Research Statement

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As a Hispanic female in STEM, my personal and professional experiences have reinforced the importance of diversity and inclusivity for both individuals and the community. At my previous employment, I was the sole female in an otherwise white male-dominated mathematics department for two years. Currently, I am one of five females within a group of nineteen first to fourth-year postdocs. Although women have been historically underrepresented in STEM, I am committed to rewriting this message and more, as I strongly believe that a diverse community is the source of innovative ideas and creative accomplishments.

To that end, I am committed to cultivating positive and encouraging learning and research environments where everyone feels accepted and motivated to explore mathematics, or any field of their desire. Specifically, I believe that all students should be mentored to **explore research experiences and careers relevant to their true interests** and should be **supported to overcome challenges and succeed in their endeavors**.

As I do with all my courses, I look to foster inclusivity and motivate students to pursue fields of their dreams. I believe that **each student should feel noticed** within the classroom, **be treated fairly**, and **with respect**. As a teacher, I look to **support my students** in whatever capacity necessary to get them to **"own" the material** and feel that **sense of competence and belonging**. Each student learns differently, which is why I incorporate **various teaching mediums**, such as technology, collaborative learning techniques, and hands-on activities, into each course meeting.

The learning experience and understanding of each student is of the upmost concern, which is why I look to **connect the concepts and skills** learned within the course **to the world around them** in order to make the **material more tangible and applicable**. As an example, I have modified the final project for my Mathematical Principles of Numerical Analysis course to include topics related to ethical and legal implications of different algorithms and tools. Currently, I am working with a female student who is interested in connecting algorithmic bias and neural networks. By **encouraging students to think critically and providing them with the necessary tools to solve problems**, students can more confidently work to make a difference within the world.

Beyond the classroom, I have actively worked to promote underrepresented minority in STEM fields. In past years, I have helped recruit a number of female students for a two-week summer programming course. I have helped to foster students' enthusiasm for mathematics by arranging for their participation in numerous mathematics competitions. Presently, I volunteer with the Tucson Math Circle to help develop interactions between secondary school students and mathematicians through weekly problem-solving sessions.

I am eager to inspire the next generation of mathematicians and get them ready and motivated to learn more. To be successful in this goal, it is imperative to continue to foster a positive and inclusive classroom and research environment where everyone, regardless of their background, is encouraged. As an educator, I will continue to look for opportunities that promote diversity, foster relationships, and recruit underrepresented students, but most importantly, that show students that I care about their learning and their future.