Efren Mendez Jr

Statement of Purpose for the Missouri University of Science & Technology Geology and Geophysics MSc Program

Growing up, I never thought I was one day going to be a geologist. As a son of two immigrants with no educational background I was set to follow in the footsteps of my father. He worked pouring concrete in harsh conditions and when I was 13 years old, he started bringing me with him. My father wanted me to understand that having no education puts you at a disadvantage. At an early age I knew my parents wanted me to finish high school. However, I knew that I wanted more and was looking for a challenge. So, I decided to attend Sam Houston State University and major in construction management. It wasn't till I took physical geology in my first semester that my whole perspective of the Earth we live on changed. Two months in, I went up to Dr. Joe Hill and told him "I want to change my major."

During my first semester I didn't know much about geology. So, I set out to explore different career paths. After months of talking with professors I figured out geology has many branches. However, I still had no clue what kind of career I wanted to make of it. It wasn't till my second semester when I talked to upperclassmen that things became clearer. They were taking Petroleum Geology and were looking at wireline logs and building structural maps. They explained what the maps were for and how it can help you determine where to drill for oil and gas. After looking at how they drew structural maps and applying their knowledge of wireline logs and the regional geology I saw petroleum geology as a potential career path. My interests in petroleum geology only increased as I took advantage of the opportunities that were offered at SHSU and the American Association of Petroleum Geologists (AAPG). When I took Sedimentology, I was given a project over the Guadalupe Mountains National Park. During my research, I came across articles over producing formations in West Texas like the Wolfcamp and Spraberry. I was amazed on how much oil there is still to recover after drilling for decades. After writing a paper and giving a presentation over the different depositional environments my passion for sedimentology and how it can be applied in petroleum geology grew. Finally, in the spring semester of my junior year, I took a petroleum geology course and that cemented my interest and set my career path as a petroleum geologist. Now I plan to obtain an MSc in Geology and one day become an exploration geologist.

To further my understanding about petroleum geology I knew that I had to apply what I have learned into the real world. Getting an internship was quite challenging especially for an undergraduate surrounded by major oil and gas schools. I decided to network on Linked In, with the Houston Geological Society, and at school events to ask about the industry. After months of building my network I received an interview with a mudlogging company and was offered an internship, which allowed me to learn about the operations of an oil rig. Upon completion of my internship I knew that I had made the right decision to pursue a career in petroleum geology.

After being on different rigs for three months in the Permian Basin and talking to different geologists and petrophysicists, I had to share my experiences. I decided to run for a leadership position in our AAPG student chapter. I was elected Vice President for the 2019-2020 academic year. With the connections I made during my internship and attending AAPG conferences I was able to bring in industry professionals to our student chapter to give presentations.

In addition to career and leadership experience at SHSU, this fall semester I was offered a teaching assistant position for lab sections of Historical Geology. My experience as a TA was unforgettable. It showed me a different perspective because at one point I was in the shoes of the students taking the course. I taught lab the way I wanted it to be when I took the course. When I took historical a crucial part of the lab was being able to identify rocks and fossils. So, I made sure my students understood what environments the respective samples were found in and helped them with a way to remember how they looked. For example, when learning about cephalopods I told them that some of them look like “cinnamon rolls”. It’s the little things they remember and makes the lab more interactive. Being able to go table to table and seeing my students grow in their knowledge of geological processes was fulfilling to see.

My research interest ranges from the applications of sedimentology and geochemistry in petroleum geology to using structural geology to understand hydrocarbon migration. At Missouri S&T I would like to work with Dr. Wan Yang and Dr. David Borrok on establishing a sequence stratigraphic framework for the Tuscaloosa shale to see the relationship between geochemical properties and rock mechanical properties to predict the distribution of petroleum rich zones. Missouri S&T offers one of the best educations in geology in the entire Midwest and provides faculty who are equipped with a wide range of geologic knowledge. I am excited about the potential to attend Missouri S&T and to expand my knowledge about petroleum geology.

Sincerely,

Efren Mendez Jr.