James Tompkin | Diversity Statement

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A computer science student body, academia, and later workforce that represents the larger distribution of peoples is less likely to ignore the concerns of subpopulations. This is important to preserve equitable outcomes across a society that is deeply entwined with computers. Within CS education, the field has still to overcome the cultural failings that stop students from engaging with our discipline or push students out of it [9, 5]. Within computer science academia, we are slow to overcome the legacy of excluding women and minorities [12, 1].

At Brown University, the undergraduates constitutes 51% women; the CS department has 34% women declaring a concentration (major) in CS (2021–2022). For ethnicity, Brown uses the term historically-underrepresented groups (HUGs). Brown constitutes 23% HUGs while Brown CS has 12% HUG concentrators (2021–2022). At the PhD level, Brown CS has 24% women students and 4% HUGs [6]. In this environment, I strive to maintain and improve representation of women and HUGs in my classes and to improve the pipeline of women and HUGs wishing to research CS. My lab's PhD students currently consist of three women and one man, and includes 50% women and HUG research assistants at MSc and undergrad level (6 of 12).

In class I identify talented women and HUGs and ask them to apply to be teaching assistants (TAs), as women and HUGs may lack confidence [9] and so are less likely to self-nominate. My head TAs are always gender balanced, as are my socially-responsible computing TAs. Within class, I use best practice to make sure women and HUGs do not underestimate their performance (releasing score distributions), emphasize project-based work and peer discovery [3], and use examples that are socially relevant [10]. For instance, in computer vision, in small-group sections, I ask students to design a human-AI collaboration process for reliable breast-cancer screening, then we discuss the efficacy of a real-life implementation [2]. I lecture on bias both in data and in human decision making for technology (e.g., Shirley cards [8]), and on the impact of technical limitations in seemingly simple or benign scenarios, e.g., limited camera sensor dynamic range creates badly-exposed selfies for dark- and light-skinned couples [11].

In the research pipeline I invite high-performing women and HUGs in my classes to become involved in research as, beyond improving research skills, this can improve the sense of self-efficacy and leadership [7]. I do this from their sophomore year. Thus far, I have supported 23 women and HUGs in independent studies and theses, five of whom went on to PhD study (including at Stanford, UToronto, and UWashington) with two more applying now.

With my colleagues, I received funding from Google to run an exploreCSR program to expose non-Brown undergraduate women and HUGs to research (2021–). Through a semester-long research experience, I have supported thirteen sophomore and junior students over four years, especially from colleges that do not have research programs (Morehouse, Spelman, Bucknell, Mount Holyoke). Of these, I am supporting Logan Stevens (UMD) in applying for graduate school. Student Joey Steigelman (Hunter CUNY) emailed me her thanks: "I always thought of AI as not for me because I felt like an outsider and that this domain was for elite geniuses. Well, enter the exploreCSR program. I am floored by the amount of learning and growth along the way."

This work complements my support of NSF REU students at Brown over the summer. HUG Jim James (Georgia Tech) worked with me in 2022 on astrophotography, received both Goldwater and Astronaut scholarships with my support, and is now applying to graduate school (including at Brown). My summer 2023 student Jennifer Lu (Wellesley) is also applying (and also to Brown): "Working with the lab has transformed my future trajectory; not only because of the innovative and inspiring topic but also the sense of support I felt from our meetings and the lab."

In the wider community With colleagues, I run the workshop on AI for Content Creation at the top computer vision conference CVPR (400+ attendees). We have raised sponsorship ($20k so far) for underrepresented students to travel and attend the workshop, and we invite them to the private speaker dinner to improve their network. As Posters chair for SIGGRAPH in 2023, I made sure the Jury had equal gender ratio, and that these jurors were not simply the most well-known women and HUGS in the field as I recognize that service burdens for underrepresented people are generally higher. I am a mentor for SIGGRAPH where I have closely supported Xi Wang (ETH Zürich) since 2021 (e.g., job application and grant proposal feedback). I also help support community events at Brown and beyond, such as hosting info sessions on Brown at Grace Hopper 2020, judging for the Womxn in STEM Symposium, and reviewing CS research proposals for high schoolers for the ENVISION Research Competition.

In spirit Face to face faculty time and support is effective at helping women and HUGs stay in STEM and go on to graduate school, especially outside the classroom [3, 4]. I try to be warm, open, and generous with my time so that I can build meaningful relationships with my students. I have hosted social events for the visual computing group during PhD hiring to try to recruit women, and encouraged and supported women and HUGs to attend visual computing workshops and conferences. For instance, for the 2023 New England Computer Vision workshop at Dartmouth, I took 50% women researchers to the event [n=7/14]. One of my proudest moments as an advisor was when, after admitting a new woman PhD student, two of my existing women PhD students bought me flowers and a card to say thank you for supporting women in CS.

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