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Study: Miami area ranks low for share of STEM jobs

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Jobs requiring knowledge in science, technology, engineering or math — known as STEM jobs — are a much broader and more diverse part of the national and regional economy than many people think, according to a new study. But the survey also shows that South Florida — with a higher unemployment rate, lower median household income and far fewer patents per capita than the nation as a whole — also trails in the share of STEM jobs.

Nationally, 49 percent of the STEM jobs are filled by workers with an associate's degree or less education, according to a report released Monday by the Brookings Metropolitan Policy Program. As of 2011, 20 percent of all jobs, or 26 million in total, required a high level of knowledge in any one STEM field. This compares to previous estimates of 4 to 5 percent from the National Science Foundation and others, the study's authors said.

"The Hidden STEM Economy" presents a new portrait of STEM workers nationally and across metropolitan areas. Previous studies classify workers as STEM only if they worked in a small number of professional occupations. The Brookings definition classifies occupations according to the level of knowledge in STEM fields that workers need to perform their jobs, so many non-professional jobs in manufacturing, healthcare and construction could be STEM jobs, the report said.

In the Miami-Fort Lauderdale-Pompano Beach metropolitan area, 51 percent of the STEM jobs required an associate's degree or less, the study found. In this region, 372,000, or 17.9 percent of all jobs, were classified as STEM jobs, but that share ranked Miami 81st out of 100 large metro areas. Miami and its largely tourism-based economy also ranked in the bottom 10 of 100 large metro areas for its overall STEM ranking, according the report. Las Vegas ranked the lowest.

"We find that half of all STEM jobs require an associate's degree or less — these types of jobs deserve more respect," said Jonathan Rothwell, associate fellow and author of the report. "The students who embark on these career tracks aren't getting the same level of support as the higher tracks. You can see that in federal funding, you can see that in state and local funding. But these workers are most likely to stay in the area and help the local economy."

The report notes, for example, that in South Florida there were 79,200 health diagnostics and treating practitioners — nearly 20 percent of all STEM jobs in the region — and just 36 percent of those jobs required a bachelor's degree. Similarly, there were 19,000 health technologists and technicians; only 10 percent required a bachelor's. Other fields, such as construction trades, mechanics and electrical repairers, represented more than 30,000 STEM jobs and required no four-year degree.

Local efforts are underway to bolster the STEM economy.

Heather Belmont, dean of the School of Science at Miami Dade College, said MDC has “taken a strong position in strengthening STEM offerings across the board,” citing associate and certificate offerings in biotechnology, bioinformatics, clean tech, lean manufacturing, forensic science, electronics technology, nuclear technology (a program run with FPL) and most recently, mobile technology. She said the college has been adding STEM programs steadily in the last five years or so, and is seeing strong demand.

“What’s really fabulous about our programs is we work directly with our industry advisory committees,” said Belmont. “Our students do get good jobs with associate degrees or certificates, and some continue on at night to get their bachelor’s” at MDC.

It pays to have STEM skills. In South Florida, STEM workers with a bachelor’s degree or more education earn an average salary of $82,652, compared to $65,272 for non-STEM workers with at least a bachelor’s, according to the Brookings study. Sub-bachelor’s level STEM jobs also provide relatively high wages, paying $51,109 on average compared to $30,178 for similar level sub-bachelor degree workers outside of STEM fields.

As expected, tech hubs such as Silicon Valley, Seattle, Boston and Washington D.C. scored well in the report for STEM jobs at all levels. Yet Florida’s Palm Bay-Titusville-Melbourne region ranked highly because of its significant aerospace presence; and energy-oriented metro areas like Houston also ranked highly.

The current narrow definition of STEM has serious funding implications, according to the study’s authors. Of the $4.3 billion spent by the federal government on STEM education, only one-fifth goes to support education or training below the bachelor’s degree level. Such limited funding makes it harder for young workers to receive training in STEM careers like technicians and craft trades and for older adults to sharpen their skills through continuing education, the study said.

“There’s much to be said for the four-year degree, that’s great, but two-thirds of young people are not completing bachelor’s degrees,” said Rothwell. “Will they be condemned to low-paying, low skill, low growth jobs or is there a career path for decent paying jobs? We think there are a lot of jobs for them in the STEM economy.”

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