

# Challenges towards Equality, Diversity and Inclusion in Physics and APS Resources

A round table discussion on diversity in academia at



2020 COM



# Committee on Minorities in Physics

Dedicated to increasing the participation of underrepresented minorities in physics.

**Chair:** Geraldine L Cochran (01/20 - 12/20)  
Rutgers University, New Brunswick

Mario F Borunda (01/18 - 12/20)  
Oklahoma State University-Stillwater

Mario Claudio Diaz (01/18 - 12/20)  
University of Texas Rio Grande Valley

Clayton E Simien (01/19 - 12/21)  
Univ of Alabama - Birmingham

Jose L Mendoza-Cortes (01/19 - 12/21)  
Florida State Univ

Donnell Walton (01/19 - 12/21)  
Corning Inc

Sowjanya Gollapinni (01/20 - 12/22)  
University of Tennessee, Knoxville

Gabriela B Gonzalez (01/20 - 12/22)  
DePaul University

Jami Valentine Miller (01/20 - 12/22)  
US Patent & Trademark Office

- 1) Why diversity?
- 2) The Gazette
- 3) Sessions for the March and April meetings
- 4) Take part in the selection of the Bouchet Award.
- 5) The National Mentoring Community (NMC)
- 6) Climate site visits
- 7) MSI travel program
- 8) APS Bridge program

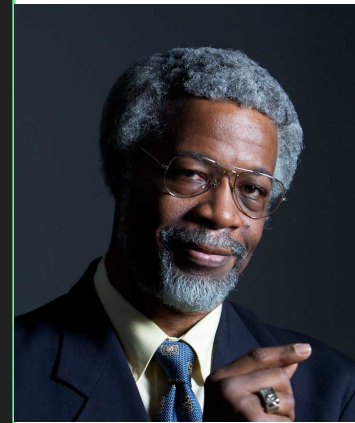
## Why diversity?

- Diverse groups come to better conclusions than homogeneous groups; *Journal of Experimental Social Psychology*, 40(4), 497-510 (2004)
- Ideas generated from diverse groups are rated at a higher quality than ideas from homogenous groups; *Small group research*, 27(2), 248-264 (1996)
- Corporate innovation found that the most inventive companies deliberately established diverse work teams; *Diversity Matters (report)*, McKinsey & Company (2014)
- Scientific papers with a more diverse author list have higher impact; *Nature News*, 513, 305 (2014)
- Diversity disrupts conformity, prompting people to scrutinize facts, think more deeply, and develop opinions; *PNAS* 30, 111 (2014)



What unique perspective does a minority student bring to a physics class?

Justice Roberts, December 9, 2015



If you want to get the most active, the most innovative, the most rapid-moving science, I believe ... diversity drives higher levels of innovation.

Jim Gates, Current APS VP, President in 2021

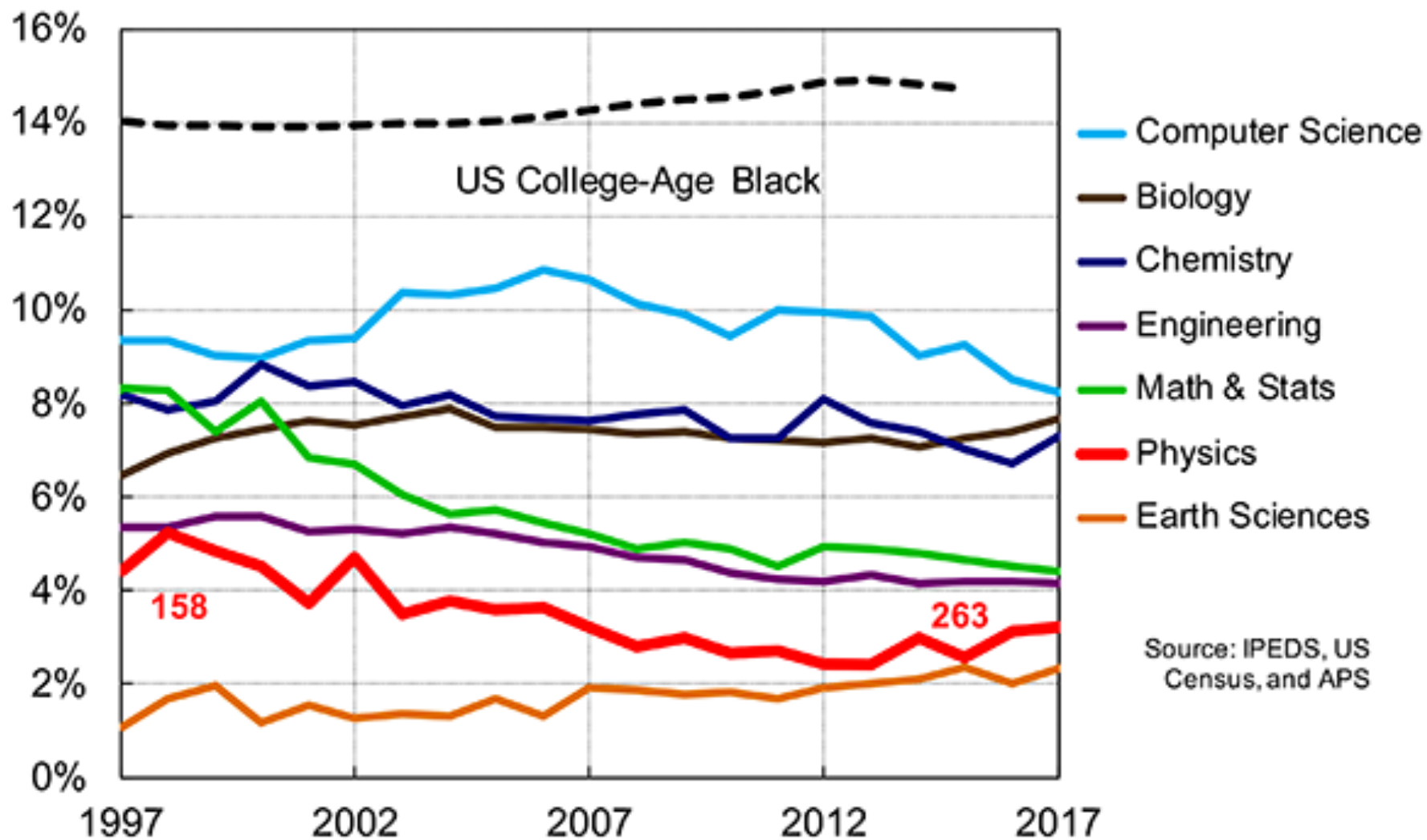
**Equity Vs. Excellence: A False Dichotomy In Science And Society**  
*The Scientist*, Vol:9, #14, pg.12 , July 10, 1995

**On the Universality of Creativity in the Arts and Sciences**  
*Beyond Two Cultures: The Sciences as Liberal Arts*, 2005

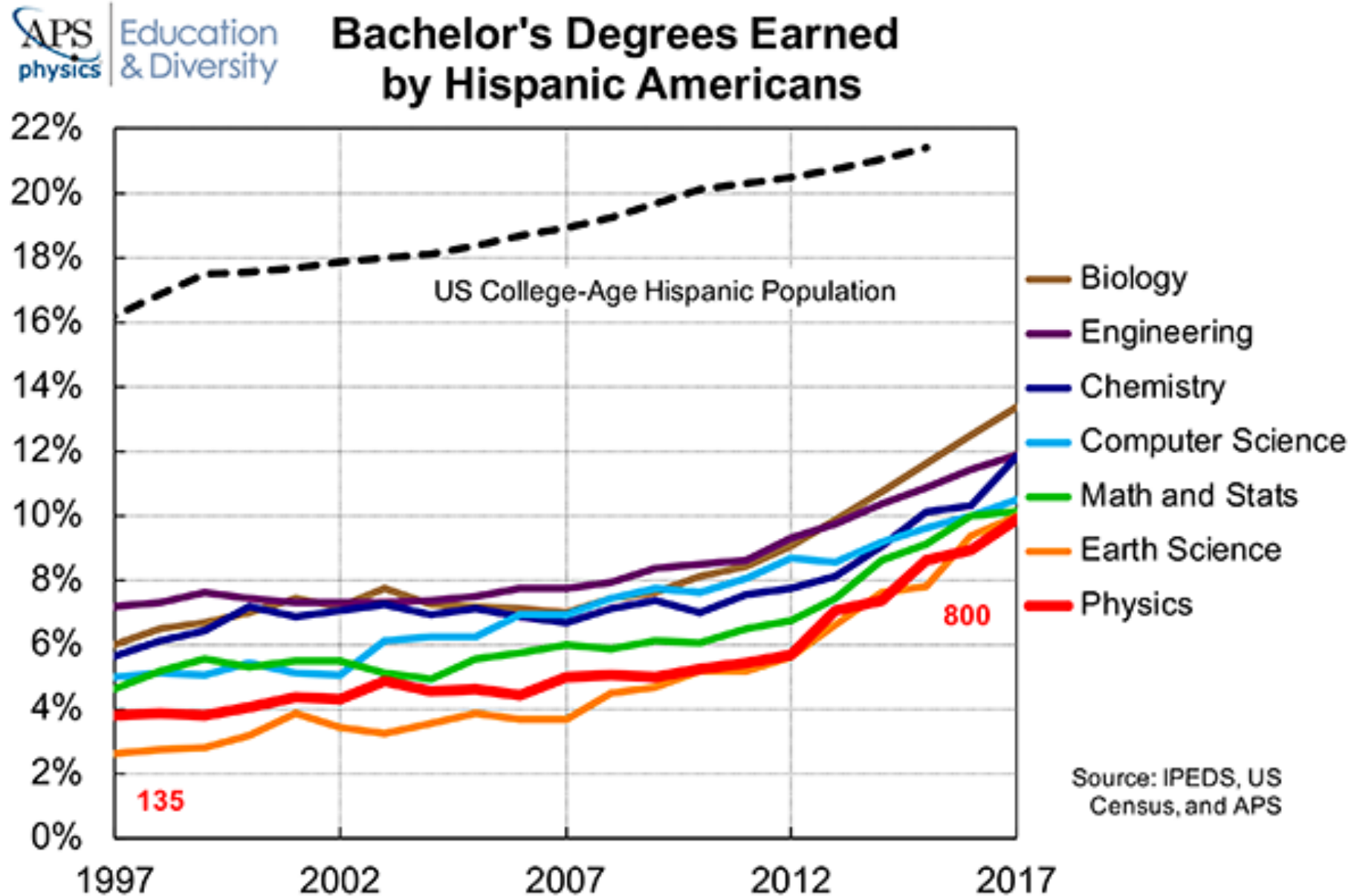
**Science, Irrationality, & Innovation**  
Kean Review, 2008

## Some statistics...

### Bachelor's Degrees Earned by African Americans



## Some statistics...

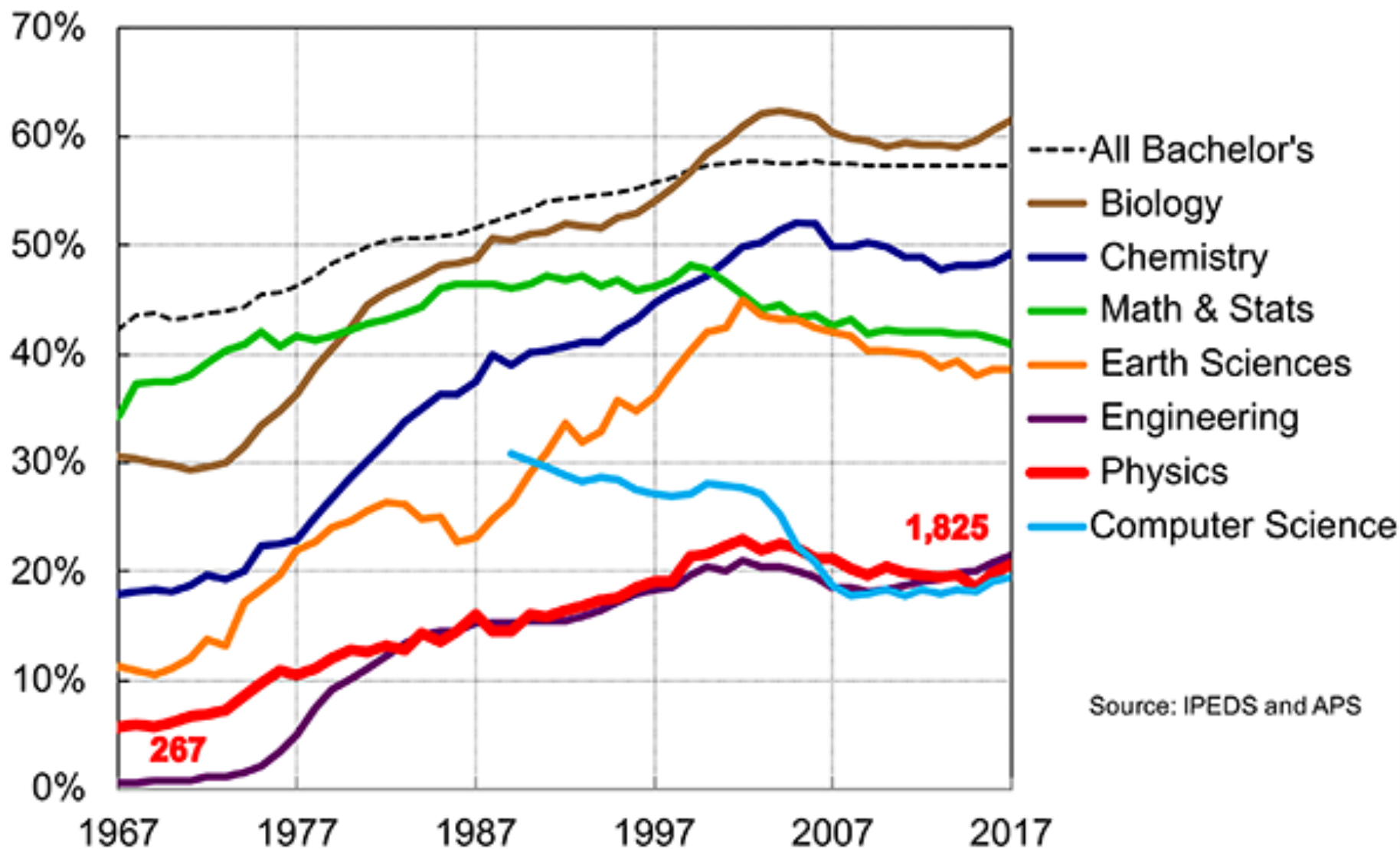


## Some statistics...



Education & Diversity

### Bachelor's Degrees Earned by Women



## Some statistics...

Coworkers make comments that seem to indicate a lack of awareness of LGBT issues



Employees are expected to not act too gay



There is pressure for LGBT employees to stay closeted



0%

20%

40%

60%

80%

100%

Strongly Agree

Agree

Disagree

Strongly Disagree

## The Gazette

This newsletter is produced by volunteer writers and editors and has a circulation of over 2,000 copies per issue.

Items featured in the *Gazette* include updates on CSWP and COM activities and programs, book reviews, statistical reports, and articles on programs designed to increase the participation of women and minorities in science.

Add your name to the *Gazette* mailing list, e-mail [women@aps.org](mailto:women@aps.org)

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## Creating a Shared Vocabulary: Intersectionality

Chanda Prescod-Weinstein

Histories of intersectionality as a concept vary, and at the same time I believe it's impossible to grapple with its meaning without knowing some version of the history. Today "intersectionality" is a word that represents contested ground both within and outside of academia. Long diatribes about its dangers appear in popular magazines; white women scholars declare themselves to be "intersectional feminists" in their Twitter bios; and universities proclaim their commitment to "intersectional diversity." For those of us who are steeped in the history of Black feminist thought, these adaptations are sometimes thrilling and sometimes infuriating. It depends on who you ask: we are not a monolith. Even the question of whether intersectionality is the property of Black feminist thought is a matter of debate – just this year Jennifer Nash published an entire book on what she calls "the intersectionality wars."

To begin: the word itself was introduced into academic literature by legal scholar Kimberlé Crenshaw in two papers published in 1989 and 1991. The first paper explains the unique social location of Black women in class action civil rights law suits, where a group of members of a class – for example women, or Black people – may be suing under civil rights law. In such cases, individual members of the group are selected as representatives. It is here that Crenshaw delineates the limbo that Black women are permanently resigned to: through repeated case examples, she shows that Black women are rejected as class representatives in cases focused on gender discrimination because as Black women they are seen as not representing "women" as a whole, while in cases focused on anti-Black racism, they are seen as not representing "Black people" because they are women. Crenshaw calls the permanent limbo introduced by these overlapping forms of subordination – the combination of sexism and racism – "intersectionality." Importantly, *intersectionality* as a concept is not a reference to the existence of Black women, but rather the multiplying oppressions under which we have been forced to legally exist. In her 1991 follow-up, Crenshaw extends this reasoning to the lives of other women of color, with a specific focus on how intersectionality impacts (poor) women of color



Chanda Prescod-Weinstein

seeking refuge from domestic violence.

Crenshaw was hardly the first Black woman to introduce concepts of overlapping oppressions into social or academic discourse. In between the two years during which Crenshaw published her papers, Patricia Hill Collins published *Black Feminist Thought*, which introduced the *matrix of domination*. This sociological paradigm is a framework for analyzing Black women's experiences by considering how different forms of oppression – racism, sexism, and classism – are connected and work together to shape Black women's lives. Collins and Crenshaw are both preceded by articulations



## APS National Mentoring Community (NMC) Program

Goal: To facilitate and support mentoring relationships between African American, Hispanic American, and Native American undergraduate physics students and local physics mentors.

- BENEFITS for MENTORS:
  - Help address the significant disparity in educational achievement for underrepresented minority students
  - Access to educational and career resources, information, and opportunities gathered by APS
  - Available travel support to attend NMC-sponsored events
  - National level support and recognition of the importance of mentoring as a critical component in promoting student academic advancement
  - Opportunities for outstanding mentors to be recognized and honored
  - Opportunities for mentors to recognize outstanding students who have achieved notable academic or professional goals
  - Advocate for students at risk of not completing their physics degree due to financial need

## NMC BEAM Fund Program

# National Mentoring Community



Bringing  
Emergency  
Aid to  
Mentees

- Small grants to NMC Mentees who are paired with an NMC Mentor (\$1,500 maximum lifetime limit)
- *Made possible, in part, with generous support from the Kenton and Amy Brown Fund of the Winston-Salem Foundation*
- For when an undergraduate student's experience when an unforeseen financial emergency threatens their ability to continue their studies

## APS National Mentoring Community (NMC) Program

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- BENEFITS for MENTEES:
  - Free APS membership for the first year
    - A monthly subscription to *Physics Today*
    - Special programming for physics undergraduates at APS meetings
    - A monthly subscription to Vector, an e-newsletter specifically for undergraduates
  - Access to educational and career resources, information, and opportunities gathered by APS
  - Available travel support to attend NMC-sponsored events
  - Eligibility for the BEAM fund

# APS National Mentoring Community (NMC) Program

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## RESOURCES:

### National Mentoring Community

Supporting Diversity in Undergrad Physics

Home Mentors Mentees Conference BEAM Fund Resources




#### Mentor Resource Library

The NMC Resource Library is your source for evidence-based resources to help you navigate the world of mentoring undergrads.

Suggestions for the Resource Library? Email NMC at [nmc@aps.org](mailto:nmc@aps.org).

#### Webinars

Led by Dr. Christine Pfund of the Center for the Improvement of Mentored Experiences in Research ([CIMER](#))



**Optimizing Mentoring Relationships: Assessing Understanding, Equity and Inclusion, Aligning Expectations**  
► [Webinar slides](#)

**Fostering Independence with Growth Mindset and Mental Health (March 27, 2018)**  
► [Webinar Slides](#)

**Introduction to the Science of Mentorship, and Giving Feedback: Effective Communication and Building Self-Efficacy (February 27, 2018)**  
► [Webinar Slides](#)

#### Resources by Topic

##### Growth Mindset

- [Fixed vs Growth Mindset](#)
- [Teach mentees about growth mindset and the importance of having a growth mindset in graduate school](#)

##### Mental Health and Wellness

- [Evidence for a Mental Health Crisis in Graduate Education](#)
- [College and Your Mental Health](#)

##### Building Mentor-Mentee Relationships

- [How to build relationships with mentees](#)
- [Communications](#)

##### Mentorship Contracts

- [Mentoring Contract Examples](#)
- [Adapted Mentee Contract for Entering Research](#)

##### Independent Development Plan

- [Independent Development Plan \(IDP\) for Undergraduate Researchers](#)
- [Self-efficacy](#)

# APS National Mentoring Community (NMC) Program

Goal: To facilitate and support mentoring relationships between African American, Hispanic American, and Native American undergraduate physics students and local physics mentors.

# APS National Mentoring Community Conference 2020

In Partnership with  
National Society of Black Physicists  
and National Society of Hispanic Physicists

[About](#) [Registration](#) [Abstracts](#) [Schedule](#) [Speakers](#) [Hotel](#) [Travel](#)

## APS National Mentoring Community Conference 2020

In partnership with National Society of Black Physicists and National Society of Hispanic Physicists

February 6 - 8, 2020  
University of Central Florida  
[Fairwinds Alumni Center](#)

The APS National Mentoring Community (NMC) Conference is organized in partnership with the National Society for Black Physicists and the National Society for Hispanic Physicists. The NMC conference will include:

- Plenary talks on mentoring and physics research
- Panels and workshops on mentoring best practices
- Career workshops and panels
- Undergraduate research experiences and graduate schools fair
- Networking opportunities
- And much more

Travel funding and registration discounts are offered to registered NMC Mentors and Mentees. To register as an NMC mentor or mentee, visit the [NMC homepage](#).

All NMC Conference participants are expected to abide by the [Code of Conduct for APS Meetings](#).



2018 Bridge Program/NMC Conference

## The 2020 NMC Conference Sponsors



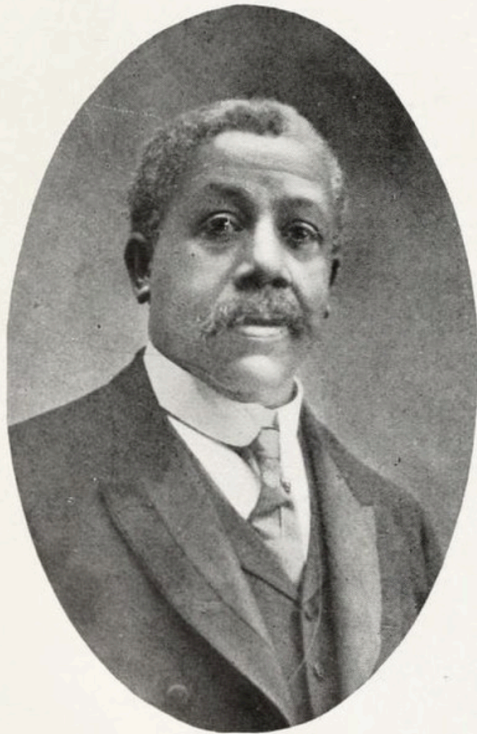
Alfred P. Sloan  
FOUNDATION



The American Physical Society [National Mentoring Community \(NMC\)](#) is an effort by APS to increase the number of physics degrees earned by underrepresented minority students, defined by the project as African Americans, Hispanic Americans, and Native Americans.

## Internships, Awards & Fellowships

**Edward Alexander Bouchet**



Bouchet c. 1912

- Research Internship:
  - APS/IBM Research Internship for Underrepresented Minority Students
  - List of REU and other lab internships
- Awards and Fellowship:
  - LeRoy Apker Undergraduate Physics Achievement
  - APS Fellowship Program
  - Edward A. Bouchet Award  
The award promotes the participation of underrepresented minorities in physics by identifying and recognizing a distinguished minority physicist who has made significant contributions to physics research

### 2020 Recipient

[Nadya Mason](#)

University of Illinois Urbana-Champaign



## Site Visit Program

Improving the climate in physics departments for underrepresented minorities and women

The Committee on the Status of Women in Physics (CSWP) sponsors site visits programs, and there is an option to jointly host a site visit with the Committee on Minorities (COM).

### Goals:

- Provide an outside appraisal of the environment experienced by women and minorities within the department or lab
- Provide suggestions to leadership for interventions or changes that can address practices that might limit or reduce participation by underrepresented groups

## Site Visit Program

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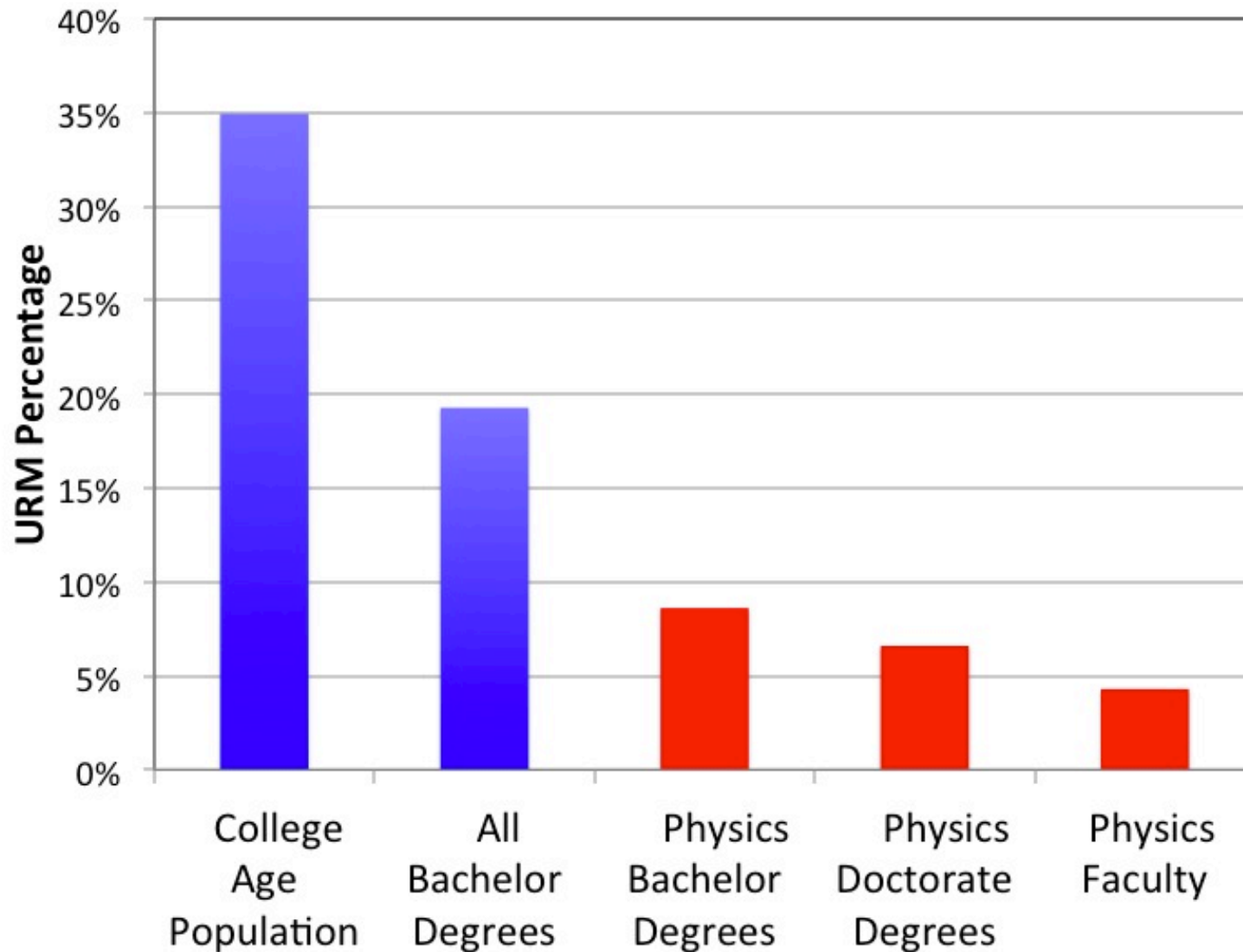
### Procedure:

- Department chair or lab director requests CSWP/COM joint visit & APS assembles a team
- Students and employees will be asked to complete a confidential survey to help the team prepare
- During the visit, the team will request meetings with various groups
- After the visit, the team will conduct an exit interview with the department chair to render a preliminary report of its findings. A confidential written report is prepared by the team offering practical suggestions on improving the climate for minorities or women



## MSI Travel Award

- Travel support (\$495) for undergraduate students who are planning to attend the APS March Meeting. Because the organizers want to prioritize inclusion of HBCU/MSI students, they are increasing the amount of the travel award (\$1000) for current undergraduates at an HBCU/MSI.
- Recruiting applicants!
- Please contact Midhat Farooq ([farooq@aps.org](mailto:farooq@aps.org)), the program manager organizing this event.



Underrepresented minorities (URMs) now make up about a third of the college-age U.S. citizens

12.4 % of Physics Bachelor's are earned by underrepresented minority (URM) students

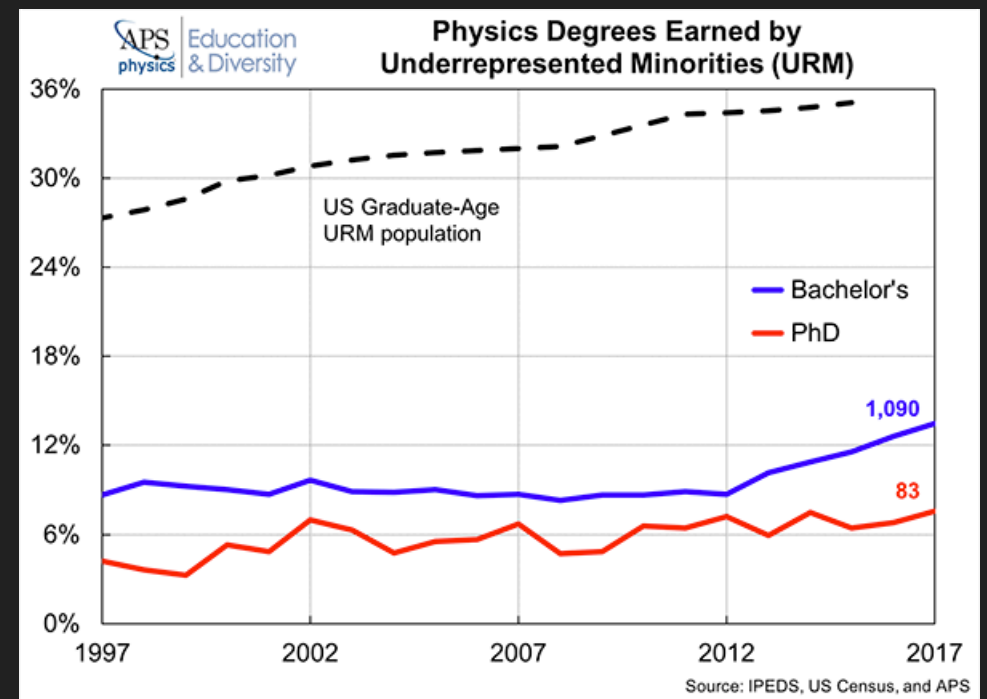
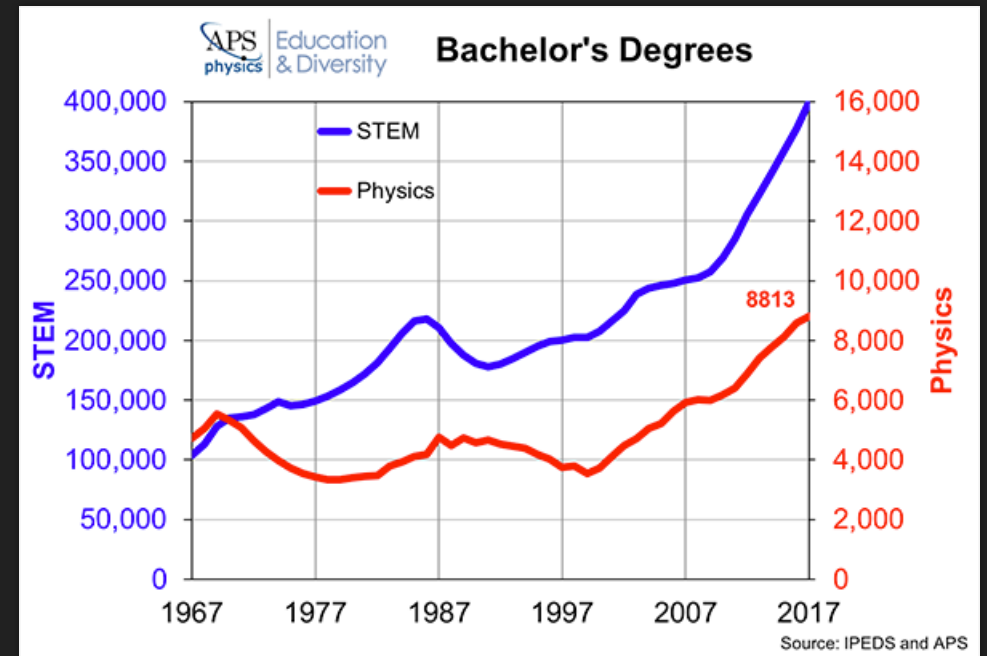
6% of Physics Doctorates are granted to URMs



The APS Bridge Program is an effort to increase the number of physics PhDs awarded to underrepresented minority (URM) students

12.4 % of Physics Bachelor's are earned by URM students

Goal: Increase the fraction of physics PhDs awarded to URM students to match the fraction of physics Bachelor's degrees granted to these groups





The APS Bridge Program is appropriate for undergraduate physics students who:

1. will contribute to the diversity of physics
2. are interested in research
3. would benefit from additional preparation before applying to physics PhD programs

## ○ Eligibility

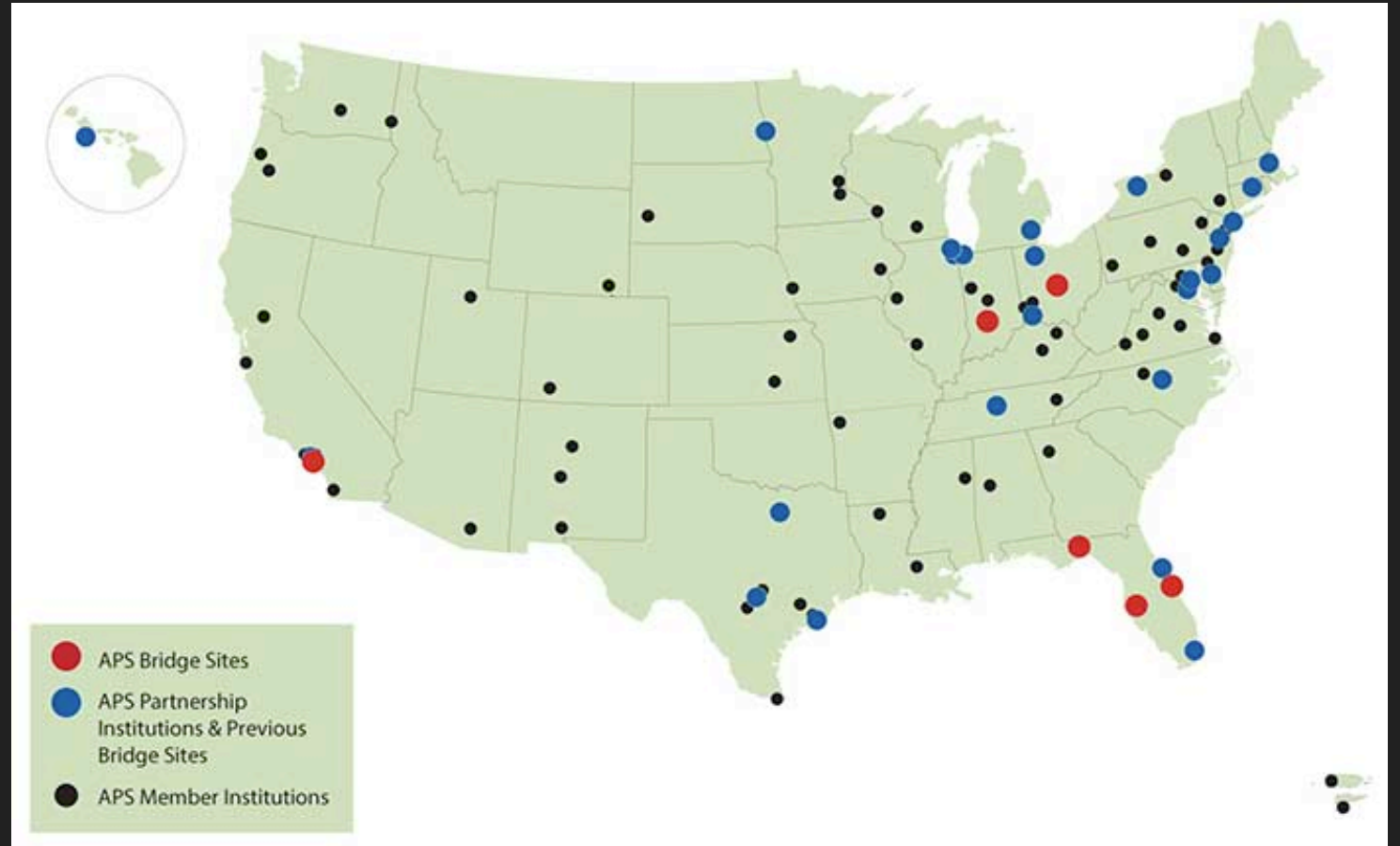
- Have a bachelor's degree in physics or closely related discipline
- Be a U.S. citizen or permanent resident (or be a part of the DACA program)
- Did not apply to a physics graduate program; or
- Applied to one or more physics graduate programs, but were not accepted by any program

## ○ Important dates

- December, application opens
- March, application closes
- April 15 to May, review of applications and students will be contacted by sites



Bridge Sites and Partnership Institutions are departments that have demonstrated that they will provide a supportive, bridge-like treatment of students



6 APS Bridge Sites and 39 APS Partnership Institutions



# IGEN

## Inclusive Graduate Education Network

[Home](#)[About IGEN](#)[People](#)[Presentations & Publications](#)[2019 Conference](#)

## The Inclusive Graduate Education Network (IGEN)

The NSF INCLUDES Alliance: IGEN (Inclusive Graduate Education Network) is a partnership of over 30 societies, institutions, organizations, corporations, and national laboratories poised to lead a paradigm shift in increasing the participation of underrepresented racial and ethnic minority (UREM) students who enter graduate or doctorate level programs in the physical sciences. Its charge is to match the advanced degree participation rates to those of undergraduate student percentages and eliminate this disparity while increasing diversity in the reserve of future scientists.

This work is done as part of the National Science Foundation INCLUDES program.

**APPLY NOW** to IGEN partner graduate programs using the free IGEN Bridge Application

APPLICATION DEADLINE: MARCH 30, 2020



# THANK YOU!

