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APS Leadership Convocation

26 January 2017
Washington, DC

APS Education and Diversity Programs

Monica Plisch, Director of Education and Diversity
Theodore Hodapp, Director of Project Development

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Education and Diversity

Committees:

- Education
- Status of Women in Physics
- Minorities

Units:

- FEd
- FGSA
- GPER
- Forum on Diversity and Inclusion (organizing)

Staff:

- Miranda Bard
- Erika Brown
- Michelle Campbell
- Brián Clash
- Renee Michelle Goertzen
- Theodore Hodapp
- Arlene Modeste Knowles
- Monica Plisch
- Anne Richard
- Susan Sargent
- Kathryne Woodle

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Departmental Programs

- **PhysTEC**
- **APS Bridge Program**
- **Conferences for Undergraduate Women in Physics (CUWiP)**
- **National Mentoring Community**
- **Best Practices in Undergraduate Physics Programs**

Physics Teacher Education Coalition

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Enhancing Diversity in Graduate Education

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- New Faculty Workshops
- Physics chairs meeting
- REU site leaders
- Professional skills development workshops
- Graduate education conference

- Advocating for physics education
- Childcare at meetings
- Mentoring seminar materials
- Ethics case studies

Programs and Resources for Units

- Childcare grants (Bard)
- Fellows, prizes, awards (COM, CSWP)
- LGBT Climate report
- Sessions:
  - Education (COE, FEd)
  - Diversity (CSWP, COM, Bouchet/MGM award winners)
- Workshops:
  - Mentoring (Plisch, Woodle)
  - Professional skills development (Goertzen)
- Documenting unit diversity (Plisch, Knowles)
- Talks:
  - Educating high school teachers
  - Graduate admissions and the GRE
  - Physics demographics
  - Education research highlights

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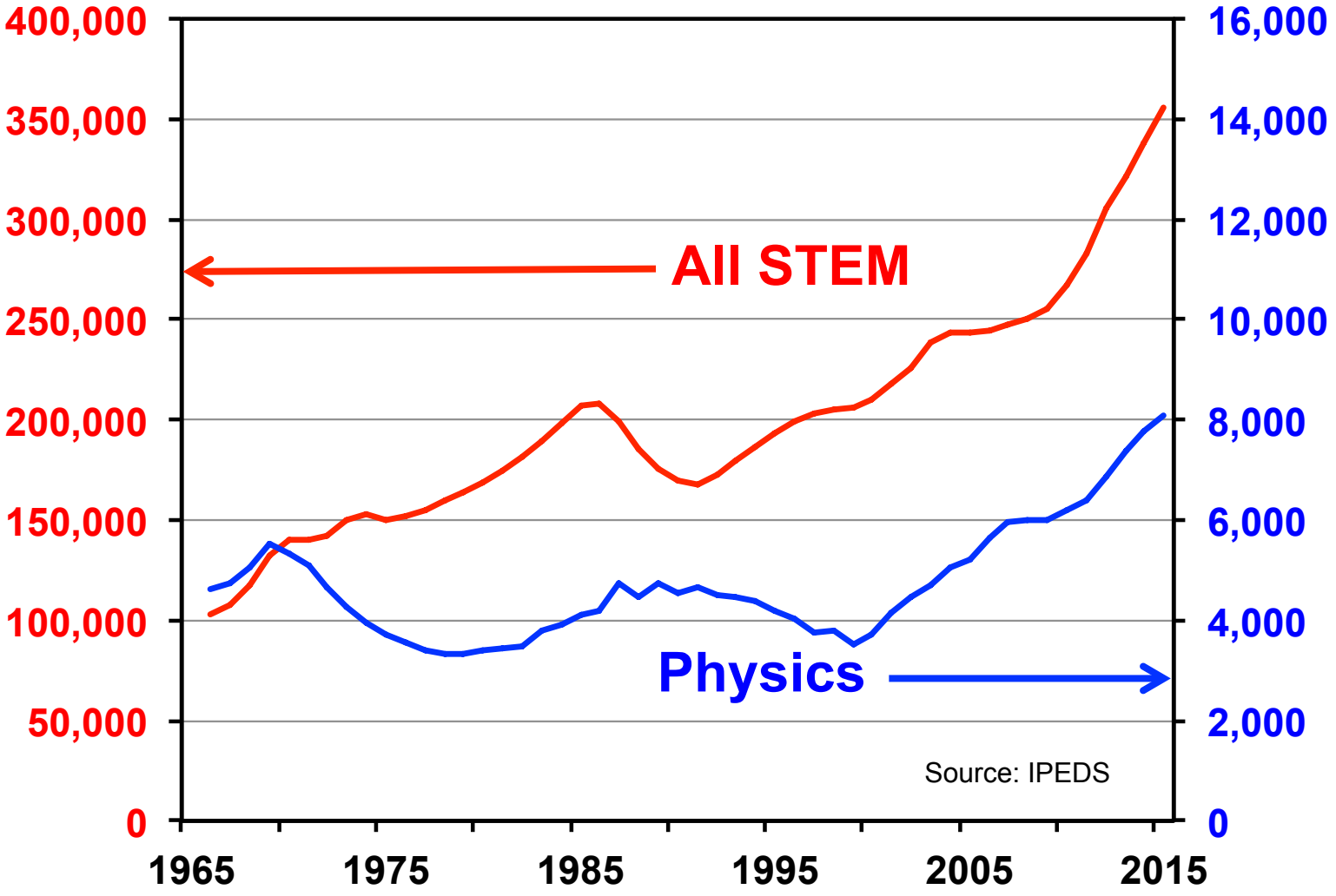
Code of Conduct for APS Meetings

It is the policy of the American Physical Society (APS) that all participants, including attendees, vendors, APS staff, volunteers, and all other stakeholders at APS meetings will conduct themselves in a professional manner that is welcoming to all participants and free from any form of discrimination, harassment, or retaliation. Participants will treat each other with respect and consideration to create a collegial, inclusive, and professional environment at APS Meetings. Creating a supportive environment to enable scientific discourse at APS meetings is the responsibility of all participants.

Participants will avoid any inappropriate actions or statements based on individual characteristics such as age, race, ethnicity, sexual orientation, gender identity, gender expression, marital status, nationality, political affiliation, ability status, educational background, or any other characteristic protected by law. Disruptive or harassing behavior of any kind will not be tolerated. Harassment includes but is not limited to inappropriate or intimidating behavior and language, unwelcome jokes or comments, unwanted touching or attention, offensive images, photography without permission, and stalking.

Violations of this code of conduct policy should be reported to meeting organizers, APS staff, or the APS Director of Meetings. Sanctions may range from verbal warning, to ejection from the meeting without refund, to notifying appropriate authorities. Retaliation for complaints of inappropriate conduct will not be tolerated. If a participant observes inappropriate comments or actions and personal intervention seems appropriate and safe, they should be considerate of all parties before intervening.

Physics / STEM Bachelor Degrees



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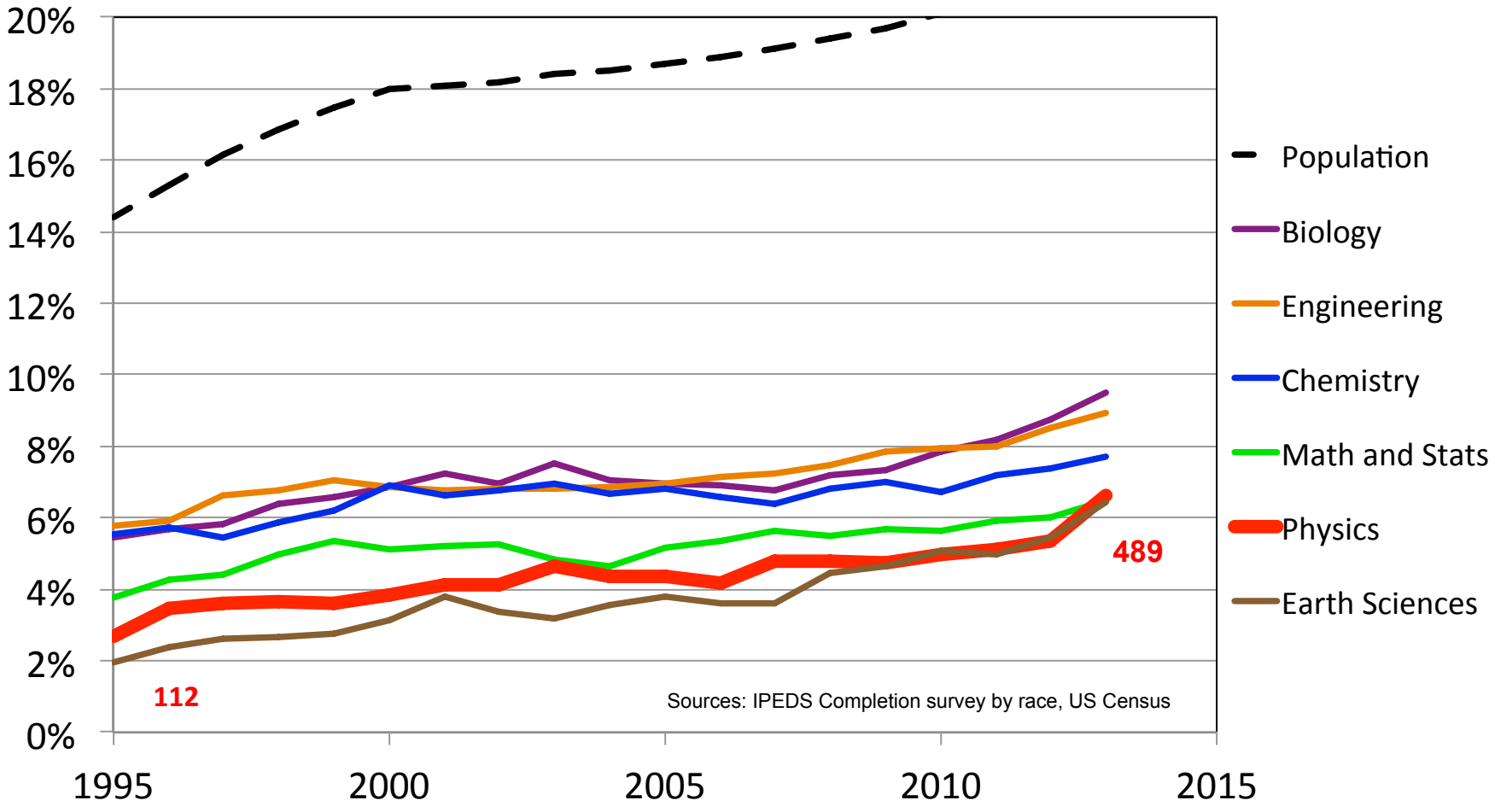
Hispanic American Bachelor Degrees



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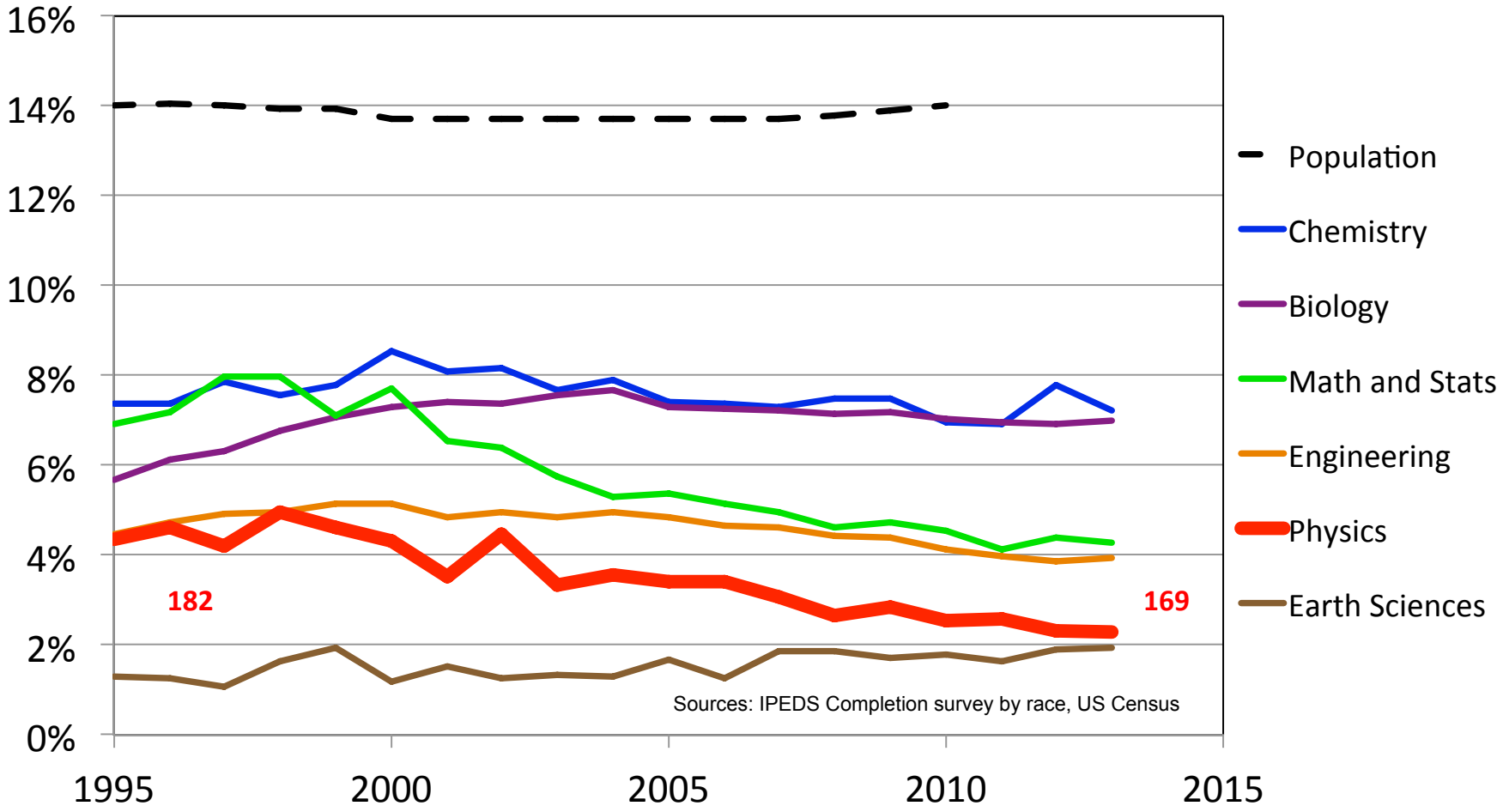
African American Bachelor Degrees



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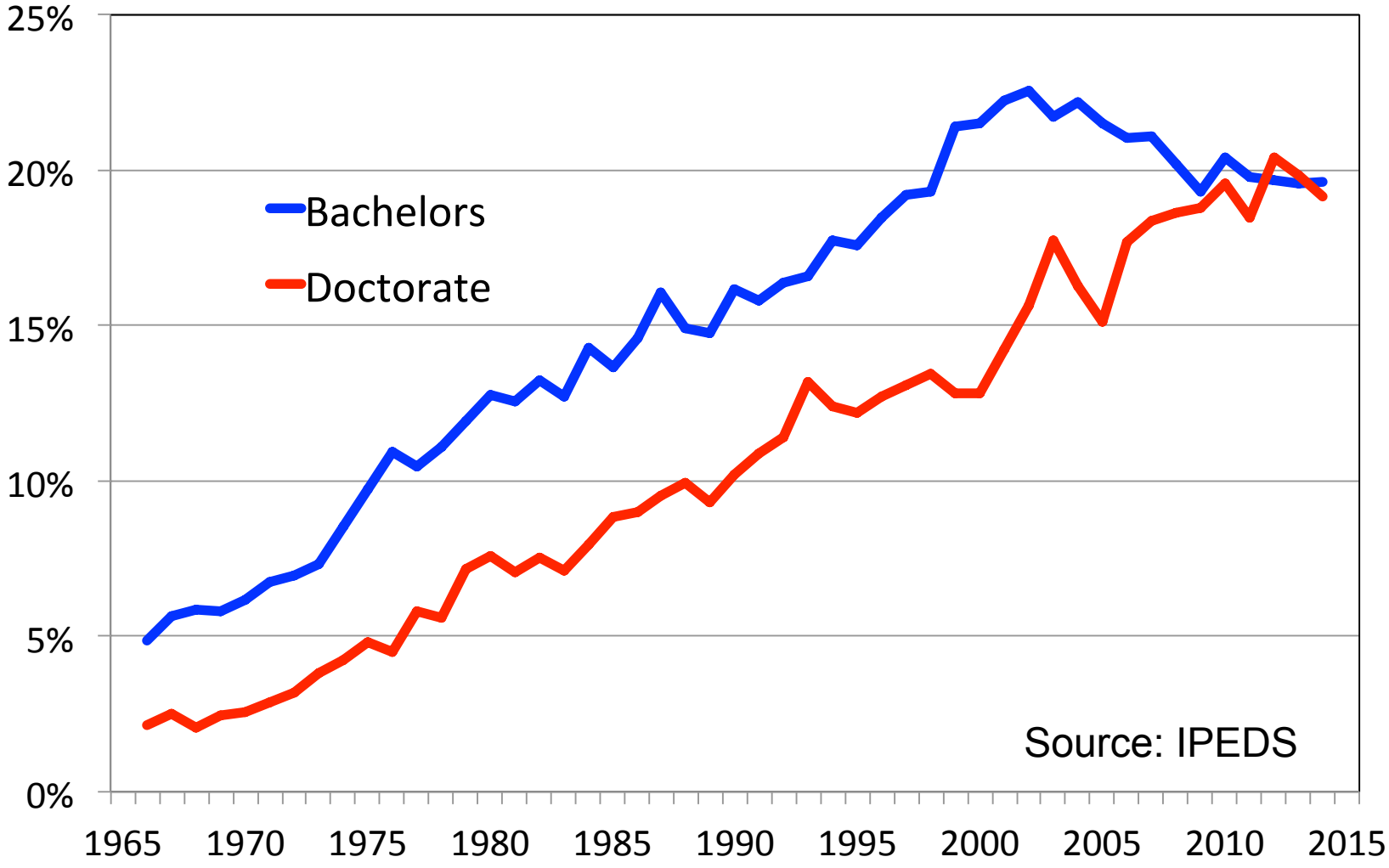
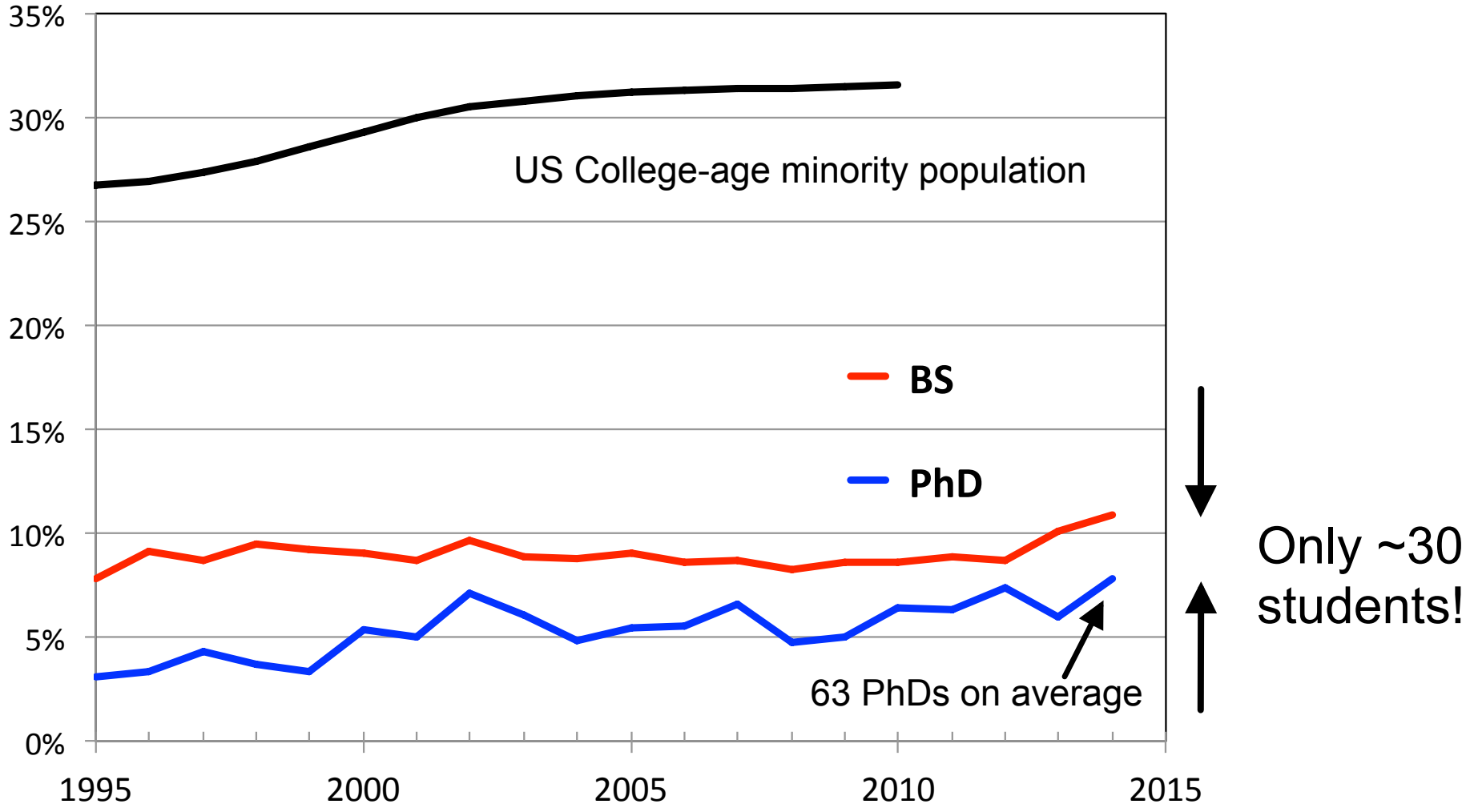
Percentage of Women in Physics

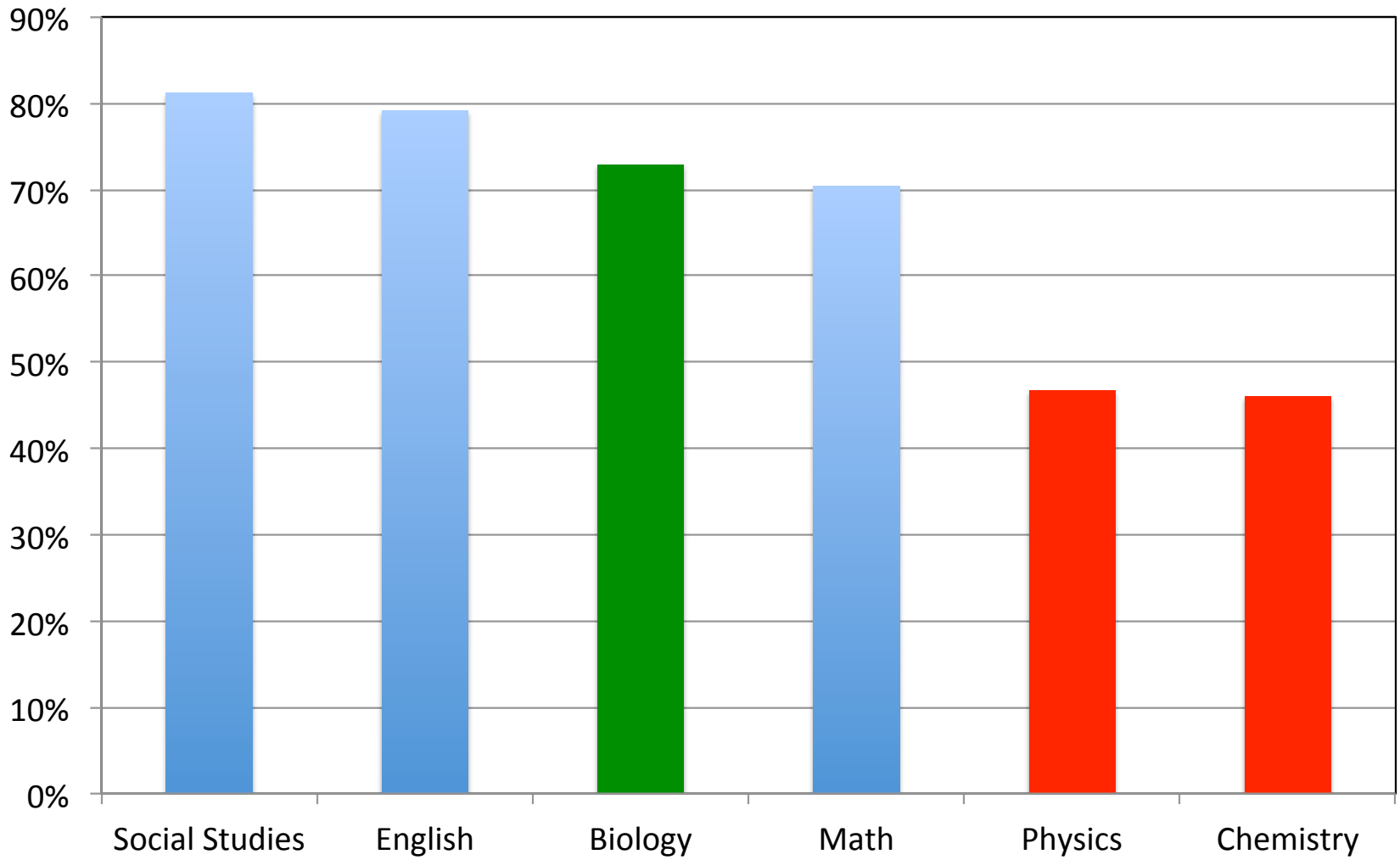


URM Physics PhDs to Minority Population



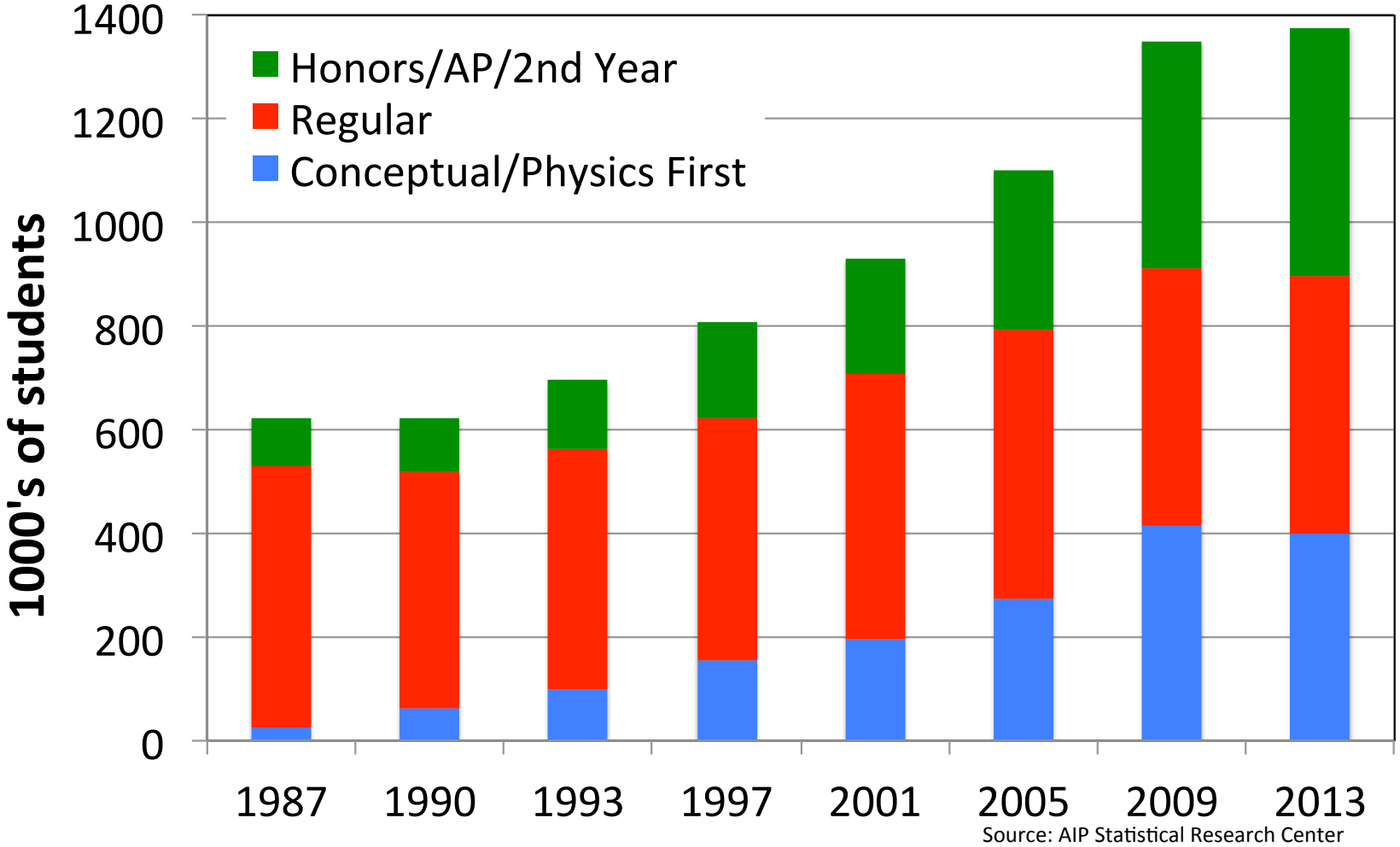
Sources: IPEDS Completion survey by race, US Census

High school classes taught by teacher with degree in the field

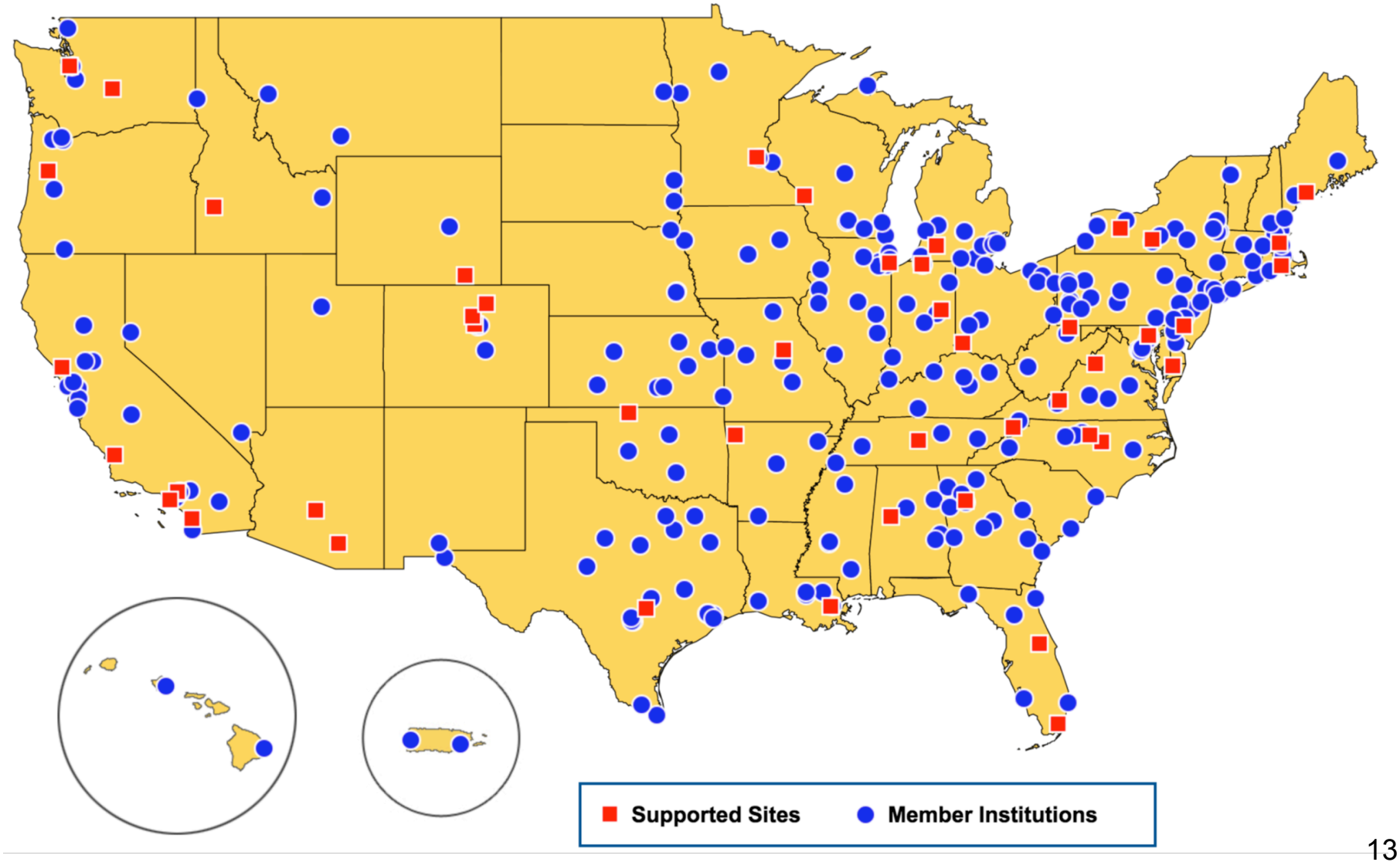


Source: Schools and Staffing Survey

High School Students Studying Physics

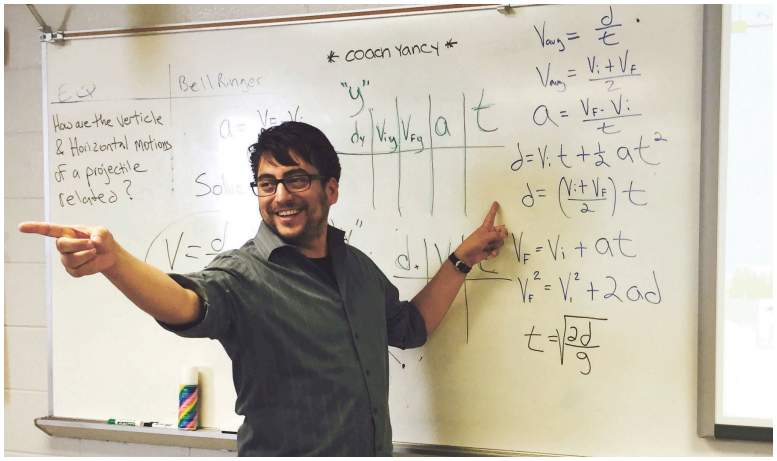


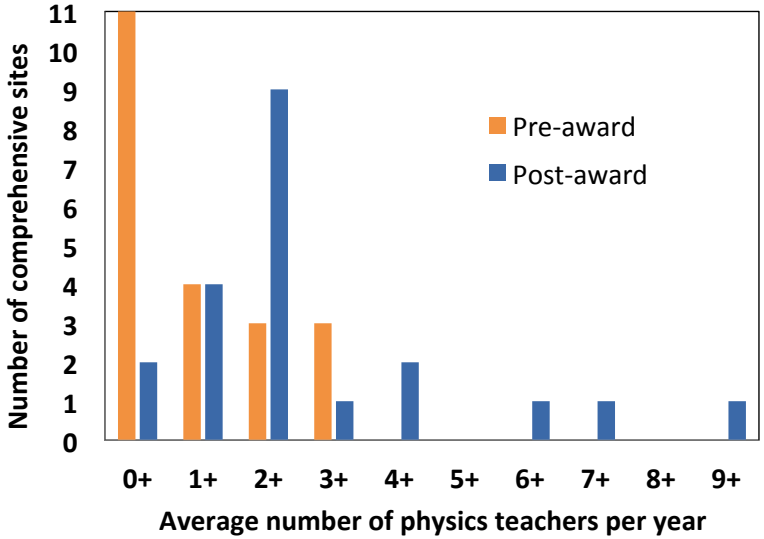
PhysTEC Member Institutions



PhysTEC graduates

- PhysTEC sites educate 1 in 8 new physics teachers with a degree
- PhysTEC *comprehensive* sites nearly tripled their numbers of physics teachers
- Retention rates for new PhysTEC teachers are over 70% for 5 years, above the national average
- 800 more physics teachers per year would solve the national shortage





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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 1st year grad courses, apply to PhD program, research underway (Department funds)
- **Place** additional students (at Partnership Institutions):
  - 44 graduate programs looked at "other" applications (2016), recruited additional students; No direct support, some travel
  - "COM approved" Partnership Institutions; national recognition of program
- **Monitor** student/site progress
- **Research**
- **Disseminate / Advocate**

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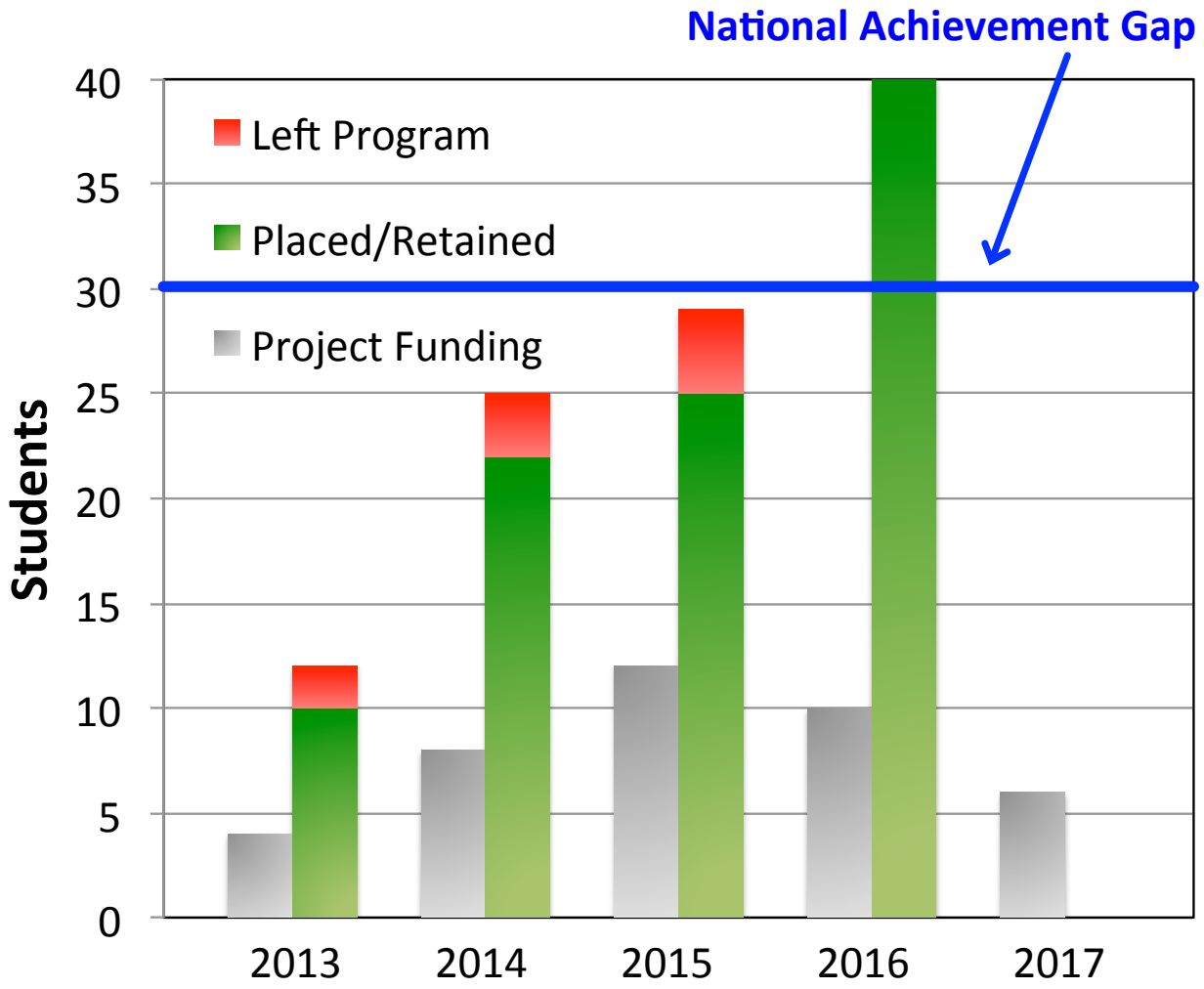
Bridge Program Achievements

Bridge Program
Physics PhDs

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



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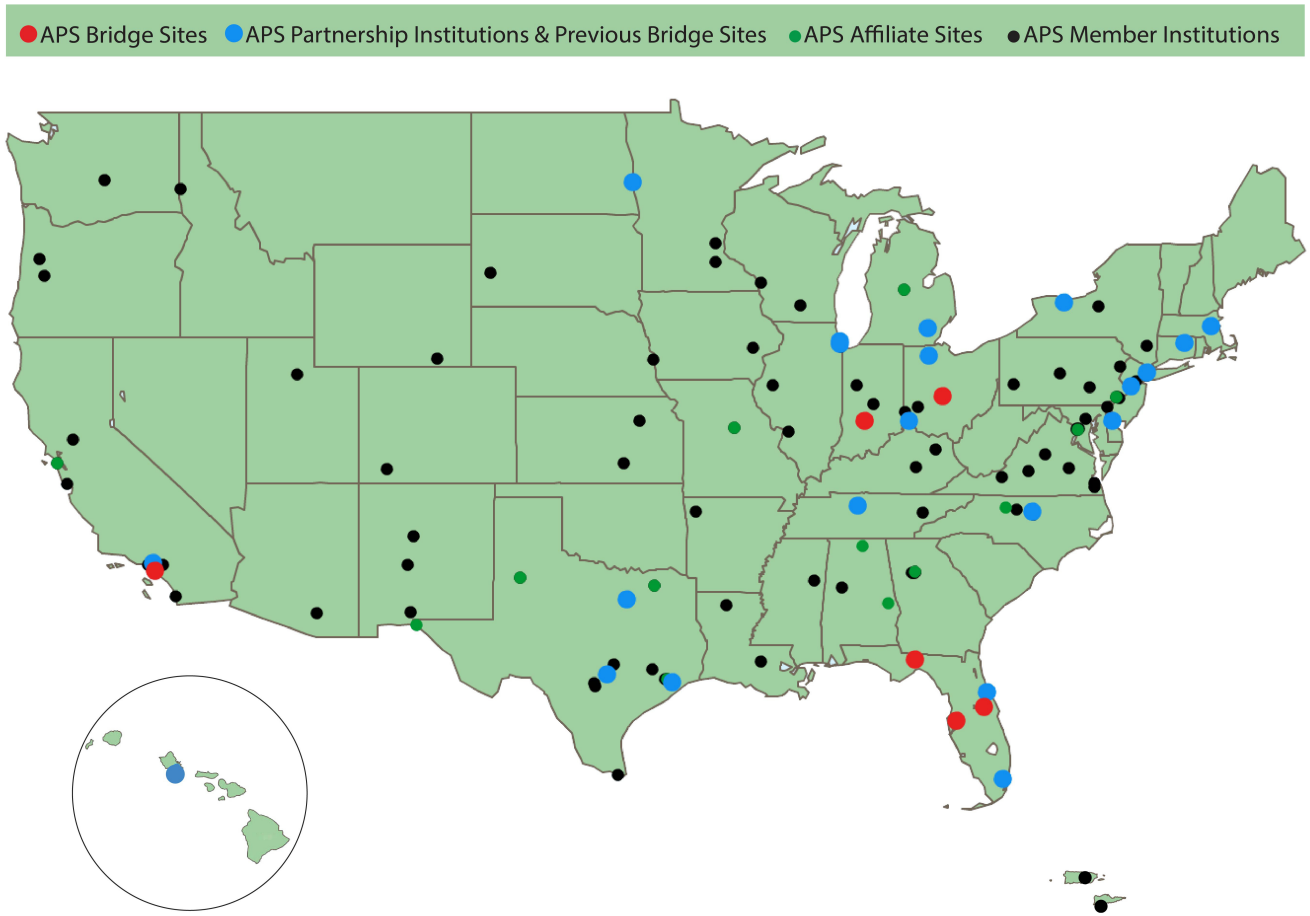
Institutional Members

- Member Institutions
  - 112 in 36 states
- Partnership Institutions
  - 27 in 16 states



APS physics | National Mentoring Community

Program Components

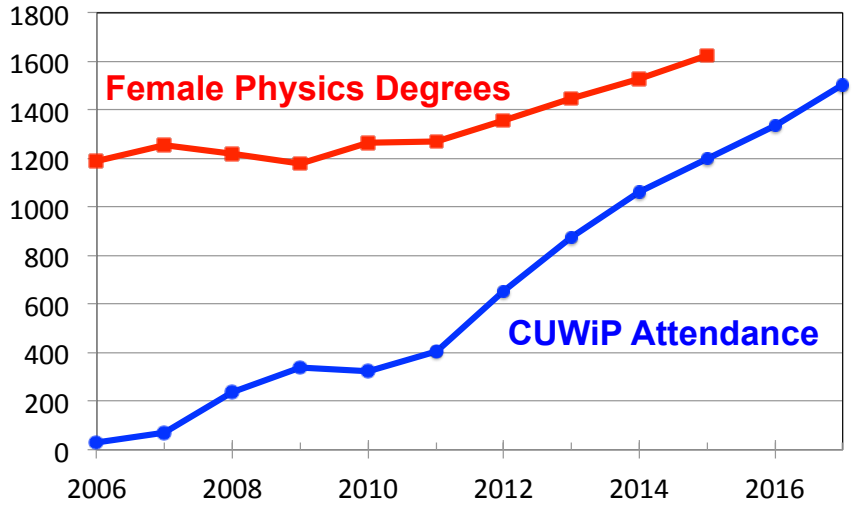
- Approved by APS Council: November 2014
- Launched April 2015
- Goal: Increasing the number of URM students who receive undergraduate degrees in physics
- Pairing faculty and URM students
- 160 mentors; 105 mentees paired
- Annual conference (21-23 October 2016) – in conjunction with REU Site Leaders meeting, Houston, TX
- Planned: scholarship funds distributed via mentors
- Planned: recognition of mentoring

Register: www.aps.org/nmc

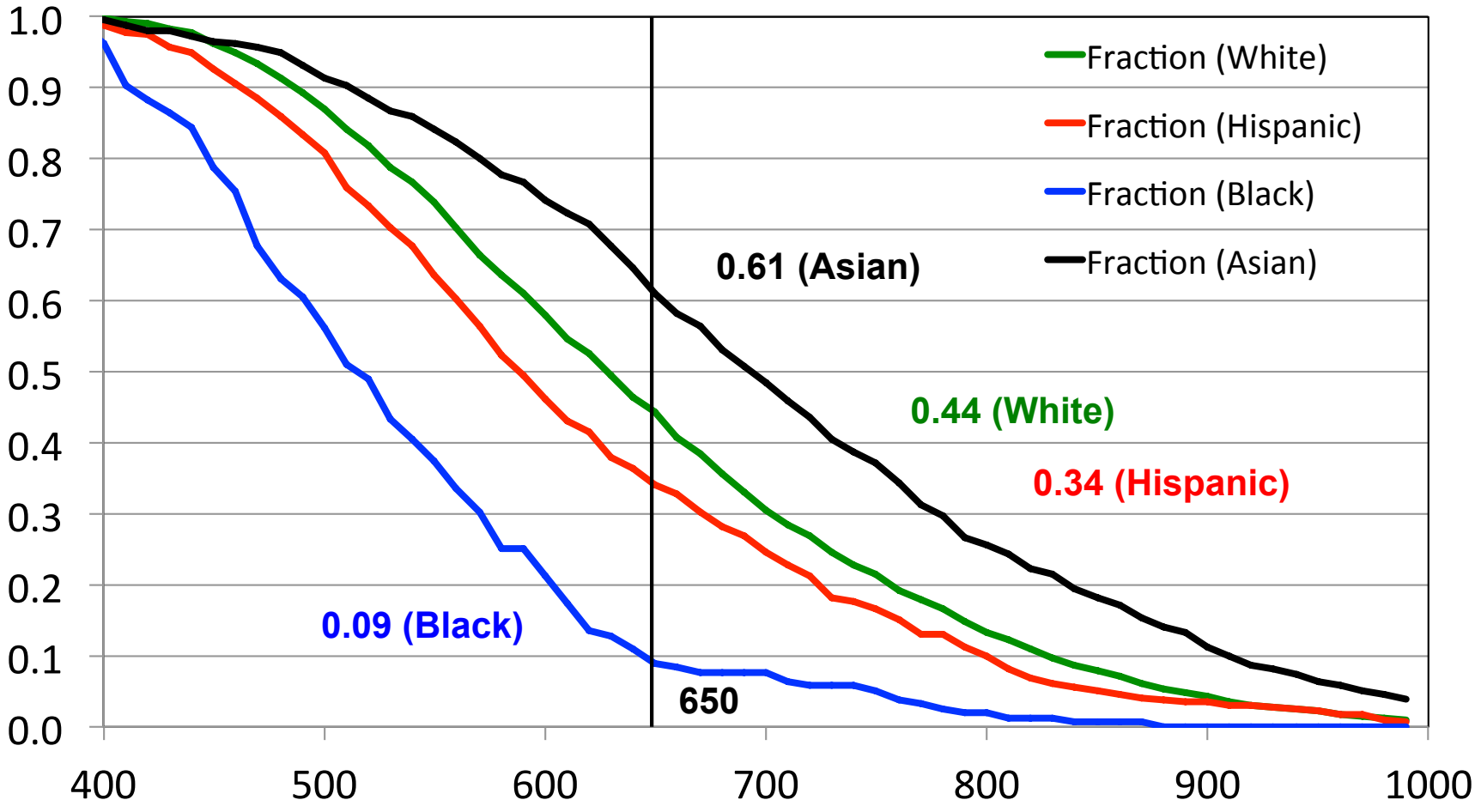
APS Conferences for Undergraduate Women in Physics

- Focus on professional development, networking, understanding pathways
- Attendance more than tripled since APS became involved
- Awarded 3-year grants from DOE, NSF for 2014-2020 conferences
- 10 sites for 2017, 12 in 2018
- Coordination of Canadian site in 2017
- Directed research efforts to improve messaging to women sees positive changes
- National leadership group; Current chair: Pearl Sandick, Utah; Overseen by CSWP

www.aps.org/cuwip



Physics GRE: Impact of Cutoff Scores



Guide for Undergraduate Physics Program Assessment, Review, and Improvement

1. **Develop a guide for self-assessment of undergraduate physics programs founded on documented best practices linked to measurable outcomes**

   The guide should provide a physics-community-based resource to assist programs in developing a culture of continuous self-improvement, in keeping with their individual mission, context, and institutional type. The guide should include considerations of curricula, pedagogy, advising, mentoring, recruitment and retention, research and internship opportunities, diversity, scientific skill development, career/workforce preparation, staffing, resources, and faculty professional development.

2. **Recommend a plan for ongoing review and improvement of this guide under the oversight of the APS COE**