• This deck includes slides showing degree outcomes in engineering. Many slides appear repetitive: this provides variations on the theme, showing different sets of groups defined by race/ethnicity, degree level, and sex.

• As with other decks, the set is not necessarily meant to be a self-contained, sequential presentation but, rather, a deck from which users may select slides for any number of presentations. The repetition, therefore, provides users with many choices to present data.

• Users should be mindful of the Y-axis scaling: white males are so numerous in engineering that graphs including this group will have far different Y-axis maxima than those showing data only for minority groups or for women.

• Why use three-year averages? Because of the very small numbers of minorities in engineering, slight year-to-year variations can sometimes be misinterpreted as dramatic changes. Therefore, in some charts, three-year averages, a common practice in research such as this, have been presented.

• Attribution: Please indicate that the source of these slides was the National Action Council for Minorities in Engineering, Inc. (NACME), Department of Research, Evaluation, and Policy. The NACME web address is: www.nacme.org, where the slides can be accessed and downloaded. Updated slides and additional decks covering new themes will be made available on an on-going basis.

• **Terminology notes:** URM = underrepresented minority, which includes African Americans, American Indians and Alaska Natives, and Latinos. When the term “American Indian” is used, it references “American Indians and Alaska Natives,” consistent with U.S. Census Bureau definitions. Asian/Pac. Isl. = Asian and Pacific Islanders are people of these descents who are U.S. citizens and permanent residents and do not include people of Asian origin who are in the United States predominantly for educational purposes. “Foreign” is used to refer to “temporary residents.”
2011 NACME Data Book

Deck 4-A

Trends in Engineering Degrees Across Race/Ethnic Groups
### Number of Degrees in Engineering By Level, Sex, and Race/Ethnicity, 2009

<table>
<thead>
<tr>
<th></th>
<th>Bachelor's</th>
<th>Master's</th>
<th>Doctorates</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Female</td>
<td>Male</td>
<td>Total</td>
</tr>
<tr>
<td>Underrepresented minorities</td>
<td>2,194</td>
<td>6,826</td>
<td>9,020</td>
</tr>
<tr>
<td>African American</td>
<td>858</td>
<td>2,238</td>
<td>3,096</td>
</tr>
<tr>
<td>Latino</td>
<td>1,261</td>
<td>4,316</td>
<td>5,577</td>
</tr>
<tr>
<td>American Indian/Alaska Native</td>
<td>75</td>
<td>272</td>
<td>347</td>
</tr>
<tr>
<td>All other U.S. citizens and permanent residents</td>
<td>9,731</td>
<td>47,778</td>
<td>57,509</td>
</tr>
<tr>
<td>Total U.S. citizens and permanent residents</td>
<td>11,925</td>
<td>54,604</td>
<td>66,529</td>
</tr>
<tr>
<td>Temporary residents</td>
<td>825</td>
<td>3,246</td>
<td>4,071</td>
</tr>
<tr>
<td><strong>GRAND TOTAL</strong></td>
<td>12,750</td>
<td>57,850</td>
<td>70,600</td>
</tr>
</tbody>
</table>

There Has Been Little Change in URM and Women’s Engineering Degrees

Source: NACME analysis of IPEDS data accessed via National Science Foundation WebCASPAR database system.
In 2009, Only 2,329 Associate’s Degrees in Engineering Were Awarded; There Was a Sharp Decline in Associate’s Degrees in Engineering Earned by Non-Latino White Men

Source: NACME analysis of Integrated Postsecondary Education Data System accessed via National Science Foundation’s WebCASPAR database system, June 2011.
Among Underrepresented Minorities, Latino and African American Men Earn the Majority of Engineering Associate’s Degrees

Source: NACME analysis of Integrated Postsecondary Education Data System accessed via National Science Foundation’s WebCASPAR database system, June 2011.
Most Associate’s Degrees Are in Other STEM Fields Besides Engineering: URMs Have Earned An Increasing Number of These Degrees

Number of Associate's Degrees in All STEM Fields Except Engineering by Race/Ethnic Category, Selected Years, 1977-2009

Note: Underrepresented Minority includes African Americans, American Indians/Alaska Natives, and Latinos; STEM includes mathematics, computer science, life sciences, physical sciences, psychology, social sciences, interdisciplinary sciences, and science and engineering technologies.
Source: NACME analysis of Integrated Postsecondary Education Data System accessed via National Science Foundation’s WebCASPAR database system, June 2011.
Average Annual Degrees Have Increased Since 2000-02 – But Mostly for Non-Minorities

**Average Annual Engineering Degrees, 2000-02 and 2007-09**

Source: NACME analysis of Integrated Postsecondary Education Data System accessed via National Science Foundation's WebCASPAR database system, June 2011.

Note: URM = underrepresented minority: include African Americans, American Indians/Alaska Natives and Latinos.
Average Annual Degrees Have Increased Since 2000-02 – But Mostly for Non-Minorities

Source: NACME analysis of Integrated Postsecondary Education Data System accessed via National Science Foundation's WebCASPAR database system, June 2011.
Average Annual Degrees Have Increased Since 2000-02 for Latinas (Mainland) and Asian/Pacific Islander Women

Source: NACME analysis of Integrated Postsecondary Education Data System accessed via National Science Foundation's WebCASPAR database system, June 2011.
Average Annual Degrees Have Increased Since 2000-02 for Underrepresented Minority Men

Average Annual Engineering Degrees, Men, 2000-02 and 2007-09

Source: NACME analysis of Integrated Postsecondary Education Data System accessed via National Science Foundation’s WebCASPAR database system, June 2011.
Average Annual Degrees Increased for Latinas, But Decreased for Other Underrepresented Minority Women Since 2000-02

Average Annual Engineering Degrees, Women, 2000-02 and 2007-09

Source: NACME analysis of Integrated Postsecondary Education Data System accessed via National Science Foundation’s WebCASPAR database system, June 2011.
Distribution of Engineering Degrees by Discipline, 2009
Engineering Bachelor’s Degree Fields, 2009

Key
- Non-URM US men
- Non-URM US women
- URM men
- URM women
- Foreign men
- Foreign women

Note: URM = underrepresented minority, includes African American, American Indian/Alaska Native and Latino
Engineering Master’s Degree Fields, 2009

Key
- Non-URM US men
- Non-URM US women
- URM men
- URM women
- Foreign men
- Foreign women

Note: URM = underrepresented minority, include African Americans, American Indians/Alaska Natives and Latinos.
Engineering Doctoral Degree Fields, 2009

Mechanical (n = 1,186)
- 54% Non-URM US men
- 1% URM men
- 3% URM women
- 29% Non-URM US women
- 7% Foreign men
- 1% Foreign women

Electrical (n = 2,090)
- 55% Non-URM US men
- 1% URM men
- 2% URM women
- 26% Non-URM US women
- 11% Foreign men
- 5% Foreign women

Civil (n = 902)
- 50% Non-URM US men
- 12% URM men
- 11% URM women
- 24% Non-URM US women
- 2% Foreign men
- 1% Foreign women

Chemical (n = 886)
- 38% Non-URM US men
- 13% URM men
- 12% URM women
- 32% Non-URM US women
- 2% Foreign men
- 2% Foreign women

Industrial (n = 333)
- 52% Non-URM US men
- 14% URM men
- 19% URM women
- 10% Non-URM US women
- 2% Foreign men
- 3% Foreign women

Aerospace (n = 257)
- 41% Non-URM US men
- 6% URM men
- 4% URM women
- 42% Non-URM US women
- 0% Foreign men
- 4% Foreign women

Key:
- Yellow: Non-URM US men
- Brown: Non-URM US women
- Green: URM men
- Teal: URM women
- Orange: Foreign men
- Red: Foreign women

Note: URM = underrepresented minority, include African Americans, American Indians/Alaska Natives and Latinos.
NOTE: The next slides will be split into three separate sections, one for each of the underrepresented minority groups (African Americans, American Indians and Latinos).
Deck 4-C:

Engineering Degrees Awarded to African Americans
The Number of Bachelor’s Degrees Earned by African Americans Has Been Very Uneven Over the Past 30 Years

Source: NACME analysis of Integrated Postsecondary Education Data System via National Science Foundation's WebCASPAR database system, July 2011.
The Number of Master’s Degrees Earned by African Americans Has Increased Slowly Over the Past Three Decades

Source: NACME analysis of Integrated Postsecondary Education Data System via National Science Foundation's WebCASPAR database system, July 2011.
The Number of Doctoral Degrees Earned by African Americans Has Increased Slowly Over the Past Three Decades

Source: NACME analysis of Integrated Postsecondary Education Data System via National Science Foundation's WebCASPAR database system, July 2011.
There Has Been a Recent Decline in the Number of Bachelor’s Degrees in Engineering Earned by African American Women

Degrees Earned by African American Females, 1977-2009

- Bachelor’s, 858
- Master’s, 304
- Doctorates, 43

Source: NACME analysis of Integrated Postsecondary Education Data System via National Science Foundation’s WebCASPAR database system, July 2011.
There has been slight growth in the number of degrees in engineering at all levels earned by African American men.

Source: NACME analysis of Integrated Postsecondary Education Data System via National Science Foundation's WebCASPAR database system, July 2011.
Top 20 Institutions Awarding Bachelor’s Degrees to African Americans in 2009

<table>
<thead>
<tr>
<th>Rank</th>
<th>Institution</th>
<th>Carnegie Classification of Institution</th>
<th>Women</th>
<th>Men</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>North Carolina Agricultural &amp; Tech State Univ*</td>
<td>Research Universities (high research activity)</td>
<td>53</td>
<td>92</td>
<td>145</td>
</tr>
<tr>
<td>2</td>
<td>Georgia Institute of Technology, Main Campus</td>
<td>Research Universities (very high research activity)</td>
<td>34</td>
<td>77</td>
<td>111</td>
</tr>
<tr>
<td>3</td>
<td>Morgan State University (Maryland)*</td>
<td>Doctoral/Research Universities</td>
<td>21</td>
<td>50</td>
<td>71</td>
</tr>
<tr>
<td>4</td>
<td>Prairie View A&amp;M University (Texas)*</td>
<td>Master's Colleges and Universities</td>
<td>24</td>
<td>42</td>
<td>66</td>
</tr>
<tr>
<td>5</td>
<td>North Carolina State University at Raleigh</td>
<td>Research Universities (very high research activity)</td>
<td>22</td>
<td>40</td>
<td>62</td>
</tr>
<tr>
<td>6</td>
<td>Southern University A&amp;M Col at Baton Rouge*</td>
<td>Master's Colleges and Universities</td>
<td>17</td>
<td>41</td>
<td>58</td>
</tr>
<tr>
<td>7</td>
<td>University of Maryland at College Park</td>
<td>Research Universities (very high research activity)</td>
<td>6</td>
<td>47</td>
<td>53</td>
</tr>
<tr>
<td>8</td>
<td>University of Michigan at Ann Arbor</td>
<td>Research Universities (very high research activity)</td>
<td>24</td>
<td>26</td>
<td>50</td>
</tr>
<tr>
<td>9</td>
<td>Tuskegee University (Alabama)*</td>
<td>Baccalaureate Colleges</td>
<td>9</td>
<td>39</td>
<td>48</td>
</tr>
<tr>
<td>10</td>
<td>University of Florida</td>
<td>Research Universities (very high research activity)</td>
<td>22</td>
<td>26</td>
<td>48</td>
</tr>
<tr>
<td>11</td>
<td>Alabama Agricultural and Mechanical University*</td>
<td>Master's Colleges and Universities</td>
<td>8</td>
<td>39</td>
<td>47</td>
</tr>
<tr>
<td>12</td>
<td>Florida Agricultural and Mechanical University*</td>
<td>Doctoral/Research Universities</td>
<td>10</td>
<td>32</td>
<td>42</td>
</tr>
<tr>
<td>13</td>
<td>Virginia Polytechnic Institute and State Univ</td>
<td>Research Universities (very high research activity)</td>
<td>9</td>
<td>30</td>
<td>39</td>
</tr>
<tr>
<td>14</td>
<td>University of Missouri, Rolla</td>
<td>Research Universities (high research activity)</td>
<td>12</td>
<td>27</td>
<td>39</td>
</tr>
<tr>
<td>15</td>
<td>CUNY City College</td>
<td>Master's Colleges and Universities</td>
<td>10</td>
<td>27</td>
<td>37</td>
</tr>
<tr>
<td>16</td>
<td>Florida Atlantic University</td>
<td>Research Universities (high research activity)</td>
<td>2</td>
<td>28</td>
<td>30</td>
</tr>
<tr>
<td>17</td>
<td>Louisiana State Univ &amp; Agric &amp; Mechanical Col</td>
<td>Research Universities (very high research activity)</td>
<td>9</td>
<td>21</td>
<td>30</td>
</tr>
<tr>
<td>18</td>
<td>George Mason University (Virginia)</td>
<td>Research Universities (high research activity)</td>
<td>3</td>
<td>26</td>
<td>29</td>
</tr>
<tr>
<td>19</td>
<td>University of Central Florida</td>
<td>Research Universities (high research activity)</td>
<td>3</td>
<td>25</td>
<td>28</td>
</tr>
<tr>
<td>20</td>
<td>University of South Florida</td>
<td>Research Universities (very high research activity)</td>
<td>4</td>
<td>24</td>
<td>28</td>
</tr>
</tbody>
</table>

* Indicates Historically Black College or University (HBCU); Purple shading are institutions at which African Americans earned 100 or more bachelor's degrees in engineering; Green shading are those where African Americans earned 50-99 bachelor's degrees in engineering.

In 2009, 24 HBCUs Awarded 638 Bachelor’s Degrees and Nine Awarded 143 Graduate Degrees to African Americans in Engineering

Source: NACME analysis of Integrated Postsecondary Education DataSystem via National Science Foundation’s WebCASPAR database system, July 2011.
2011 NACME Data Book

Deck 4-C:

Engineering Degrees Awarded to American Indians
The Number of Bachelor’s Degrees Earned by American Indians Has More Than Doubled Over the Past Three Decades

Source: NACME analysis of Integrated Postsecondary Education Data System via National Science Foundation’s WebCASPAR database system, July 2011.
There Has Been an Uneven Trend, but General Modest Growth in the Number of Engineering Master’s Degrees Earned by American Indians

Master's Degrees in Engineering Earned by American Indians, 1977-2009

Source: NACME analysis of Integrated Postsecondary Education Data System via National Science Foundation’s WebCASPAR database system, July 2011.
Doctoral Awards in Engineering to American Indians Are Persistently Few in Number

Source: NACME analysis of Integrated Postsecondary Education Data System via National Science Foundation’s WebCASPAR database system, July 2011.
American Indian Women Are Earning More Engineering Degrees, but Still Earn Fewer Than 100 Degrees Annually Across All Levels, Combined

Degrees Earned by American Indian Females, 1977-2009

- Bachelor's, 75
- Master's, 19
- Doctorates, 6

Source: NACME analysis of Integrated Postsecondary Education Data System via National Science Foundation's WebCASPAR database system, July 2011.
Degree Awards to American Indian Men Have Shown a General Upward Trend

**Degrees Earned by American Indian Males, 1977-2009**

- **Bachelor's, 272**
- **Master's, 70**
- **Doctorates, 13**

Source: NACME analysis of Integrated Postsecondary Education Data System via National Science Foundation's WebCASPAR database system, July 2011.
American Indian Bachelor’s Degree Recipients Were Dispersed Among 141 Institutions

<table>
<thead>
<tr>
<th>Rank</th>
<th>Institution</th>
<th>Carnegie Classification of Institution</th>
<th>Women</th>
<th>Men</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Oklahoma State University, All Campuses</td>
<td>Not classified</td>
<td>4</td>
<td>19</td>
<td>23</td>
</tr>
<tr>
<td>2</td>
<td>University of Oklahoma, Norman Campus</td>
<td>Research Universities (high research activity)</td>
<td>3</td>
<td>17</td>
<td>20</td>
</tr>
<tr>
<td>3</td>
<td>California State University-Long Beach</td>
<td>Master's Colleges and Universities</td>
<td>1</td>
<td>8</td>
<td>9</td>
</tr>
<tr>
<td>4</td>
<td>Massachusetts Institute of Technology</td>
<td>Research Universities (very high research activity)</td>
<td>8</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>5</td>
<td>Arizona State University Main</td>
<td>Research Universities (very high research activity)</td>
<td>1</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>6</td>
<td>Northern Arizona University</td>
<td>Research Universities (high research activity)</td>
<td>3</td>
<td>4</td>
<td>7</td>
</tr>
<tr>
<td>7</td>
<td>Milwaukee School of Engineering</td>
<td>Baccalaureate Colleges</td>
<td>6</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>8</td>
<td>New Mexico Institute of Mining and Technology</td>
<td>Master's Colleges and Universities</td>
<td>3</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>9</td>
<td>University of Arkansas, Main Campus</td>
<td>Research Universities (high research activity)</td>
<td>1</td>
<td>5</td>
<td>6</td>
</tr>
</tbody>
</table>


- George Washington U. awarded six graduate degrees (one woman, five men) to American Indians, all master’s
- Top doctoral institution: University of California, Berkeley, with three doctoral degrees awarded to men and one to an American Indian woman
Deck 4-C:

Engineering Degrees Awarded to Latinos
The Number of Bachelor’s Degrees Earned by Latinos Has Increased Slowly Over the Past Three Decades

Source: NACME analysis of Integrated Postsecondary Education Data System via National Science Foundation's WebCASPAR database system, July 2011.
The Number of Master’s Degrees Earned by Latinos Has Increased Slowly Over the Past Three Decades

Source: NACME analysis of Integrated Postsecondary Education Data System via National Science Foundation’s WebCASPAR database system, July 2011.
The Number of Doctoral Degrees Earned by Latinos Has Increased Slowly Over the Past Three Decades

Source: NACME analysis of Integrated Postsecondary Education DataSystem via National Science Foundation's WebCASPAR database system, July 2011.
There is an order of magnitude difference in the number of Bachelor’s degrees vs. Graduate degrees earned by Latino males.
Growth in Engineering Degrees Earned by Latinas Has Been Consistent at the Bachelor’s and Master’s Levels, but Has Been Very Slow at the Doctoral Level.

Degrees Earned by Latinas, 1977-2009

Source: NACME analysis of Integrated Postsecondary Education Data System via National Science Foundation's WebCASPAR database system, July 2011.
Many U.S. Latinos Earn Degrees from Puerto Rican Institutions, Especially at the Bachelor’s Level

Source: NACME analysis of Integrated Postsecondary Education Data System via National Science Foundation’s WebCASPAR database system, July 2011.
# Top Mainland Institutions: Latino Bachelor’s Degrees, 2009

<table>
<thead>
<tr>
<th>Rank</th>
<th>Institution</th>
<th>State</th>
<th>Carnegie Classification of Institution</th>
<th>Women</th>
<th>Men</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Florida International University*</td>
<td>Florida</td>
<td>Research Universities (high research activity)</td>
<td>46</td>
<td>169</td>
</tr>
<tr>
<td>2</td>
<td>University of Florida</td>
<td>Florida</td>
<td>Research Universities (very high research activity)</td>
<td>24</td>
<td>118</td>
</tr>
<tr>
<td>3</td>
<td>University of Texas at El Paso*</td>
<td>Texas</td>
<td>Research Universities (high research activity)</td>
<td>36</td>
<td>117</td>
</tr>
<tr>
<td>4</td>
<td>University of Texas at Austin</td>
<td>Texas</td>
<td>Research Universities (very high research activity)</td>
<td>29</td>
<td>106</td>
</tr>
<tr>
<td>5</td>
<td>Texas A&amp;M University Main Campus</td>
<td>Texas</td>
<td>Research Universities (very high research activity)</td>
<td>25</td>
<td>97</td>
</tr>
<tr>
<td>6</td>
<td>California State Polytechnic University Pomona*</td>
<td>California</td>
<td>Master's Colleges and Universities</td>
<td>22</td>
<td>89</td>
</tr>
<tr>
<td>7</td>
<td>California State Polytechnic U-San Luis Obispo</td>
<td>California</td>
<td>Master's Colleges and Universities</td>
<td>16</td>
<td>79</td>
</tr>
<tr>
<td>8</td>
<td>Georgia Institute of Technology, Main Campus</td>
<td>Georgia</td>
<td>Research Universities (very high research activity)</td>
<td>22</td>
<td>59</td>
</tr>
<tr>
<td>9</td>
<td>University of Texas - Pan American*</td>
<td>Texas</td>
<td>Master's Colleges and Universities</td>
<td>16</td>
<td>59</td>
</tr>
<tr>
<td>10</td>
<td>Arizona State University Main</td>
<td>Arizona</td>
<td>Research Universities (very high research activity)</td>
<td>21</td>
<td>57</td>
</tr>
<tr>
<td>11</td>
<td>University of California-San Diego</td>
<td>California</td>
<td>Research Universities (very high research activity)</td>
<td>11</td>
<td>54</td>
</tr>
<tr>
<td>12</td>
<td>University of Texas at San Antonio*</td>
<td>Texas</td>
<td>Research Universities (high research activity)</td>
<td>13</td>
<td>53</td>
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<tr>
<td>13</td>
<td>New Mexico State University, All Campuses*</td>
<td>New Mexico</td>
<td>Not classified</td>
<td>11</td>
<td>51</td>
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<tr>
<td>14</td>
<td>University of Arizona*</td>
<td>Arizona</td>
<td>Research Universities (very high research activity)</td>
<td>14</td>
<td>50</td>
</tr>
<tr>
<td>15</td>
<td>San Diego State University*</td>
<td>California</td>
<td>Research Universities (high research activity)</td>
<td>11</td>
<td>50</td>
</tr>
<tr>
<td>16</td>
<td>University of Central Florida</td>
<td>Florida</td>
<td>Research Universities (very high research activity)</td>
<td>16</td>
<td>45</td>
</tr>
<tr>
<td>17</td>
<td>Massachusetts Institute of Technology</td>
<td>Massachusetts</td>
<td>Research Universities (very high research activity)</td>
<td>15</td>
<td>45</td>
</tr>
<tr>
<td>18</td>
<td>California State University-Long Beach*</td>
<td>California</td>
<td>Master's Colleges and Universities</td>
<td>11</td>
<td>42</td>
</tr>
<tr>
<td>19</td>
<td>Kansas State University</td>
<td>Kansas</td>
<td>Research Universities (high research activity)</td>
<td>14</td>
<td>41</td>
</tr>
<tr>
<td>20</td>
<td>University of California-Irvine</td>
<td>California</td>
<td>Research Universities (very high research activity)</td>
<td>13</td>
<td>40</td>
</tr>
</tbody>
</table>

* Indicates Hispanic Serving Institution (HSI); Purple shading are institutions at which Latinos earned 100 or more bachelor’s degrees in engineering; Green shading are those where Latinos earned 50-99 bachelor’s degrees in engineering.

Of the 6,699 Bachelor’s Degrees Earned by Latinos, 16.7 Percent Were from Puerto Rican Institutions

<table>
<thead>
<tr>
<th>Institution</th>
<th>Carnegie Classification of Institution</th>
<th>Women</th>
<th>Men</th>
</tr>
</thead>
<tbody>
<tr>
<td>University of PR Mayaguez Campus*</td>
<td>Doctoral/Research Universities</td>
<td>233</td>
<td>355</td>
</tr>
<tr>
<td>Universidad Politecnica de Puerto Rico*</td>
<td>Not classified</td>
<td>84</td>
<td>289</td>
</tr>
<tr>
<td>Inter American U of PR San German Campus*</td>
<td>Master's Colleges and Universities</td>
<td>10</td>
<td>60</td>
</tr>
<tr>
<td>Universidad del Turabo*</td>
<td>Doctoral/Research Universities</td>
<td>10</td>
<td>55</td>
</tr>
<tr>
<td>Caribbean University*</td>
<td>Master's Colleges and Universities</td>
<td>6</td>
<td>20</td>
</tr>
</tbody>
</table>

**TOTAL: Puerto Rico**

**Percent Women: 30.6%**

*Indicates Hispanic Serving Institution (HSI); Purple shading are institutions at which Latinos earned 100 or more bachelor's degrees in engineering; Green shading are those where Latinos earned 50-99 bachelor's degrees in engineering.