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APS Bridge Program
Erasing the Doctoral Degree Attainment Gap in Physics for Underrepresented Minority Students

Theodore Hodapp
APS Director of Project Development
Sr. Advisor to Education and Diversity

National Academies: Revitalizing Graduate STEM Education for the 21st Century

Staff:
• Erika Brown (Project Manager, APS)
• Deepa Chari (Postdoc. Assoc., FIU)
• Brián Clash (Project Coordinator, APS)
• Monica Plisch (Management Team, APS)
• Geoff Potvin (Research Advisor, FIU)
• Rachel Scherr (Project Evaluator, SPU)

Architect’s Council:
• Marcel Agüeros (Columbia)
• Ed Bertschinger (MIT)
• Andreas Bill (CSU Long Beach)
• Simon Capstick (Florida State)
• Kelly Holley-Bockelmann (Fisk/Vanderbilt)
• Cagliyan Kurdak (Michigan)
• Garrett Matthews (USF)
• Jon Pelz (Ohio State)
• Talat Rahman (UCF)
• Jon Urheim (Indiana)

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 URM Bachelor and PhD STEM Degrees

- All STEM disciplines fail to bring URM students from BS to PhD
- No change in last two decades
- Numbers are attainable (need about ~30/year more in physics)
- Critical: Must identify and retain students who are currently unsuccessful

Sources: IPEDS Completion survey by race, US Census

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Recruit Promising Students: grad programs (unaccepted), undergrad programs (promising but uncompetitive, or unsure), website

Establish Supportive Programs: Bridge Sites (6), Partnership (21)
- Year 1: Grad or advanced undergrad courses, introduction to grad-level research, active mentoring, progress monitoring, social integration into grad school
- Year 2: Take 1st year grad courses, apply to PhD program, research underway

Place Students: Match students post-April 15th with interested programs
- APS Committee on Minorities vets new Partnership Institutions

Monitor student/site progress

Research

Disseminate / Advocate
Partnership Institutions

Non-APS Sites:
- Bowling Green State University*
- Cal State Los Angeles*
- Columbia University
- Delaware State University
- DePaul University*
- Embry-Riddle Aeronautical University
- Fisk-Vanderbilt
- Florida International University
- MIT
- North Dakota State University
- Princeton University
- Texas State University*
- University of Chicago
- University of Cincinnati
- University of Connecticut
- University of Hawai‘i at Manoa
- University of Houston, Clear Lake*
- University of Michigan
- University of N. Carolina, Chapel Hill
- University of Rochester
- University of Texas, Arlington

*Master’s degree is highest awarded

APS Sites:
- Cal State Long Beach*
- Florida State University
- Indiana University
- Ohio State University
- University of Central Florida
- University of South Florida

*Non-APS Sites: institutions where the highest degree offered is a master's, while APS Sites: institutions where the highest degree offered is a PhD.
Bridge Program Achievements

- 106 Students placed; 88% retention rate
- Exceeded “30” the number to close the gap in physics
- Most students supported by institutions – demonstrating sustainability
- These students would not be in graduate programs without bridge programs
- Admissions is failing these (and other) students
- Basic retention measures can also benefit all students (induction, mentoring, progress monitoring, peer-involvement, etc.)
- Graduate student groups are a tremendous resource
Research projects in graduate admission:
- No correlations between success in obtaining a PhD and admissions metrics (GRE, GPA)
- Students and faculty differ on interpretations of admissions criteria
- Interpretation of GRE scores by faculty goes against ETS guidance
- Faculty use “fixed” mindset in evaluating students leading to less diverse entering classes

Brian Zamarripa Roman (UCF)
- Found grad admissions and GRE fees too expensive
- Mentor at UTEP convinced him to apply to bridge program
- Excelling at grad courses, one of top students at UCF
- Awarded NSF GRF (Mar 17)

Kevin Galiano (OSU)
- Applied to only 1 program, not accepted, did not understand grad admissions process
- 3.91 GPA in grad courses
- Very productive researcher, with high impact paper under review