

DEI  
in  
Astronomy



# NATIONAL STATISTICS OF US DEMOGRAPHICS 2019

Black	13.4%
Latinx	18.5%
American Indian or Alaska Native	1.3%
Asian	5.9%
Women	50.8%

Black

Latin

Ame

Nati

Asia

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NEWS • 02 OCTOBER 2018

# Physics Nobel won by laser wizardry — laureates include first woman in 55 years

*Donna Strickland, Gérard Mourou and Arthur Ashkin share the prize for inventing intense beams that can capture fast processes and manipulate tiny objects.*

Davide Castelvecchi, Elizabeth Gibney & Matthew Warren



Arthur Ashkin, Donna Strickland and Gérard Mourou. L-R: Nokia Bell Labs; Univ. Waterloo; CTK/Alamy

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#### RELATED ARTICLES

What the Nobels are — and aren't — doing to encourage diversity



Close but no Nobel: the scientists who never won



Where Nobel winners get their start





## diversity and inclusion



**DIVERSITY AND INCLUSION | NEWS**

### Thousands of physicists sign letter condemning 'disgraceful' Alessandro Strumia gender talk

08 Oct 2018 [Michael Banks](#)



Delegates at the first workshop on high-energy theory and gender held at CERN last month. (Courtesy: CERN)

# Gender matters

Evidence shows that patterns of inequity in physics drive talented women out of the field. Here's what physicists can do to overcome them.



**Jennifer Blue** is an associate professor of physics at Miami University in Oxford, Ohio.



**Adrienne Traxler** is an assistant professor of physics at Wright State University in Dayton, Ohio. **Ximena Cid** is an assistant professor of physics at California State University, Dominguez Hills, in Carson.



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Physics Today **71**, 3, 40 (2018); <https://doi.org/10.1063/PT.3.3870>

CONSENSUS STUDY REPORT

# *Sexual Harassment of Women*

Climate, Culture, and  
Consequences in  
Academic Sciences, Engineering,  
and Medicine



# PHYSICS TODAY

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DOI:10.1063/PT.6.2.20180615a

15 Jun 2018 in [Politics & Policy](#)

## Culture change is key to reducing sexual harassment in academia, report says

Increasing diversity and avoiding students' dependence on a single adviser are among the recommendations to improve what's currently a toxic work environment.

Toni Feder

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Sexual harassment is pushing researchers out of science and medicine, says a [new report](#) by the National Academies of Sciences, Engineering, and Medicine, and combating the problem

## EQUALITY



The assumption is that everyone benefits from the same supports. This is equal treatment.

## EQUITY



Everyone gets the supports they need (this is the concept of "affirmative action"), thus producing equity.

## INCLUSION



All 3 can see the game without supports or accommodations because the cause(s) of the inequity was addressed. The systemic barrier has been removed.





**TEAM+UP**

## 1. BELONGING:

Fostering a sense of belonging is essential for Black student persistence and success.

“The climate of the Physics department is very non-inclusive of people of colour....They would say [things] like ‘You should change your major.’”



**TEAM+UP**

## 2. PHYSICS IDENTITY:

To persist, Black students must perceive themselves, and be perceived by others, as future physicists and astronomers

“I’ve had two professors ask me why I’m in physics... Like, ‘Why are you still a physics major? Why do you want to do this?’... It’s like, ‘Well, I’m here because this is what I want to do.’ They’re like, ‘You’re making your life difficult doing all this.’ It’s very discouraging when you hear [this].”



**TEAM+UP**

### **3. ACADEMIC SUPPORT:**

Effective teaching and a strengths-based approach to academic support are necessary for Black student retention and success

“I think I encountered my best instructors when I took quantum, and those were two of the hardest semesters ever, but they both had open doors at the time and were really open ... I didn't feel they expected less of me or didn't feel I belonged in the class because I was the only black woman, black person, in the classroom”



**TEAM+UP**

#### **4. PERSONAL SUPPORT:**

Many African American students need support to offset financial burdens and stress.

“I am paying the cost of college on my own, so that is continuous financial stress. Working 20+ hours a week, including overnights. Continuous and worsening mental health issues. Personal tragedies. Living at home in a non-ideal situation. Lack of support from the college [and] department. Administrative issues with the college...”



**TEAM+UP**

## **5. LEADERSHIP & STRUCTURES:**

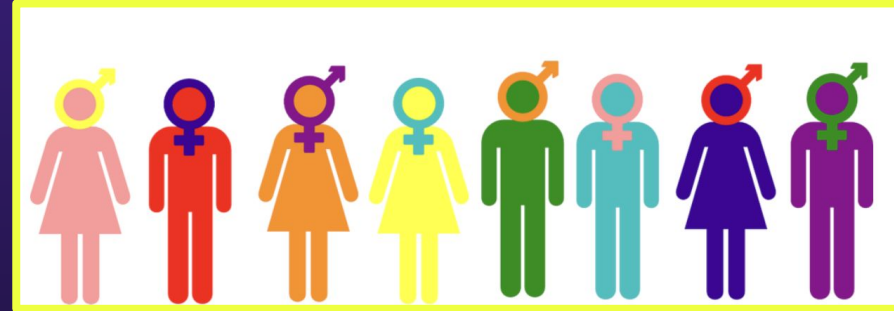
For sustainability, academic and disciplinary leaders must prioritize creating environments, policies, and structures that maximize Black student success.

Department chairs and officers should set norms and values of inclusion and belonging; recruit, develop, and support a diverse faculty; and oversee structures, policies, and practices that enhance the success of African American students.

**Black students need specific supportive environments to persist in physics and astronomy, but they aren't broken, and they don't need fixing.**

# OTHER ASPECTS OF DIVERSITY

- LGBTQ+ Representation
- First generation students
- Low income students
- Students with families to support
- Students with disabilities
- International students



# Women in Astronomy Resources

## Reports and Articles:

- [Gender Bias in Academe: An Annotated Bibliography of Important Recent Studies](#)
- [10 Rules to Achieve Conference Speaker Gender Balance](#)
- [Nature Astronomy Focus: Gender Equity in Astronomy](#) Articles and data on gender equity in astronomy
- [Women in Physics and Astronomy \(American Institute of Physics 2019 Report\)](#)
- [Data to Improve the Situation of Women and Minorities in Physics and Astronomy](#)
- [Inclusive Excellence \(Musings on Empowering Women in STEM\)](#)

## Other Resources:

- [APS Effective Practices for Recruiting and Retaining Women in Physics](#)
- [CUWiP - Conferences for Undergraduate Women in Physics](#)
- [CSMA - AAS Committee on the Status of Women in Astronomy](#)
- [CSWP - AIP Committee on the Status of Women in Physics](#)

# LGBTQ+ Resources

- [LGBT+Physicists](#): Serving sexual and gender minorities in physics
- [LGBT Climate in Physics](#): Building an Inclusive Community
- [LGBT+ Inclusivity in Physics and Astronomy](#): A Best Practices Guide
- [Outlist](#): A list of LGBTQIA+ members of the astronomical community
- [LGBTQ+ STEM](#): Improving LGBTQ+ visibility in Science, Technology, Engineering, and Mathematics



# BIPOC Resources

- [White Awareness](#) An introduction to the privileges of being white
- [Allyship Guide](#) A google doc guide to allyship in the black lives matter fight
- [An Anti-Racism Starter Kit](#)
- [Save The Tears: A White Woman's Guide: A guide aimed at women for how to make meaningful change](#)
- [No White Saviors](#) Do you know what this is? Are you aware white people tend to do this? No? Read!

## Resources for Academia

- [The TEAM-UP Task Force Report: The AIP National Task force to Elevate African American Representation in Undergraduate Physics & Astronomy](#)
- [Role of Academia in Combatting Structural Racism in the United States: From The Association for Prevention Teaching and Research](#)
- [Advice on Advising: How to Mentor Minority Students: The Chronicle of Higher Education Article](#)
- [UT Dynamics of Diversity Courses](#)
- [Astronomy in Color Blog](#)
- [More Ally Resources: Including STEM and academic specific sites, organizations to support, blogs to read, people on twitter to learn from and amplify, and hashtags to follow](#)
- [From Gate Keeping to Engagement: A Multicontextual, Mixed Method Study of Student Academic Engagement in Introductory STEM Course](#)
- [Black in Astro: An astrobites writeup of how we can support black astronomers](#)
- [From Equity to Anti-Racism in Education 2019 SXSW Talks](#)
- [Black Astronomers You Should Know: Twitter post from Ashley Lindalía @That\\_Astro\\_Chic](#)
- [4 Ways Scientists and Academics Can Effectively Combat Racism: Forbes article, June 2nd 2020](#)
- [Designing for Institutional Transformation: 6 Principles for Department-Level Interventions: Physical Review Physics Education Research article, 2019](#)
- [Maximizing American Talent by Advancing Women in Color in Academia: National Academies of Sciences, Engineering, & Medicine conference proceedings, 2013](#)
- [Encouraged or Weeded Out: Perspectives of Students of Color in the STEM Disciplines on Faculty Interactions: Journal of College Student Development article, 2017](#)
- [National Mentoring Community: Supporting Diversity in Undergrad Physics](#)
- [Coalition for Next Generation Life Science: Mission of data collection and transparency of demographics in universities](#)

# Additional Resources

- [Inclusive Astronomy \(IAU100 Theme\)](#) IAU resources related to equity and diversity in astronomy
- [A Parable of Polygons](#) An interactive illustration of how subtle biases can create a segregated society
- [Recommendation letter gender bias calculator](#) A tool to analyze the language in letters of recommendation for gender biases
- [STEM Inclusion Study](#)
- [AAS Task Force on Diversity and Inclusion in Astronomy Graduate Education](#)
- [Towards a More Inclusive Astronomy](#)
- [Twitter Diversity Journal Club](#)
- [OSU Diversity Journal Club](#)
- [Test your implicit bias](#)
- [OSU Inclusive Teaching](#)
- [International Society of Muslim Women in Science](#)
- [Making work better with Google's re:Work](#)