Study finds STEM workers more likely to find jobs in denser STEM labor markets

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In one of the first attempts to understand the geography of STEM degree-job matching, a Dartmouth-led study published in *Economic Geography* finds that matching is much more likely in dense rather than in large STEM labor markets.

While other studies have investigated human capital, the role of occupational specialization, and, gender and racial disparities within the STEM pipeline, this research examines how economic geography, specifically, the impact of labor-market size and labor-market density, may affect job matching. It then tests whether working in such dense labor markets elevates the chances of being matched for specific types of workers.

Findings indicate that the concentration of STEM jobs in the largest cities (e.g. New York and Los Angeles) do not elevate the chances that a STEM worker lands a STEM job. However, working in medium to large metropolitan STEM agglomerations, places such as: San Jose, Calif.; Seattle, Wash.; Washington, D.C.; Raleigh-Durham, N.C.; and Austin, Texas; increases the probability of job matching.

Previous research shows that matching probabilities are low for women, blacks and Latinos relative to native-born white men but are relatively better for Asians and younger workers. Do these same effects play out across all labor markets?

This is an important question as many of these STEM job

agglomerations are associated with progressive, meritocratic cultures. The study asks if these places play by a different set of rules when it comes to race and gender. When it comes to STEM job matching, they do not. Women and racialized minority STEM graduates are indeed better matched in STEM clusters, but many others are too. That STEM agglomeration hardly improves the matching prospects for women, blacks, and Latinos relative to white men, signaling that no invisible hand can mediate the solution to these labor-market inequalities.

"The metaphor of the STEM pipeline is often used to describe the path from training to work. Pipeline conjures up a conduit from a single source to a single outlet. The STEM employment sector in the United States, however, is large and non-uniform, and subject to both temporal and, our concern, spatial variation. Given that this analysis focused on only one aspect of STEM employment— job matching across the entire category of STEM, unpacking the geography STEM jobs will surely only further complicate the landscape of an already variable employment terrain," says lead author Richard Wright, professor of geography at Dartmouth College.

To evaluate STEM job matching, the study uses 2009-2011 data from the Minnesota Population Center and the American Community Survey regarding civilian workers between the ages of 25 and 65, who have undergraduate and advanced degrees in the STEM fields of: engineering; computer science; biology and life sciences; mathematics and statistics; engineering technologies; and nuclear, industrial radiology, and biological technologies. The study also draws on data from the 2010 Bureau of Labor Statistics in which 184 of their 840 unique job codes are classified as an occupation in STEM.

More information: Richard Wright et al. The Matching of STEM Degree Holders with STEM Occupations in Large Metropolitan Labor Markets in the United States, *Economic Geography* (2016). DOI:

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