APS / AAPT Department Chairs Meeting

31 May 2013
American Center for Physics

APS Bridge Program

Theodore Hodapp
American Physical Society
Director of Education and Diversity
Joint Diversity Statement

08.2 JOINT DIVERSITY STATEMENT
(Adopted by APS, NSBP, NSHP in 2008)

To ensure a productive future for science and technology in the United States, we must make physics more inclusive. The health of physics requires talent from the broadest demographic pool. Underrepresented groups constitute a largely untapped intellectual resource and a growing segment of the U.S. population.

Therefore, we charge our membership with increasing the numbers of underrepresented minorities in physics in the pipeline and in all professional ranks, with becoming aware of barriers to implementing this change, and with taking an active role in organizational and institutional efforts to bring about such change. We call upon legislators, administrators, and managers at all levels to enact policies and promote budgets that will foster greater diversity in physics. We call upon employers to pursue recruitment, retention and promotion of underrepresented minority physicists at all ranks and to create a work environment that encourages inclusion. We call upon the physics community as a whole to work collectively to bring greater diversity wherever physicists are educated or employed.
African American Undergraduate Majors

US College-Age African American Population

- Biology
- Chemistry
- Engineering
- Math & Stats
- Physics
- Earth Sciences

172
149

1995 2000 2005 2010
Hispanic Undergraduate Majors

US College-Age Hispanic Population

- Engineering
- Biology
- Chemistry
- Math & Stats
- Earth Science
- Physics
52 PhDs awarded to minorities in 2010

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

US College-age minority population

Sources: IPEDS Completion survey by race, US Census
APS Bridge Program:
Project Goals

• Increase, within a decade, the number of physics PhDs awarded to underrepresented minority students to match the fraction of physics Bachelor’s degrees granted to these groups

• Develop, evaluate, and document sustainable model bridging experiences that improve the access to and culture of graduate education for all students, with emphasis on those underrepresented in doctoral programs in physics

• Promote and disseminate successful program components to the physics community
Physics Degrees Awarded to Underrepresented Minorities

- Bachelor's Degrees: ~400 degrees
- Doctoral Degrees: ~40 more PhDs

Source: IPEDS, US Census
Key Personnel

Steering Committee
- J.D. Garcia (Arizona)
- Yolanda George (AAAS)
- Wendell Hill (UMCP)
- Anthony Johnson (UMBC)
- Ramon Lopez (UT Arlington)
- Steve McGuire (Southern)
- Cherry Murray, chair (Harvard, APS President 2009)
- Luz Martinez-Miranda (President, NSHP)
- Paul Gueye (President, NSBP)
- Bernadette Cogswell (Vanderbilt Grad Student)
- Ximena Fernández (Columbia Grad Student)

Architect’s Council
- Keivan Stassun (Fisk/Vanderbilt)
- Cagliyan Kurdak (Michigan)
- Marcel Agüeros (Columbia)
- Ed Bertschinger (MIT)

APS Staff
- Theodore Hodapp
- Brian Beckford (Project Manager)
- Arlene Modeste Knowles
- Bushraa Khatib (Project Coordinator)
- Monica Plisch
APS Bridge Program: Key Components

• Recruiting through graduate programs across the US (now 100+ institutions, representing >70% of all doctoral students)
• Spend 1-2 years in a “Bridging program”
  • Take advanced UG or entry-level graduate coursework
  • Graduate-level research
  • Demonstrate ability to do independent research and succeed in graduate-level coursework
  • Receive coaching on preparing graduate admissions package (letters, GRE, statements)
  • Accepted into doctoral program
• Receive mentoring in bridge/doctoral programs (esp. transitions)
• Research into barriers; disseminate successful program elements
• Build a national coalition of departments committed to improving participation
Existing Bridge Programs in Physics

- Fisk / Vanderbilt
- Columbia University
- University of Michigan
- MIT
Student Eligibility

- Bachelor’s degree in physics or closely related discipline
- US citizen or permanent resident
- Either:
  - Did not apply to graduate program this year
  - Applied but was not accepted
- Be committed to improving diversity in physics
- Meet individual requirements of the institution

Students may not be currently enrolled or have an existing physics graduate degree
Getting Involved

• **Member Institution** (any institution)
  Free; receive information / updates; reduced fees for APS-BP conferences

• **Partnership Site** (Doctoral granting institutions)
  APS COM approval process; recommended site for Bridge Fellows (and others) to attend; demonstrate effective practices in graduate student support

• **Bridge Site** (MS or PhD granting)
  Receive significant funding from APS; build sustainable program; prepare 2+ students each year for graduate study; significant institutional commitment

[www.APSBridgeProgram.org](http://www.APSBridgeProgram.org)
Project Progress

• Bridge Site Selection
  • 24 Applicants
  • 7 Selected for full Proposals
  • 2 Sites awarded: Ohio State, South Florida

• Student Recruitment
  • 28 Completed applications (plus locally recruited)
  • ~12 deemed competitive
  • We can fund 4  

Six accepted!!

• Summer Meeting

• Admissions Study
27 – 29 June, American Center for Physics

- Bridge students, current a prospective bridge sites, interested faculty, researchers, NSF program officers
- Jim Duderstadt (former president of the University of Michigan)
- Logistics of running project components
- Larger issues surrounding minority participation in physics (admissions, GRE, mentoring, Implicit Bias, Stereotype Threat, etc.)
- Registration: apsbridgeprogram.org/conferences/
Admissions Bias?

![Bar chart showing GRE scores for Physics Subject Test before and after graduate admission, categorized by gender (Female and Male) and GPA. The chart includes data for both graduate admission stages and is sourced from PhD recipients from Oregon State University.](chart.png)
GRE Quantitative Scores

Source: ETS, "Factors that can influence performance on the GRE General Test 2006-2007"