

**Richard Avila**  
**Alliance/Merck *Ciencia* Scholar Class of 2013**  
**Studying mechanical engineering at Boston University**  
**Interned at Boston University's department of mechanical engineering**

After a fall when Richard was a baby, his mother took him to see a medicine man. The healer saw that the plates of his skull had not yet fused, but he saw something else too. He told her, "Your son is going to be a real big success in life."

Richard's parents worked hard to support their son. His mother packaged chickens in a factory. Years later, she continues to have health problems from working in a cold room for long periods. His father had a job in textiles and learned English by listening to the Beatles.

Richard excelled in school and took an interest in mechanics. Once, when Richard took apart a broken radio, he was dumbfounded looking at the "tiny parts that don't really do anything on their own but work together." It was like seeing the Wizard of Oz behind the curtain, he says. He knew these hundreds of pieces interacted to receive signals and produce music, but he still had questions.

Today, Richard is studying mechanical engineering at Boston University and finding answers to all of the challenging curiosities that stumped him as a child.

As an Alliance/Merck *Ciencia* Scholar and with the support of the Alliance, this past summer Richard interned alongside his academic advisor in the Boston University department of mechanical engineering, studying the behavior of the Rydberg atom. By understanding atomic behavior, researchers can learn to control the behavior and elicit certain chemical reactions. For example, Richard explained, knowledge of atomic behavior might be used to help biological systems to activate medicine in the body.

In addition to studying mechanical engineering, Richard plans to minor in theatre. After he graduates, Richard hopes to work in the engineering industry field, pursue a master's degree and possibly a PhD.

When Richard received the scholarship from the Alliance, his mother reminded him of the healer's words.