

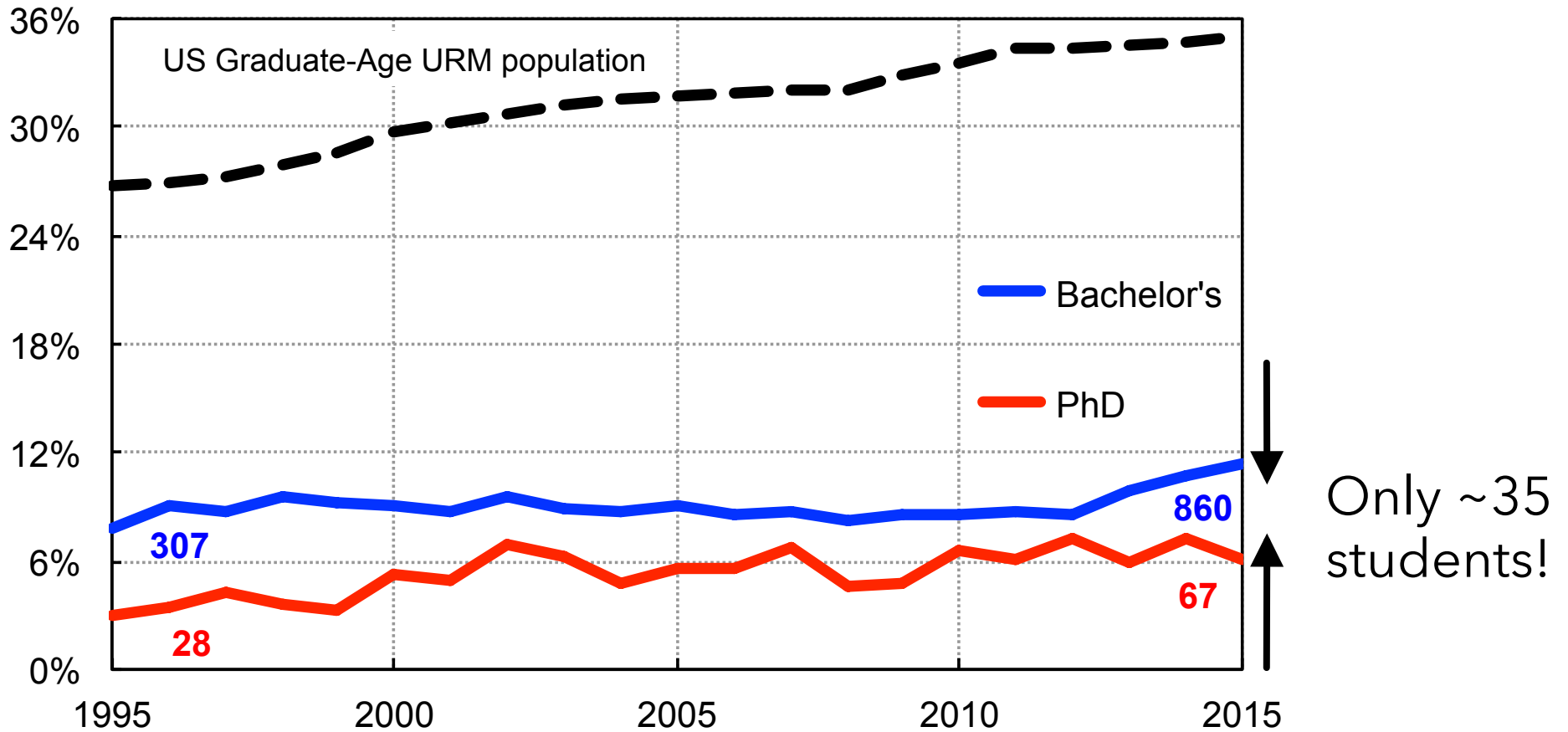
*7 October 2017  
College Park, MD*

# ***The APS Bridge Program: Changing the Face of Physics Graduate Education***

*Theodore Hodapp*

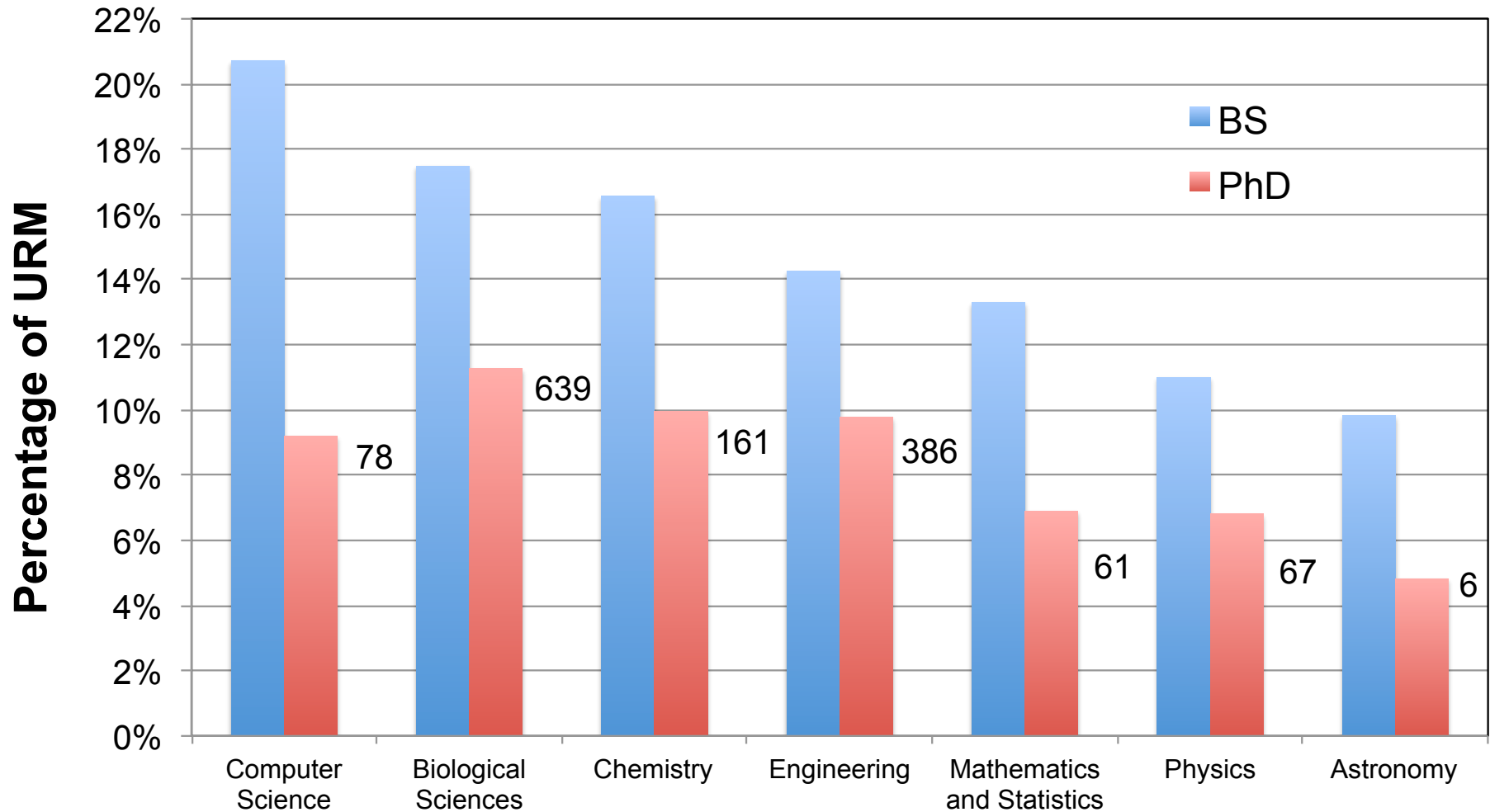
Director of Project Development  
Senior Advisor to Education and Diversity

# Underrepresented Minority (URM) Physics degrees



Source: National Center for Education Statistics, US Census, and APS

# Bachelor and PhD STEM Degrees



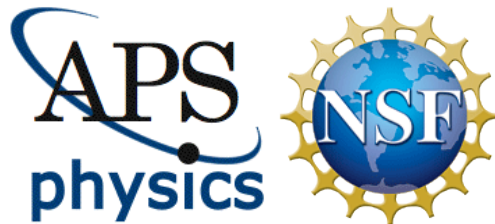
## Leadership / Oversight

### National Advisory Committee

- Emilio Codecido (OSU, Grad student)
- J.D. Garcia (Arizona)
- Yolanda George (AAAS)
- Wendell Hill (UMCP)
- Renee Horton (NSBP)
- Anthony Johnson (**Chair**, UMBC)
- Ramon Lopez (UT Arlington)
- James Mathis (UM, Grad student)
- Steve McGuire (Southern University)
- Jesús Pando (NSHP)
- Ritchie Patterson (Cornell)

### Funding

- NSF
- APS
- Bridge sites



### 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)

### Research / Assessment

- Deepa Chari (FIU-Postdoctoral Assoc.)
- Geoff Potvin (FIU-Research advisor)
- Rachel Scherr (SPU-Project evaluator)

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## APS Bridge Program: Key Features

- **Recruit** students through graduate programs (unaccepted), undergrad programs (promising but uncompetitive, or unsure )
- **Establish** Bridge Sites (6):
  - Year 1: Advanced undergraduate or grad courses, introduction to grad-level research, active mentoring, progress monitoring, social integration into grad school ([Project funds](#))
  - Year 2: Take 1<sup>st</sup> year grad courses, apply to PhD program, research underway ([Department funds](#))
- **Place** additional students at Partnership Institutions (23):
  - 65 graduate programs looked at "other" applications (2017), recruited additional students; No direct support, some travel
  - "COM approved" Partnership Institutions; national recognition of program
- **Monitor** student/site progress
- **Research**
- **Disseminate / Advocate**

# Student Eligibility

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

**We review applications AFTER April 15**

# Institution Involvement

- **Member Institution** (any institution, 125)  
Free; receive information / updates; reduced fees for APS-BP conferences
- **Partnership Site** (graduate only, 32)  
APS COM approval process; recommended site for Bridge Fellows (and others) to attend; demonstrate effective practices in graduate student support
- **Bridge Site** (graduate only, 6)  
Receive significant funding from APS; build sustainable program; prepare 2+ students each year for graduate study; significant institutional commitment

## APS Bridge Partnership Sites

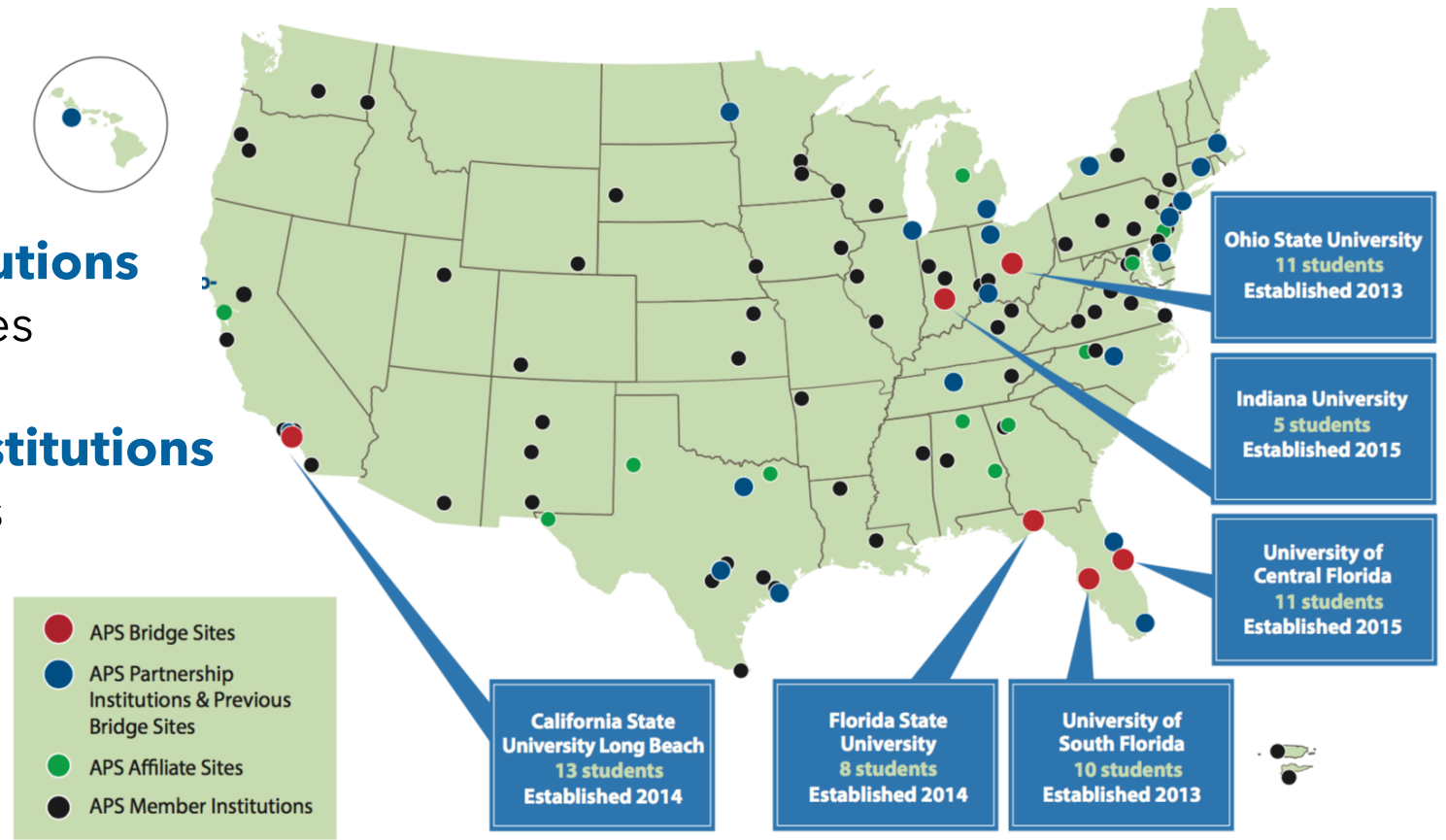
\*Bowling Green State University  
 \*California State University Long Beach  
 \*California State University, Los Angeles  
 Columbia University  
 Delaware State University  
 \*DePaul University  
 Embry-Riddle Aeronautical University  
 Fisk-Vanderbilt  
 Florida International University  
 Florida State University  
 Illinois Institute of Technology  
 Indiana University  
 MIT  
 North Dakota State University  
 Ohio State University  
 Princeton University  
 \*Texas State University  
 \*Towson University  
 University of Central Florida  
 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 North Carolina at Chapel Hill  
 University of Rochester  
 University of South Florida  
 University of Texas at Arlington  
 University of Texas, San Antonio  
 University of Virginia  
 \*Wright State University

## Member Institutions

- 125 in 38 states

## Partnership Institutions

- 32 in 18 states
  - 24 PhD
  - 8 MS





# Bridge Sites and Partnership Institutions

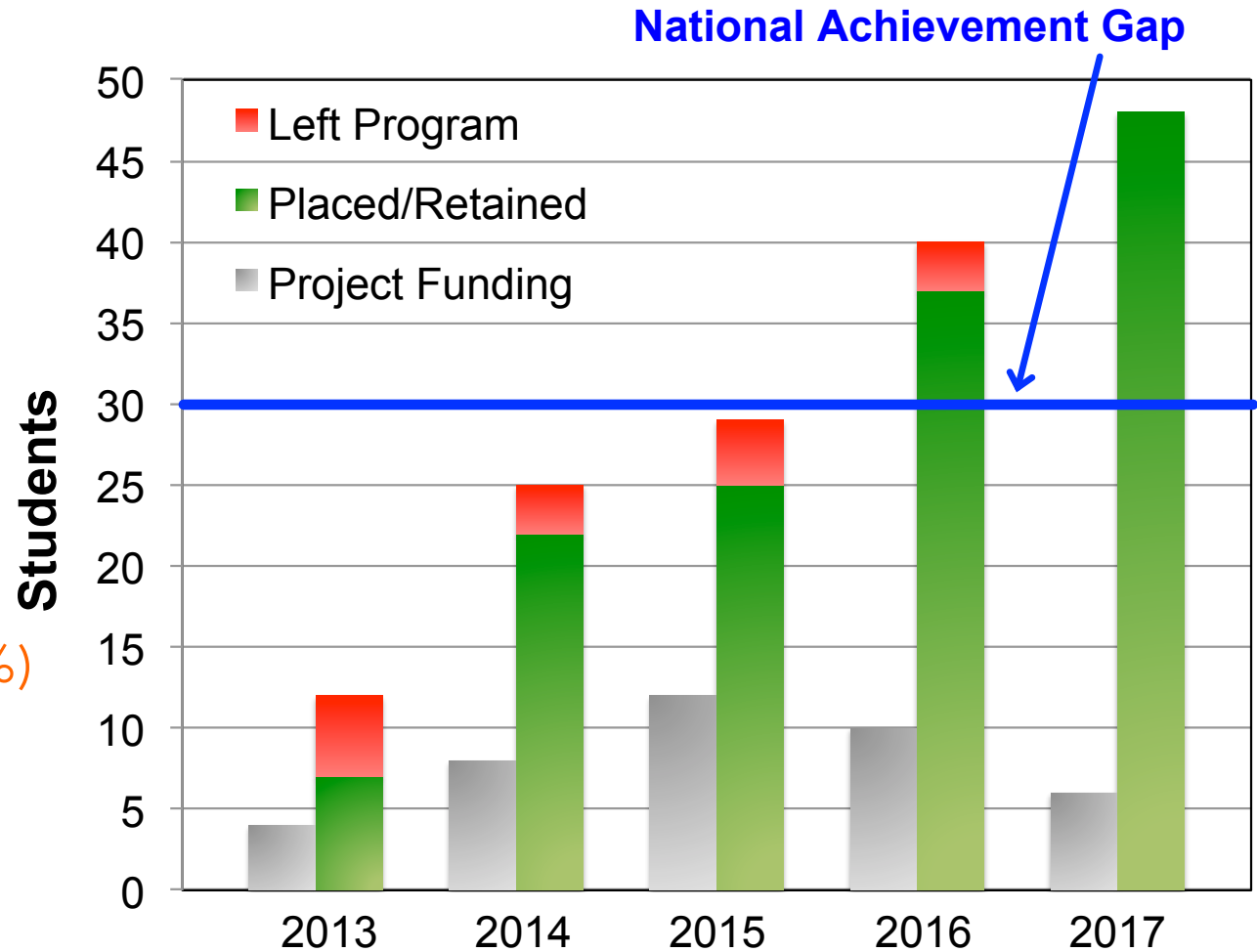
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- Admission decisions (“holistic” criteria)
- Financial support (timing)
- Coursework (induction advising critical, allow advanced undergrad courses, alternative plan)
- Progress monitoring (timing, tutors if needed)
- Multiple mentors (intervention, peer involvement)
- Research (appropriate match)

# Bridge Program Achievements

## Bridge Program Physics PhDs

- ✧ 23% Women (20%)
- ✧ 93% URM (6%)
  - 64% Hispanic
  - 24% African American
  - 5% Native
- ✧ 88% Retention (60%)



## Where did the 48 students go (2017)?

- Bowling Green State University
- CSU Long Beach (2)
- CSU Los Angeles (5)
- Delaware State University (2)
- DePaul University
- Fisk-Vanderbilt University (3)
- Florida State University (6)
- Indiana University (2)
- Ohio State University (3)
- Texas A&M University, Commerce
- Texas State University
- University of Central Florida (5)
- University of Cincinnati (3)
- University of Connecticut
- University of Houston, Clear Lake (3)
- University of Kansas (2)
- University of Massachusetts Dartmouth
- University of Minnesota Duluth
- University of North Carolina, Chapel Hill
- University of Rochester
- University of South Florida (2)
- University of Virginia