

I am one of the very few people that can confidently say that I knew I wanted to be a scientist since the age of 7. Inspired by scientists who performed experiments combining colorful and foamy solutions, I signed up for a science class. I still remember how amazed I was when we learned what diffusion was by boiling purple cabbage in water. Seeing the color dance through the water, I knew right there I wanted to be a scientist.

My involvement in science grew stronger when my parents gave me a microscope for my 10th birthday. It was so exciting to see at large scale what to my eyes appeared so small. Sugar grains, leaves, small insects - nothing escaped from going under my microscope. The best part was realizing what a cell was when staining a thin onion layer with methylene blue. I could see the blue nucleus and the morphology of each cell, and I was enchanted. At twelve, my parents gave me a chemistry set with which I could mix my own colorful solutions. I remember loving making blue crystals out of copper sulfate.

My love for science did not vanish, despite the fact that science in Chile is not as popular and widespread as it is here. After finishing high school I decided to study biochemistry at the University of Santiago de Chile. **I wanted to contribute to the scientific community, promote scientific development in my country, and to pass on my knowledge to younger generations.** All my professors were researchers, and, as I learned how nature works at the molecular level, I knew I wanted to be one as well. After my first Genetics class with Dr. David Holmes I found it fascinating that microorganisms are involved in major environmental problems such as acid mine drainage, and that we could study an organism's genomic information to infer its role in this process. With the support of Dr. Holmes I applied for and won a fellowship for undergraduates to go to high technology centers in foreign countries. I went to work at Integrated Genomics Inc. in Chicago, where I learned how to use bioinformatic platforms not only to study individual genomes, but also to compare multiple organisms based on their genomic information. I learned that if we could compare different capacities of organisms and also be able to view them as members of an integrated system, we could apply this knowledge in understanding a natural environment. That is when my interest in studying microbial communities started to grow. Another factor influencing me was the atmosphere I was in. It was so exciting to meet renowned researchers and to experience their scientific environment. One afternoon my advisor, Dr. Andrei Osterman, asked me if I had any plans for my professional future. He told me he was very happy with my work and how fast I was learning, and he suggested that I pursue graduate studies here in the United States. He offered to help me with recommendation letters and would be happy to work with me again. Hearing this from a renowned researcher made me incredibly happy and proud.

I am a fast learner and I enjoy studying. Even though I had studied biochemistry, my undergraduate thesis involved analysis of large datasets of protein sequences. In order to complete the analysis I had to learn programming in Perl. Working on my undergraduate thesis for a full year gave me the confidence and knowledge that has well prepared me to advance in my research career. This gives me an advantage over other undergraduate students that take only class work. **I am confident that I could be involved in challenging scientific questions, and I have the leaning skills and perseverance to succeed in finding the answers.**

While still in Chile I also worked as a part-time English and chemistry teacher and had a great relationship with the students. I could tell that they understood what I explained to them, and I learned that different people have a different pace of learning. I really enjoyed passing on my knowledge as I started developing my teaching skills.

Teaching experience is an important part of becoming a leader in science and a professor at the university level, and I want to continue gaining it throughout my time in the graduate school.

The knowledge I acquired during my bachelors and the internship in Chicago opened for me the doors to the research world. After my graduation I moved to Berkeley, California, and in 2006 began working in a geomicrobiology lab with Dr. Jill Banfield at the University of California, Berkeley, studying microbial communities in acid mine drainage. I decided to apply to the graduate program in Environmental Science, Policy and Management (ESPM) at UC Berkeley to continue my studies in this area, and I was accepted! It is really exciting to be part of such a leading research institution. **The ESPM program is interdisciplinary, which means that not only I will increase my knowledge in the microbiology field but I will also learn to interact with policy makers and social scientists.** This will make me a versatile person and, hopefully, prepare me to influence environmental policy one day.

To my surprise and joy, the department of ESPM applied on my behalf to the **Berkeley Edge Fellowship Program**, a University of California joint program to recruit underrepresented minorities in the fields of Science (STEM). This program is funded by the NSF- Alliances for Graduate Education and the Professoriate, and other recognized institutions. It was a real honor to receive this fellowship. This encouraged me to work hard on my project at Dr. Banfield's lab, and as a result **I'm writing my first publication as a first author.**

This summer **I also participated in the SMASH (Summer Math & Science Honors) Academy program**; a program organized by the Level Playing Field Institute that recruits and prepares underrepresented minority high school students from the Bay Area, for future careers in science and engineering. During the course of two weeks I taught those students simple experiments to identify and observe microbial diversity in the environment. At the end of the program they had to present their results and explain to the audience what they had learned. **It was so gratifying to pass on my knowledge to those kids, knowing that I may have contributed to recruiting them as future students in the fields of science.**

A really important part of my doctoral thesis is my intent to do research in collaboration with researchers from my country. As I mentioned above, science in Chile is starting to grow but we still need to do a lot more. I am looking forward to bringing my knowledge in genomics of microbial communities, collaborating with researchers and students that do similar work, and helping expand the connections between research in Chile and the United States.

I know I am a good student and I do all I can to be the best. Studying at the University of California in Berkeley will give me the needed knowledge to be an expert in the microbiology and microbial ecology fields. **My goal is to continue my career in academia and be able to influence policy making** by providing solid research and expertise on microbial ecology and its environmental implications. But most of all, **I want to share my knowledge with others and promote diversity at the graduate level.** At present I am participating in a Berkeley Edge mentorship program and my mentor is also an underrepresented minority, which is really important to me. It encourages me to be, sometime in the future, a mentor as well to a minority student like myself. Eventually, I will teach seminars and classes at the university level not only here but also in Chile, and encourage more students of minority background to join the forces of science. The selected program and research proposal will be indispensable in helping me achieve this goal.