

I. Overview: As a first-generation Latina female from a low socio-economic background, it is important to me to serve as a positive role model, teacher, and mentor to underrepresented students. Early during my career, I realized two important concepts: (1) most challenges for underrepresented students stem from a lack of instruction or availability of resources and (2) these inequities stem from longstanding institutional discrepancies that prevent underrepresented students from receiving the guidance they need to succeed. **Therefore, my research program is centered to promote diversity, inclusion, awareness, cultural competency, and equity.** The discourses of diversity is often related to matters of interpersonal relations, being heard, or feeling unwelcomed. I define diversity to include culture, race, ethnicity, gender, age, religion, language, abilities/disabilities, sexual orientation, socioeconomic status, and geographic region of origin. Increasing minority participation in STEM is not only important for providing individuals with opportunities, it is that diversity has proven to make institutions better, more productive, and more innovative.

II. My contributions to increasing diversity highlights:

- Improve the visibility and support for first year Latino undergraduate students:
 - I mentored 5 undergraduate students, and as the coordinator, I managed 30 mentors, > 50 mentees, and mentored 2 additional students at the University of Connecticut
- As a postdoc working at a Hispanic-serving institute (> 20% Latinos) at UCSB:
 - I mentored 29 undergraduate students, including 22 females and 19 minority students
 - I mentored 3 minority graduate students
 - I am working with five undergrads to write their first peer-reviewed article
- I created a “How to” series on applying for graduate school at UCSB: 12 students attended
 - All twelve students that attended the presentation rated it as extremely helpful
- My future work at the MA Coop Unit:
 - In the lab, I will work to create an inclusive and equitable lab climate
 - At the University, I will work to recruit, retain, and develop a diverse community
 - In the broader community, I will make STEM accessible to a wider audience

III. University of Connecticut & University of Maryland: As an undergraduate at the University of Connecticut, I had no guidance from parents, siblings, family, or professors as to “what comes after my undergraduate degree?”. As a child of immigrants who did not attend college, I was raised to be self-supporting and to seek no outside help, as many Latinos are. At the end of my first year, I applied to be a mentor for the Mentoring, Educating, and Training for Academic Success (METAS) program whose mission is to help guide first year Latino students. As a mentor, I spoke to students about prejudicial views. As Latinos, we do have the ability to succeed, but sometimes we have to take extra effort to prove our worth and to show that we are qualified candidates in every respect. I urged others to put forth their best selves and rise above stereotypes. **As an undergraduate, I mentored more than five students my first two years.** I, too, had overcome self-limiting beliefs, and a lack of confidence and support. I made myself an available and approachable role model, and I supported my mentees. My senior year, **I was promoted to coordinator of the METAS program.** As coordinator, I helped shape and mold the program by leading team building exercises and workshops, bringing in speakers from around campus to teach students about resources, and I organized events. That year, **I managed a total of 30 mentors, >50 mentees, and mentored 2 students personally.** I helped students see that they could overcome difficulties in their programs and advised them about on campus resources to use.

During my graduate career at the University of Maryland, **I recruited, trained, and mentored four undergraduates that presented at national conferences and benefited from these experiences.** I joined the Society for Advancement of Chicanos/Hispanics and Native Americans (SACNAS), and

Out in Science, Technology, Engineering, and Math (oSTEM), as well as attended LGBTQIA+ workshops. In 2015, I mentored a first-year transgender male starting his graduate career. I helped him overcome hurdles, I answered questions, and I supported him. He was one of the best graduate students in the biology department at the University of Maryland, and today, he holds a two-year position at Swarthmore College. Through the years, I also volunteered at local schools in Barrigon, Panama, where access to education is limited. The classrooms typically consisted of students ranging in ages from six to 13 years old, and my two primary goals were (1) to connect the school to the National Park they had within a mile of their school and (2) to teach them about the research we were conducting in the National Park. I have contributed to the diversity and equal opportunity in higher education of underrepresented groups by mentoring, training, and engaging students of diverse backgrounds.

IV. University of California, Santa Barbara: As a National Science Foundation Postdoctoral Fellow working under the Broadening Participation Program at a Hispanic-serving institution (>20% Latino community), **my research has generated unique educational opportunities for undergraduate and graduate students of diverse backgrounds.** I have recruited, trained, and prepared 29 undergraduates to help perform experiments and develop their own research projects related to my research program. Of these undergraduates, 19 were female, and a total of 22 identified as belonging to a group underrepresented in STEM. These students have participated in conferences such as *Ecology & Evolution of Infectious Disease* to present their research to other scientists performing similar work, and four of these students are currently writing manuscripts to submit to peer-reviewed journals.

In addition to mentoring students inside the lab, I prepare them for graduate school. **I put together a “How to” series on graduate school for undergraduates.** The “How to” series includes: (1) “How to apply to graduate school: where, when, and how”, and (2) “How to write a successful personal statement”. I am looking to expand the series to include a module on “How to prepare for the interview process and deciding among schools”. This material will be open-source and publicly available online soon.

I presented one of these modules (“How to apply to graduate school: where, when, and how”) to a group of 12 undergraduates, predominately minorities. All of them rated the presentation as extremely informative. Many of the students that attended were 3rd and 4th year students that commented “*I didn’t know how to pick a school or an advisor*” and that the presentation taught them “*How to apply to grad school, find a research topic of interest, and how to look for an advisor prior to applying.*” Half of the battle in increasing diversity in STEM is knowing, and I aim to inform and mentor students.

V. Summary: By being a successful Latina researcher, teacher, and mentor, I am positively contributing to diversity in STEM. My visibility in the field helps others see and feel that they too can hold jobs like me and that these jobs are not out of reach. I have come to appreciate that the biggest hurdles stopping underrepresented groups from succeeding is psychological. I have persisted and thrived in my own career despite these barriers in my own higher education. I recognize the small and damaging experiences that uniquely threaten minorities known as *stereotype threat*. Subconsciously, we struggle with the validation of the stereotypes our groups face, be it race, gender, sexual orientation, etc. Therefore, in the classroom, the field, or laboratory, I make an active effort to fight and contradict negative affirmations instilled in underrepresented groups. I have the communication skills and cross-cultural ability to effectively motivate and contribute to diversity and equal opportunity in higher education. My research program generates unique educational opportunities for undergraduate students of diverse backgrounds. I have already impacted lives, and

my ultimate goal is to continue promoting diversity, inclusion, awareness, cultural competency, and equity.

VI. My contributions at the MA Coop Unit: I am impressed with the Coop Unit's and University's commitment to diversity and inclusion. **As a first-generation Latina female from a low socio-economic working-class background, I would be increasing ethnic, gender, and geographic diversity to USGS and University's Faculty.** I would love to be a part of an institution facilitating higher education opportunities for underrepresented groups because diversity makes institutions stronger by bringing novel perspective and experiences.

As an Assistant Unit Leader at the MA Coop Unit, I will take a three-pronged approach to increasing minority participation in STEM. First, within the lab, I aim to create an inclusive, equitable lab climate. I will do this by regularly leading anti-racists discussions, addressing racism in the lab and field, and advocating for anti-racist pedagogy training for all faculty and graduate students. At the University level, I will work to retain, recruit, and develop a diverse community. To do this, I will participate in programs like the Louise Stokes Alliance for Minority Participation, SACNAS, the and the Doris Duke Conservation Scholars Program. I will also advertise research opportunities at Historically Black Colleges and Universities, such as Delaware State University and Cheyney University of Pennsylvania. At the community level, I will work to make STEM accessible to a wider audience. I plan to lead bilingual workshops on topics related to STEM in nearby public schools and community centers in Holyoke and Springfield. I will also join groups like Eureka! Scholars, 4-H Youth Development, and MA Envirothon that are already working on outreach to a broader community. The hurdles faced by minority and underrepresented groups are important to me and my research program. I am thrilled to be applying to work for an organization that takes these issues seriously, and I believe that the MA Coop Unit is poised to make a large contribution to academic equality.

VII. Mentoring philosophy to increase success of minorities in STEM: A mentor is an active partner in an ongoing relationship who helps a mentee maximize potential and reach personal and professional goals. Therefore, each one of my students and I will develop a plan to maximize their potential and reach their personal and professional goals. I will provide career counseling: training in preparation of grant proposals, publications and presentations, guidance on ways to improve teaching and mentoring skills, guidance on how to effectively collaborate with researchers from diverse backgrounds and disciplinary areas, and training in responsible professional practices. Each student is unique, and therefore, we will craft a mentoring plan that provides them the support they need as well as an evaluation plan that helps them reach their goals.