

*"[I]f change continues at the same slow pace as it has done for the past fifty years, it will take almost another fifty (until 2057) for women to finally reach pay parity."*  
 ---Institute for Women's Policy Research, <http://www.iwpr.org>

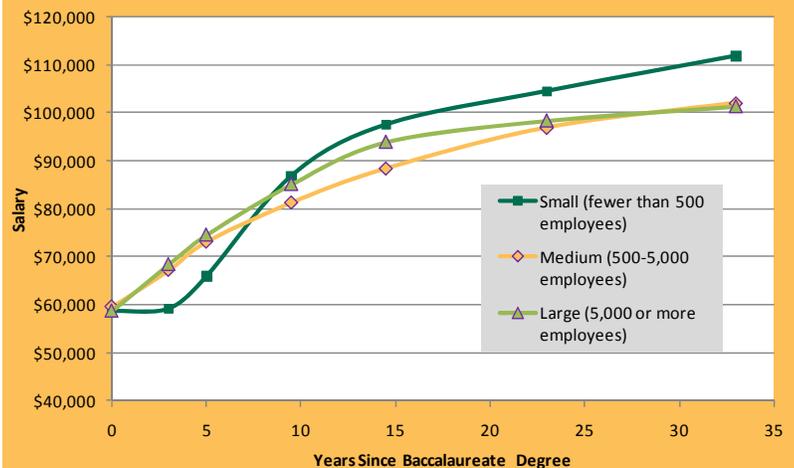
Engineers' salaries place them far above the average for U.S. full-time and year-round employed workers. We begin by looking at data collected by the Engineering Workforce Commission in its annual employer survey of engineers' salaries. These data focus on engineers in industry and government, the leading sectors for engineers and are useful for seeing how large-scale structural features impact engineers' salaries. Next, we use 2009 data from the American Community Survey (ACS), a large, national survey conducted by the U.S. Census Bureau. While the EWC study is based on information provided by employers, ACS data are based on reports of earnings by individuals. Therefore, these data are useful for answering questions about how individual characteristics, such as racial-ethnic category or sex, affect engineers' salaries.

For more than 40 years, the EWC has collected data on engineers' salaries from the nation's leading engineering employers. Data are collected from employers rather than individual engineers, allowing the display of engineers' pay ranges. Their data allow closer examination of engineers in specific, key industries (e.g., various types of manufacturing, research and development, etc.); for supervisors; and in several major metropolitan areas. EWC's analyses all show how time, measured in years since earning the bachelor's degree, relates to earnings. Engineers and engineering employers use the EWC data to benchmark salaries. Employers use the EWC report to ensure that they are offering competitive salaries to recruit new engineers and retain experienced ones. Engineers use the EWC data to see how well their present salary tracks for those in similar positions.

These are two examples of the analyses possible using the EWC data. The chart to the right shows the impact of employer size on engineers' wages, showing salaries are for all engineers at all degree levels. Regardless of employer size, the median starting salary for new engineers was around \$58,500-\$59,500. Within the first few years of employment, engineers' salaries at small employers remain virtually unchanged, while those at medium and large employers are more likely to experience immediate early career growth. The trajectory for those who work at small employers steepens and eventually those who have more than 30 years of post-baccalaureate experience at small companies have salaries that exceed those of their peers at large and medium ones.

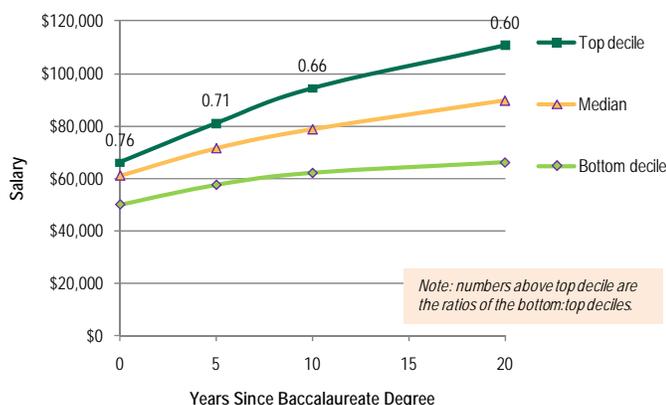
**Engineers' Median Salaries by Employer Size, All Degree Levels, 2010**

(Source: NACME Research, Evaluation and Policy analysis of Engineering Workforce Commission (2010). *Engineers' Salaries: Special Industry Report*)



**Salaries of Engineers, Non-Supervisory, Bachelor's Degreed by Years Since Baccalaureate Degree, 2010**

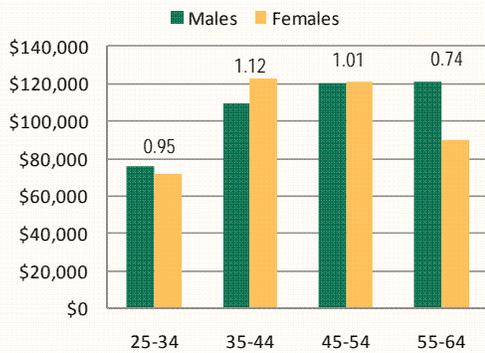
(Source: NACME Research, Evaluation and Policy analysis of Engineering Workforce Commission (2010) *Engineers' Salaries: Special Industry Report*)



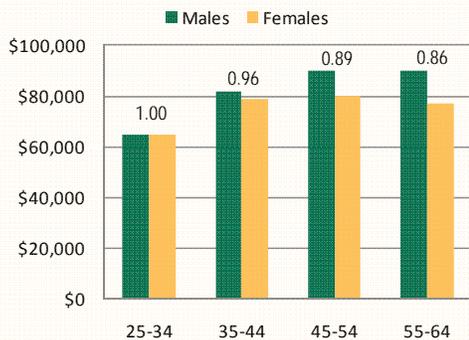
The graph to the left shows the median, top decile and bottom decile salaries earned by engineers at all levels and all engineering positions in industry and government at four points in post-bachelor's careers. The numbers above the top decile earnings represent the ratio of earnings for engineers in the bottom 10 percent compared to those in the top 10 percent. These show that at the time engineers are initially hired, the earnings gap is 0.75, but widens over the career-span. After 20 years in the field top-earning engineers earn substantially more than those at the bottom.

*Note: all analyses are of full-time, year-round workers. Any references to salary gaps are limited to those for full-time, year-round workers.*

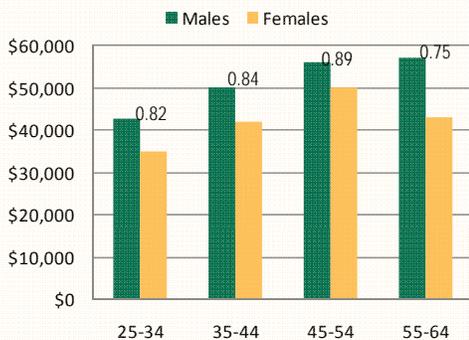
Median Annual Salaries of Engineering Managers by Sex and Age Group, 2009



Median Annual Salaries of Engineers by Sex and Age Group, 2009



Median Annual Salaries of Engineering Technicians by Sex and Age Group, 2009



Source: NACME analysis of American Community Survey public use IPUMS 2009 data.

**Acknowledgements:** This brief was completed by Lisa M. Frehill, NACME Director of Research, Evaluation and Policy (lfrehill@nacme.org). The author is grateful for the 2010 data provided by Daniel Bateson of the Engineering Workforce Commission and for comments on drafts provided by Catherine Hill and Christianne Corbett, both of the American Association of University Women, Linda S. Hagedorn, Iowa State University and Sandra Austin and Brenda Krulik of NACME.

**About the National Action Council for Minorities in Engineering, Inc. (NACME)**

Since its founding 37 years ago, NACME has stayed true to its mission: To insure American resilience in a flat world by leading the national effort to expand U.S. capability via better engagement of African American, American Indian and Latino women and men in science, technology, engineering and mathematics (STEM) education and careers. NACME alumni hold leadership positions in industry, medicine, law, education and government. With funding from corporate and individual donors, NACME has supported over 22,000 students with more than \$124 million in scholarships and other support. Currently, NACME provides scholarship support to more than 1,300 college engineering students through a national network of 50 partner universities. NACME is also implementing a middle school through community college strategy to increase the proportion of underrepresented minority students in STEM disciplines.

<http://www.nacme.org>

The pay gap for full-time, year-round employed women and men in the U.S. active civilian labor force is currently 0.79: the average woman earned 79 cents for every dollar the average man earned. The situation for women is very different in engineering, possibly due to the high demand for engineering talent. The sex gap in pay is:

- Negligible for engineers aged 44 and less.
- Wider for engineers 45 and older.
- Larger for engineering technicians than engineers.
- Variable for engineering manager - 35-44 year old women have higher average earnings than men, but this is reversed for 55-64 year old engineering managers.

**Wage Ratios Comparing Earnings of White Males within Each Age Group to Those of Males of Color and Females, 2009**

| Age & Ethnic Category  | Engineers |         | Engineering Technicians |         | Engineering Managers |         |
|------------------------|-----------|---------|-------------------------|---------|----------------------|---------|
|                        | Males     | Females | Males                   | Females | Males                | Females |
| <b>25-34</b>           |           |         |                         |         |                      |         |
| White                  | \$65,000  | 0.985   | \$42,000                | 0.810   | \$75,000             | 0.960   |
| African American       | 0.969     | 0.985   | 1.024                   | 0.571   | N/A                  | 0.533   |
| Asian/Pacific Islander | 1.077     | 1.138   | 1.071                   | 1.000   | 1.413                | 1.467   |
| Latino/a               | 0.923     | 1.031   | 1.071                   | 0.714   | 1.187                | N/A     |
| <b>35-44</b>           |           |         |                         |         |                      |         |
| White                  | \$80,000  | 0.950   | \$50,000                | 0.832   | \$110,000            | 1.073   |
| African American       | 0.938     | 0.875   | 1.02                    | 0.840   | 0.691                | N/A     |
| Asian/Pacific Islander | 1.125     | 1.063   | 0.900                   | 0.860   | 1.091                | 1.318   |
| Latino/a               | 0.938     | 0.813   | 1.000                   | 0.880   | 0.909                | 1.055   |
| <b>45-54</b>           |           |         |                         |         |                      |         |
| White                  | \$90,000  | 0.833   | \$58,000                | 0.862   | \$120,000            | 1.008   |
| African American       | 0.833     | 0.989   | 0.897                   | 0.862   | 0.975                | 1.667   |
| Asian/Pacific Islander | 1.111     | 1.000   | 0.966                   | 0.983   | 0.917                | 1.167   |
| Latino/a               | 0.944     | 0.722   | 0.862                   | 0.845   | 0.950                | 0.667   |
| <b>55-64</b>           |           |         |                         |         |                      |         |
| White                  | \$91,000  | 0.857   | \$59,000                | 0.729   | \$122,000            | 0.820   |
| African American       | 0.813     | 0.593   | 1.017                   | 0.847   | 0.820                | 0.492   |
| Asian/Pacific Islander | 1.055     | 0.923   | 0.847                   | 0.661   | 1.279                | 0.492   |
| Latino/a               | 0.879     | 0.648   | 0.814                   | 0.658   | 1.434                | N/A     |

Wage ratios were computed for seven groups compared to white males, as shown in the table, below. The median salaries for white males are shown in the yellow boxes, then the ratio of all other categories—defined by sex and race/ethnicity simultaneously—are shown within each age group and for three types of engineering workers: engineers, engineering technicians, and engineering managers. Some key points:

- As age group increases so too do annual median earnings.
- Engineering managers' median salaries are highest and technicians the lowest.
- Those in the earliest stages of their careers show little differences regardless of racial-ethnic group and sex.
- African American and Latina women's earnings for the 35-44 year old age group were substantially lower than those of the six other racial-ethnic categories.