Diversity & Inclusion in Physics

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CONTEXT
Why are we here?
The number of women receiving physics PhDs and bachelor's degrees are both at all-time highs, 365 and 1,550 respectively. The percentage of physics PhDs awarded to women has been increasing, whereas the percentage of physics bachelors awarded to women has been declining in recent years.
Number of Hispanic and African-American female PhDs in Physics, 1979-2006.

**African-American**
- 1979 - 1985: 2
- 1992 - 1986: 3
- 1999 - 1993: 16
- 2000 - 2006: 21

**Hispanic-American**
- 1979 - 1985: 7
- 1992 - 1986: 16
- 1999 - 1993: 21
- 2000 - 2006: 18

AIP Statistical Research Center compiled from data collected by the National Science Foundation.
Figure 2

Conclusion

This report has examined the representation of underrepresented minority faculty members in physics and astronomy departments. Documenting the low number of minority faculty members is important, but does not present the whole picture. Counting numbers of people cannot tell us about the everyday experiences and workplace environments of academic physicists. It also does not tell us about possible inequities in salaries and in promotion and tenure rates. Representation of URMs on physics and astronomy faculties could increase in the future, but URMs could still experience less than desirable situations on the job. Focusing on representation alone also does not tell us reasons for any inequities that we may observe. More data are needed about the working lives of URM faculty members in order to document additional areas of needed change.

www.aip.org/statistics
Our beliefs about pre-requisites for success are part of the problem:
Our beliefs about pre-requisites for success are part of the problem:

Greater prevalence of belief that special unteachable talent/brilliance is required for success

% US PhDs in field who are women

Greater prevalence of belief that special unteachable talent/brilliance is required for success
The Problem With the GRE

The exam “is a proxy for asking ‘Are you rich?’ ‘Are you white?’ ‘Are you male?’”

VICTORIA CLAYTON | MAR 1, 2016 | EDUCATION
Why we are here.
EXAMPLE I:

ICTP
Collaborating for 30 years

Dean Shobhana Narasimhan (JNCASR, Bangalore, India)
Dean Elizabeth H. Simmons (Michigan State University, U.S.A.)
Career Development Workshop for Women in Physics

12 - 16 October 2015

Miramare, Trieste - Italy
### Immediately Relevant Topics

<table>
<thead>
<tr>
<th>Specific Skills</th>
<th>Career Pathways</th>
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<tr>
<td>CV preparation</td>
<td>Picking a research problem</td>
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<td>Publishing tips</td>
<td>Transitioning from academe to industry</td>
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<td>Negotiation</td>
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<td>Teaching strategies</td>
<td>Work-Life issues</td>
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<td>Writing methods</td>
<td>The culture of physics</td>
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<td>Funding opportunities</td>
<td>Careers in different countries</td>
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Varied Formats

Lecture, demonstration, panel, Workshop, team assignments, Theatre-based, posters, discussion
Diversity of Speakers

Physics sub-field, Country of origin, Career stage, Gender, ...

...
Impact
based on survey and post-workshop communications

- Sense of community
- An enduring network
- Inspiration to persevere
- New directly useful career skills
- Perspective on global context of women physicists
- Plans to share what was learned back at home institution
- Plans to organize a similar conference in home country
- Request for future workshops to benefit more women physicists
EXAMPLE II: Supporting LGBT Physicists in the American Physical Society
Welcome to the first website for lesbian, gay, bisexual, transgender, intersex, queer, questioning, asexual, pansexual, not-cisgender and not-straight (as well as friendly cis and straight) physicists. This resource website has come out of a need for resources for gender and sexual minority (GSM) physicists. We serve as a networking resource for young GSM physicists and students to find mentors, a place to find resources for laboratories and universities to make their physics departments more GSM friendly, as well as a hosting of information of get togethers of GSM physicists and allies.

Along with the AAS Working Group on LGTBIQ Equality, have recently updated our Best Practices Guide for physics and astronomy departments! It includes a list of suggestions that your department can enact to make it more inclusive and welcoming towards LGBT+ students and faculty.

If you would like to join our mailing list, please join the the Google Group below. If you are a physicist who is either an out GSM or ally, please consider e-mailing us so that we can add you our OutList, which will help other physicists network with you. If you would like to offer your skills and talents towards this cause, please contact us.

We look forward to meeting you and continuing to build this community!

Subscribe to LGBT+physicists
Email:  
[Subscribe]  
Visit this group

E-mail us at info@lgbtphysicists.org
Charge to APS Ad-Hoc Committee on LGBT Issues

“...advise the APS on the current status of LGBT issues in physics, provide recommendations for greater inclusion, and engage physicists in laying the foundation for a more inclusive physics community.”

Kate Kirby,
Executive Officer of the APS
Information Gathering

Focus Groups at APS Meetings
2014 and 2015 at both March and April Meetings

Climate Survey of LGBT Physicists (May-June 2015)
Surveyed 324 individuals through snowball sampling.
Follow up interviews with 5 survey participants.

APS Membership Survey Question (October 2015)
2,596 responses of which 2.5% identified as LGBT and 14%
preferred not to provide this information.
Notably, 16.3% of those 18-25 identified as LGBT.
APS Ad-Hoc Committee on LGBT Issues

Michael Falk (chair)
Johns Hopkins University

Timothy Atherton
Tufts University

Ramón Barthelemy
APS/AIP Sponsored AAAS Science and Technology Fellow

Wouter Deconinck
College of William and Mary

Savannah Garmon
Osaka Prefecture University

Elena Long
University of New Hampshire

Elizabeth Simmons
Michigan State University

Kyle Reeves
University of North Carolina

Monica Plisch
Arlene Modeste Knowles
APS Staff Liaisons

Go.aps.org/lgbtphysics
Background and Findings 2

The overall climate experienced by LGBT physicists was highly variable.

[Bar chart showing discomfort levels for LGBT men, LGBT women, and gender non-conforming individuals.]

- LGBT men: 15% uncomfortable
- LGBT women: 25% uncomfortable
- Gender non-conforming: 30% uncomfortable

[Circle chart showing harassment observed by LGBT physicists.]

- LGBT men: 31% observed harassment
- LGBT women: 44% observed harassment
- Gender non-conforming: 67% observed harassment
In many physics environments, social norms establish expectations of closeted behavior.

“In the last lab I worked with, I was afraid to even mention that I might be gay. They were all very traditional sort of people.”

“Because I am in the closet about my identity, and I pass just fine as a result, I am actually quite comfortable in these areas. What people don’t know can’t hurt me!”

“I don’t know of any other ‘out’ physics grad students. I know that a lot of them are very conservative. And I feel like they respect me right now. But I don’t know that they would respect me if I came out to them.”
Many LGBT physicists are at risk for leaving their workplace or school.

36% Considered leaving their workplace or school in the prior year

“Just you not being able to figure me out doesn’t really need to qualify whether I can be educated here."

“... And the outlook for me in terms of getting a Ph.D., which is what I’m kind of debating whether or not I want to do, is really contingent upon whether or not I have the right type of support system around me to be able to facilitate my success.”
Recommendation 6
Support the establishment of a Forum on Diversity and Inclusion.

APS should support the establishment of a new APS Forum that works to build a more inclusive, diverse and equitable society for all physicists, including those who identify as LGBT, women, racial or ethnic minorities, persons with disabilities and others.

APS Forum on Diversity and Inclusion

Physicists of Color  Women Physicists  LGBT Physicists  Physicists with disabilities

Update: A proposal and bylaws for the Forum are in the works!
CHARGE & RESOURCES
How all Physicists can Promote Diversity & Inclusion

• Recognize these issues are worthy of discussion and effort within the physics community
• Seek and support physics talent, potential, and accomplishment in the broadest range of individuals
• Stand up for colleagues who work on these issues
• Consciously examine the most reliable evidence when making decisions, to minimize the impact of implicit biases
• Listen closely to the lived experiences of other physicists
• Join the efforts to establish an APS Forum on Diversity & Inclusion, to help us all recruit, train, and keep the best physicists in our field
How all Physicists can Promote Diversity & Inclusion at DPF2017

Today and tomorrow: participate in the parallel sessions on diversity, inclusion & education to find collaborators and discover useful strategies

“Innovations in Science Communication”
(10:45 – 12:15 today)

“Education in the Digital Age”
(13:30 – 15:15 today)

“Equity, Inclusivity, and Diversity in Science Culture”
(13:30 – 15:15 tomorrow)
Resources:

AIP Statistical Research Center:  [www.aip.org/statistics/](http://www.aip.org/statistics/)

**American Physical Society**
- C-LGBT Report:  [go.aps.org/lgbtphysics](http://go.aps.org/lgbtphysics)

**Faculty Family Friendly Edge:**  [ucfamilyedge.berkeley.edu/](http://ucfamilyedge.berkeley.edu/)

**Gender Equity Project:**  [www.hunter.cuny.edu/genderequity/](http://www.hunter.cuny.edu/genderequity/)

**Implicit Associations Test**  [https://implicit.harvard.edu/implicit/demo](https://implicit.harvard.edu/implicit/demo)

**lgbt+physicists**
- Website, with Out and Ally lists  [lgbtphysicists.org](http://lgbtphysicists.org)

**NSF ADVANCE**
- Portal Website:  [www.portal.advance.vt.edu/](http://www.portal.advance.vt.edu/)
- StratEGIC Gender Equity Toolkit:  [www.colorado.edu/eer/research/strategic.html](http://www.colorado.edu/eer/research/strategic.html)

**WISELI Guide to Inclusive Hiring:**  [http://wiseli.engr.wisc.edu/searchguidebooks.php](http://wiseli.engr.wisc.edu/searchguidebooks.php)
More Resources:

Books:
• L. Babcock and S. Laschever [negotiation], *Women Don’t Ask* and *Ask For It*
• S.E. Page [diversity and teams] *The Difference*
• C. Steele [stereotype threat] *Whistling Vivaldi*
• J. Williams & R. Dempsey [patterns of bias] *What Works for Women at Work*
• E. Ideal & R. Meharchand, eds. [women role models in STEM] *Blazing the Trail*
• T. Wilson [conscious & unconscious mental processes] *Strangers to Ourselves*

Articles:
• *Nature* special issue: Vol. 495, 7 March 2013
• *Inside Higher Ed*, column: *Mend The Gap* [E.H. Simmons]
• *Inside Higher Ed*, column: *Mentoring 101* [Kerry Ann Rockquemore]

Organizations:
• National Center for Faculty Development & Diversity [http://www.facultydiversity.org]
• MentorNet [http://mentornet.org]
• National Society of Black Physicists [http://nsbp.org]
• National Society of Hispanic Physicists [http://www.hispanicphysicists.org]
• SACNAS [http://sacnas.org]