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

NAS August 15, 2016
## Post-Traditional Student Profile

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

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

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
Latinas in STEM
(Science, Technology, Engineering, & Math)

- 37% Latina freshman who reported intending to major in STEM fields
- 3% Percentage of all bachelor degrees earned in STEM
- 57% Majority had degrees in biological and biomedical sciences
- 13% Percentage who worked in science & engineering occupations

- 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%)
Latinos in STEM: Concentrated Completions

2% of all institutions awarded 33% of all credentials to Latinos in STEM
Latinos in the STEM Workforce

• Latinos are more likely to be employed in service occupations

<table>
<thead>
<tr>
<th>Professional</th>
<th>Service</th>
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</thead>
<tbody>
<tr>
<td>Architectural &amp; Engineering Manager</td>
<td>Computer Support Specialist</td>
</tr>
<tr>
<td>Computer &amp; Information Systems Manager</td>
<td>Electrical &amp; Electronic Engineering Technician</td>
</tr>
<tr>
<td>Petroleum Engineer</td>
<td>Mechanical Engineering Technician</td>
</tr>
</tbody>
</table>

OVER $120,000  $40,000-$75,000
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
## What Works: STEM pathways

<table>
<thead>
<tr>
<th>STEM pathway strategy</th>
<th>Why it works</th>
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<tr>
<td>College Readiness</td>
<td>Supporting policies that enhance K-12 STEM competency works to attract new talent to the fields and crucial to academic and workforce preparation.</td>
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<td>Outreach</td>
<td>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.</td>
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<tr>
<td>Institutional Commitment</td>
<td>Commitment from leadership is needed to ensure sustainability of collaborative programs and efforts to increase student success.</td>
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<tr>
<td>Institutional Partnerships</td>
<td>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.</td>
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<tr>
<td>Advising</td>
<td>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.</td>
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<tr>
<td>Mentorship</td>
<td>Peer-mentorship programs allow students to build networks of support and can help improve retention, especially for transfer students.</td>
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<tr>
<td>Faculty</td>
<td>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.</td>
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<tr>
<td>Academic Support</td>
<td>Supplemental instruction and on-campus centers dedicated to increasing success in math and science provide students additional academic support in STEM disciplines.</td>
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<tr>
<td>Research &amp; Fellowships</td>
<td>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.</td>
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<tr>
<td>Industry Cooperation</td>
<td>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.</td>
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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
EdExcelencia.org

On social media #LatinoStudentSuccess