Luis Torres  
Alliance/Merck Ciencia Scholar Class of 2012  
Studying biomedical engineering at the University of Southern California  
Interned at the National Institutes of Health at the National Institute of Biomedical Imaging and Bioengineering (NIBIB)

Luis’s grandmother became ill with lung cancer when he was in high school. Luis remembered feeling powerless to help her. The doctors discovered the cancer in its late stage, and she passed away. Luis then researched different medical fields and learned about biomedical engineering. “I wanted to create cures or vaccines, something that could prevent people from dying from cancer,” he said.

As a first-generation Mexican-American, one of the most difficult challenges in reaching his goal is simply to fit in at his college. Luis’s high school was 99 percent Hispanic and only half of the students were expected to graduate. In most of his college classes he’s often the only Mexican. “Going into every new class and seeing these new faces that don’t look like yours, it’s kind of intimidating,” he said.

As an Alliance/Merck Ciencia Scholar and with the support of the Alliance, Luis interned at the University of Southern California lab for two summers, where he researches a drug delivery pump that could help treat glaucoma, the leading disease that causes blindness. Luis was excited when one of the researchers told him that the same delivery technique might be used to deliver cancer-fighting medicines.

Last summer, Luis was selected to join a competitive internship program at the National Institutes of Health (NIH). Luis was able to accept the internship thanks to support from the Alliance. Luis worked at the National Institutes of Biomedical Imaging and Bioengineering (NIBIB), where he worked alongside a team whose goal is to develop a malaria vaccine. The disease kills more than half a million people each year.

Luis’s main focus was to test the effect of different calcium concentrations on certain surface proteins—including those that surface or open up on the malaria parasite after it enters hepatocytes or human liver cells. Luis used atomic force microscopy (AFM) to capture images of the samples and software to analyze the images. He then used the results of the software analysis to produce graphs and histograms that could later be used in descriptive analysis.

Asked where he got his inspiration and drive, Luis pointed to his parents. He said he also inspires himself by, “looking back and seeing how far I’ve come.”

Luis is deciding between a career in medical research and one designing medical devices.