

Hispanics and STEM EDUCATION:

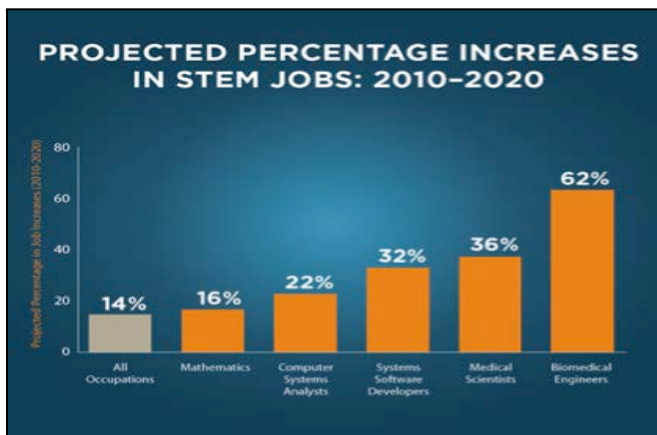


"...Leadership tomorrow depends on how we educate our students – especially in science, technology, engineering, and math." President Barack Obama, September 16, 2010

Science, Technology, Engineering, and Mathematics (STEM) skills are necessary now more than ever in order to compete in a global economy. According to the U.S. Congress Joint Economic Committee (JEC), between 2010 and 2020 the overall employment in STEM occupations will increase by 17 percent, yet not enough students are pursuing degrees and careers in the STEM fields to meet the increasing demand. There are currently two science and technology job openings for every qualified job seeker. The lack of STEM representation is even more prevalent among Hispanics, who although accounted for 16% of the U.S. population in 2010, only earned 8 percent of all certificates and degrees awarded in the STEM fields between 2009 and 2010.

THE NEED

Hispanics students are currently the largest minority group in the public school system, but they score lower than national averages on math and science achievement tests and enroll at significantly lower levels. Hispanics are underrepresented in undergraduate and graduate STEM programs and are not sufficiently exposed to STEM subjects at the K-12 Levels. Given that less than 2 percent of the STEM workforce is Hispanic while almost 20 percent of the country's youth population is Hispanic, the WHIEEH has named STEM as one of its key priorities, working with White House and U.S. Department of Education (ED) leadership, and public and private stakeholders to increase Hispanic participation in STEM fields.



STATISTICS

The percentage of Hispanic students enrolled in STEM fields increased by 33 percent from 1996 to 2004. Although Hispanic students have been shown to be equally as likely as White students to major in STEM subjects, they are significantly less likely to earn a degree or certificate in a STEM field¹. According to recent data from the Higher Education Research Institute (2010), 16 percent of Hispanic students who began college in 2004 as STEM majors completed a STEM degree by 2009, which presents an opportunity with regards to STEM representation and postsecondary completion. Hispanics represent the largest minority group with measured interests in STEM fields, creating a significant opportunity going forward.

Total Certificates and degrees awarded to Hispanics and to all students in STEM, by academic level: 2009-2010

ALL STUDENTS			
Academic Level	Hispanics	Total	% Hispanics
Certificate	3,655	14,936	24
Associate	5,016	43,292	12
Bachelor	18,613	246,732	8
Masters	2,822	75,872	4
Doctoral	695	23,644	3
Total	30,801	404,476	8

Source: U.S. Department of Education, National Center for Education Statistics, IPEDS. 2009-2010, Completions survey

¹ Overview of Hispanics in Science, Math, Engineering, and Technology (STEM): K-16 Representation, Preparation and Participation, July 2012

http://www.hacu.net/images/hacu/OPAI/H3ERC/2012_papers/Crisp%20nora%20-%20hispanics%20in%20stem%20-%20updated%202012.pdf

THE GOAL

President Obama has articulated a clear priority for STEM education: within a decade, American students must "move from the middle to the top of the pack in science and math." Specifically, he has called on the nation to develop, recruit, and retain [100,000 excellent STEM teachers](#) over the next 10 years. He also has asked colleges and universities to graduate an additional 1 million students with STEM majors. To reach these goals, the WHIEEH will work to ensure Hispanics have access to relevant resources and opportunities.

THE PLAN

How, then, can we ensure that Hispanics are taking hold of the jobs that will advance the U.S. in the 21st century global workforce? The solution to expanding interest in STEM fields, as well as diversifying the workforce, starts with exposing Hispanic students to STEM-focused education and careers at earlier ages. It is vital that student interests are sparked starting in preschool and well through a college or career.

The Obama administration is leading a cohesive national strategy to reorganize STEM education programs and increase the impact of federal investments while improving the delivery, impact, and visibility of STEM efforts. One such effort is the FY 2013 Federal investment of \$100 million for ED's Developing Hispanic Serving Institutions STEM and Articulation program, which is designed to increase the number of Hispanics and other low-income students attaining degrees in STEM fields. The reorganization of STEM programs will not impact investments in Hispanic community; rather it will facilitate working with stakeholders across the nation. The WHIEEH seeks to identify bright spots and leaders in Hispanic STEM education, highlight the importance and benefits in Hispanic role models and educators have on students, while amplifying mentorship, grant, and scholarship opportunities.

A CLOSE PARTNERSHIP

The FY14 proposed President's budget includes \$415 million for the *STEM Innovation Initiative*, a comprehensive networked strategy for improving K-12 STEM instruction through a combination of recruiting and training effective STEM teachers, strengthening instructional practices, and increasing student engagement in STEM subjects.

In 2014, the President's Budget proposed a government-wide STEM reorganization to create a coherent framework

for delivering STEM education to more students and teachers more effectively while reducing fragmentation and the Administration published a [Five-Year Federal Strategic Plan](#) to help align the reorganization with key goals and strategies. The major goals include: improving pre-K-12 instruction; increasing and sustaining youth and public engagement with STEM; enhancing undergraduate STEM education; creating a national strategy around graduate fellowships; and better serving groups historically underrepresented in STEM.

Over the past year, agencies have made considerable progress towards a stronger and more cohesive infrastructure for delivering STEM education. For example, in implementing the Strategic Plan, mission agencies have increased coordination with the lead agencies (ED, the National Science Foundation, and the Smithsonian Institution) and are identifying ways to leverage existing resources to improve the reach of agency assets.

BUILDING ON SUCCESS

Currently, ED STEM programs serving the Hispanic community include, but are not limited to the following:

- [Developing Hispanic-Serving Institutions STEM and Articulation Program](#): To increase the number of Hispanic and other low income students attaining degrees in the STEM fields and to develop model transfer and articulation agreements between 2-year Hispanic-serving institutions and 4-year institutions in such fields.
- [Upward Bound Math-Science](#): To strengthen the math and science skills of participating students and to encourage them to pursue postsecondary degrees and careers in math and science fields.
- [Teacher Incentive Fund \(TIF\)](#): To support efforts to develop and implement performance-based teacher and principal compensation systems in high-need schools as well as increasing the number of effective teachers teaching poor, minority, and disadvantaged students in hard-to-staff subjects.
- [Minority Science and Engineering Improvement Program](#): To assist predominantly minority institutions in effecting long-range improvements in science and engineering education programs and increasing the flow of underrepresented ethnic minorities, particularly minority women, into science and engineering careers.

To learn more about, please visit www.ed.gov/stem or <http://www.whitehouse.gov/administration/eop/ostp>