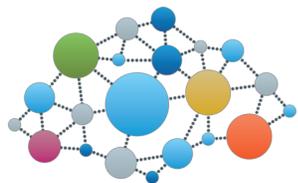


# AGU Annual Meeting Heads and Chairs Workshop

*9 December 2018  
Washington, D.C.*

## **Inclusive Graduate Education Network: Changing the Face of Graduate Student Participation in the Physical Sciences**



**IGEN**

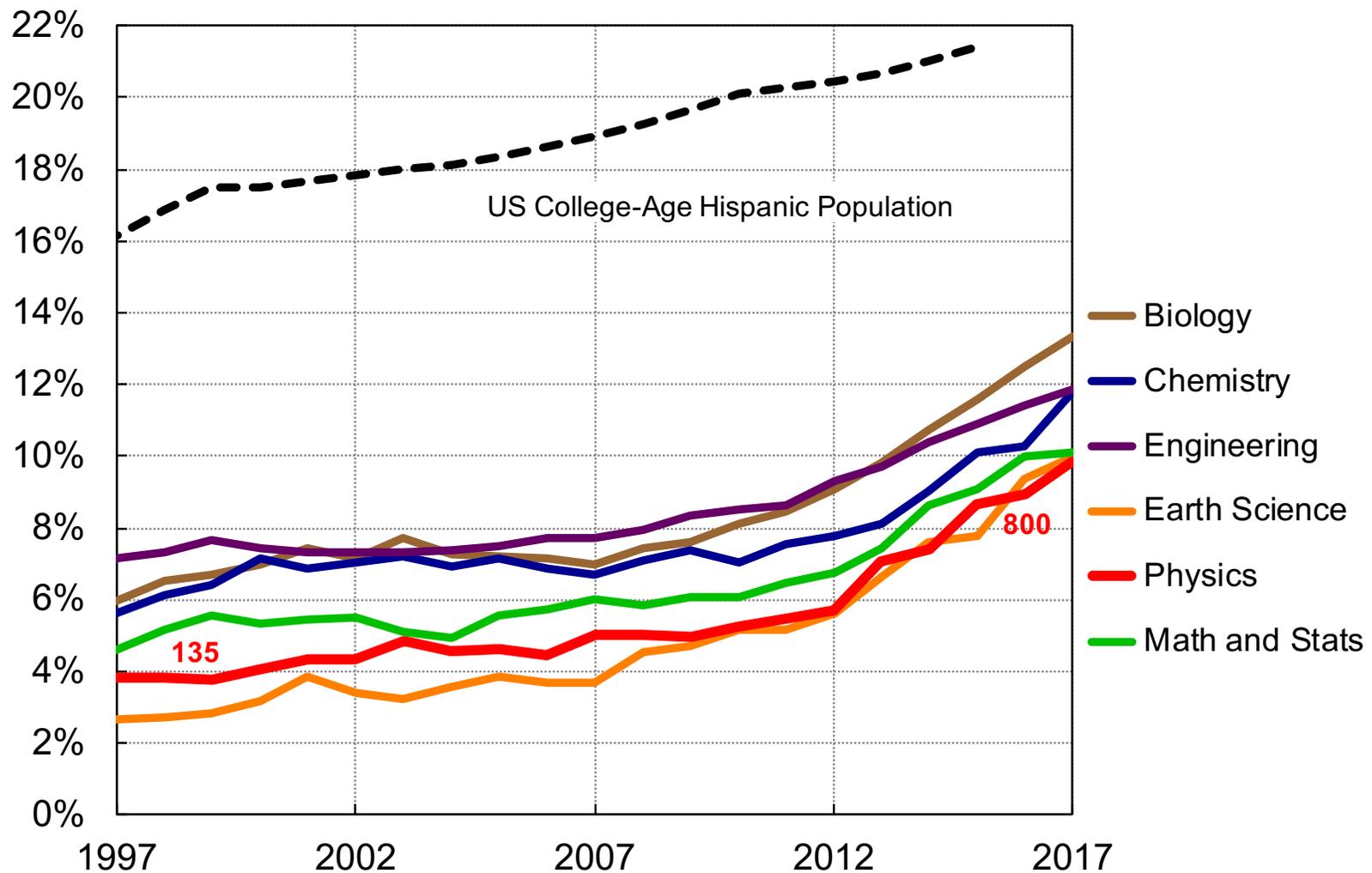
Inclusive Graduate Education Network

*Theodore Hodapp*

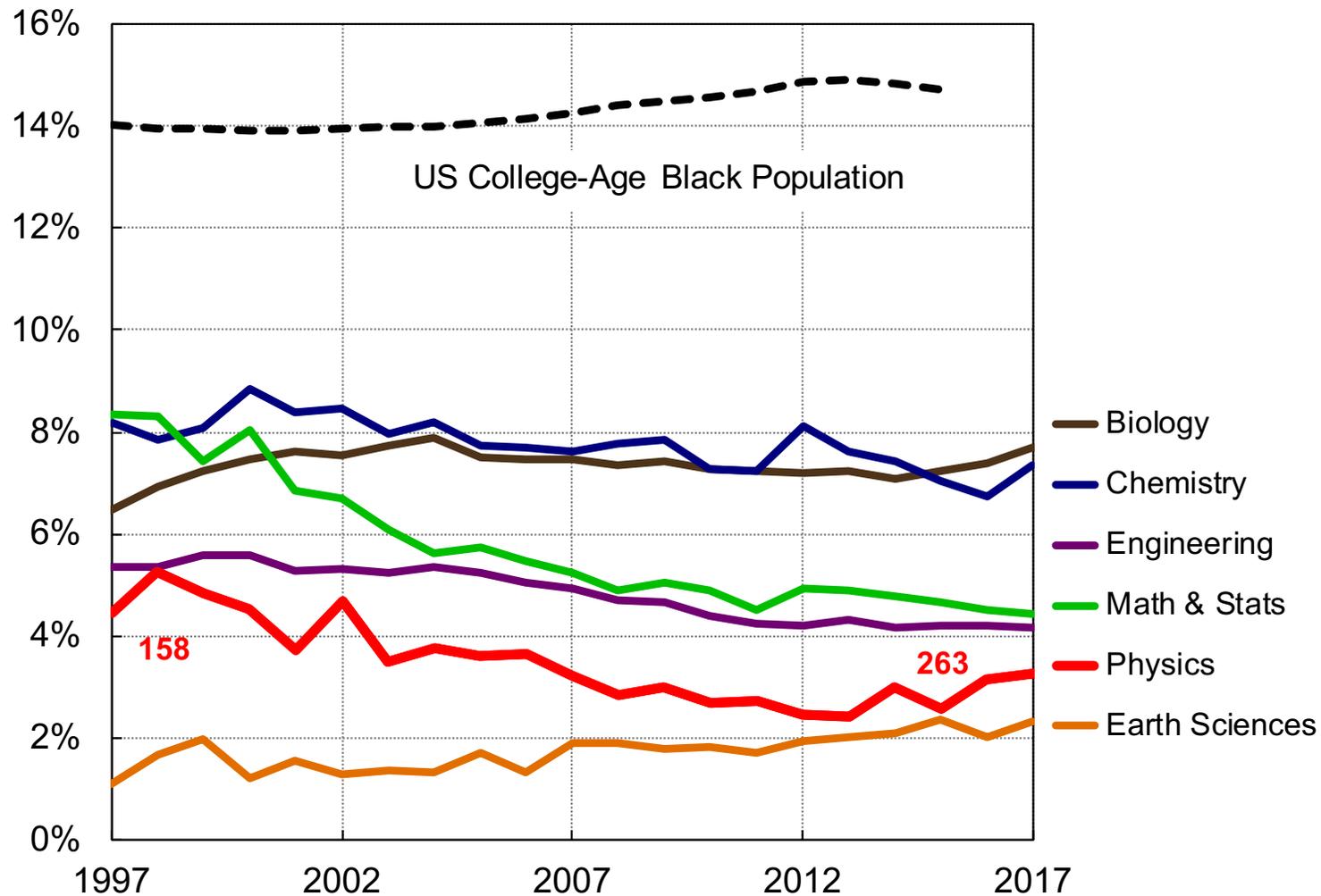
**IGEN Director**

**APS Director of Project Development**

# Hispanic American Bachelor Degrees

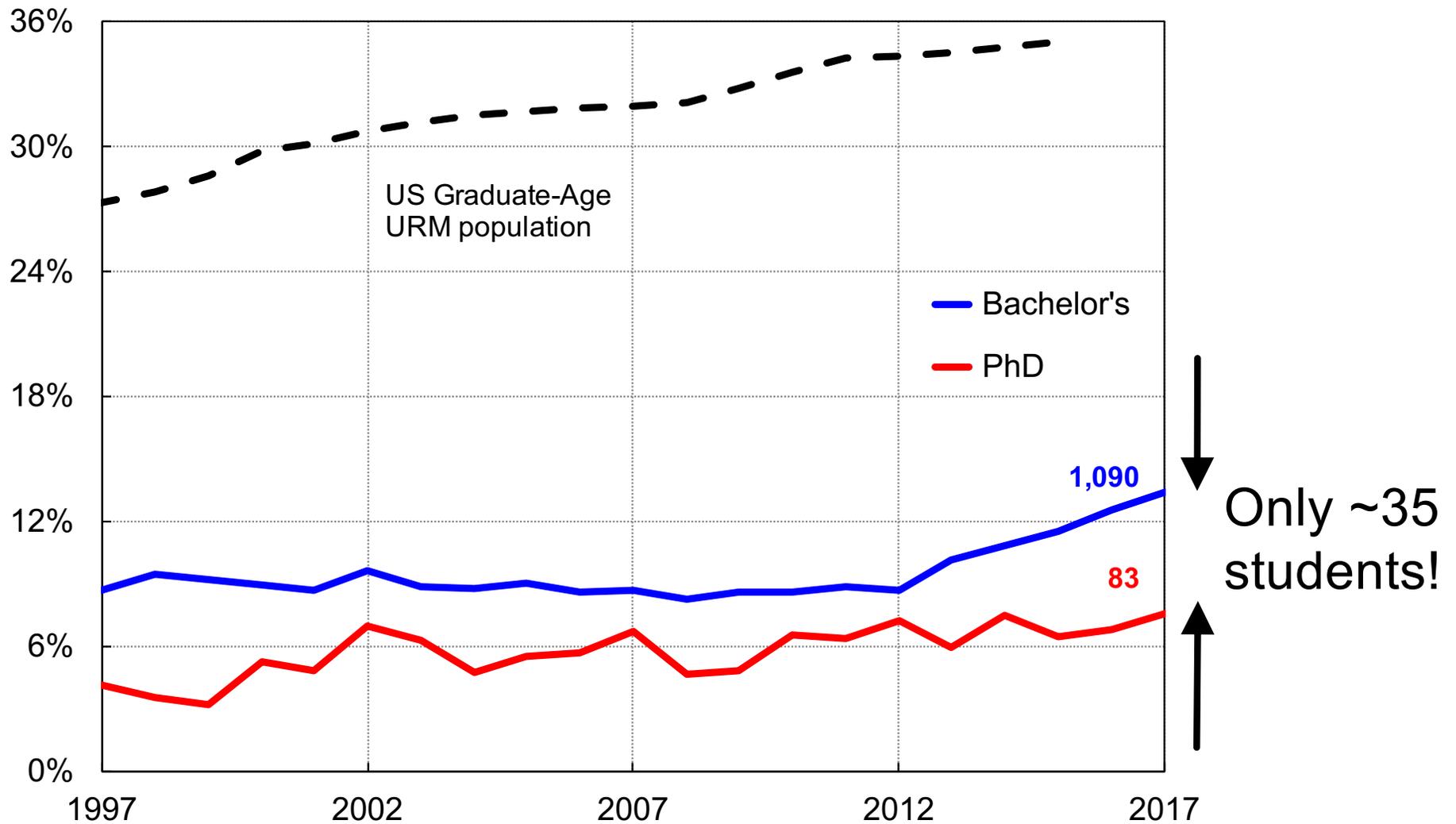


Source: IPEDS, US Census, and APS



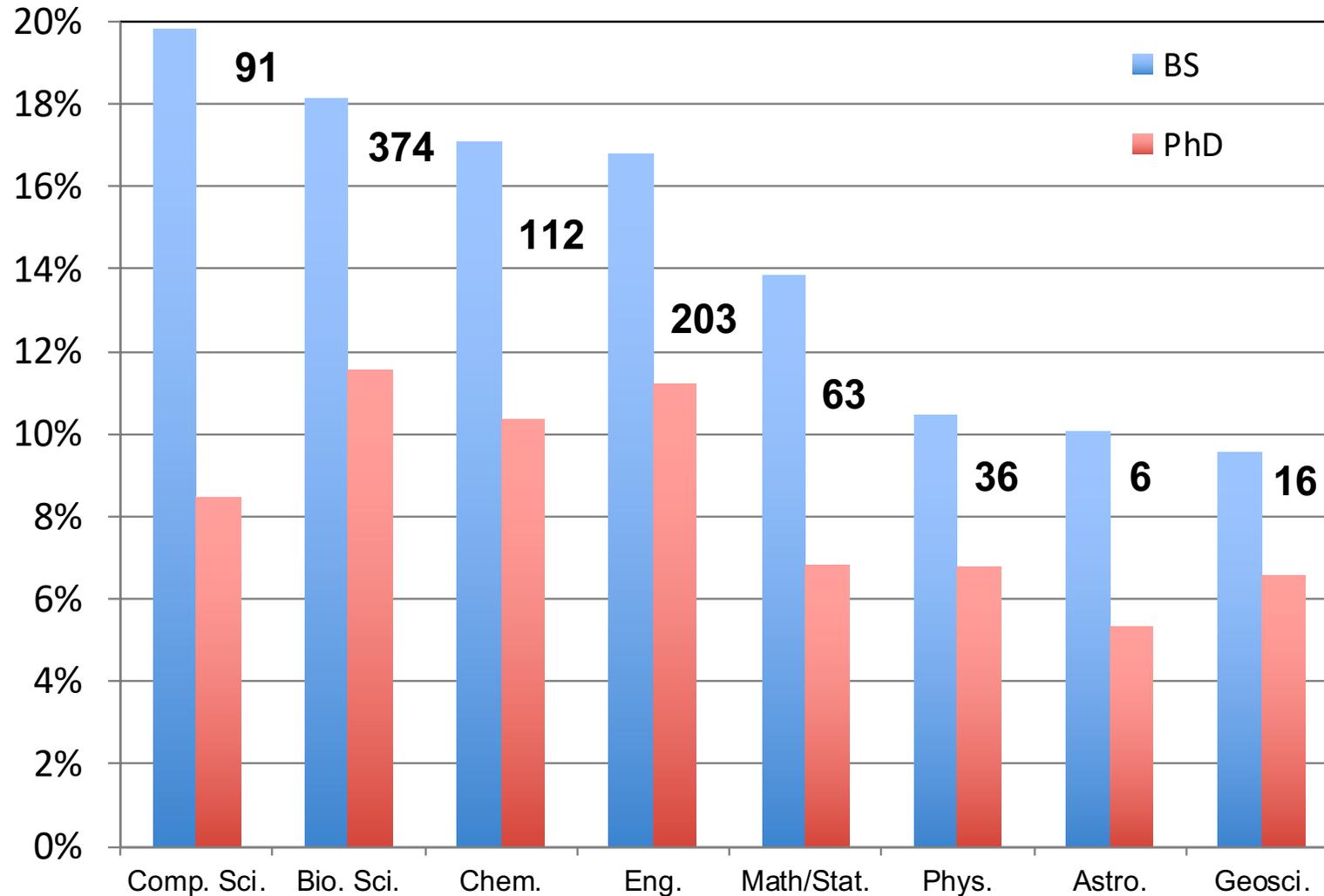
Source: IPEDS, US Census, and APS

# Underrepresented Minority (URM) Physics degrees



Source: IPEDS, US Census, and APS

# Problem in all Disciplines Bridge Components can Solve

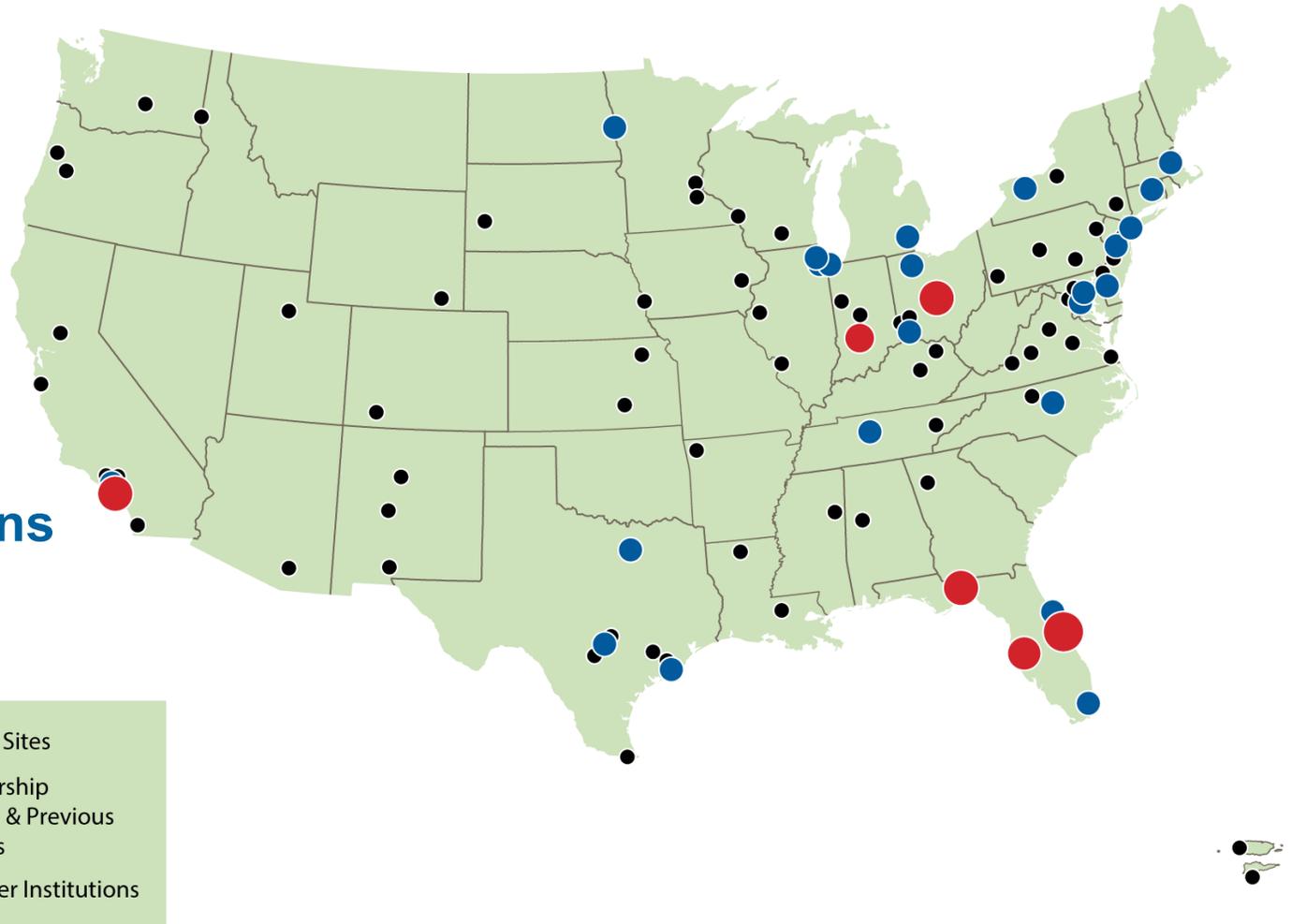


## NSF INCLUDES



## Broadening Participation in STEM at scale

- Future of Work
- Growing Convergence Research
- Harnessing the Data Revolution
- Mid-scale Research Infrastructure
- Navigating the New Arctic
- NSF 2026
- **NSF INCLUDES**
- Quantum Leap
- Understanding the Rules of Life
- Windows on the Universe



## Member Institutions

- 143 in 38 states

## Partnership Institutions

- 38 in 18 states
  - 31 PhD
  - 7 MS

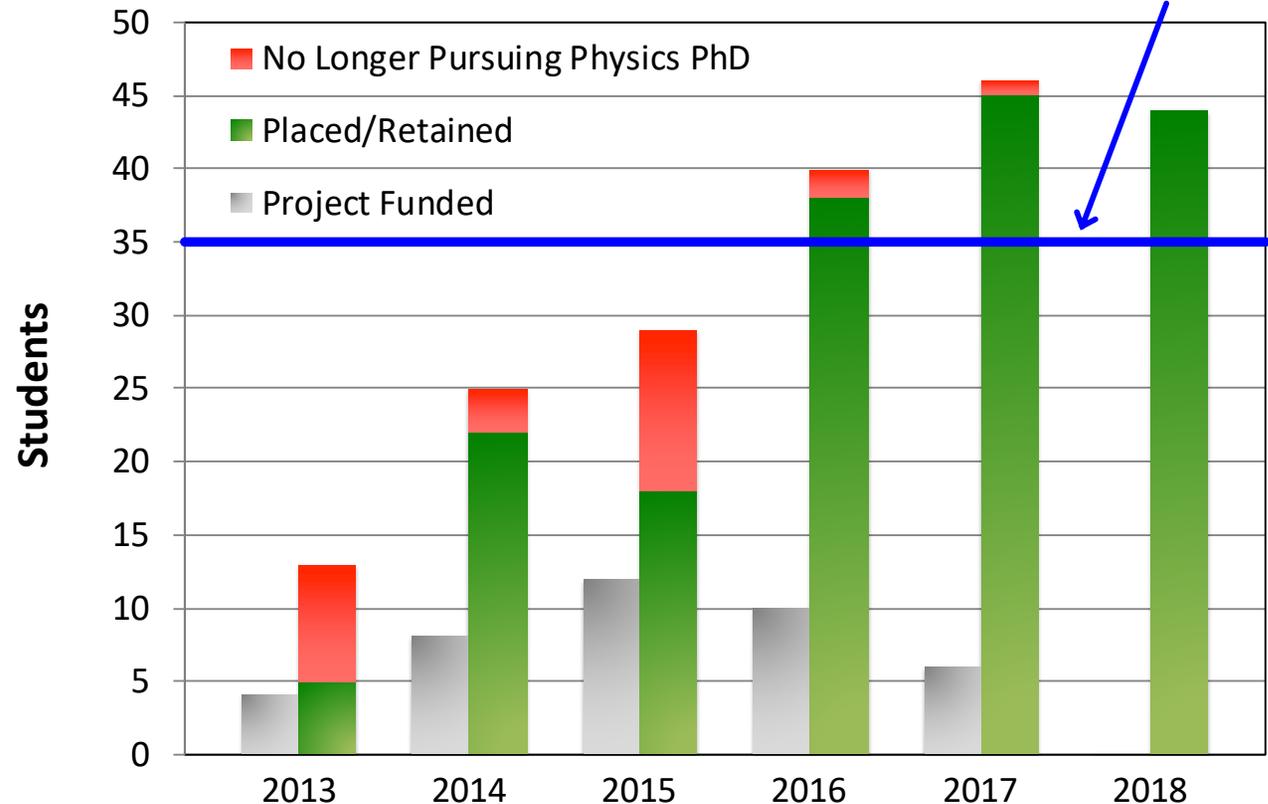
## Bridge Program All Physics PhDs

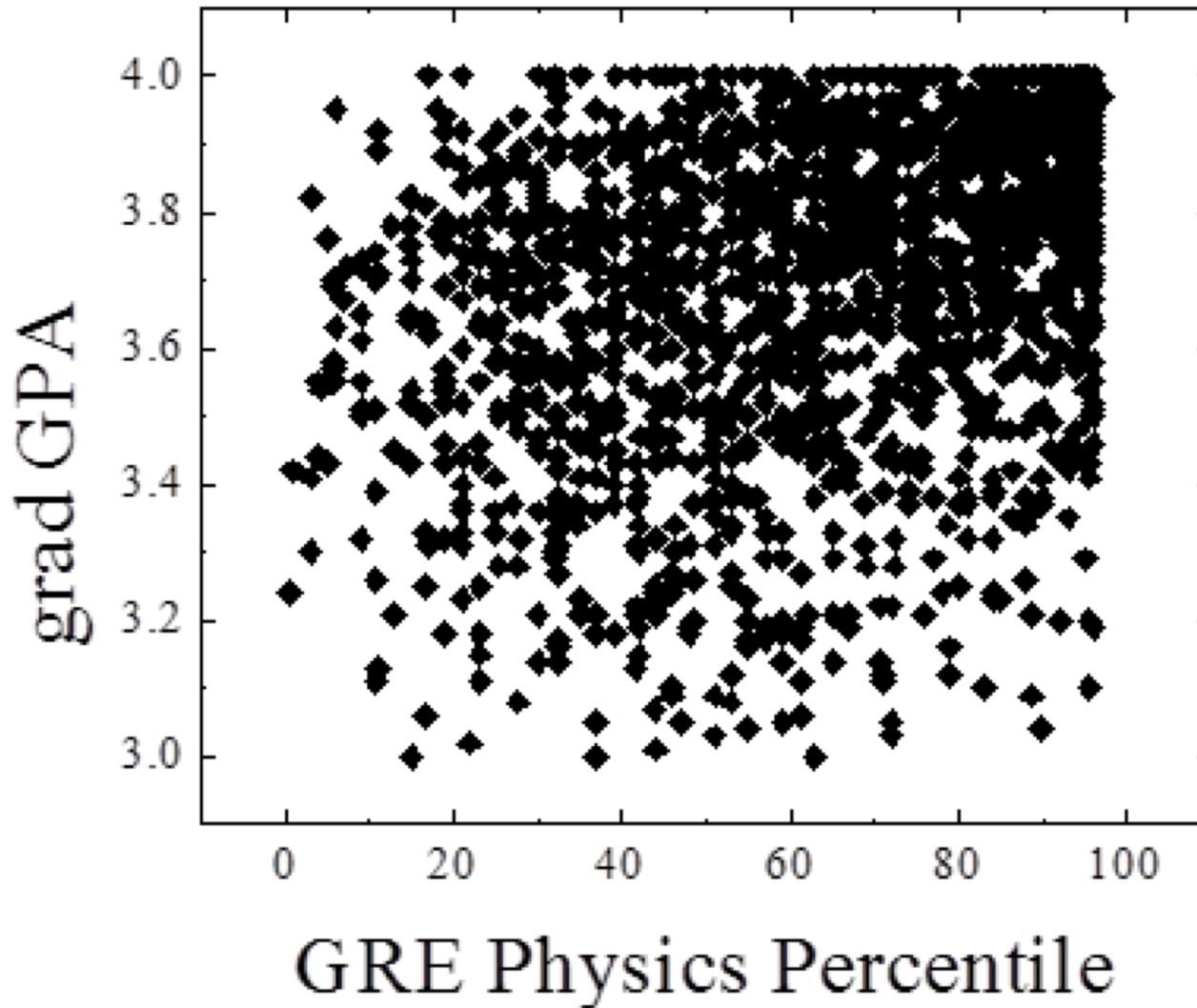
- ✧ 23% Women (20%)
- ✧ 93% URM (6%)
  - 64% Hispanic
  - 24% African American
  - 5% Native
- ✧ 87% Retention (60%)

**168 Students making progress toward PhDs**

**– All traditionally excluded**

URM PhDs reach same fraction as undergrad degrees





$r = 0.24$ ;  $N = 1686$   
"Weak" Correlation

- **Bridge:** Increase the fraction of students from underrepresented groups who complete doctoral degrees in the physical sciences to match the levels of undergraduate degrees awarded.
- **Inclusive Practices:** Catalyze the adoption of evidence-based inclusive practices, especially in graduate education, that reduce inequities in doctoral completion for underrepresented groups and benefit all students.
- **Research:** Conduct research and propagate results that distill scalable, effective practices in inclusive graduate education and institutional change within the physical sciences.
- **Transitions:** Establish sustained, cross-sector partnerships within and among critical stakeholders that support the advancement of underrepresented students from undergraduate through professional employment.

### Major Partners

- American Physical Society
- American Chemical Society
- **American Geophysical Union**
- American Astronomical Society
- Materials Research Society

### Cross-Cutting Hubs

- Inclusive Practices Hub (workshops, training local champions, national facilitators; RIT)
- Research Hub (graduate education; USC)

### National Laboratories (CIMER)

- Los Alamos
- Argonne

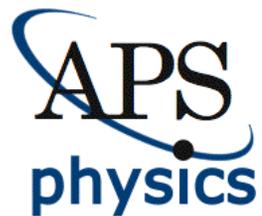
- Lawrence Livermore
- Brookhaven
- FRIB
- Sandia
- Lawrence Berkeley
- MagLab
- NIST
- JPL
- Adding: FermiLab, INL, ...

### Private Sector Corporations

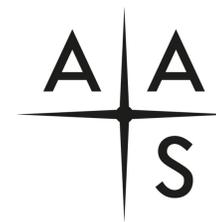
- General Atomics
- IBM
- Intel Corporation
- Google
- Adding: Corning, ExxonMobil, ...

- **Application aggregation in 2020**
- **Partnership Departments starting in 2019**
- Establish and propagate resources and advocates to impact admissions and retention practices
- Developing mentoring materials focused on National Lab environment, but applicable in other areas
- Establishing pathways to make professional opportunities available to graduates at National Labs and industry
- Enhancing mentoring of undergraduates into graduate studies
- National advocacy through annual meetings (and other channels)

- How can we reach Earth/Space Science Departments?
- What are the concerns?



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