a collaborative effort in the United States between universities, non-profits, government foundations, and the tech industry. The effort centers on fifteen research universities that are engaged in efforts to diversify their undergraduate computing programs in terms of both gender and race/ethnicity. These BRAID institutions accomplish this work by engaging in four “best practices”:

1. Revamping introductory computing courses to make them appealing and accessible to students from a wide range of backgrounds and experience levels;
2. highlighting interdisciplinary connections of computing to attract students with a wide range of interests;
3. providing opportunities for students to experience a sense of community and belonging in computing; and
4. enhancing diversity in recruiting efforts through outreach to high schools.

The project is managed by AnitaB.org, a Silicon Valley non-profit dedicated to promoting equity in the tech sector, as well as Maria Klawe, president of Harvey Mudd College, and is funded by several major tech companies in the U.S., with additional research support provided by a variety of federal, non-profit, and private sources. The research component of the BRAID initiative is housed at UCLA’s Momentum: Accelerating Equity in Computing And Technology, where I direct mixed-methods studies of the successes and challenges experienced by institutions in their efforts to add more diversity to computing fields at a time of growing demand for computing degrees (see <https://momentum.gseis.ucla.edu/>).

A particular success of the initiative is the extent of collaboration among the various constituent groups. Each summer since 2015, we have gathered for an annual BRAID Summit where presentations and conversations allow for deep conversation between and among department chairs, the research team, the funding agencies, and affiliated institutions and organisations. The Summit highlights the value of not just “disseminating” research findings and “telling” of best practices, but reflecting together on what we are all collectively learning and how we might apply new knowledge to our own respective efforts. The value of bringing all constituents together cannot be overstated, as both research and practice emerge stronger as a result.

Our research questions are continually shaped by engaging with administrators and faculty who work directly with students, and their efforts are increasingly informed by what we are learning from the data. Ironically, one of the central findings from our research is the power of collaborative and supportive peer environments in encouraging underrepresented students’ persistence and sense of belonging in computing; so too have partnership and a shared sense of vision bolstered the progress made by researchers and practitioners engaged in diversity efforts.

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