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Hibbs Brief

Hibbs Institute for Business & Economic Research

Exploring STEM Opportunities: A Focus on Economic Potential in East Texas

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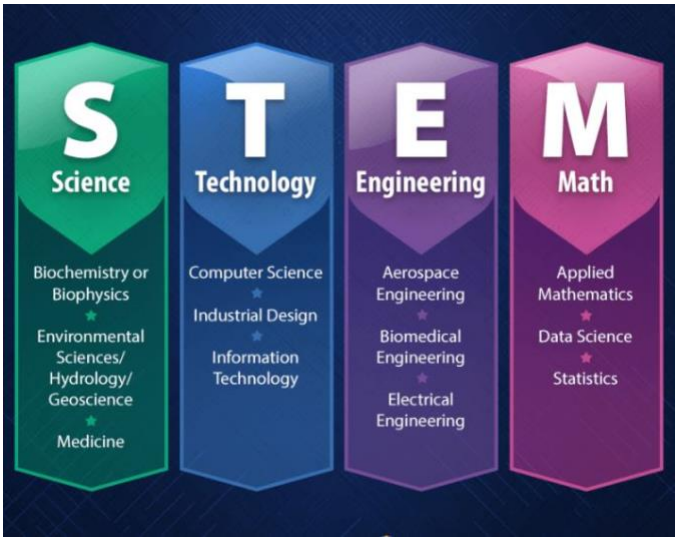
In this issue of the **Hibbs Brief**, we examine STEM occupations and their potential in an economic context in the United States, Texas and East Texas.

The acronym STEM stands for science, technology, engineering and math. STEM is an interdisciplinary educational approach that integrates these four disciplines to develop critical thinking, problem-solving, creativity and reasoning skills.[1] Individuals who pursue a college degree or technical career in a STEM discipline are more likely to find a job in a STEM occupation (an occupation strongly associated with any of the STEM disciplines). Every existing occupation or profession is classified into one of the 867 occupational categories detailed in the Standard Occupational Classification (SOC). The U.S. Bureau of Labor Statistics (BLS) indicates that roughly 23% (201 occupations) of the 867 detailed occupations are related to STEM disciplines.[2]



Source: CodeWizardsHQ.

Why are STEM Occupations Meaningful in the Economic Context?

STEM occupations are considered the future of the economy for two important reasons:

Employment Growth. From 2009 to 2022, employment in STEM occupations grew substantially compared to non-STEM occupations. For STEM occupations, this increase represented about 33% (or 2.6 million jobs) in the 13-year period, while non-STEM occupations only grew 25%. Furthermore, STEM occupations are projected to grow consistently and faster than the average for all occupations during the following decade (2022 to 2032). According to BLS projections, STEM occupations will increase 10.8% by 2032, compared to non-STEM occupations, with a projected growth of 2.3% within this time period.[3]

Well-Paid Positions. On average, STEM occupations are better paid than non-STEM occupations. According to the BLS, the median annual wage for STEM occupations was $97,980 in 2022, compared to non-STEM occupations, which accounted for $46,310 in the same year. Although STEM occupations only represent 6.3% nationwide (more than 10 million) of all occupations, their wages, on average, are more than double the non-STEM occupation wages.[4]

High-tech companies establishing or relocating from other countries (a "tech wave") are thrusting the economy and a considerable portion of the labor market in the United States. High-skilled individuals in STEM disciplines are instrumental in this "tech wave." Semiconductors and microchip manufacturing, artificial intelligence or electric vehicles are a few examples of industries that require a handful of workers in STEM occupations.[5]

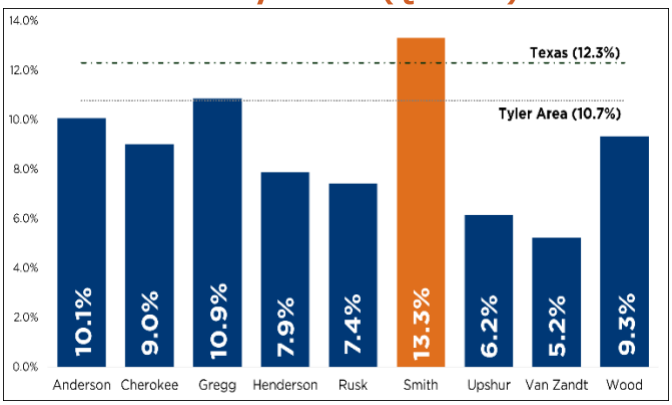
The increase in STEM occupations is more abundant in some regions of the country. This is the case for Texas, which has experienced a considerable growth of STEM occupations in its labor market during the past few years. Recently, Texas has become a magnet for major corporations seeking to capitalize on its favorable business environment and vibrant economic environment. Companies such as Samsung, Oracle, Tesla and Amazon have established local operations centers in Texas, boosting the demand for STEM occupations and the local economies of the neighboring areas.[6]

STEM Occupations in East Texas

With this in mind, we examined STEM occupations within the Tyler Area. As a reminder, we define Tyler Area as the eight contiguous counties surrounding Smith County, including Anderson, Cherokee, Henderson, Gregg, Rusk, Upshur, Van Zandt and Wood. **Figure 1** depicts the percentage of STEM workers in each county of the Tyler Area (shown by bars) and the corresponding shares for the overall state of Texas and the overall Tyler Area (shown by dotted lines).

In Q3 of 2023, about 12.3% (1.8 million individuals) of the Texas workforce was associated with STEM jobs, compared to 10.7% in the Tyler Area. While some counties in the Tyler Area show a relatively low number of STEM jobs, such as Upshur (6.2%) and Van Zandt (5.2%), Gregg County surpasses the area's average with 10.9% and Smith County even exceeds the state's average with 13.3% **(Figure 1)**.

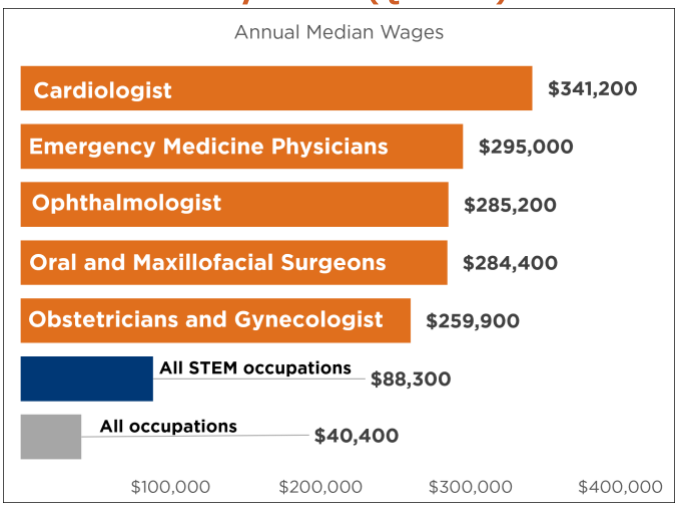
Figure 1. Proportion of STEM Workers in the Tyler Area (Q3 2023)



Source: Hibbs Institute's estimates using Quarterly Census of Employment and Wages data provided by Chmura Economics and Analytics.

In the Tyler Area, the healthcare industry not only represents the most important driver of the regional economy[7] but also has some of the better-paid occupations in the area. The top five STEM occupations with the highest median wages are healthcare-related: 1) Cardiologist — $341,200; 2) Emergency Medicine Physicians — $295,000; 3) Ophthalmologists — $285,200; 4) Oral and Maxillofacial Surgeons — $284,400; and 5) Obstetricians and Gynecologists — $259,900 **(See Figure 2)**. Remarkably, a cardiologist in the Tyler Area may earn an annual wage that exceeds the median annual wages of eight average workers in the area.

Figure 2. Highest Wages for STEM Occupations in the Tyler Area (Q3-2023)



Source: Hibbs Institute's estimates using Quarterly Census of Employment and Wages data provided by Chmura Economics and Analytics.

It is expected that STEM occupations will continue to grow in the following years. This is particularly good for the economic growth of East Texas as the healthcare industry keeps expanding, especially with the development of the UT Tyler School of Medicine. However, it would be beneficial for the region if more individuals engaged in all kinds of STEM occupations besides medicine.

A STEM-targeted education today could position East Texas as a thriving hub for economic development and technological advancement in the years to come.

End Notes

[1] Code Wizards HQ. What Does STEM Stand For? **https://www.codewizardshq.com/stem-meaning/#stem**

[2]The Office of Management created a Standard Occupational Classification (SOC) to guarantee that the occupational data generated throughout the Federal Statistical System are consistent and can be compared. List of SOC Occupations. **https://www.bls.gov/soc/Attachment_C_STEM_2018.pdf**

[3] Hibbs Institute's estimations using **https://www.bls.gov/careeroutlook/2014/spring/art01.pdf**

[4] U.S. Bureau of Labor Statistics (September 2023). Employment in STEM occupations. **https://www.bls.gov/emp/tables/stem-employment.htm**

[5] Shivakumar, S., Wessner, C. & Howell, T. (October 10, 2023). The Role of Industrial Clusters in Reshoring Semiconductor Manufacturing. **https://www.csis.org/analysis/role-industrial-clusters-reshoring-semiconductor-manufacturing**

[6] Arc Relocation. 8 Big Companies Moving to Texas in 2024 [Here's Why]. **https://arcrelocation.com/companies-moving-to-texas/**

[7] Holland, B (January 23, 2023). New UT Tyler medical school expected to have major economic impact. **https://www.kltv.com/2023/01/27/new-ut-tyler-medical-school-expected-have-major-economic-impact/**

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