STEM and Underrepresented Minority Groups: A Sociological Perspective

B. Chad Starks, Ph.D.
Associate Director, Delaware Space Grant
Mid-Atlantic Regional Space Grant Meeting
September 25, 2014
Increasing representation of underrepresented groups in STEM
Figure 9.
Racial and Ethnic Representation in the STEM Workforce
(In percent. Data based on sample. For information on confidentiality protection, sampling error, nonsampling error, and definitions, see www.census.gov/acs/www/)

Note: Native Hawaiian or Other Pacific Islander alone was combined with Some Other Race because of a small number of sample observations.
Source: U.S. Census Bureau, 2011 American Community Survey.
Figure 14.
Share of Total Employment, Science and Engineering Degrees, and STEM Employment by Sex
(In percent. Data based on sample. For information on confidentiality protection, sampling error, nonsampling error, and definitions, see www.census.gov/acs/www/)

- **Total workforce**
  - Male: 52%
  - Female: 48%
  - Gender gap (in percentage point): 4%

- **Science and engineering graduates**
  - Male: 61%
  - Female: 39%
  - Gender gap (in percentage point): 22%

- **STEM workforce***
  - Male: 76%
  - Female: 24%
  - Gender gap (in percentage point): 52%

*With a science or engineering bachelor’s degree.
Source: U.S. Census Bureau, 2011 American Community Survey.
Strategies to address issue

- Faculty–Centered Approach
  - Buying–in
  - Step outside comfort zone
  - Ethic of care

- Student–Centered Approach
  - Gaining rapport and building trust
  - Truth telling
  - Academic capital
  - Don’t be invisible

- Institutional Approach
  - Changing venue
Challenges

- Being unaware of best approaches to issue
- Resources
- Barriers to communication
- Messengers
- Overnight Expectations
## Success of Approach

<table>
<thead>
<tr>
<th>Race</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>African-American</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>9</td>
<td>18</td>
</tr>
<tr>
<td>Hispanic</td>
<td>0</td>
<td>3</td>
<td>2</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Other</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>6</td>
</tr>
</tbody>
</table>
# Success of Approach

## Race of DESG Awardees By Year

<table>
<thead>
<tr>
<th></th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>African-American</td>
<td>3</td>
<td>4</td>
<td>4</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>Hispanic</td>
<td>0</td>
<td>3</td>
<td>2</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Other</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>
## Success of Approach

### Gender of DESG Applicants By Year

<table>
<thead>
<tr>
<th></th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>29</td>
<td>18</td>
<td>14</td>
<td>21</td>
<td>30</td>
</tr>
<tr>
<td>Male</td>
<td>37</td>
<td>39</td>
<td>37</td>
<td>48</td>
<td>51</td>
</tr>
</tbody>
</table>
Thank you!!

B. Chad Starks, Ph.D.
b cstarks@udel.edu