



# LGBTQ+ Experiences in Physics

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Prof. Elena Long

A Rainbow of Dark Sectors  
Aspen Center for Physics

March 23<sup>rd</sup>, 2021



**University of  
New Hampshire**



# LGBT Climate in Physics

BUILDING AN  
INCLUSIVE  
COMMUNITY

American Physical Society  
Ad-Hoc Committee on LGBT Issues

Michael Falk (Chair)  
John 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  
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University of New Hampshire

Elizabeth Simmons  
Michigan State University

Kyle Reeves  
University of North Carolina

Monica Plisch    Arlene Modeste Knowles  
APS Staff Liaisons

2016



[go.aps.org/lgbtphysics](http://go.aps.org/lgbtphysics)

AMERICAN PHYSICAL SOCIETY

# EXPLORING THE WORKPLACE FOR LGBT+ PHYSICAL SCIENTISTS

A report by the Institute of Physics, Royal Astronomical Society  
and Royal Society of Chemistry

2019

<https://www.rsc.org/new-perspectives/talent/lgbt-report/>

**IOP**  
Institute of Physics

**ROYAL SOCIETY  
OF CHEMISTRY**



**ROYAL SOCIETY  
OF CHEMISTRY**

**IOP** Institute of Physics

SCIENCE ADVANCES | RESEARCH ARTICLE

SCIENTIFIC COMMUNITY

## Systemic inequalities for LGBTQ professionals in STEM

E. A. Cech<sup>1\*</sup> and T. J. Waidzunus<sup>2</sup>

Researchers have documented race and gender inequality in science, technology, engineering, and math (STEM) for decades. Do lesbian, gay, bisexual, transgender, and queer (LGBTQ) professionals face parallel experiences of disadvantage in STEM? Using representative survey data from 21 STEM professional societies ( $N_{\text{sample}} = 25,324$ ;  $N_{\text{LGBTQ}} = 1006$ ), this paper presents multidimensional and methodologically robust documentation of 5 dimensions of LGBTQ inequality in STEM. Controlling for variation by demographic, discipline, and job factors, LGBTQ STEM professionals were more likely to experience career limitations, harassment, and professional devaluation than their non-LGBTQ peers. They also reported more frequent health difficulties and were more likely to intend to leave STEM. These trends were similar across STEM disciplines and employment sectors. We found no differences by LGBTQ status in education level, work effort, or job commitment. These findings reveal LGBTQ status as a clear axis of inequality in STEM and motivate further research into the mechanisms producing such outcomes.

[E. A. Cech, T. J. Waidzunus, \*Science Advances\* 7, eabe0933 \(2021\)](#)

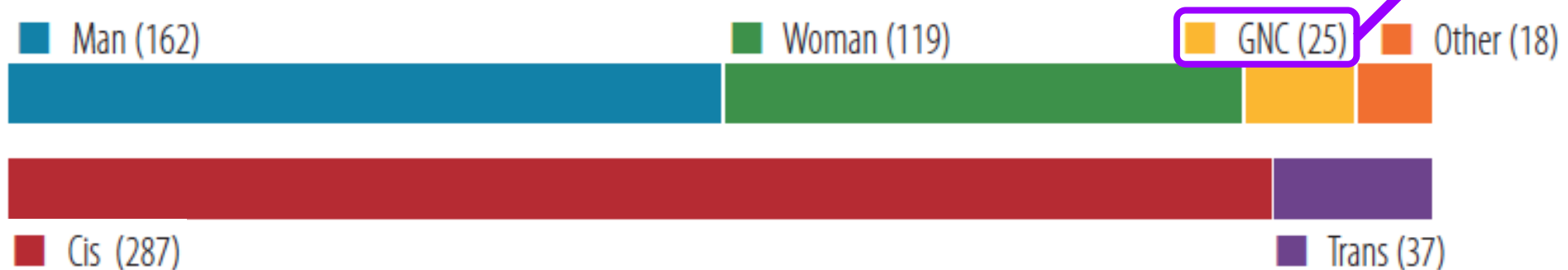
# Information Gathering

## Focus Groups at APS Meetings

- 2014 & 2015, both March & April Meetings

## Climate Survey of LGBT Physicists (May-June 2015)

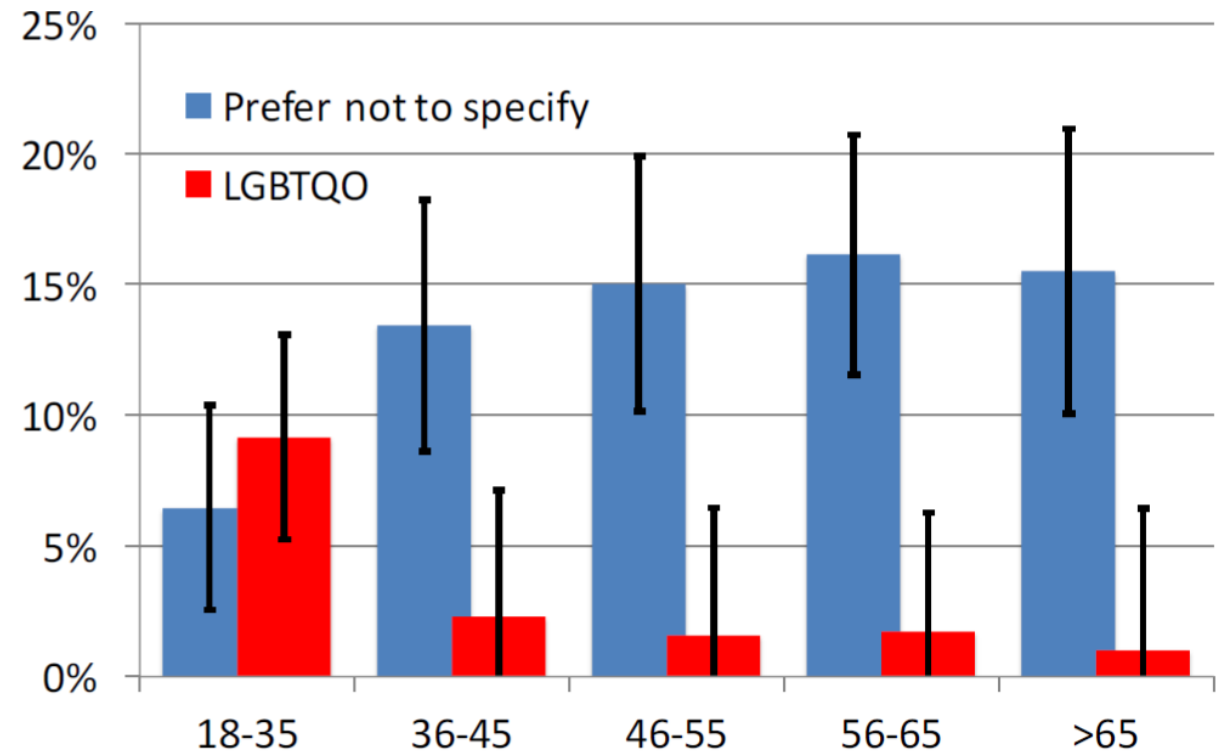
- Surveyed 324 individuals through snowball sampling
- Follow-up interviews with 5 survey participants
- Significant results found via  $\chi^2$ , t tests, principal component analysis, & binary logistic regression



# Information Gathering

## 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



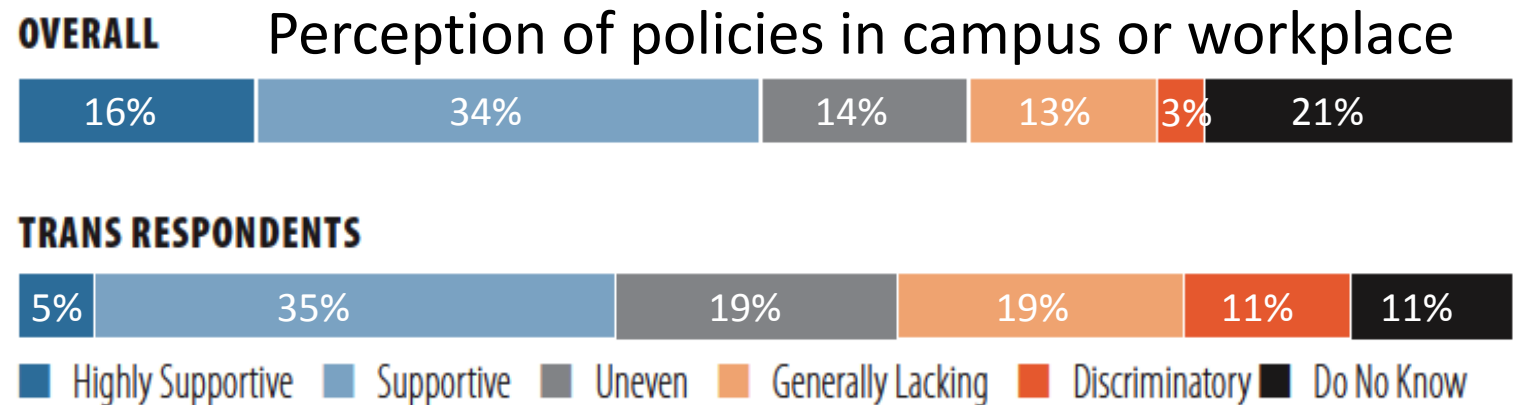
# Background and Findings 1

## LGBT physicists have faced uneven protection and support from legislation and policies.



### **BREAKING: 2021 Becomes Record Year For Anti-Transgender Legislation**

by [Wyatt Ronan](#) • March 13, 2021



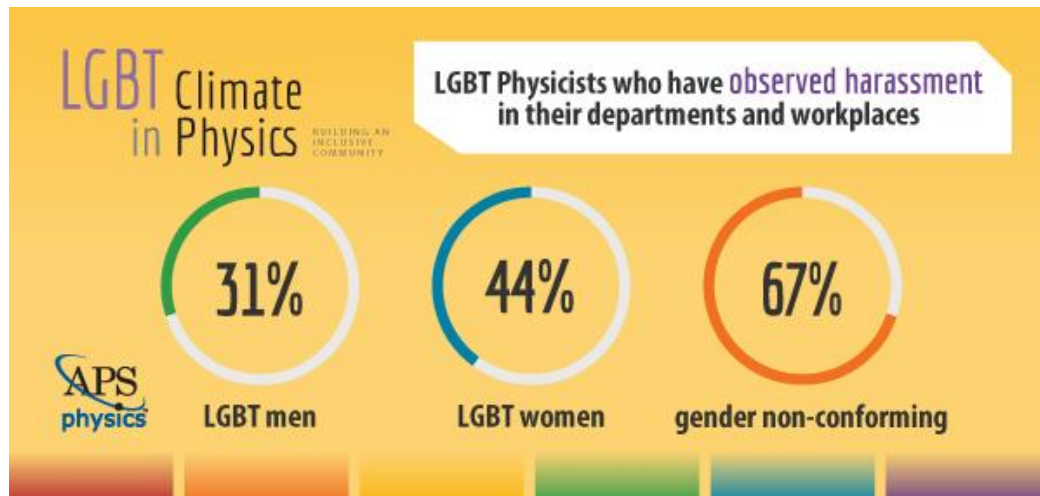
In the US, there is currently a wide-spread political effort targeting transgender people that seeks to:

- bar access to healthcare
- bar access to the use of appropriate facilities such as restrooms
- that would restrict transgender students' ability to fully participate in school
- that would allow religiously-motivated discrimination against trans people
- that would make it more difficult for trans people to obtain identification documents with their name and gender

## Background and Findings 2

The overall climate experience by LGBT physicists was highly variable.

*[I was] mocked and openly laughed at by a group of colleagues in a corridor of my department as a result of my gender expression*



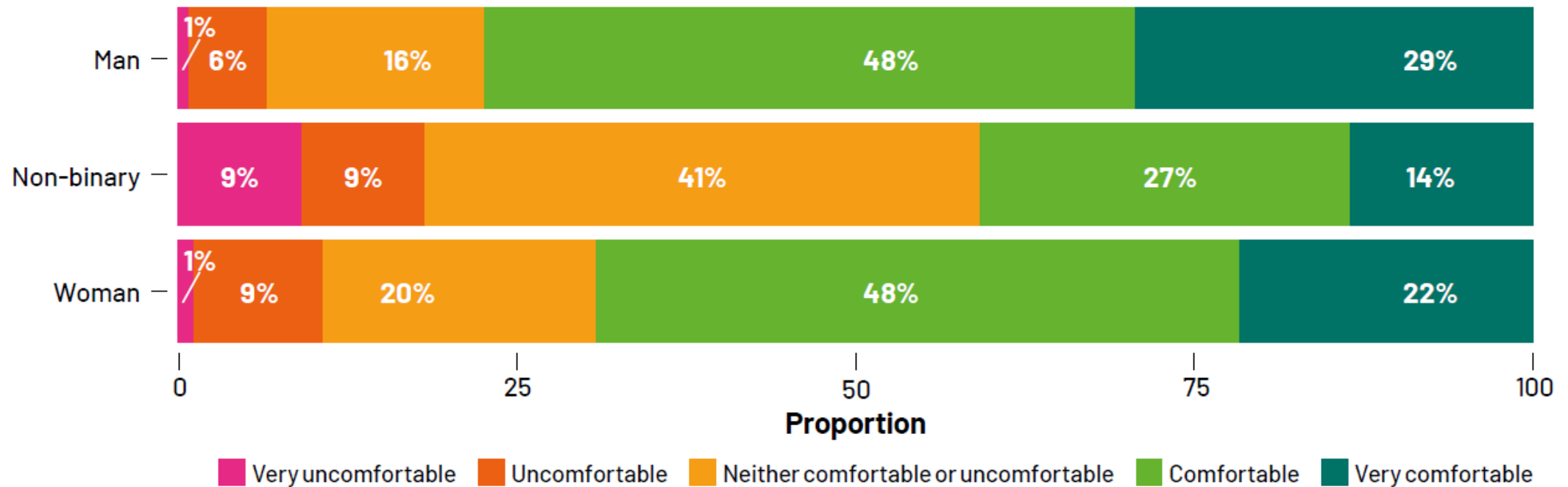
*In my lab/office I feel comfortable. I have had no issues with anybody and they have all been accepting.*

*A gay student was openly mocked by a professor in front of the class, most of whom laughed in agreement.*

## Background and Findings 2

The overall climate experience by LGBT physicists was highly variable.

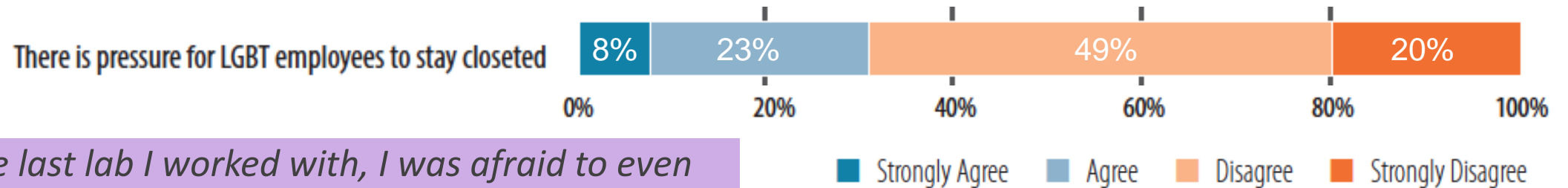
**Figure 2: Respondent perceptions of how comfortable they are in their overall organisation environment by gender**





## Background and Findings 3

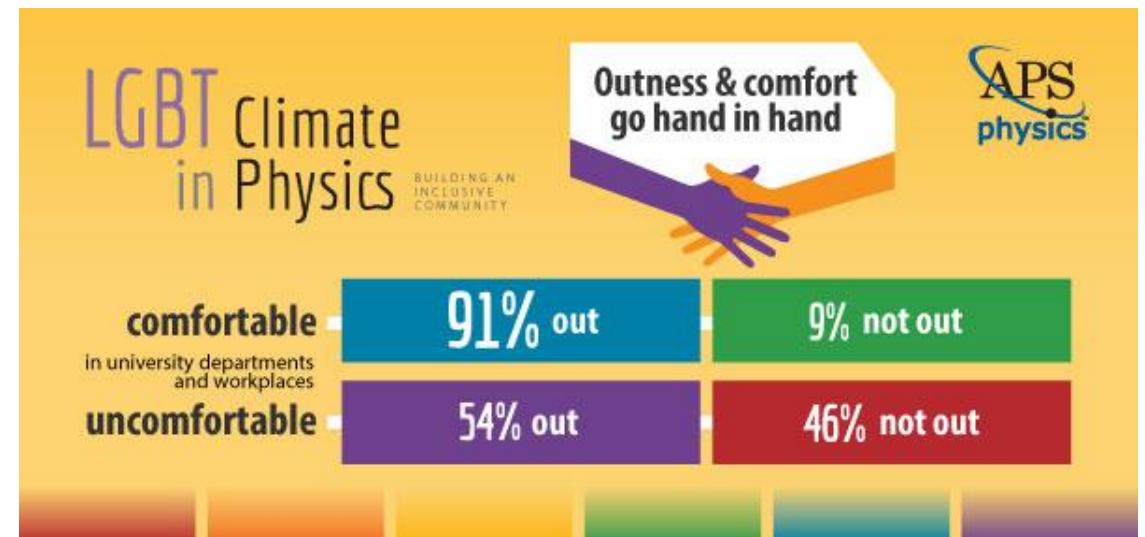
# In many physics environments, social norms establish expectations of closeted behavior.



*“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 respected me right now. But I don’t know that they would respect me if I came out to them.”*



## Background and Findings 4

# Isolation was a common theme for many LGBT physicists.

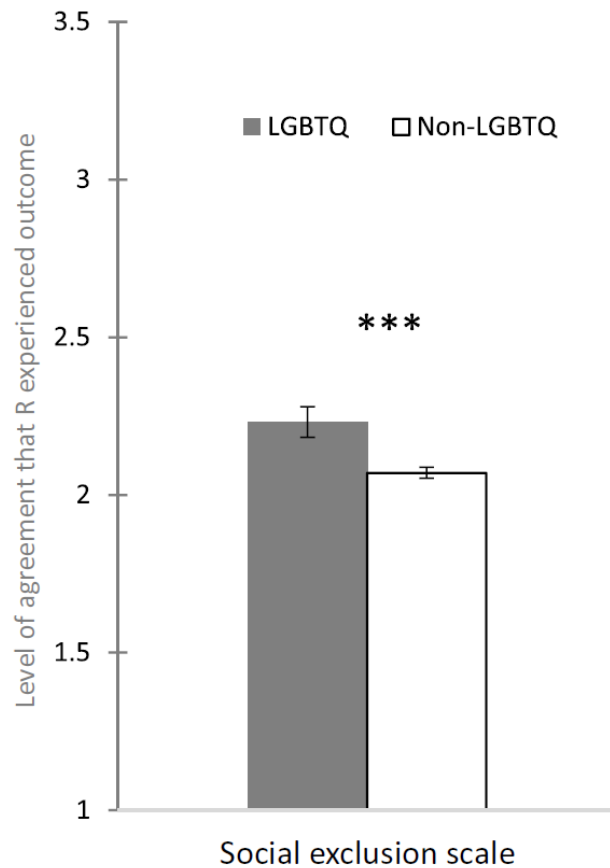
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*“It’s ‘don’t ask don’t tell,’ [which leads to a] hard time networking because [my] mostly male colleagues [are] uncomfortable to invite [a] gay couple for outings etc. It’s a subtle form of discrimination. Inability to network makes it difficult to join group grant proposals.”*

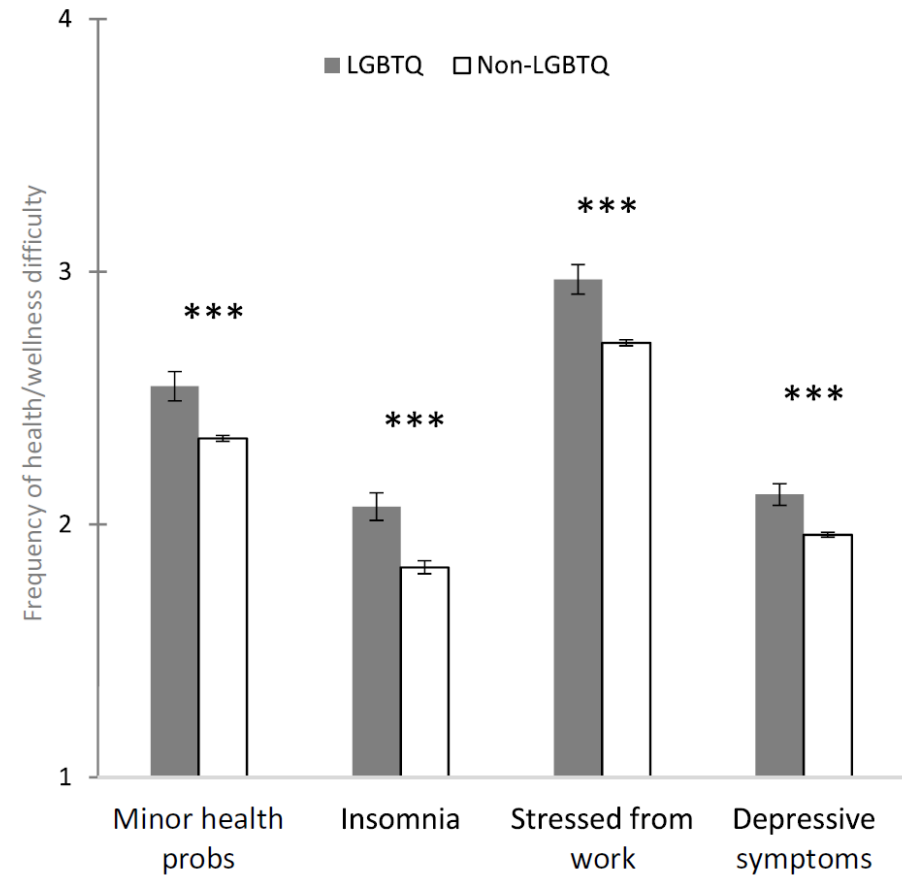
*“I am not really out at work because I don’t feel comfortable outing myself in the environment. There are no other LGBT+ individuals in my department.”*

## Background and Findings 4

# Isolation was a common theme for many LGBT physicists.



E. A. Cech, T. J. Waidzunas,  
*Science Advances* 7, eabe0933  
(2021)

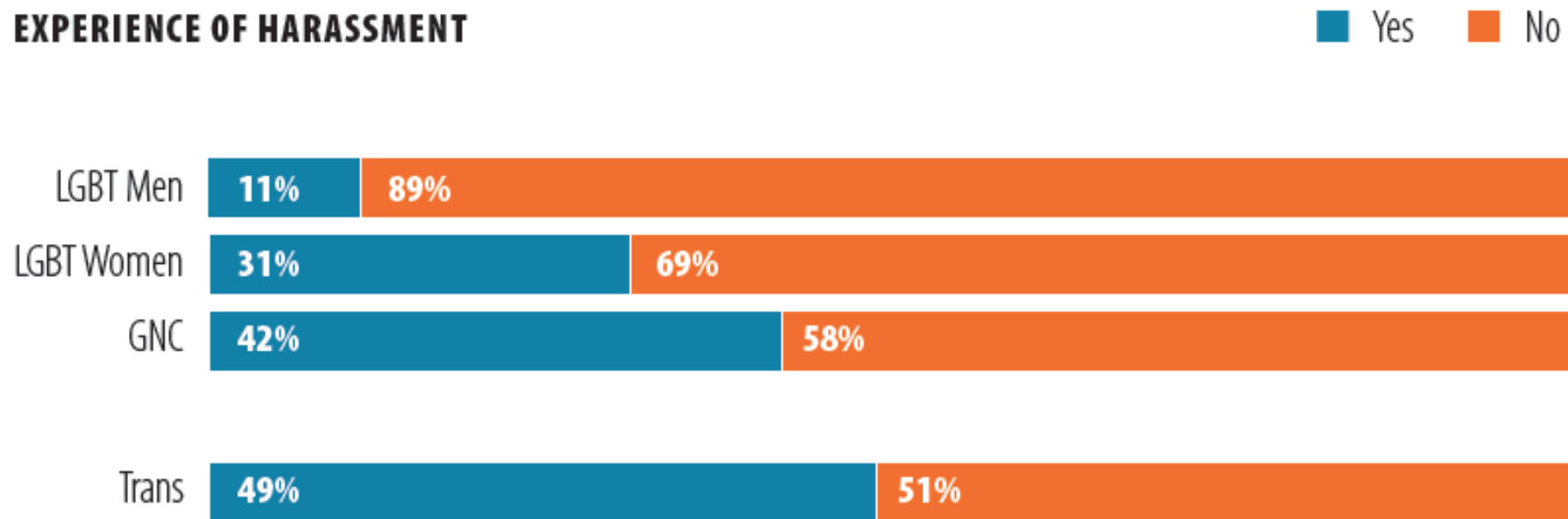


## Background and Findings 5

# A significant fraction of LGBT physicists have experienced or observed exclusionary behavior.

Experience of harassment broken down by gender and separately for trans respondents

### EXPERIENCE OF HARASSMENT

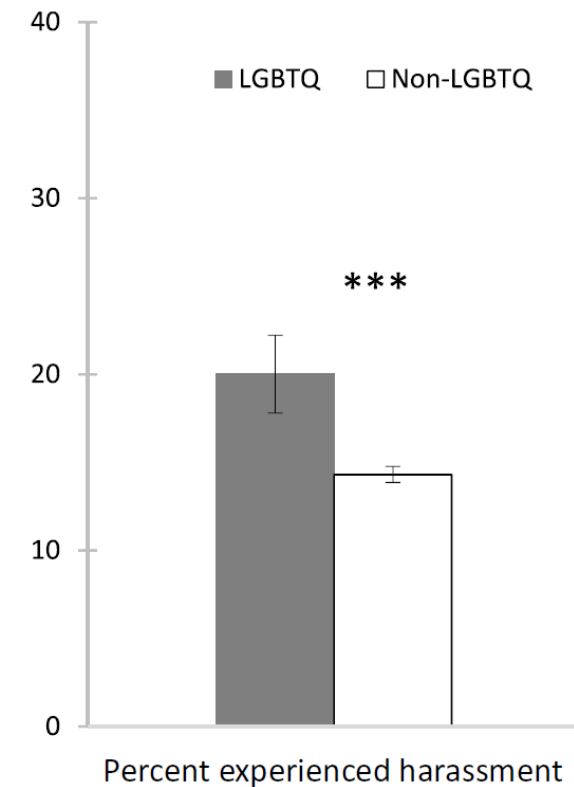
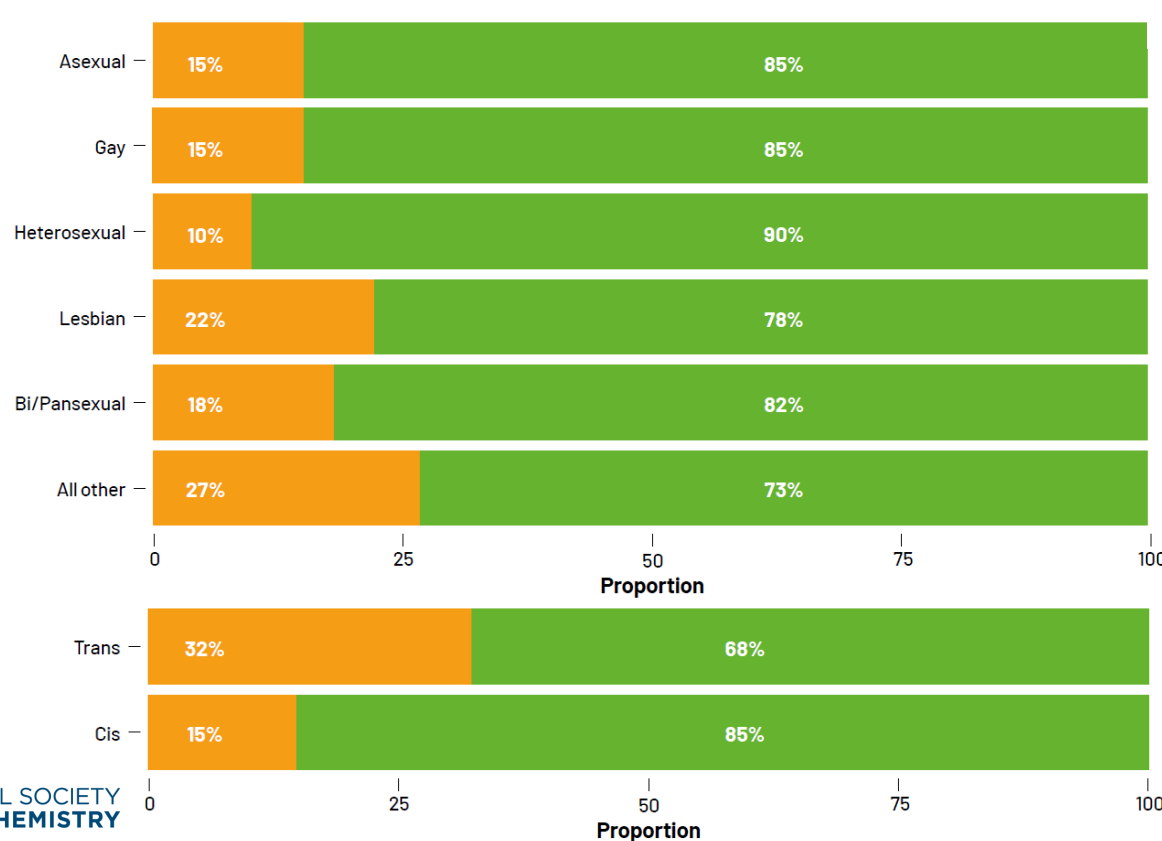


LGBT = lesbian, gay, bisexual, transgender as well as other sexual and gender minorities  
GNC = gender-nonconforming

# Background and Findings 5

## A significant fraction of LGBT physicists have experienced or observed exclusionary behavior.

Figure 5: Proportion of respondents who experienced exclusionary, intimidating, offensive or harassing behaviour because of their gender identity or sexual identity in the last 12 months, by sexual orientation



E. A. Cech, T. J. Waidzunas, *Science Advances* 7, eabe0933 (2021)

## Background and Findings 6

LGBT physicists with additional marginalized identities faced greater levels of discrimination.

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*“Things I have personally experienced within my physics department: Sexual harassment, sexist jokes directed at me (e.g. being told that I would not be using experimental apparatus in a lab except for personal grooming), sexist assumptions directed at me (e.g. being told that I only received the position due to my gender), sexualization and tokenization of my orientation (e.g. male physicists showing pictures of conventionally attractive females to me, because they think that ‘lesbians are hot’).”*

*“It is my impression that faculty are intolerant and silent bystanders towards LGBTQ students. Upon hearing comments made by faculty I know there are negative attitudes and stereotypes towards LGBTQ people and people of color.”*

## Background and Findings 7

# Transgender and gender-nonconforming physicists encountered the most hostile environments

### OBSERVATION OF HARASSMENT

■ Yes ■ No



### EXPERIENCE OF HARASSMENT



“I deal with not having my choice of pronoun respected every day. Sometimes these situations affect me deeply on an emotional level, and affect my ability to work for several hours.”

“I was harassed by a professor while going into the bathroom like the first week that I was on campus.”

## Background and Findings 8

Many LGBT physicists are at risk for leaving their workplace or school.

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



# 36%

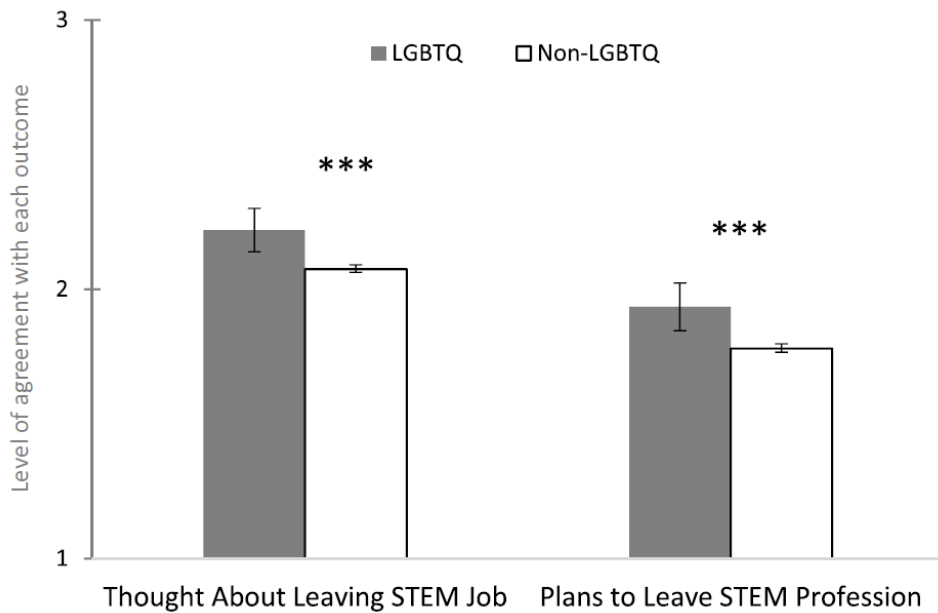
Considered leaving their workplace or school in the prior year

*"...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."*



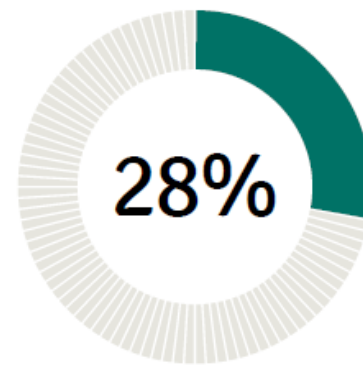
# Background and Findings 8

## Many LGBT physicists are at risk for leaving their workplace or school.

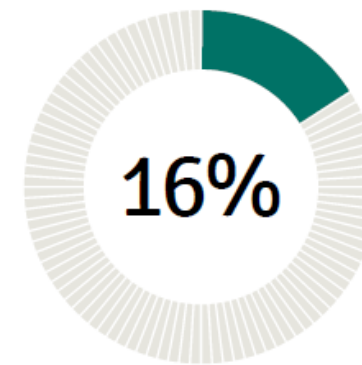


E. A. Cech, T. J. Waidzunus, *Science Advances* 7, eabe0933 (2021)

### Respondents stating they had at some point considered leaving their workplace



LGBT+ respondents



non-LGBT+ respondents



Trans respondents considered leaving often



## Background and Findings 9

LGBT physicists report trouble identifying allies to help mitigate isolation, exclusion, or marginalization.



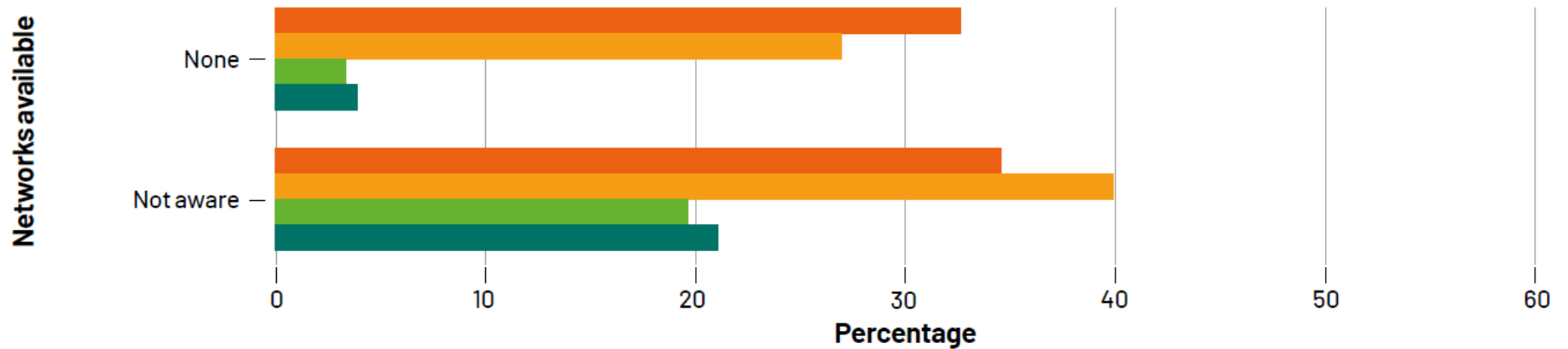
*“I’ve identified two professors at [University] who are okay working with queer, LGBTQ people and one of them was actually my thesis advisor. And the reason I was able to identify him was because he had a little rainbow sticker on his window. And I would kind of see some of these... and that was kind of a cue for me to be a little more comfortable around him in terms of just talking about my family life or just opening up in general...”*



## Background and Findings 9

# LGBT physicists report trouble identifying allies to help mitigate isolation, exclusion, or marginalization.


Figure 12: LGBT+ networks available to respondents within their workplace, by job type



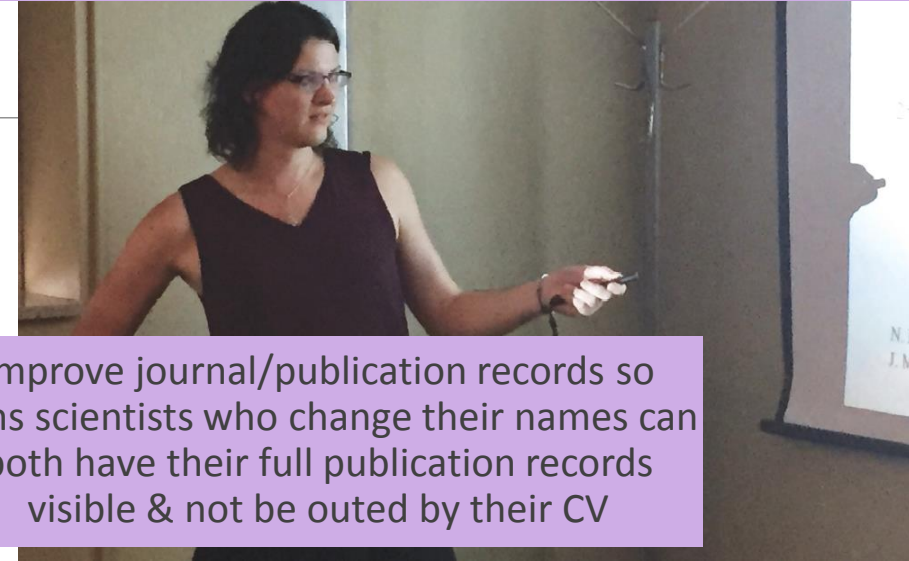
We anticipate sharing the initial guidance document—which will likely then continue to evolve over time—within the next few months. We know some journals and publishers are waiting for COPE’s guidance, rather than developing their own policies. For journals and publishers actively developing their own policies or seeking to be proactive, we are happy to put you in contact with members of the working group in the interim, with the aim of providing insight and expertise. More importantly, we know the document cannot come soon enough for trans authors, who are most impacted by the current processes and practices.

## Recommendations to the APS

1. Ensure a safe and welcoming environment at APS meetings.
2. Address the need to systematically accommodate name changes in publication records.
3. Develop advocacy efforts that support LGBT equity and inclusion

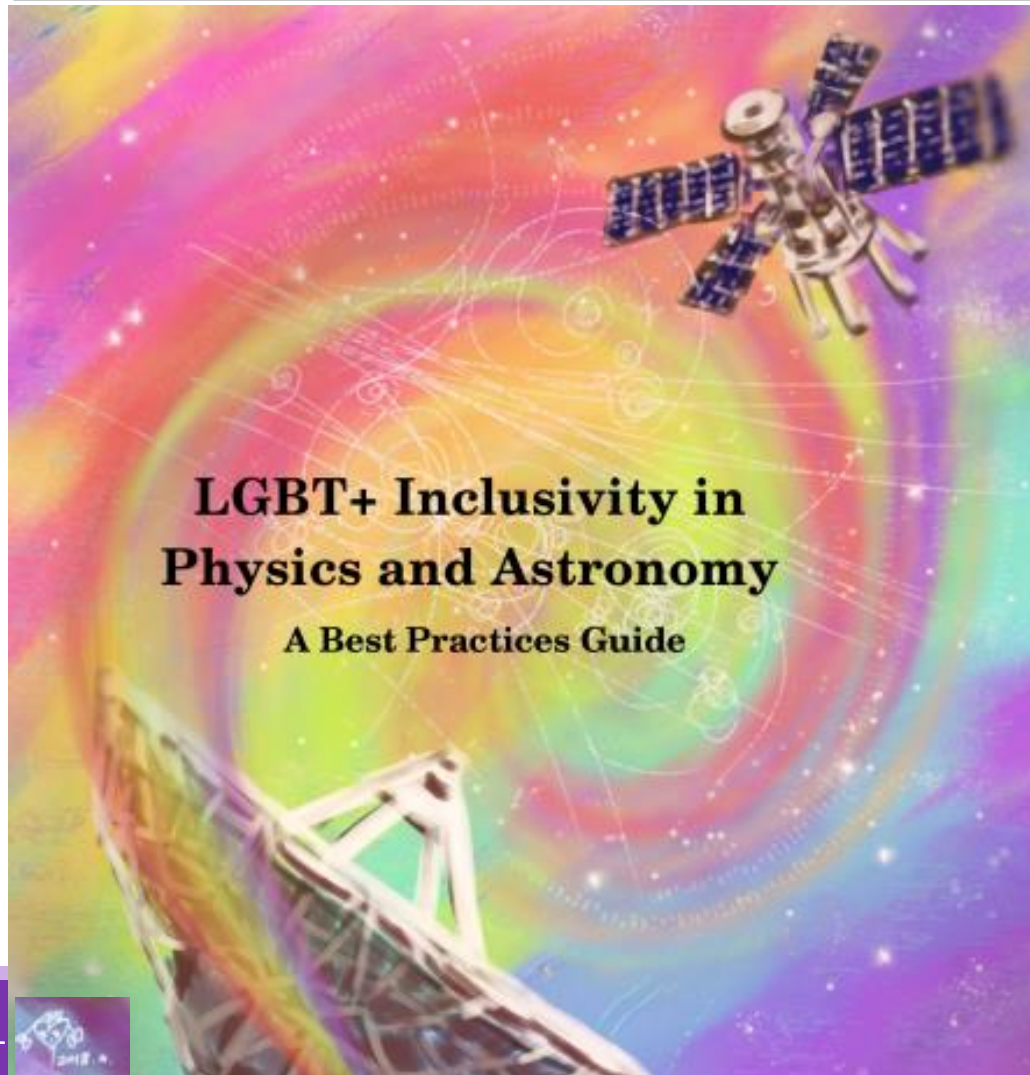


Improve journal/publication records so trans scientists who change their names can both have their full publication records visible & not be outed by their CV



4. Promote LGBT-inclusive practices in academia, national labs, and industry.
5. Implement LGBT-inclusive mentoring programs.
6. Support the establishment of a Forum on Diversity and Inclusion

# Recommendations for all physicists



We present the second edition of a Best Practices Guide for academic departments and other institutions striving to create more inclusive environments for physicists and astronomers in the LGBT+ community. Our recommendations incorporate new research since the original, 2014 edition, and are designed for anyone who wishes to become aware of -- and help mitigate -- the extra burdens that face members of the LGBT+ community in the physical sciences.

lgbt+physicists & AAS Committee for SGM in Astronomy

N. Ackerman, T. Atherton, A.R. Avalani, C.A. Berven, T. Laskar,  
A. Neunzert, D.S. Parno, M. Ramsey-Musolf

# Recommendations for all physicists

<b>1</b>	<b>Toward a welcoming department</b>	<b>1</b>	<b>2</b>	<b>In the Classroom</b>	<b>19</b>	<b>4</b>	<b>Hiring and promotions</b>	<b>32</b>
<b>1.1</b>	<b>Aware</b>	<b>1</b>	<b>2.1</b>	<b>Importance of course climate in learning</b>	<b>19</b>	<b>4.1</b>	<b>Toward an inclusive job search</b>	<b>32</b>
1.1.1	Understand departmental demographics	1	2.2	<b>Before the course</b>	<b>20</b>	4.1.1	Include non-discrimination statements in job announcements	32
1.1.2	Encourage accurate pronoun use	2	2.2.1	Include welcoming language and non-discrimination policies in your syllabus	20	4.1.2	Provide bias training for search committees	33
1.1.3	Participate in surveys exploring LGBT+ experiences	4	2.2.2	Establish how your students wish to be identified	20	4.1.3	Avoid assumptions	33
1.1.4	Encourage faculty and staff to pursue diversity training	4	2.2.3	Educate faculty and TAs on climate issues	21	4.1.4	Be open to name changes for job and tenure applicants	34
1.1.5	Protect students' privacy	5	2.2.4	Design for inclusion	21	<b>4.2</b>	<b>Retention and promotion</b>	<b>34</b>
1.1.6	Support transitioning individuals	5	<b>2.3</b>	<b>In the classroom</b>	<b>21</b>	4.2.1	Provide help for all dual-career couples	34
<b>1.2</b>	<b>Welcoming</b>	<b>6</b>	2.3.1	Communicate expectations on the first day of class	21	4.2.2	Consider LGBT+ persons when developing family-friendly policies	35
1.2.1	Include everyone in social events	6	2.3.2	Do not tolerate offensive language	22	4.2.3	Assess teaching performance fairly	35
1.2.2	Use gender-neutral and inclusive language	7	2.3.3	Intervene in problematic scenarios	22	<b>5</b>	<b>Travel and hosting</b>	<b>36</b>
1.2.3	Allow name and gender changes on departmental records	8	2.3.4	Use correct names and pronouns	23	<b>5.1</b>	<b>Support attendance at LGBT+ related conferences</b>	<b>36</b>
1.2.4	Avoid gender assumptions for nominations and opportunities	8	2.3.5	Use inclusive examples and analogies	23	5.1.1	Institute departmental and institutional policies	36
1.2.5	Set expectations for professional behavior	8	2.3.6	Watch for implicit bias	24	5.1.2	Remember intersectionality	36
1.2.6	Reduce isolation in the department	9	2.3.7	Encourage equitable participation in groups	24	5.1.3	Advertise support	37
<b>1.3</b>	<b>Advocating</b>	<b>10</b>	<b>2.4</b>	<b>Monitor climate</b>	<b>25</b>	5.1.4	Monitor discretion and safety	37
1.3.1	Join an Out List as an LGBT+ scientist or as an ally	10	<b>3</b>	<b>Mentoring and advising</b>	<b>27</b>	5.1.5	Establish connections with existing campus organizations	37
1.3.2	Increase LGBT+ visibility within the department	10	<b>3.1</b>	<b>Promoting quality mentorship</b>	<b>27</b>	<b>5.2</b>	<b>Ensure inclusive lodging and travel arrangements</b>	<b>37</b>
1.3.3	Recognize and reward significant achievements	11	3.1.1	Be aware of general issues in mentoring LGBT+ students	27	5.2.1	Allow travelers to choose their modes of transport	37
1.3.4	Evaluate service fairly and account for cultural taxation	11	3.1.2	Recruit LGBT+ students actively	28	5.2.2	Be flexible about how travel arrangements are made	38
1.3.5	Include LGBT+ people in positions of power	12	3.1.3	Increase protections for postdocs	28	5.2.3	Do not require people to have roommates	38
<b>1.4</b>	<b>Resourceful</b>	<b>12</b>	3.1.4	Discuss climate with advisees	29	5.2.4	Provide private facilities in shared housing	38
1.4.1	Help department members find resources	12	<b>3.2</b>	<b>Advancing the careers of LGBT+ students</b>	<b>29</b>	5.2.5	Identify a contact person for confidential lodging concerns	38
1.4.2	Appoint a diversity liaison or committee	13	3.2.1	Advise on personal statements and applications	29	<b>5.3</b>	<b>Host inclusive conferences</b>	<b>39</b>
1.4.3	Create safe spaces within the department	13	3.2.2	Advise on graduate school	30	5.3.1	Pay attention to names, biographies, and pronouns	39
1.4.4	Provide equal access to restrooms	14	3.2.3	Advise on summer programs, study abroad, and other travel	30	5.3.2	Provide equal access to restrooms	39
1.4.5	Increase networking opportunities	15	3.2.4	Write recommendation letters inclusively	30	<b>5.4</b>	<b>Be inclusive in gender-based outreach and events</b>	<b>39</b>
1.4.6	Mitigate the negative effects of poor advisor-advisee relationships	16				<b>5.5</b>	<b>Invite LGBT+ speakers to campus</b>	<b>40</b>
1.4.7	Take harassment, discrimination, and hostility seriously	16						
1.4.8	Provide flexibility for people trying to escape a hostile colleague or advisor	17						
1.4.9	Encourage good group practices	17						
<b>6</b>	<b>Toward a welcoming institution</b>	<b>41</b>						
<b>6.1</b>	<b>Awareness and Advocacy</b>	<b>41</b>	<b>6.2</b>	<b>Caring</b>	<b>43</b>			
6.1.1	Identify and consult your LGBT+ students	41	6.2.1	Help trans students deal with Selective Service	43	<b>6.3</b>	<b>Equity</b>	<b>45</b>
6.1.2	Be aware of Title IX and safe incident reporting	42	6.2.2	Appoint a contact person for dual-career couples	44	6.3.1	Use gender-neutral and inclusive language	45
6.1.3	Participate in surveys exploring LGBT+ experiences	42	6.2.3	Advocate for intersectional inclusion at institutional resource centers	44	6.3.2	Facilitate name and gender changes on institutional records while preserving privacy	45
6.1.4	Become an advocate	43	6.2.4	Ensure sensitivity training for campus first-responders	44	6.3.3	Allow rare changes to computer usernames	47
6.1.5	Support students in diversity initiatives	43				6.3.4	Provide inclusive health insurance	48

# Much work remains...



At a press conference at the APS March Meeting today, the APS Committee on LGBT Issues released the first ever report on the status of LGBT+ physicists. LGBT physicists face issues of isolation and harassment in their departments and workplaces. Trans physicists experience much higher rates of exclusion and isolation. The report gives specific recommendations to make the physics community more inclusive and safe for the LGBT+ community.



Physics Today  
Mar 15 at 4:30pm

Today the American Physical Society's Ad-Hoc Committee on LGBT Issues released a report on "LGBT Climate in Physics: Building an Inclusive Community." Findings include that LGBT physicists experience workplace pressure to "not act too gay," that those with additional marginalized identities face greater discrimination, and that transgender individuals experience the most hostile climate. Over a third of LGBT physicists surveyed considered leaving their department in the last year. The report recommends specific ways for APS to make the physics community more inclusive and safe, including establishing a broad-based Forum on Diversity and Inclusion. The report was presented at the APS March Meeting today and is available to view on the APS website.





## Filippo Catalfamo

Such a disgusting article which is scientifically useless, why don't you

publish  
the know  
so disge



## David V

Since n  
surprise  
lifestyle  
like to a  
with an,



## Maciej Łukasiewicz

The only rainbows I want in my lab are the ones light makes in a prism. Get that crap out of here. Sexuality should be a private matter and not flaunted liek that, especially in such an environment where qualifications are all that matter. I find it hard to believe quality physicists who happen to be gay have a more difficult time than others.

T community in  
ing on, is this





## **Michael Falk**

It is nice to know that when your colleagues exhibit surprise that there are physicists who would object to even the discussion of LGBT marginalization, that there are plenty of colleagues willing to post comments on Facebook to show that this concern is clearly valid.

# Much work remains...

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## AAAS Calls for Measuring LGBTQ Representation in STEM

The American Association for the Advancement of Science signed onto a [letter](#) to the National Science Foundation last week **urging that it include measures of LGBTQ representation in the 2021 National Survey of College Graduates**. The letter states such data would aid in understanding and addressing barriers faced by LGBTQ people in the STEM fields and notes there is precedent for collecting such information in U.S. government surveys. The authors also point to efforts within specific fields to understand disparities, such as the **American Physical Society's 2016 LGBT Climate in Physics Report**, which they state found **"more than 20% of LGBTQ people reported being excluded, intimidated, or harassed at work due to their LGBTQ identity"** and that these experiences **"predicted a desire to leave the field."** They also cite research that found **LGBTQ undergraduates were "more likely than their heterosexual peers to leave STEM for a non-STEM major by their senior year."**

<https://www.aip.org/fyi/fyi-this-week/week-july-6-2020>

## How many scientists are LGBTQ? Federal survey delays frustrate researchers

By [Katie Langin](#) | Dec. 16, 2020 , 1:20 PM

[Science Careers](#)

In 2018, the U.S. National Science Foundation (NSF) raised the hopes of many LGBTQ scientists when it announced it would **explore adding questions about sexual orientation and gender identity to its workforce surveys**, starting with the 2021 National Survey of College Graduates (NSCG). But that timeline hasn't held up: Last month, the U.S. Office of Management and Budget approved NSF's plans for its **2021 NSCG—and it doesn't include a question about sexual orientation**. A modified gender question with options other than "male" and "female" will appear, but only for a 5000-person test sample of the approximately 169,000 total survey recipients. And the agency has not released the exact wording, which has raised **concerns over whether the question will yield reliable data and be sensitive to the transgender community**.

# Thank you!

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