

As a teacher, I possess a tremendous power...that decides whether a crisis will be escalated or de-escalated and a child humanized or dehumanized. – Haim Ginott

A student has to be able to see that they can succeed *as themselves*. If their faces are not reflected, if their values are not reflected, if their culture is not reflected, then they will begin to hide pieces of themselves. They will not feel attached to academia or their success in it.

I am a queer, genderqueer Mexican. I have hidden pieces of myself. I feel acutely the effects of being an underrepresented and marginalized voice in academia. From my own experiences and from interviewing Under-Represented Minorities (URMs) at MIT, I have seen that the academic pipeline continues to leak our marginalized communities at every level as students detach from their success in academia.

Recruiting more diversity is crucial but *retention* requires URMs to feel comfortable and, ultimately, a sense of community within academia. I describe my Diversity *Philosophy* of why diversity is essential to academia and how to retain it before discussing the many activities I've undertaken to realize this philosophy:

Diversity Philosophy. Research is a social activity. From our metaphors, analogies, terminology, and jokes to our writing conventions, dissemination styles, agreed upon ethics, and even what we consider interesting and research-worthy. The directions we pursue and their perceived importance are culturally bound to the poetics we imbue them and the worldview we communicate them through. This is my favorite aspect of research, but it has an important consequence: Diversity is not orthogonal to research.

Diversity cannot be viewed as just a charitable accomplishment, separable from research. Diversity changes the nature of the research itself. By changing the community, diversity automatically changes the social activity of doing research and its directions. Further, a population being underrepresented is equivalent to the exclusion of large swaths of individuals and their talent. This is tragic for the state of a field's research.

For me though, diversity is not just about my love for my field's research but a love for my community. It is painful to not see my Queer and Trans and Person of Color (QTPOC) communities in academia. And it is painful to see that it is not just systemic barriers to entry excluding them but a culture that keeps them from wanting to stay in academia or join in the first place.

Retention lies in changing our culture *now* to include norms on how we acknowledge power differentials between majority groups and URMs, what metrics and methods we develop to acknowledge the extra emotional and educational labor URMs often have to engage in, and what processes we have to both hear and incorporate the changes and norms URMs need within their academic communities.

For people to engage with research as a social activity it has to be a fun one, and the end goal is to reach a critical mass of URMs so that they can see that their success can be as their full selves.

Past Initiatives. Being both a URM and in academia, I am very aware of both the barriers to entry and my privileged position. I have consistently used that position for both recruitment and retention.

- **Recruitment:** I spent the first two Summers of my graduate program driving between Berkeley and Sacramento to return to my diverse teaching-focused undergraduate university, Sacramento State, to co-teach an NSF LSAMP program crafted to re-introduce math as a creative and social activity to incoming underrepresented STEM students. The underrepresented populations in this program outscored the campus' majority populations in Calculus for the last 20 years. I also spent one of these Summers as part of the Berkeley SMASH Academy, creating and teaching a five-week math program to local underrepresented high school students and explaining academic paths to them. I later returned to Sacramento State to serve as a panelist encouraging Latinx engineering majors to pursue academia and demystifying its entrance process.

I have talked with K-12 classrooms about math and academic paths both through the Skype A Scientist program where, for the past three years, I had video calls with disadvantaged classrooms across the country and through Oakland's Dinner With A Scientist program. Lastly, I have created, secured funding for, and co-organized the monthly *QT Presenters: QTPOC Reclaiming Education and Science (QTPRES)* Conference for sharing STEM concepts with the QTPOC community in the San Francisco Bay Area that will debut February. I have framed 'STEM' as "the type of truth-seeking marginalized communities are often cut out of," in contrast to the truth-seeking of poetry, art, film, music, dance, etc. that these communities have found their voice in. This framing helps remove negative connotations marginalized populations may justifiably have against engaging in STEM while also giving them an opportunity to define the culture, presentation norms, questions of interest, framing, etc from scratch. While this conference is mostly a recruitment effort since most participants will not already be in academia, its premise is what retention requires and what I plan to bring to academia as a professor: An environment that allows students to bring their full selves.

• **Retention:** In pushing for this type of environment crucial for retention in academia, I have for the past three years served as a peer counselor for Berkeley's EECS department through their EECS Peers program, making public my background and experiences and holding office hours for those needing commiseration or advice. While this program doesn't target URMs, many who came to my hours were.

In general, I am open about the identities I hold and their impact on my experience in academia, making them public both on the EECS Peers website and, earlier in my program, through my blog *On The Shoulders Of Windmills*. I have heard consistently from URMs that this has helped them see themselves in academia.

I have further spent weeks of emotional and educational labor addressing the EECS department at Berkeley and the CSAIL department at MIT through email, explaining enacted microaggressions as well as the power differentials that faculty have over students and majority populations have over marginalized ones. This was emotionally taxing and personal, but necessary. Students and faculty professed that they learned a great deal, public and healing apologies were made and accepted, and I was invited to help in attempts at changing department cultures at both campuses. But most importantly, I received a myriad of personal emails from undergraduates, graduates, staff, and faculty from marginalized groups thanking me and feeling seen while also letting me know that they didn't feel free to make the same statements. As long as students have to hide pieces of themselves, the academic pipeline will continue to leak at every level.

I have begun to interview URM students at MIT this semester on their experiences in academia, most of which have considered quitting at some point or have already decided to not stay in academia. This has so far both built community and a sense of commiseration while also giving me a more holistic sense of the URM experience and ideas for future initiatives I will undertake for retention.

Future Initiatives. I plan to continue engaging in many recruitment efforts, continuing with the Skype A Scientist program, applying for NSF Research Experience for Undergraduates (REU) programs and hosting marginalized undergraduates through it, and bringing my QTPRES conference to all cities I live in. But mostly, I want to engage in the cultural shift needed to allow retention.

• **Admissions & Hiring:** I want to participate in admissions and hiring not only for diversity *recruitment* but to implement guidelines and norms that promote *retention*. For example, I am heartened that Diversity Statements are being adopted by more universities, but the norms for their content are still evolving and I would like to help codify that. In a similar way that Research Statements are expected to not just be a listing of research projects but a holistic vision of a research program, a diversity *philosophy* should, beyond listing diversity initiatives, explain *why* diversity is important in academia and how this philosophy allows URMs to connect to their success the full way through the academic pipeline. I believe prompting for this can give a strong signal for how *recruitment* can translate to the cultural environment needed for *retention*.

Further, marginalized populations pay an extra tax throughout their careers. They are a source of emotional labor as underrepresented populations turn to them for commiseration and a source of educational labor as they explain the nuances of a microaggression or the reasoning behind evolving terminology. To account for this, I have been interviewing URM students at MIT this semester and will interview URMs at Berkeley next semester to get a more holistic sense of the invisible labors undertaken by these populations. Using this I would like to develop metrics and prompts that will allow this labor to be recognized in the admissions and hiring process. While this can help incentivize non-URMs to share some of this labor, it more importantly helps allow URMs to no longer have to *choose* between research productivity and working towards a culture that better retains their community, which often pits their community ties and values against their research output and hirability. Most importantly, the simple act of asking if extra emotional and educational labor was undertaken shows that URMs' presence is acknowledged and appreciated.

• **Ethics in Curricula:** Harvard's new Embedded EthiCS program recognizes that a one-off ethics course cannot *habituate* researchers with an ethical lens on technology, even when they are interested and engaged, and so embeds ethics modules *throughout* their core courses. Realizing that Computer Science does not need to attempt to redefine ethics internally, they instead work with ethicist postdocs to help cover the modules. I would like to work with ethicists in the Philosophy Department to help develop curricula that accounts for the fact that STEM is not siloed off from the society it is born out of and affects. Having ethical discussions throughout core courses can take the brunt of that responsibility off of URMs who's communities often disparately feel the adverse real-world effects of new technologies.

These types of initiatives can make academia a place that acknowledges the presence of URMs and shares the labor they would instead have to do. Otherwise, marginalized populations have to choose between doing that labor or hiding pieces of themselves. And they will not feel attached to academia or their success in it.