August 7, 2020

**What is the talent pool today of Hispanics in Engineering (question for SHPE CEO) and how has that number evolved over the past few years? Any specific data on geography for those indicators?**

The talent pool includes 2 parts – incoming graduates and those in the workforce.

In 2018, 13,873 Hispanics earned BS engineering degrees, 2509 earned MS degrees, and 318 earned engineering PhDs – according to ASEE which is our best source of data. For BS degrees, that represents 11.4% of the engineering B.S. degrees awarded. Most of the trends on Hispanics earning engineering degrees are positive. However, we are still a long ways from having engineering degree production correspond to resident population numbers, where Hispanics are 22% of the population aged 18 to 24. We must continue to work for step-function increases in graduates, rather than the gradual steady increase we are seeing now.

The other component of Hispanic engineering talent is the existing workforce. In 2019, there were 185,394 Hispanic engineers in the workforce. Again, it’s important to compare the percentage Hispanics are represented in the workforce which is 8.3% with the percentage we are represented in the total U.S. workforce which is 18%.

In terms of geography, the Bureau of Labor Statistics report that California, Texas, Florida, Michigan, and Ohio employ the most engineers. The top six states for Hispanic population are California, Texas, Florida, New York, Michigan, and Ohio, so we can see some alignment, but I am not aware of a source for detailed Hispanic engineering workforce numbers by state.

**What are the 2 most impactful ways to lower dropout rates? And the 2 most impactful ways to help Hispanics get into STEM jobs? Do you see those being the ones we need to keep investing in, or are there others that based on the macroeconomic and social situations we are living in, would be great to focus on as well?**

In terms of retention, the three most critical issues are financial resources, sense of belonging, and STEM identity. At SHPE, we are working on all three – financial resources via ScholarSHPEs; sense of belonging via our SHPE Familia at the chapter, regional and national levels, and STEM identity by members being engaged in STEM outreach.

With respect to helping Hispanics get into STEM jobs, the most things we can do is 1) give them opportunities to apply what they learn before graduation and 2) teach them about how to navigate the STEM workplace before they enter it. In terms of applying what they learn, that could be internships, coops, or even class or civic projects that help them apply the knowledge they’ve gained. For navigating the STEM workplace, they need to learn about professionalism, leadership, and networking – essentially building their social capital.

I believe we do need to continue to invest in these efforts, but we must approach these core issues more holistically and systematically. For example, let’s talk about financial challenges. The logical answer is scholarships and financial aid – help them financially. But it’s not that simple -- Hispanics are raised with a very strong work-ethic and they are often debt averse. This leads them to work more hours than they should while pursuing their STEM degree. A recent report indicated that most Latino college students work more than 30 hours a week while going to school. Even if you give them scholarships or financial aid, they will probably still work. We need to think of holistic solutions – maybe create work opportunities that reinforce their learning, or connect them to campus, or build their sense of belonging.

The other thing that recent events have highlighted though is the digital divide. When Hispanic students were forced to remote learning, they faced many challenges – lack of internet service, multiple children in the household shared one computer, or their computer not being able to run the software they needed to use for class. I heard someone say the other day that once upon a time, this country created the infrastructure to put telephones in every home. We need to put broadband access in every home.

**What are your recommendations for how one as an individual (a person in the workforce) can help the Hispanic community in promoting/mentoring/supporting STEM efforts?**

On a personal level, you can encourage the children and young people in your life to consider STEM opportunities, and help them understand that they can do it if they choose to. You can add your heart and your voice as a mentor any and every time you have the chance. We need many, many more Hispanics in STEM, but in reality we build those numbers one person at a time.

It is also important to be an advocate for diversity, representation, and inclusion within your organization and community – whether you are STEM professional or not. With every promotion comes more responsibility and opportunity to advocate. As non-STEM professionals in the workforce, “we don’t know what we don’t know,” so it’s important that we educate ourselves on how to bring up the conversation when we see an opportunity and be an advocate for diversity in STEM.

Finally, as individuals we need to make our workplaces more welcoming and inclusive for those who are diverse. The best way to do this is to understand bias and microaggressions and work to reduce and eliminate them. The easiest way to understand your own biases is to use the Implicit Association Tests (IATs). After you understand your biases, the best way to reduce or eliminate them is to consciously work to act counter-intuitively to our biases. For microaggressions, understand what they are and try to eliminate these behaviors if you’re doing them, and speak up to counter them if you witness others doing them.