Diversity, Equity and Inclusion
"Freedom is what we do with what is done to us."
— **Jean-Paul Sartre**

In the 1990s Colombia was in the middle of a civil war between the government and guerrilla forces. Due to the constant threat of violence, my parents decided to move to the US. This war was not new; it was the culmination of hundreds of years of expropriating the land and labor of Colombia's native peoples. In particular, the forced labor by multinationals for the extraction of rubber caused the initiation of these peasant guerrillas. I'm one of the privileged few that got to leave Colombia during this time period. Not only did I get to leave, but I also got to drive a car whose tires were the cause of unrest in my home country. Thus, for me, being privileged meant being uprooted from my home, having to learn a new language, and coming to a country where I am seen as an "Other." An outside to whom all insecurities can be projected onto, I represent an existential racial threat to a U.S. society that imagines itself as primarily homogenous. Ironically, the more the other invokes fear and discomfort, the more united dominant members of society can feel. For example, as an adolescent in the United States, kids entertained themselves by constantly sniffing in my presence, implying that I was some sort of drug dealer because the U.S. media frequently portrays Colombians as 'narcos.' As a teenager, my otherness led to me being perpetually followed around while shopping because 'I look like a shoplifter.' As a graduate student, my otherness led U.S. American colleagues to complain that I succeeded merely because of my status as an 'underrepresented minority' (URM).[1]

These are just three examples that encapsulate how insensitive people treat people of color as outsiders and, especially, as out of place in academic contexts, where URMs comprise only 10% of the tenured and tenure-track faculty.[2] That is, even though the number of undergraduate students of color has increased steadily in the last 20 years, the amount of faculty of color has not kept up. While the racial identity of faculty might not seem important to the mission of research universities, it indicates that there is a systemic problem with recruiting and retaining faculty of color.

Despite these roadblocks, a loving family, mentors, and a passion for mathematics and philosophy led me to become an 'anomaly,' one of the few URMs to complete a PhD at University of Michigan and to continue my career in academic research as a postdoctoral fellow at Duke University. In recognition of how lucky I am to be able to pursue my passion, I dedicated my dissertation thesis to the universal Others (i.e. to the O and the o), and have been personally committed to helping other underrepresented scholars become anomalies.

Ideally, one day the distribution of individuals in any segment of society will match societal demographics. Thus, throughout my entire academic career, I have been committed to supporting students and researchers of color. During my time at the University of Florida, I served on the board of Society of Hispanic Professional Engineers (SHPE). SHPE organized events to raise money for scholarships, to tutor peers, and encourage Hispanic students to pursue higher education degrees in STEM. When I started graduate school at the University of Michigan, I realized that there were limited social support structures for Hispanic students pursuing advanced degrees. Moreover, there was a disconnect between undergraduate and graduate underrepresented minority students. In order to address these problems, a group of graduate students and I started SHPE-GRAD, a society aimed at the recruitment, retention, and professional development of Hispanic graduate students at the University of Michigan. We rewrote parts of the SHPE constitution to focus on getting Hispanic engineers to pursue academic research. As a result, SHPE-GRAD hosts a variety of academic and professional skills workshops, peer mentoring, and social events. Furthermore, SHPE-GRAD is set up as a sub-group of the SHPE undergraduate chapter, enabling collaborations with them. This has enabled SHPE-GRAD to host informational sessions, resume critiques, and other mentoring activities.

Outside of SHPE, I have also helped coordinate various events to help URM students to positively contribute to both the scientific enterprise and to the college environment. For example, at Michigan, I hosted various students' panels through the college (e.g. Graduate student information and Fellowship panels) and at minority serving conferences (e.g. HEENAC 2011-2013). Recently, I took part in a panel organized by the National institutes of neurological disorders and stroke

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[1] Even though this is a common occurrence for URM, researchers are increasingly finding that legacy admissions are much more advantageous to upper class students than diversity initiatives are to URM. See: https://www.economist.com/graphic-detail/2019/10/04/does-harvard-accept-its-cleverest-applicants

[2] Martin Finkelstein, Valerie Martin Conley, and Jack H. Schuster. "Taking the Measure of Faculty Diversity." *TIAA Institute,* April 2016. Retrieved at https://www.tiaainstitute.org/publication/taking-measure-faculty-diversity

(NINDS/NIH) titled *BRAIN Initiative Scientific Advances Powered by Diverse Disciplines, Tools, and People* at the 2019 SACNAS conference. The aim of this panel was to introduce URM undergraduates and graduate students to the BRAIN initiative and the types of skillsets that are necessary to contribute to it.

As a researcher I promote an inclusive, safe, and rigorous learning environment for all students. In the classroom, I do this by being transparent and aware of student's diverse needs (see teaching statements). I also actively work against the perpetuation of implicit bias in college classrooms by encouraging diverse interactions of students by assigning team members in group projects. In the laboratory, I create opportunities for underserved undergraduates to get involved in academic research. I have participated in various events by Summer Research Opportunities Program (SROP), which prepares underserved students to perform graduate research. I benefited from the mentorship that I received in SROP as a student and, as a professor, I want to ensure that underserved students are given the time and resources they need to develop their research potential. Furthermore, because URM students are less likely to pursue undergraduate research opportunities due to time and money constraints, I actively recruit URMs to my research group and avoid voluntary positions, which unfairly reward privileged students. Active recruitment and mentorship of URMs transcends the success of individual students and individual labs; it is integral to the advancement of science. For these reasons, we need to be leaders in DEI.

DEI leadership is prescient because scientific advancements are increasingly requiring cross field collaborations. For example, the BRAIN 2025 Report identifies the ability to attract investigators from quantitative disciplines like statistics, computer science, physics, mathematics, and engineering as critical to their success. In our field of electromagnetism, many have unsuccessfully tried to make the transition into the bio-sciences. However, being successful at making such a leap requires leaving the comfort of our fields to become 'out of touch' outsiders in the biosciences. URM researchers have an edge here because they know how to navigate in the margins. For me, leaving my roots in purely computational electromagnetic research to join a psychiatry department as a post-doctoral associate proved successful precisely because of my background as an outsider in U.S. society. In 2008, the chair of the EECS department said to our incoming class of graduate students that UM was ready for the recession because Michigan had already been in a recession for 6 years. Well, URMs are ready for bridging fields because they have had to navigate research as outsiders for the last century.

The imperative of DEI reaches beyond the scientific practice. For example, dealing with the threat of ecological catastrophe is imposing universal solidarity and collaboration across all human communities. At universities there are active efforts to reverse the trends by rethinking acceptance metrics, opportunities for extracurricular activities, summer camps, grading policy to generate a more inclusive environment. However, there are challenges to change as institutions have a tendency to adopt key terms while ignoring the substance. As such, it is important for individuals to play their part and ensure that these policies reach beyond symbolism. I play my part by showing individuals that, in spite of the adversarial situations URM students face, there is a path through which they can achieve their higher education goals. For many, that path takes the shape of people who inspire and uplift them. I have had many mentors who have contributed to my development and have set an example by helping others. I want to be there for others and inspire them to further their education, just like my mentors inspired me. It is important to both serve as an example and guide those in doubt of their capabilities. I would like to help them build confidence and realize the possibility to overcome the obstacles they face, even though sometimes it may feel impossible.