APS Leadership Convocation

20 February 2015
College Park, MD

APS Education and Diversity Programs

Theodore Hodapp
American Physical Society
Director of Education and Diversity
• PhysTEC
• APS Bridge Program
• Conferences for Undergraduate Women in Physics (CUWiP)
• National Mentoring Community

• New Faculty Workshops
• Education conferences
• Physics chairs meeting
• REU site leaders
• Advocating for physics education

• Professional development workshops
• Childcare at meetings
• Mentoring seminar materials
• Ethics case studies
Physics / STEM Bachelor Degrees

Source: IPEDS Completion Survey

www.aps.org/programs/education/statistics

©2015, American Physical Society; Email: hodapp@aps.org
Underrepresented Minorities: Undergraduate Majors

US College-Age Underrepresented Minority Population

- Biological Sciences
- Chemistry
- Engineering
- Mathematics and Statistics
- Physics
- Earth Sciences
- URM

<table>
<thead>
<tr>
<th>Year</th>
<th>Biological Sciences</th>
<th>Chemistry</th>
<th>Engineering</th>
<th>Mathematics and Statistics</th>
<th>Physics</th>
<th>Earth Sciences</th>
<th>URM</th>
</tr>
</thead>
<tbody>
<tr>
<td>1995</td>
<td>10%</td>
<td>15%</td>
<td>20%</td>
<td>25%</td>
<td>30%</td>
<td>35%</td>
<td>40%</td>
</tr>
<tr>
<td>2000</td>
<td>15%</td>
<td>20%</td>
<td>25%</td>
<td>30%</td>
<td>35%</td>
<td>40%</td>
<td>45%</td>
</tr>
<tr>
<td>2005</td>
<td>20%</td>
<td>25%</td>
<td>30%</td>
<td>35%</td>
<td>40%</td>
<td>45%</td>
<td>50%</td>
</tr>
<tr>
<td>2010</td>
<td>25%</td>
<td>30%</td>
<td>35%</td>
<td>40%</td>
<td>45%</td>
<td>50%</td>
<td>55%</td>
</tr>
</tbody>
</table>

277

490
US College-age minority population

9-10% of BS degrees in physics are granted to underrepresented minorities

52 PhDs awarded to minorities in 2010

Only ~30 students!

Sources: IPEDS Completion survey by race, US Census
APS Bridge Program: Key Features

- Recruiting through graduate programs (now 115+ institutions), undergrad programs – 41 applicants in 2014

- **Bridge Sites (4, soon to be 6):**
  - Year 1: Advanced undergraduate courses, introduction to grad-level research, active mentoring, progress monitoring, social integration into grad school (APS funds)
  - Year 2: Take 1st year grad courses, apply to PhD program, research underway (Department funds)

- **Ancillary Students (Partnership Institutions):**
  - 69 graduate programs look at “other” applications, recruited additional 8 offers to these students (2014)
  - Beginning approval of APS “COM approved” Partnership Institutions; national recognition of program
  - No direct support for students, some travel support possible

- APS monitors progress of all students; conduct research
Bridge Program Achievements

National Achievement Gap

![Bar chart showing placement data over years.](chart.png)

- Project Goal
- Project Achievement

Placed Students

Project Year

2013 2014 2015 2016 2017

©2015, American Physical Society; Email: hodapp@aps.org
National Mentoring Community (NMC)

Plans (established November 2014):

- Increase URM degree completion in physics
- APS identifies / connects mentors
- Mentors recruit mentees (locally)
- Provide an annual gathering of mentors and mentees to:
  - Spread best-practices; conduct professional skills workshops; connect students and their mentors with others (9-10 October 2015)
- Provide merit-based honors
- Needs-based scholarship program
- Track student progress
- Math Alliance has developed a network of 350+ mentors providing local mentoring to 600+ undergraduates
- First mentor/mentee pairs by 15 March – contact us if you know great mentors who should be recognized
GRE Physics Scores: Impact of Cutoff Scores

Source: ETS

Fraction (F) 0.25
Fraction (M) 0.46

650
Physics GRE: Impact of Cutoff Scores

- 0.09 (Black)
- 0.34 (Hispanic)
- 0.44 (White)
- 0.61 (Asian)
This material is based upon work supported by the National Science Foundation under Grant No. 1143070

Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation.