Latinos & STEM: What We Know & What We Can Do

NAS August 15 , 2016

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Post-Traditional Student Profile

Traditional student profile	Post-traditional student profile
College-ready	May need academic prep or remediation
Enroll in a college or university full-time	Enroll at a community college and part-time
Enroll the fall after high school graduation	Delay initial postsecondary enrollment while entering the workforce
Live on-campus	Live off-campus with their parents or with their own dependants
Complete a bachelor degree in four years	Take more than four years to complete a degree
Parents have college degree	First in family to enroll
White, non-Hispanic	Latino or African American
Do not work while enrolled	Many work 30 hours or more a week
Make college choices based on financial aid, academic programs offered, & institutional prestige	Make college choices based on cost of attendance, location, & accessibility

Source: *Excelencia* in Education: Using a Latino Lens to Reimagine Aid Design and Delivery

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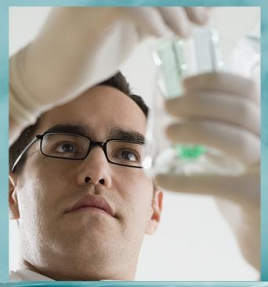
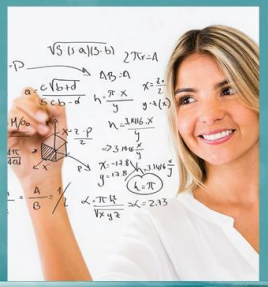
FINDING YOUR WORKFORCE:
LATINOS IN SCIENCE, TECHNOLOGY, ENGINEERING, AND MATH (STEM)





LINKING COLLEGE COMPLETION WITH U.S. WORKFORCE NEEDS – 2012-13

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INFORM
ORGANIZE
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Why Latinos in STEM?

- For the U.S. to maintain its historic preeminence and benefits in the fields of STEM—it must **produce 1 million more STEM professionals** than are projected to graduate at current rates.
- meeting **the nation's STEM completion goal requires over a 30% increase** in undergraduate STEM degrees over current rates.
- **Hispanics are projected to account for 75 percent of the growth in the nation's labor force** between 2010 and 2020.
- **Latinos completing certificates and degrees in STEM fields are vital** to meeting the national STEM college completion goal.

Sources: President's Council of Advisors on Science and Technology (PCAST). "*Engage to Excel: Producing One Million Additional College Graduates with Degrees in Science, Technology, Engineering, and Mathematics*." February 7, 2012. Washington, D.C. & Bureau of Labor Statistics, U.S. Department of Labor. News Release. *Employment Projections: 2010-2020*. USDL-12-0160. Table 1. Civilian labor force, by age, sex, race, and ethnicity, 1990, 2000, 2010, and projected 2020.

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Goal of *FYW: Latinos in STEM*

1. **Increase awareness** more Latinos are graduating with degrees in occupational areas important to current and future workforce
2. **Highlight the institutions and their efforts** in graduating Latinos
3. **Encourage those in the workforce and institutions to do more** to engage the Latino community
4. **Respond to those who are interested in recruiting** Latinos with postsecondary credentials but do not know where to find them

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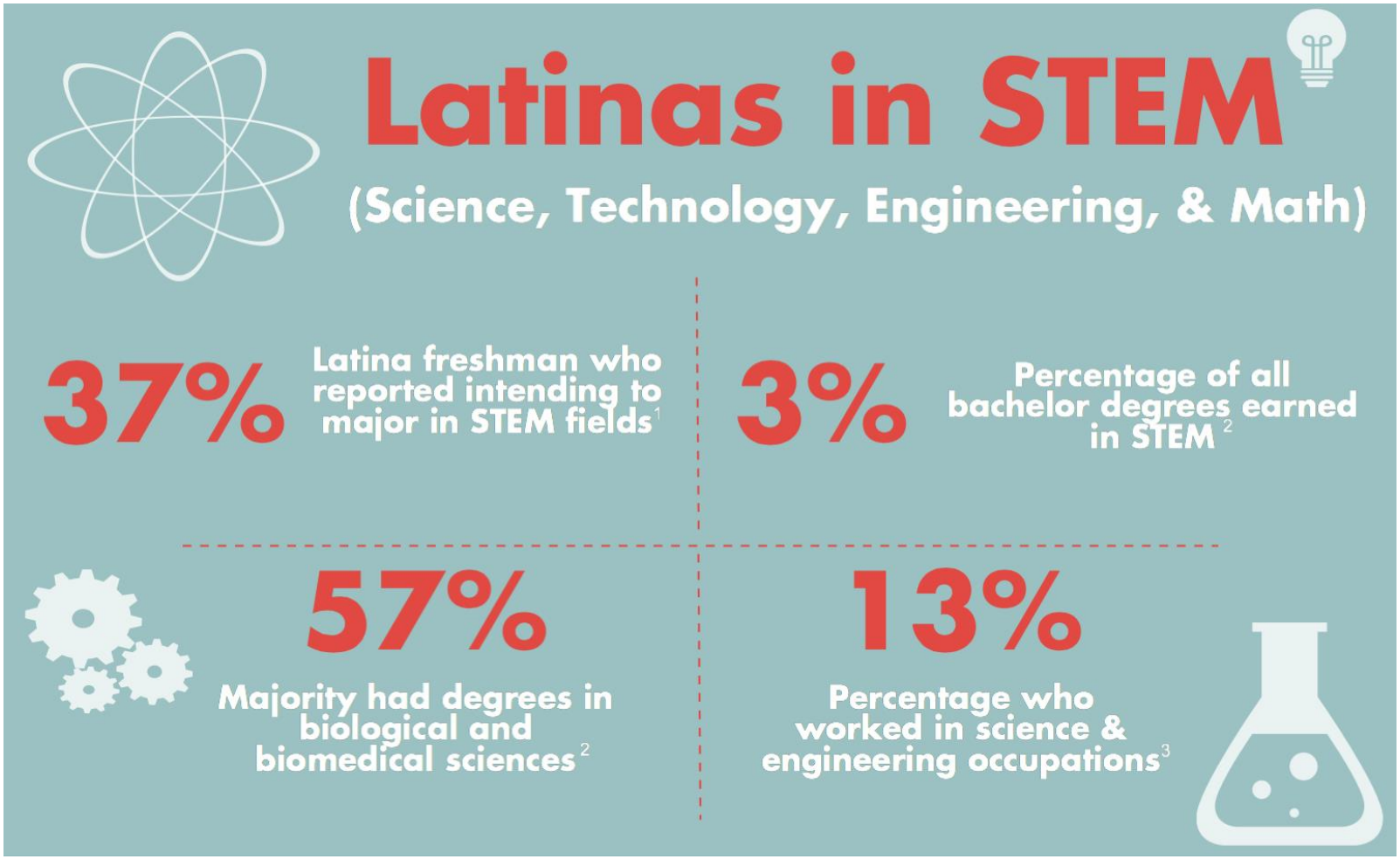

- Earned 60% of all bachelor degrees, but only 37% of all STEM bachelor degrees awarded to all Latinos
- Represented only 8% of all women who earned a bachelor degree in STEM
- Of all degrees earned in STEM, Latinas earned Bachelor's (3%), Master's (1%), Doctoral (1%)

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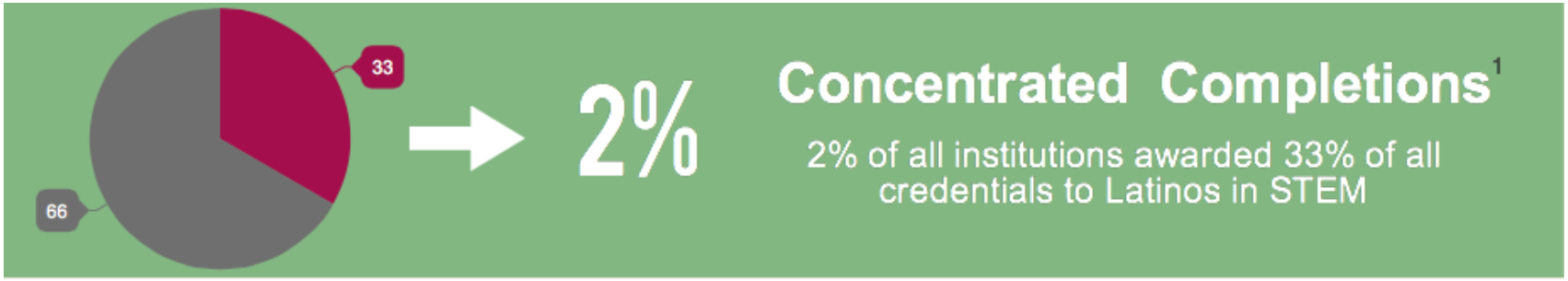
Latinos in STEM: Concentrated Completions



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Latinos in the STEM Workforce

- Latinos are more likely to be employed in service occupations

Latinos are more likely to be employed in lower paying occupations [4]

Professional	Service
Architectural & Engineering Manager Computer & Information Systems Manager Petroleum Engineer	Computer Support Specialist Electrical & Electronic Engineering Technician Mechanical Engineering Technician
OVER $120,000	$40,000 – $75,000

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Top 25 Institutions Graduating Latinos in STEM (2012-13)

Certificates Awarded to Latinos
- Instituto de Banca y Comercio Inc, PR
- South Texas College, TX
- Miami Dade College, FL
- Wyotech-Long Beach, CA
- United Education Institute-Huntington Park, CA

Associate Degrees Awarded to Latinos
- South Texas College, TX
- San Jacinto Community College, TX
- University of Phoenix-Online
- El Paso Community College, TX
- Instituto Tecnologico de Puerto Rico-Recinto de Guayama, PR

Bachelor Degrees Awarded to Latinos
- University of Puerto Rico-Mayaguez, PR
- Florida International University, FL
- The University of Texas at El Paso, TX
- Texas A & M University-College Station, TX
- The University of Texas-Pan American, TX

Masters Degrees Awarded to Latinos
- Universidad Politecnica de Puerto Rico, PR
- Florida International University, FL
- The University of Texas at El Paso, TX
- University of Puerto Rico-Mayaguez, PR
- University of Southern California, CA

Doctoral Degrees Awarded to Latinos
- Stanford University, CA
- University of California-Berkeley, CA
- The University of Texas at El Paso, TX
- University of California-Davis, CA
- University of California-Irvine, CA

Top 25 Institutions Graduating Latinos in Computer & Information Science (2012-13)

Certificates Awarded to Latinos
- South Texas College, TX
- Instituto de Banca y Comercio Inc, PR
- Valencia College, FL
- Florida Career College-Miami, FL
- Rio Salado College, AZ

Associate Degrees Awarded to Latinos
- University of Phoenix-Online, AZ
- CUNY Borough of Manhattan Community College, NY
- Northern Virginia Community College, VA
- Miami Dade College, FL
- Coleman University, CA

Bachelor Degrees Awarded to Latinos
- University of Phoenix-Online, AZ
- Atlantic University College, PR
- Florida International University, FL
- University of Maryland-University College, MD
- Inter American University of Puerto Rico-Bayamon, PR

Masters Degrees Awarded to Latinos
- Nova Southeastern University, FL
- University of Maryland-University College, MD
- DePaul University, IL
- American InterContinental University-Online, IL
- Capella University, MN

Doctoral Degrees Awarded to Latinos
- Nova Southeastern University, FL
- Capella University, MN
- Colorado Technical University-Colorado Springs, CO
- The University of Texas at El Paso, TX
- Michigan State University, MI

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What Works: STEM pathways

STEM pathway strategy	Why it works
College Readiness	Supporting policies that enhance K-12 STEM competency works to attract new talent to the fields and crucial to academic and workforce preparation.
Outreach	Targeted outreach to students throughout the educational pipeline allows students to learn about the many career options within STEM and stimulate interest in pursuing a post-secondary education.
Institutional Commitment	Commitment from leadership is needed to ensure sustainability of collaborative programs and efforts to increase student success.
Institutional Partnerships	Partnerships between community colleges and surrounding universities allow students to transfer and continue their education. Through these partnerships, academic advising to transfer students assist with matriculation and enrolling in courses.
Advising	Academic advisors make sure students stay on track to graduate through creating academic plans and informing students of available financial aid. Advising and support from faculty also play a crucial role in students' retention.
Mentorship	Peer-mentorship programs allow students to build networks of support and can help improve retention, especially for transfer students.
Faculty	Avenues for faculty development provide opportunities to keep courses exciting and current through the use of new pedagogies that use technology and problem-based learning.
Academic Support	Supplemental instruction and on-campus centers dedicated to increasing success in math and science provide students additional academic support in STEM disciplines.
Research & Fellowships	Undergraduate research opportunities are absolutely crucial to establishing a professional identity early. Fellowships allow students to earn on-the-job experience and technical skills needed for the workforce after graduation. These opportunities can empower individuals to move along educational levels and careers paths.
Industry Cooperation	Industry cooperation is needed to ensure students receive relevant training that can transition well into the workplace. Efforts to align training to specific skills demanded by employers can hold value for both employee and employer.

What Works

College Readiness: Mathematics Intensive Summer Session (MISS): California State University-Fullerton, CA - Since 1990, High school girls attend MISS courses in college prep math at the Algebra II level and above during the summer. Assigned to teams of four, students build collaborative learning skills. Latinas are the largest ethnic group of participants (57%).

Academic support: Computing Alliance of Hispanic-Serving Institutions (CAHSI) - University of Texas at El Paso, TX – CAHSI is a consortium of 10 HSIs with goals to: (1) increase the number of Hispanic students who enter the computing workforce with advanced degrees; (2) support the retention and advancement of Hispanic students and faculty in computing; and (3) develop and sustain competitive education and research programs.

Retention and completion: ARMAS (Achieving in Research Math and Science) Center - New Mexico Highlands University, NM – ARMAS's goal is to increase STEM student retention and graduation through collaborative-based and innovative best practices, including STEM fellowship opportunities and the provision of supplemental instruction in STEM gateway courses.

www.EdExcelencia.org/examples

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On social media #LatinoStudentSuccess

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