No Shortage of Qualified American STEM Grads

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No Shortage of Qualified American STEM Grads

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Giving STEM graduates a green card is a widely popular but misguided policy. Advocates of automatic green cards for STEM graduates base their positions on one or more of a number of suppositions: The U.S. economy is lagging because we don’t have enough scientists and engineers to meet industry demand; and/or increasing the supply will directly increase the innovation level in the economy; and/or increases in the number of scientists and engineers in other countries will put the United States at a competitive disadvantage. Each argument has the same intuitive appeal as that of motherhood and apple pie yet, when looking at the evidence, we find each of these arguments lacks empirical support.

Let us consider the evidence. Do we really kick STEM graduates out of the country upon graduation? Currently, graduates are automatically eligible to work for 29 months after graduation and the most recent research finds that stay rates have not changed significantly over the past decade, with more than two thirds of foreign STEM Ph.D.’s working in the United States after graduation. And for those STEM graduates who do not stay, our research and that of others suggests it is because they find better opportunities at home and less attractive STEM career options in the United States, not because of any barriers to getting a visa, anecdotal accounts notwithstanding.

[Check out the U.S. News STEM education blog.]

And what is the evidence that there is a large, unmet demand for STEM graduates? A quick scan of this week’s news finds that HP will lay off over 27,000 workers this year, following layoffs of over 28,000 a few years ago. Or consider General Electric’s recent relocation of its 115 year old X-ray headquarters from Wisconsin to Beijing, following earlier expansion of its corporate research and development labs in India and China. These companies are not alone but represent the general trend, in industry after industry, of locating...
STEM-intensive activities offshore. It is thus a rather curious proposition that companies are seeking more U.S. STEM employees at the same time they are laying off tens of thousands of STEM workers and increasing employment of offshore STEM workers who earn a fraction of U.S. salaries. And this is occurring at the same time that we graduate two to three times more STEM graduates each year than are hired into a STEM field.

What do the career prospects of a STEM Ph.D. look like? The typical career path is increasingly two post-docs following a Ph.D. before entering the labor market. That is, following a bachelor's degree and another four or five years of intensive study and low-wage labor in a professor's lab, the typical STEM Ph.D. can look forward to yet another six or eight years working at an average salary of $50,000 before they can compete for a regular job in a flooded labor market. For some, a deep and abiding love of science and engineering and willingness to play the job lottery keeps them in the game. For many others, these dim prospects push them to go elsewhere. And this pyramid scheme—of many low-paid graduate students and post-docs working for a small number of senior scientists—rests on having the large supply of foreign students who still flock to the United States because our education system is superb and, because until recently, there were even dimmer prospects of employment in their home countries. However, as more U.S. and international firms move their technology and research operations offshore, good job opportunities outside the United States will continue to draw talented STEM graduates to those locations.

[See a collection of political cartoons on immigration.]

It is the shift in demand—of where jobs are located—not supply-side policies such as visa policies that are determining the composition and size of the U.S. STEM labor pool. Further, specific labor market immigration policy is different from overall immigration policy: The benefit of a social policy that embraces diversity and immigration is something quite different from a labor market policy that seeks to flood the labor pool of STEM workers by robbing our global neighbors to get them. At best, a policy such as the STAPLE Act is a policy in search of a problem and, at worst, has the perverse effect of weakening the U.S. STEM workforce.

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