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Critiquing the "Underrepresented Minorities" Label

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Critiquing the "Underrepresented Minorities" Label: Disrupting Inequity

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Inequity has been part of engineering education throughout its history. Multiple government agencies (National Science Foundation, National Institutes of Health, etc.), private companies, non-profit organizations, and higher education institutions have invested in programs to change the demographics of the engineering workforce over the last thirty or more years. However, most positive gains plateaued about 20 years ago. Recent statistics show that the participation and advancement in engineering is disproportionately lower than would be expected in an equitable system for women and members of most racial/ethnic minority groups (except Asian Americans), as well as persons with disabilities [1, 2]. We submit that it is time to reflect on the language we use to discuss inequity in engineering education. Based on our research, that of others, and numerous conversations of the years, we propose a perspective and language shift for consideration and discussion.

Critiquing the status quo

> "Words are but pictures of our thoughts" - John Dryden [3]

Consideration begins by examining the use of the label "underrepresented minority" as a tool of oppression. For the past 100 years, engineering has been a domain of white, upper-class, able-bodied men [1, 4]. Students who do not identify within those historic norms of engineering are often referred to collectively in educational policy and literature as underrepresented minorities (URM) or underrepresented populations (URP). Usage of these shorthand labels provides a succinct phrasing for researchers, administrators, and policy-makers; yet it simultaneously may contribute to inequity. Use of "underrepresented" focuses the conversation on counts and proportionality, while also placing the ownership of difference on the marginalized persons. Common construction using the noun "minorities" repeats the emphasis on numerical representation, deemphasizes personhood, and focuses the context on racial identity.

By definition, the adjective "underrepresented" concentrates the attention of diversity, equity, and inclusion in engineering on proportional demographics. Evidence exists that solving the proportional representation issue does not actually create an inclusive environment supportive of student success [5-7]. Just as equality does not equal equity [8]; parity does not equal inclusion [6, 9]. Hurtado and colleagues (2012) pointed out how compositional diversity is only one factor in creating a diverse learning environment [10]. Efforts designed to increase compositional

diversity neglect the experiences and different combinations of barriers that individuals must confront. "Underrepresented" could also be considered a form of spot-lighting, of continuously reminding students that each of them is a "representative" for their social identity group(s) [11]. This socially-taxing language reminds individuals that their group is judged by the attitudes, behaviors, and achievements of those who have "represented" before. The language also serves to continue erasure of past contributions and accomplishments by implying that certain groups have not made an impact in engineering and technology [12]. These interpretations possibly induce a continuous feeling of stereotype-threat [13, 14]. Finally, we posit that saying "underrepresented" is a statement of supremacy by the dominant majority groups. It implies that minority groups have not yet achieved sufficient prominence or stature in the discipline to be recognized: Their cultural norms are neither valued nor accepted [11, 14, 15]. "Underrepresented" emphasizes oppressed members' lack of power in the system and is a constant reminder of isolation or potential tokenism.

Minority as an adjective is generally defined as the smaller number or less than half. With women comprising over half of college enrollees, the term is only valid when considering populations at the discipline level, and then it is redundant with "underrepresented." However, as indicated in the report title, "Women, Minorities, and Persons with Disabilities in Science and Engineering" [1], common usage of "minorities" emphasizes non-white racial or ethnic group membership. As the demographics of the U.S. change, this term will cease to be factually meaningful in that context as well. That tipping point for the college-aged population to become minority single-race/non-Hispanic white is likely in the next five to ten years [16]. When the label is used in the noun form (as in the title and content of the aforementioned report and common elsewhere), it denies personhood and thereby oppresses the agency of individuals. Either form (adjective or noun) directs the conversation to outcomes defined by race or ethnicity. As pointed out by Black feminist or Black queer scholars and activists, isolating their identity based solely on race, gender expression, or sexual orientation ignores and dismisses the multiplicative oppression experienced in their lives at the intersection of different marginalized identities [17-19]. While, racism in all areas of our society must be exposed and eradicated, using "minorities" as a catch-all ignores the differential experiences within and among the members of groups collected under this label [5-7, 9, 20-25]. Also, there are many other dimensions of difference through which students or engineers are subjected to marginalization because they are perceived as Other within the norms of engineering [26-28].

Owning exclusion

The language of "underrepresented minority" masks the responsibilities of the engineering educational system to correct exclusion manifested through culturally accepted practices and structural policies prescribed by the dominant culture. We offer a limited set of many available examples from our research and that of others to demonstrate how common practices and policies are exclusionary. Historically, the concept of a challenging curriculum to "weed-out"

students not suited for the discipline has been an accepted practice [29-31]. However, that practice excludes students regardless of performance level. Twenty years ago, Seymour and Hewitt demonstrated that "switchers" and "non-switchers" had similar patterns on inadequate preparation, work ethic, conceptual difficulty with course content, and GPA at the time of switching [32]. Ten years ago, the National Academy of Engineering report *Changing the Conversation* identified the accepted representations of engineering *by engineers* as one of the reasons that diversifying the discipline has been a challenge [33]. Through explicit and implicit messaging shared with students, such as engineering students study *all the time* or engineers *love* math and science, engineering faculty perpetuate exclusion [20, 21, 25, 31, 34-37].

Structural policies can have similar impact on student exclusion. Requirements that students be calculus-ready before starting an engineering degree program can prohibit students from majoring in engineering disciplines. Although some programs exist (e.g., summer bridge and red-shirt-like programs) to serve students "whose high school records do not yet represent their potential," program capacity is often well below the need [38]. Enrollment Management (EM) policies arbitrarily exclude students based on performance in prerequisite classes that are not always indicative of potential in major coursework or as a practicing engineer. Depending on the implementation of the EM plan, the thresholds of performance can be impacted by implicit biases, set artificially high, or based on misguided metrics [39].

We cannot change what we do not talk about. As long as labels focus on the excluded community members and not the norms and agents of exclusion, equity cannot advance.

Disrupting the paradigm

> "All big changes of the world come from words." - Marjane Satrapi [3]

Continuing use of the label "underrepresented minority(-ies)" is a way that the educational system is complicit in the continued exclusion of students who do not fit the historic norms of engineering. Research described above and elsewhere has shown that exclusion is the result of systematic institutional conditions and the individual agentic actions of faculty, staff, administrators, and policy-makers. These conditions and actions enforce the historic norms of engineering and favor the dominant majority students. Based on that work, we propose and seek discussion of using **Excluded Identities (EI)** to replace "underrepresented minority."

The proposed label, **Excluded Identities**, foregrounds the engineering education system as the active agent of exclusion. This alternative shorthand also recognizes that identities are multi-dimensional (some privileged, some not) and that individuals may experience intersecting and compounding forms of marginalization or exclusion. We suggest changing the paradigm from one based on words quantifying the outcome of otherness to one based on words emphasizing the process of exclusion. This re-focus hopefully will facilitate disruption of an inequitable system, making room for new advances in equitable engineering education.

Finally, we reiterate that the use of any label is a convenience for communication that carries the homogenization associated with aggregation. We also acknowledge that our perspective is influenced by our white privilege. While we believe that the proposed label is preferable to the dominant term, we invite an open dialogue about **Excluded Identities** or any other label that re-orients the community's effort toward disrupting inequities embedded in the engineering education system. Perhaps a new term should be rooted instead in injustice or inequity.

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