

# Keynote: Truth, Social Justice (and the American Way?)

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In addition to being a long-standing problem in the computer science research literature [3], bathroom placement raises the complex questions of *equality*, *fairness*, and *social justice*, in a simpler domain than the issues we face in computing. Bathrooms are also something that we can, without much controversy, agree does involve some intrinsic biological differences.

Old engineering school buildings often had no women’s bathrooms, or perhaps had one hidden away somewhere for the secretarial staff to use. When they were built, this was accepted practice since women students weren’t allowed either (not that this was justifiable, of course!). After schools started allowing women to attend, it became clear that not having any women’s restrooms was not acceptable.

What was done at MIT, and was still the case in many MIT buildings when I was a student there, was to leave the men’s bathrooms on the ground floor as they were, and convert some of the bathrooms above them and in the basement to women’s bathrooms. Along the “Infinite Corridor” that connected most of the buildings at MIT, there were three well-spaced men’s restrooms, but only one for women. This 3:1 ratio may have been equitable at some level, since at the time I was a student there in the early 1990s, fewer than 1/3<sup>rd</sup> of students were women [4] (by contract, recent MIT classes have exceeded 45% women). Although the lack of nearby bathrooms posed a minor inconvenience to women students, it was certainly not *fair*. An average woman would be expected to have a more difficult time going to the bathroom between classes than an average man. More importantly, it was abysmal for *social justice*: what could provide a more clear message to women students that they were not welcome to study engineering, than not having women’s restrooms?

There has been some progress on this—one of the men’s restrooms on the Infinite Corridor was converted to a women’s restroom in 2005 [2], and modern buildings (even for computer science departments) are nearly all designed with equal numbers and nearby locations for men’s and women’s restrooms. This satisfies *equality*, but not necessarily *fairness*. For many buildings (e.g., theaters, restaurants), the equal distribution means women spend a lot more time waiting in line to use the restroom than men do — perhaps a fairer solution would strive to equalize the waiting time in light of biological differences, not the expended resources.

In most areas, the issues are not so bare as they are for restrooms, but similar issues arise. One of the great challenges we have in discussing under-representation of women in computing is that *equality*, *fairness*, and *social justice* are often in conflict with each

other. We have, thankfully, made progress over that past several decades towards eliminating most overt forms of discrimination—job listings are no longer categorized as “Men Wanted” or “Women Wanted” following legal rulings in the 1970s [9]; pay scales are no longer explicitly permitted to discriminate against women; and, although plenty of sexist louts exist, such behavior is no longer considered acceptable and occasionally even leads to serious consequences for the offender [1, 7, 8].

But, many insidious vestiges of a history of discrimination and a male-dominated culture survive, and sometimes overcoming them will require sacrificing *equality*, and perhaps even *fairness*, to serve *social justice* goals. It’s important that we talk about these trade-offs openly, instead of resorting to obfuscations and euphemisms. A few examples, ranging from the near-trivial to the essential:

- Conferences (but hopefully not CCS!) often provide microphones for speakers that are ill-suited for typical women’s clothes. This is a situation where *equality* is satisfied (every speaker gets the same microphone options), but *fairness* is not because the suffering is disproportionately faced by women. Women speakers can follow advice to dress to be ready for difficult microphones [11], but this doesn’t seem like the socially just solution. Given the paucity of women speakers, and natural reluctance to complain about such things, however, it is likely such problems will persist.
- Buildings, including academic and industrial computer science buildings, tend to have thermostats set to frigid temperatures (especially during the hot summer when air conditioning is on). The standard temperatures are based on typical male preferences, but women appear to on average find warmer temperatures more comfortable [10]. Plenty of anecdotal evidence supports this, and I know of women who won’t spend any more time than necessary in our computer science building because it can be cold enough to make them sick. In modern, environmentally-certified buildings where individuals cannot control the temperature of their own office or lab, it’s necessary for all room temperatures to be *equal*. But, selecting a temperature that is too cold for most women is definitely not *fair*, and having a building temperature more women find uncomfortable does not serve *social justice*.
- In many organizations, one response to gender imbalances is to require that all committees include at least one (“token”?) woman. When there is a severe dearth of women faculty (namely, those most likely to adopt such a policy), this leads to an excessive committee workload for women. This burden can fall especially hard on early-career women faculty, who may also end up with an increased external service load due to program chairs wanting less imbalanced committees [6]. Here, both *equality* and *fairness* are being sacrificed for a *social justice* goal, but the costs of striving for that goal fall mostly on those from historically disadvantaged groups.

- The academic career path remains a bizarre mix of hazing rituals, middle school style popularity contests, archaic rituals, and arbitrary ticking clocks, leftover from medieval times when the only role women were allowed to have in academia was hosting tea parties for their faculty spouses. Academics value traditions for good reasons — academic institutions have endured like no others, and the value of our degrees depends on those traditions. But, many of these traditions have the effect of unnecessarily making academic careers less desirable for women. Of course, those with the most power to change these systems are also the ones who benefit most personally from them, so we shouldn't expect them to change anytime soon. But, we should recognize and confront the harm they cause, and look for ways to make all stages of academic careers more compatible with family life for both men and women.

I am flattered to be invited to speak at this workshop as an “ally” for women in computer security, and computing and technical fields in general [5]. I am a strong advocate for making our research community as welcoming as possible to all people, and for pushing against ingrained cultures that discourage anyone from pursuing careers in computing. I also think that it is important that we can speak honestly and openly about situations where equality, fairness, and social justice goals are in conflict, to make decisions that benefit our community and society at large.

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## BIOGRAPHY

David Evans is a Professor of Computer Science at the University of Virginia and leader of the Security Research Group. His current research focuses on adversarial machine learning, secure multi-party computation, and web security and privacy. He is the author of an open computer science textbook, a children’s book on combinatorics and computability, and teacher of a popular introductory computer science MOOC. He won the Outstanding Faculty Award from the State Council of Higher Education for Virginia and an All-University Teaching Award. He is Program Co-Chair for the ACM Conference on Computer and Communications Security (CCS 2017) and was Program Co-Chair for the 31st (2009) and 32nd (2010) IEEE Symposia on Security and Privacy. He has SB, SM and PhD degrees in Computer Science from MIT and has been a faculty member at the University of Virginia since 1999.