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FUTURE OF THE U.S. SPACE WORKFORCE: HEALTHY OUTLOOK OR CAUSE FOR CONCERN?

Abstract

Debates about the adequacy of the science, technology, engineering, and math (STEM) pipeline have been ongoing for years, with many arguing that the United States is at risk of a shortage in qualified STEM workers, while others contend there may be a surplus. This debate is directly relevant to the future health of highly technical national space activities. However, it is often difficult to determine how the broader issues of STEM education and jobs apply to the space industry. This paper systematically analyzes data from the U.S. Bureau of Labor Statistics, Department of Commerce, National Science Foundation, and other sources, to determine what trends in degree attainment, wages, and employment suggest about the future health of the U.S. space workforce.

The size of the U.S. space workforce has decreased each year since 2006, even as employment in the nation as a whole began to increase. Over this period, the number of STEM graduates has increased steadily, both in the United States and globally. Multiple analyses of the U.S. STEM workforce suggest that there are more qualified STEM workers than open STEM positions. Researchers at Georgetown University and the Brookings Institution suggest that these trends may be driven by an increased demand for STEM-competencies, even in fields that are not traditionally considered to be part of the STEM industry. There is evidence that the space industry is affected by this trend as well. Even as the number of positions has fallen, real wages have continued to increase across most sectors of the space workforce, suggesting that demand for qualified workers in the space industry remains high.

The paper concludes that though there does seem to be an adequate number of qualified individuals to fulfill the needs of the space industry, the space industry will face competition from other fields in attracting these workers. To retain and attract the individuals needed for a successful program, the space industry must continue to provide the competitive wages that make it an attractive choice. According to surveys of new graduates, the space industry is still seen as particularly desirable industry in which to work. The industry should build on this reputation, which may be challenging in an era when government budgets for some of the most visible space activities seem to be decreasing.