

Workforce

Report submitted to the Louisiana Senate and House Committees on Education

The area of Workforce for the LaSTEM Advisory Council included a comprehensive list of areas of focus in line with the requirements of the state legislation. Specifically, ACT 392 provides the following tasks the Council: 1) to coordinate and oversee the creation, delivery, and promotion of STEM education programs; 2) to increase student interest and achievement in the fields of STEM; 3) to ensure the alignment of education, economic development, industry, and workforce needs; and 4) to increase the number of women who graduate from a postsecondary institution with a STEM degree or credential. As such there was pretty significant overlap and coordination of efforts required with the other Subcommittees and with other initiatives in the state.

The Workforce Subcommittee's work centers around addressing the following statistics:

- 71% of American jobs in 2018 will require STEM skills.
- In the past 10 years, growth in STEM jobs has been three times greater than non-STEM jobs.
- 80% of the fastest growing occupations in the US depend upon mastery of mathematics and scientific knowledge and skills.
- 58% of Louisiana's 4- and 5-Star Jobs are STEM-intensive jobs.

This is a critical concern for workforce since in Louisiana only 10% of students meet the benchmarks necessary to be considered STEM-ready according to ACT. For females, the data are more challenging. Women make up 50% of the workforce, and 24% of the STEM workforce, while 50% of those drop out in the first 10 years.¹ Women are losing ground in computer science degrees awarded: roughly 23% in 2004 and 17% in 2014. Further, according to My College Options, interest in STEM for girls at graduation is declining: from 16.2% in 2012 to 14.3% in 2018.

For African Americans, there is also a stark reality. The 2002 ETS Report entitled "Meeting the Need" was then projecting that 60% of the U.S. population increase would be among Blacks and Hispanics and that reaching workforce goals for the STEM disciplines could not occur without

¹ Million Women Mentors

mobilizing achievement among those now underrepresented groups. They go on to say: “Together these facts make it clear that meeting our nation’s future economic needs will not be possible without improving the math and science achievement of underrepresented minorities. This report documents the extent to which minorities are represented in science and engineering occupations.”

More recently, a 2016 US news report stated, “Low minority workforce participation in engineering and STEM generally is driven by low numbers of African-American, Hispanic, American Indian and other underrepresented populations pursuing degrees in these fields. Since 2000, underrepresented minorities have earned just 12.9% of all bachelor's degrees in engineering – a number that has remained flat. The percentage of blacks among engineering degree candidates has actually been declining for more than a decade and was only 3.5% in 2014 – well below the 13.2% that represents parity for African-Americans. (US News May 2016)

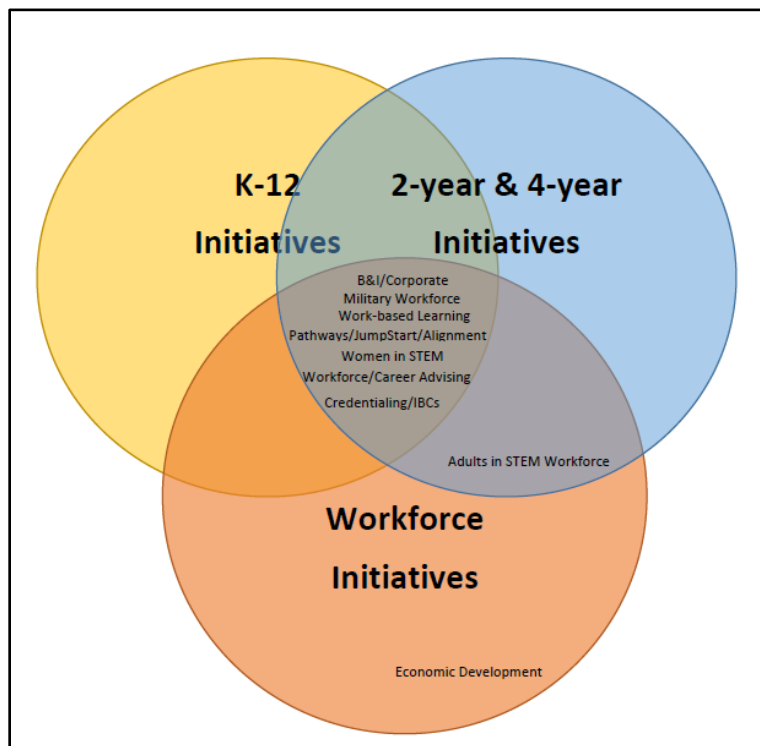
It is highly likely that the situation is the same or worse in our state. Also, even more important is the fact that Louisiana’s population has the second highest proportion of African-Americans in the nation. Louisiana cannot significantly increase the STEM workforce without also focusing on moving the needle for African-Americans.

The Workforce Subcommittee acknowledged the areas necessary to address the STEM workforce challenges. The following teams were established within the Subcommittee to address relevant issues:

- Business and Industry/Corporate/Economic Development
- Credentialing/Industry-based Certifications
- Workforce and Career Counseling
- Pathways/JumpStart/Alignment
- Work-Based Learning Efforts
- Women in the STEM Workforce
- Adults in the STEM Workforce
- Military Workforce

Selected fields aligned to occupations in healthcare and other industries will also be included for special emphasis, as identified by statewide and regional analyses and approved by the Council. The Subcommittee also recognized that significant workforce-related efforts, systems and resources exist that can undergird and support the work of the Subcommittee, including the State’s CIP-SOC Crosswalk, which is under development; the Workforce Commission’s STAR Rating System, and Workforce Investment Council’s Occupational Forecast. In conjunction with the November LaSTEM Advisory Committee, the Workforce Subcommittee met and Council members and interested STEM Stakeholders volunteered or were drafted to serve on the respective teams. The Workforce Subcommittee designed **Figure B** to depict how its work overlaps and dovetails with the work of the other Subcommittees.

FIGURE B: LaSTEM Subcommittee Overlap by Workforce Initiatives



During the January LaSTEM Advisory Council meeting, the Workforce Subcommittee presenters concluded that:

1. Although STEM is not explicitly incorporated into the assessment of employer demand, highly-rated occupations are more likely to have strong STEM components.
 - a. Among all occupations in Louisiana, 40% have a positive STEM rating
 - b. Among 4- and 5-star occupations, 58% have a positive STEM rating
 - c. When considering the importance of STEM education and training within occupational classifications: there is a strong latent demand for STEM preparation.
2. Star Ratings reflect that there is unique regional demand.
3. STEM has important implications when considering workforce as a driver of economic growth.
4. Analyses identifying high-wage, high-demand jobs; economic driver jobs; and gaps between supply and demand must inform strategic decisions. See Figure C.
5. LED FastStart's Tier Jobs Analysis identifies workers critical to economic driver industries and industries that provide essential services to our communities (FastStart is the workforce development division of Louisiana Economic Development)
 - a. Tier 1 (Economic Driver) Industries
 - i. Produce things of value and sell them outside the region
 - ii. Growth is limited primarily by availability and quality of workforce
 - iii. Wages are typically above average
Examples include: Manufacturing, Utilities, Industrial Construction, Software Development
 - iv. Tier 1 Jobs are 4- and 5-Star jobs employed in significant numbers by Tier 1 economic driver industries
 - b. Tier 2 Industries provide services essential to well-functioning, economically vibrant communities. Examples include: Healthcare, Education, Police and Fire Services. Tier 2 Jobs are 4- and 5-Star jobs employed in significant numbers by Tier 2 industries.

- c. Tier 3 Jobs are all other 4- and 5-Star Jobs

FIGURE C: LED Formula for Determining Gap and/or Surplus



As depicted in [Figure C](#), LED FastStart’s Supply-Demand Gap Analysis compares demand for 4- and 5-star jobs (Annual Job Openings) to annual educational completers (Annual Completions) to determine a Workforce Gap (or Surplus). On behalf of the Workforce Subcommittee, LED FastStart has completed an initial run of its Tier Jobs and Workforce Supply-Demand Gap Analysis based on 2017 employment projections approved by the Workforce Investment Council and 2017 completers of programs offered by all accredited Louisiana post-secondary institutions. These studies provide data to support LaSTEM’s strategic focus on increasing completers in specific STEM fields, notably Computer Science, Cybersecurity and Data Analytics, Engineering and Engineering Technology, and skilled crafts relevant to industrial construction, production, and maintenance. Based on this, the Workforce Subcommittee is framing its SMART Objectives to move the needle in key STEM areas.