Engineering Salaries

INTRODUCTION

Engineering salaries are known to be among the highest median salaries in the United States. However, what does this particularly mean for the underrepresented minority employed in these fields? Over the last three years, the representation of women and minorities employed in engineering occupations has remained paltry (see Figure 1). Data from the National Science Foundation (NSF) indicate that across all science and engineering (S&E) occupations, more than half of all workers are non-Hispanic white males. In fact, women in S&E occupations were more likely than men to identify as American Indian/Alaska Native, African American, Latino, or of two or more races (Science and Engineering Indicators, 2012, www.nsf.gov).

This becomes critical for the discussion of salaries in engineering, as a component of salaries in general. Figure 2 illustrates comparisons in the median one year salary estimates for both 2009 and 2010 for the average American worker, by gender, race, and ethnicity. On average, underrepresented minorities and especially, minority women, earn the lowest wages.

Comparing the average median wages for groups to the median wages in engineering fields presents a critical picture for underrepresented minorities. Both male and female engineers across all levels of education earn, at the median range, more than double their peers. Males employed in engineering in 2010 experienced a 4.5 percent growth in median wages in just one year, the highest group presented in Figure 2. Median wages for women's engineering salaries remain lower, and grow at a slower rate. There are no comparable data for minorities on this scale for 2009 and 2010, but what follows indicates significant patterns for underrepresented minority salaries in engineering, in the next three tables.
POLICY CONSIDERATIONS

Increasing the representation of minorities within the ranks of scientists and engineers employed in the United States is a critical factor to address here. While the picture within the engineering fields, especially in terms of median salaries for engineers, is promising, this is dampened by the low actual numbers of underrepresented minorities working in these fields.

African Americans, Latinos, and American Indian/Alaska Native scientists are still more concentrated in the less-technical STEM fields, such as the biological and social sciences. Increasing representation of American Indian/Alaska Native, Latino, and African American scientists and engineers extends beyond the fiscal health of each group into the general health of a productive nation — bringing higher levels of equanimity across culture, education, and occupation.

To do so, we encourage policymakers, educators, and business and industry leaders to pursue the following policies and practices:

1. **K-12 EDUCATION.** Increase the access to STEM directed education, science, mathematics, and computer learning support at the K-12 level.

2. **HIGHER EDUCATION.** Provide attractive and supported opportunities to explore degree options within the technically advanced areas of science and engineering.

3. **GOVERNMENT.** Provide adequate scholarship funding to see promising minority students through two-year, four-year, and graduate level education.

4. **BUSINESS.** Provide internships and opportunities for underrepresented minority STEM candidates beginning at the high school level and continuing through degree completion.

The picture from within engineering specifically, however, is the most inspiring. From 2006 to 2008, underrepresented minorities experienced significant salary increases above their peers (Figure 4). While American Indian/Alaska Native representation in engineering remains less than 1 percent, the median engineering salary for this group experienced a 23 percent growth rate in the space of two years, placing this underrepresented minority group in the highest median salary bracket below Asians. This growth, and that for African Americans and Latinos, is occurring in part because representation of minority groups and women in the more highly technical areas of engineering is increasing.

Figure 5 illustrates employment fields in engineering, median salaries, and the percent representation of each group employed in each. The highest representation for underrepresented minorities still remains in those fields with lower median salaries. The slightly higher representation of American Indian/Alaska Native members in aerospace engineering may be an indicator for the reported increases in median salary for 2008.