



Dr. Leticia Márquez-Magaña – Molecular Biologist

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I was born and raised in Sacramento, California, and I have two younger brothers and a younger sister. My parents are from two small pueblos in Zacatecas, Mexico. My mom is from Jalpa, and my father is from Tepechitlan. I believe that because my parents were immigrants, they were cautious in allowing us to fully participate in American society. We were not allowed to play outside unless they were home, which was not until late since they both had to work. I was given permission to sleep over at just one friend's house, and then only after her parents met mine. As a child and into my late teens, I tried to assimilate into the majority culture. In my attempt to be like everybody else, I stopped speaking Spanish, and took it as a compliment when individuals told me I was an "exception to my race." It was not until college that I understood the discrimination that minorities

often experience in this country. At the same time, I rediscovered the richness of my cultural heritage, and truly began to appreciate the many gifts my Mexican parents bestowed upon me.

It was the media portrayal of prominent scientists that first sparked my interest in the sciences - distinguished men with wild white hair, running around the laboratory in white coats. I remember wanting to participate in the discovery process that allows one individual to be the first person in history to know something, and then to share that knowledge with humanity.

I attended an all girls Catholic high school where there were no physics classes and pre-calculus was taught for the first time the year I graduated. When my teachers discussed the biochemical process of the cell, an all encompassing black box was drawn on the board to represent a chemical occurrence that we were to accept on blind faith. I wanted to know what was in that black box.

It was not until college, while attending Stanford University (www.stanford.edu), that I was truly able to pursue my scientific curiosity. One of my biochemistry professors had figured out a specific biochemical process that happens in the cell. He demonstrated how individual electrons were moving from different molecules, allowing a biochemical process to occur. Being able to understand basic biological phenomena at a molecular level fascinated me. This was the first time I heard a professor explain what was inside one of those black boxes commonly drawn on chalk boards, and I wanted to be a scientist who uncovered the contents of those black boxes.

While an undergraduate student, I almost changed my major to liberal studies out of sheer intimidation and low grades. This was not due to a lack of intelligence, but to an inadequate preparation at the high school level. Furthermore, I was very active in the Chicano community at Stanford, and I was concerned that a major in the sciences would not best benefit the Latino people. Towards the end of my undergraduate career I began to receive better grades in my science courses, and assisted in a couple of research projects. Still, I continued to question if I should become a scientist. Serving my community was of the utmost importance to me. Moreover, I did not see any other Latinas in science. It was not until one of my professors pointed out that as a research professor I could indulge my fascination with science, while serving my community as a role model for women and minority students, that I decided that science would be my path. After receiving a bachelor's of science and a master's of science degree in biological science from Stanford University, I continued my education at the University of California, Berkeley and

received a doctorate in biochemistry. I finished my training with a post-doctoral fellowship in the department of molecular pharmacology at Stanford Medical Center (www-med.stanford.edu).

Today, I am a research professor of microbial genetics and molecular biology for the department of biology at San Francisco State University (www.sfsu.edu). In my laboratory we study the molecules that govern the ability of a bacterial cell to move towards food and away from toxic materials. The specific bacterium I study is *Bacillus subtilis*, a common soil bacterium. In fact, a few years ago some scientists discovered a piece of amber from the Jurassic period, and when they broke it open, they found bacterial spores. The spores were germinated and found to be those of *Bacillus subtilis*. We study this bacterium's gene expression, and try to understand it at a molecular level.

I am very proud of my Mexican heritage and it is an integral part of who I am. I am not just a scientist and research professor, I am a Chicana scientist and research professor. It is very important to love what you do. If you have a passion for science do not let anything get in your way. Go after that goal! In my experience it is never the "brightest" student that makes it, but the one who "wants it" the most.