State of the Science for Research on Health Disparities among Sexual and Gender Minorities

Brian Mustanski, PhD

@Mustanski

NIMHD Health Disparities among Sexual and Gender Minorities Workshop, 2023

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Third Coast CFAR

CENTER FOR AIDS RESEARCH IN CHICAGO

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Federal Health Disparity Priorities

LGBT health requires specific attention from health care and public health professionals to address a number of disparities, including:

- LGBT youth are 2 to 3 times more likely to attempt suicide.
- LGBT youth are more likely to be homeless.
- Lesbians are less likely to get preventive services for cancer.
- Gay men are at higher risk of HIV and other STIs, especially among communities of color.
- Lesbians and bisexual females are more likely to be overweight or obese.
- Transgender individuals have a high prevalence of HIV/STDs, victimization, mental health issues, and suicide and are less likely to have health insurance than heterosexual or LGB individuals.
- LGBT populations have the highest rates of tobacco, alcohol, and other drug use.

#1: The field has done an exceptional job of documenting the existence of SGM disparities across a range of health domains.

Portfolio Analysis Overview

A Snapshot of the NIH FY 2020 SGM Portfolio Analysis

National Institutes of Health
Sexual & Gender Minority Research Office

SGM Portfolio Project Increases

The **total number** of **projects at the NIH increased** from 51,382 in FY 2015 to **62,581** in FY 2020, an increase of **21.8%.** The **SGM portfolio,** by contrast, **increased** from 301 in FY 2015 to **500** in FY 2020, an increase of **66.1%.**

FYs 2015–2020

Non-HIV/AIDS Funding

The **total number** of **non-HIV/AIDS** projects reached an all-time high in FY 2020.

DOUBLED

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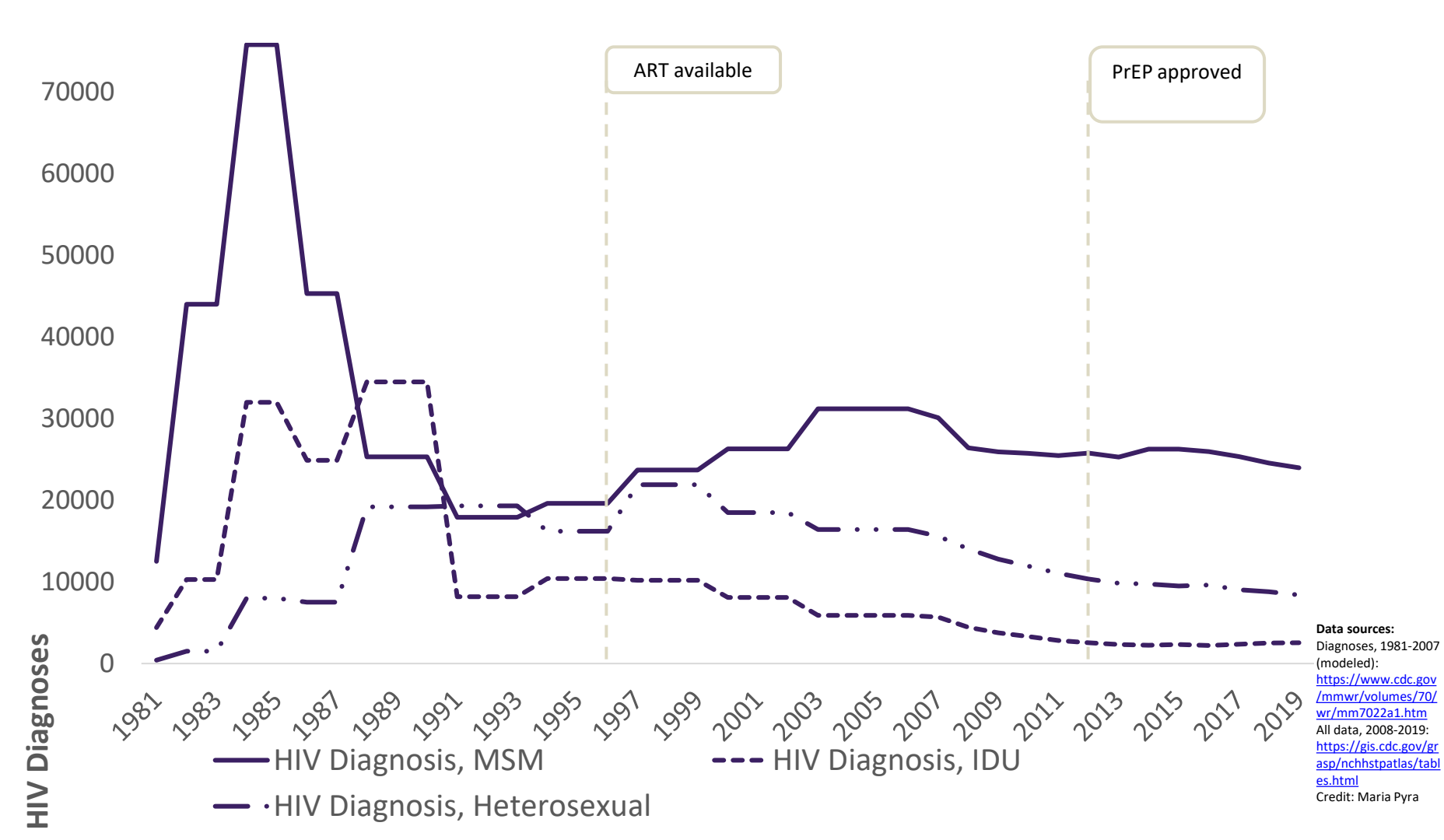
#2: SGM health research is growing, but some groups are still very underrepresented (i.e., cis women) and much of the research is observational rather than testing interventions.
Many major health disparities still understudied (e.g., suicide, smoking, cancer).



Data sources:
Diagnoses, 1981-2007 (modeled): https://www.cdc.gov/mmwr/volumes/70/wr/mm7022a1.htm
All data, 2008-2019: https://gis.cdc.gov/grasp/nchhstpatlas/tables.html
Credit: Maria Pyra

Demography (2021) 58(4):1445–1472 Published online: 17 June 2021
DOI 10.1215/00703370-9357508 © 2021 The Authors

Birth Cohort Trends in Health Disparities by Sexual Orientation

Hui Liu and Rin Reczek

ABSTRACT Lesbian, gay, and bisexual-identified (LGB) people experience worse mental and physical health than their straight-identified counterparts. Given remarkable social and legal changes regarding LGB status in recent decades, we theorize that this profound health disadvantage may be changing across cohorts. Using data from the 2013–2018 National Health and Interview Surveys, we analyze five mental and physical health outcomes—psychological distress, depression, anxiety, self-rated physical health, and activity limitation—across three birth cohorts colloquially known as (1) Millennials, (2) Generation Xers, and (3) Baby Boomers and pre-Boomers. We find no evidence of reduced health disparities by sexual orientation across cohorts. Instead, relative to straight-identified respondents, the health disadvantages of gay, lesbian, and—most strikingly—bisexual-identified people have increased across cohorts. Findings highlight the importance of identifying the causes of increased health disparities as well as designing and implementing more direct public policies and programs to eliminate health disparities among more recent LGB cohorts.

KEYWORDS Sexual orientation • Birth cohort • Trends • Health disparities • Bisexuality

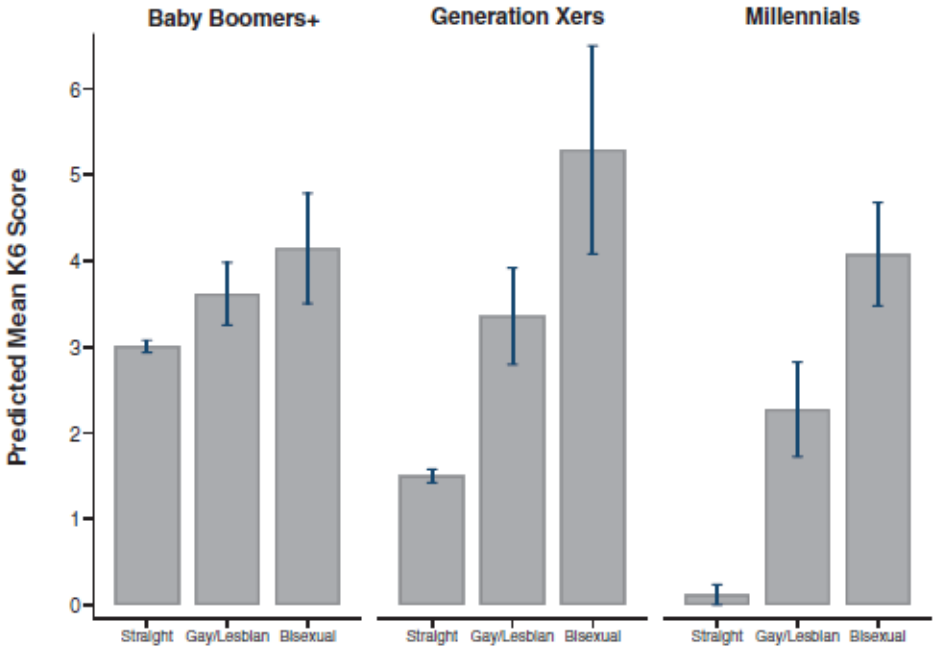
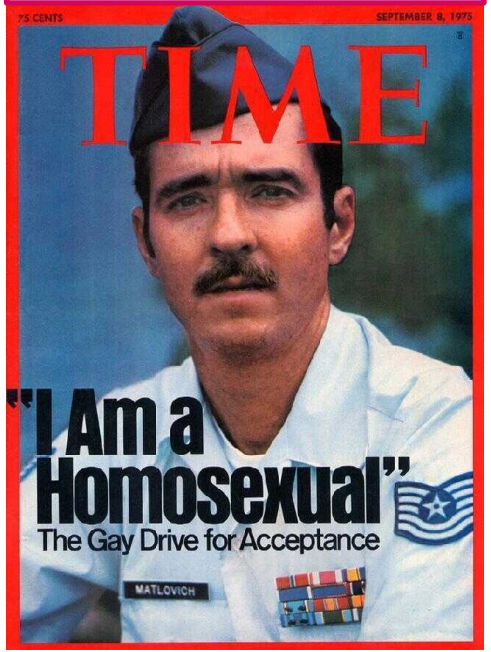


Fig. 1 Marginal predicted mean K6 scores assessing psychological distress, by sexual orientation and cohort, and 95% confidence intervals

#3: Social progress and health research have yet to translate into shrinking SGM health disparities. Why is that?

Internalized homophobia



Depression and Anxiety

Suicide

Addiction

Sexual risk behaviors

Mental and behavioral problems

Psychotherapy

Clinical Psychology Review

Internalized homophobia and internalizing mental health problems: A meta-analytic review

Michael E. Newcomb [a,*], Brian Mustanski [b]

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Anxiety

ABSTRACT

Research on internalized homophobia (IH) has linked it to both mental and physical health outcomes. Extant research indicates that IH and mental health are related in a variety of different subgroups of lesbian, gay and bisexual (LGB) persons. However, much of this research has suffered from methodological issues. Studies have frequently substituted distress-related constructs (e.g., self-esteem and general well-being) for measures of internalizing mental health problems. Furthermore, many studies have misapplied measures of IH designed for gay men with lesbian samples. The current study used Hierarchical Linear Modeling to perform meta-analysis. Effect sizes were combined across multiple studies that used dimensional measures of internalizing mental health problems (i.e., depression and anxiety). The use of multilevel modeling techniques allowed for the evaluation of moderating effects on these relationships, including those of gender, year of data collection, mean age of the sample, publication type, and type of symptomatology measured. Thirty-one studies were meta-analyzed for the relationship between IH and mental health ($N = 5831$), revealing a small to moderate overall effect size for the relationship between the two variables. Higher levels of IH were associated with higher scores on dimensional measures of internalizing mental health problems. Significant moderating effects were also found for mean age of the sample and the type of symptomatology measured in each study. The relationship between IH and internalizing mental health problems was stronger in studies with a higher mean age. The relationship between IH and depressive symptomatology was stronger than the relationship between IH and symptoms of anxiety. Limitations and future research directions are discussed as well as implications for clinical practice.

- 31 studies (n = 5,831)
- Small overall association.
- Effects bigger in younger samples.

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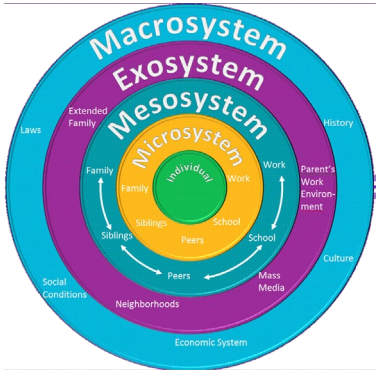
#4: Research needs to move beyond documenting disparities to studying interventions on multilevel mechanisms.



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Romantic Relationships

Journal of Abnormal Psychology

0021-843X/18/$12.00 http://dx.doi.org/10.1037/abn0000332

Romantic Involvement: A Protective Factor for Psychological Health in Racially-Diverse Young Sexual Minorities

Sarah W. Whitton and Christina Dyar
University of Cincinnati

Michael E. Newcomb and Brian Mustanski
Northwestern University Feinberg School of Medicine

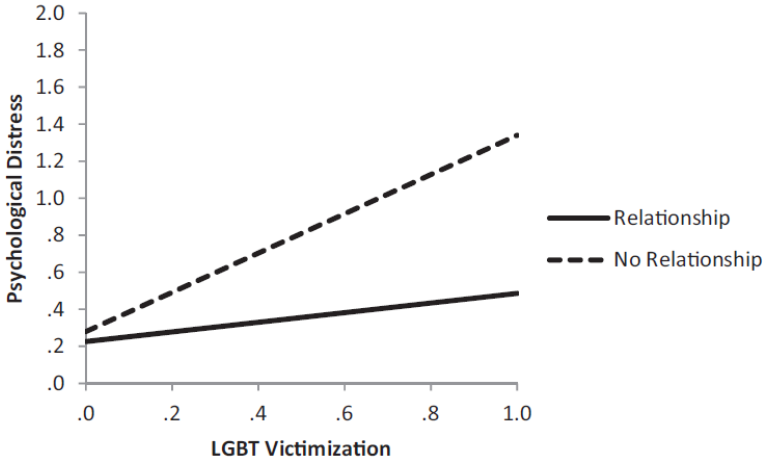

Figure 2. Simple slopes of the association between LGBT victimization and psychological distress by relationship status.

AIDS Behav (2017) 21:2464–2478
DOI 10.1007/s10461-017-1674-0

ORIGINAL ARTICLE

Integrating HIV Prevention and Relationship Education for Young Same-Sex Male Couples: A Pilot Trial of the 2GETHER Intervention

Michael E. Newcomb[1,2] · Kathryn R. Macapagal[1,2] · Brian A. Feinstein[1,2] · Emily Bettin[1,2] · Gregory Swann[1,2] · Sarah W. Whitton[3]

4 session hybrid group/individual intervention for HIV- & HIV+ coupled YMSM

- 2 groups, 2 individual couple sessions
- Relationship functioning
  - Effective communication
  - Dyadic coping skills
- Sexual health intervention
  - Sexual satisfaction and pleasure
  - Relationship sexual agreement
  - Primary and secondary HIV prevention

Families

Journal of Gay & Lesbian Social Services, 23:204–225, 2011
Copyright © Taylor & Francis Group, LLC
ISSN: 1053-8720 print / 1540-4056 online
DOI: 10.1080/10538720.2011.561474

Routledge
Taylor & Francis Group

Mental Health of Lesbian, Gay, and Bisexual Youths: A Developmental Resiliency Perspective

BRIAN MUSTANSKI and MICHAEL E. NEWCOMB
University of Illinois, Chicago, Illinois
ROBERT GAROFALO
Children's Memorial Hospital/Northwestern Feinberg School of Medicine, Chicago, Illinois

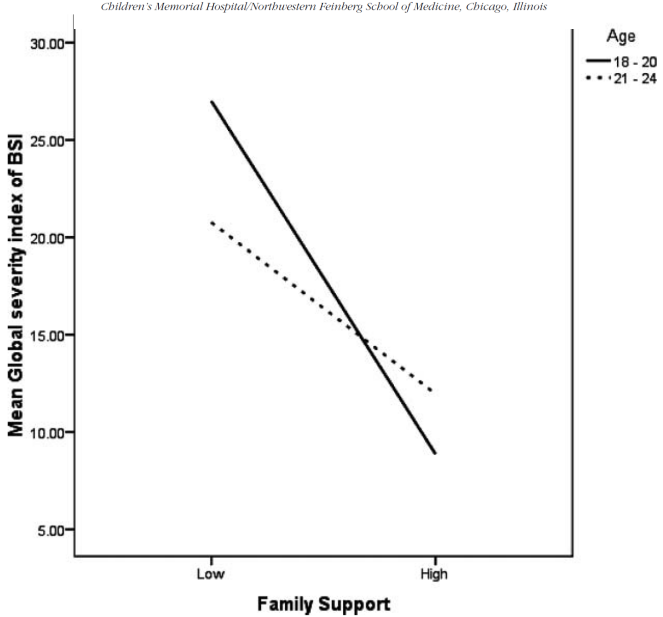

FIGURE 1 Interaction between age and family support in predicting psychological distress.

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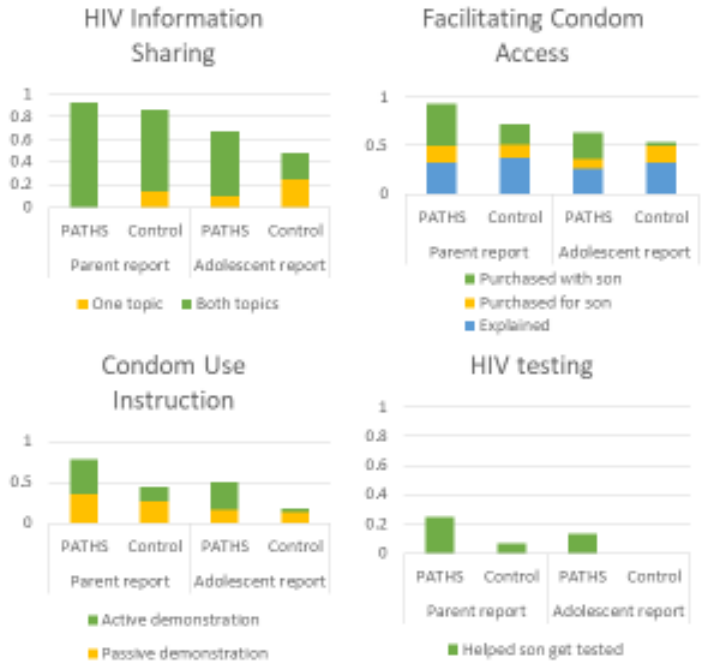
PATHS – A parent focused HIV-prevention intervention for adolescent MSM

Effects on Parent Behaviors



Huebner, D. M., Barnett, A. P., Baucom, B. R. W., Guilamo-Ramos, V. (2022). Effects of a Parent-focused HIV Prevention Intervention for Young Men who have Sex with Men: A Pilot Randomized Clinical Trial. *AIDS and Behavior*. https://doi.org/10.1007/s10461-022-03885-1

Effects on Parent Knowledge, Attitudes, Skills

Outcome	B Intervention Effect	95% CI	
Self-perceived knowledge about PrEP	0.58*	0.11	1.03
Interest in exploring PrEP for son	0.60†	-0.03	1.21
Communication self-efficacy	0.41*	0.19	0.62
Condom self-efficacy	0.22†	0.00	0.44
Positive outcome expectancy for communication	0.05	-0.35	0.47
Negative outcome expectancy for communication	-0.14†	-0.28	0.01
Intentions to talk about HIV	0.50*	0.12	0.89
Intentions to facilitate condom access	0.85*	0.36	1.28
Intentions to provide condom instruction	0.77*	0.22	1.31
Intentions to assist with HIV testing	1.03*	0.44	1.63

Note. CI = Credible Interval.
All effects are adjusted for pre-intervention levels of the outcome variable.
P-values from Bayesian estimation reflect the posterior probability that the coefficient for the intervention effect is > 0. *p < 0.05; †p = 0.06.

J Behav Med (2020) 43:673–694
https://doi.org/10.1007/s10865-019-00120-6

The relationship between minority stress and biological outcomes: A systematic review

Annesa Flentje[1,2] · Nicholas C. Heck[3] · James Michael Brennan[4] · Ilan H. Meyer[5]

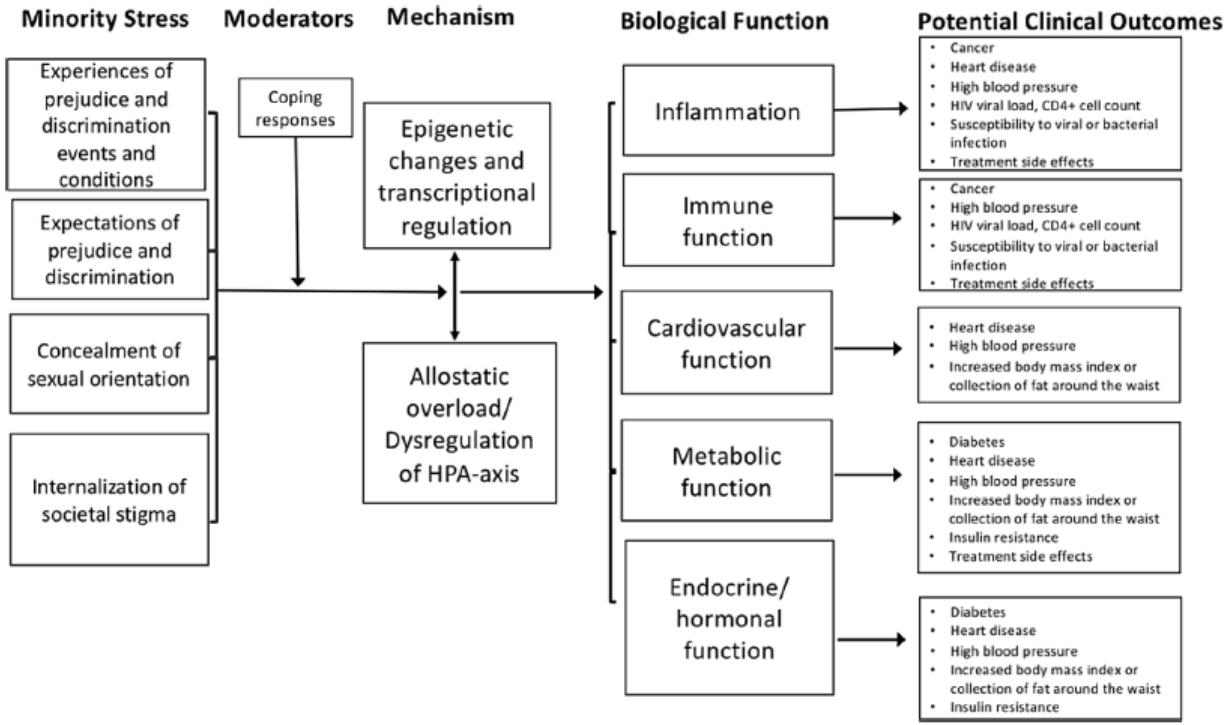


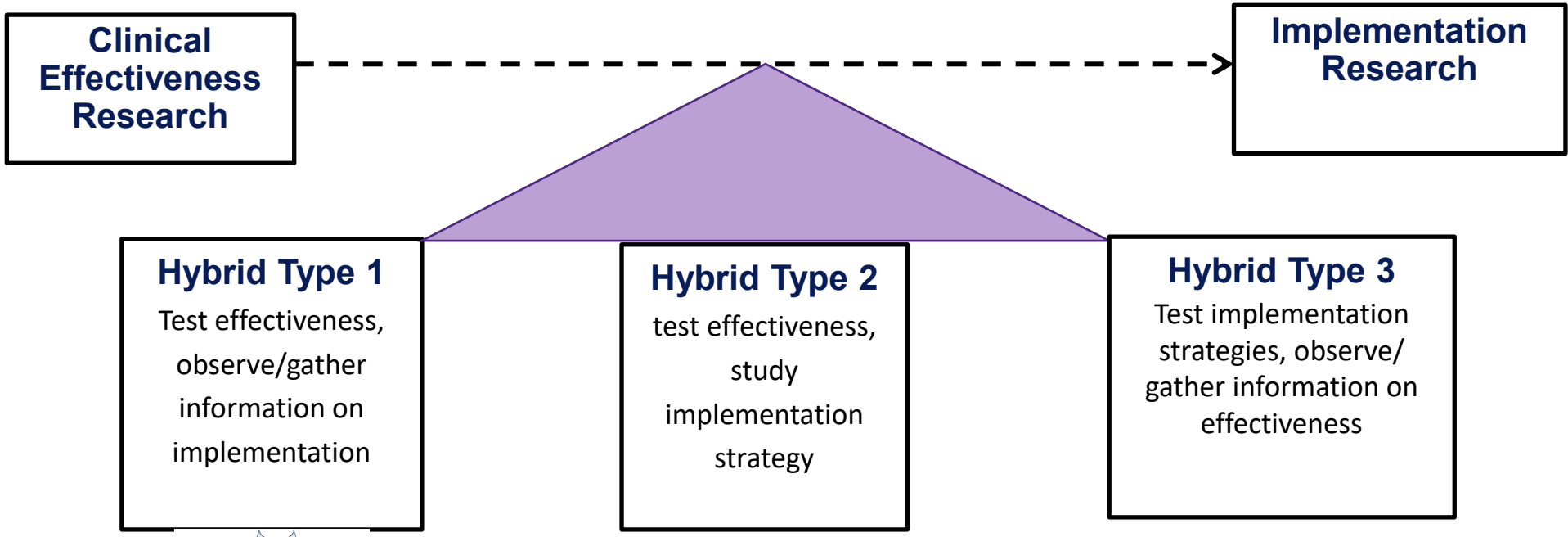
Fig. 1 Proposed conceptual model of how minority stress may impact health through biological mechanisms

#5: We need more research on medical outcomes and studies that identify the biological mechanisms linking minority stress to these outcomes.


SCIENCE

#6: Integrate implementation science into our clinical research to help accelerate interventions into practice to improve SGM health.

Types of Hybrid Designs



SMART

Mustanski 2020 (*JMIR Res Protoc*)

have fun. stay safe.
keep it up!

Mustanski 2023 (*Contemp Clin Trials*)

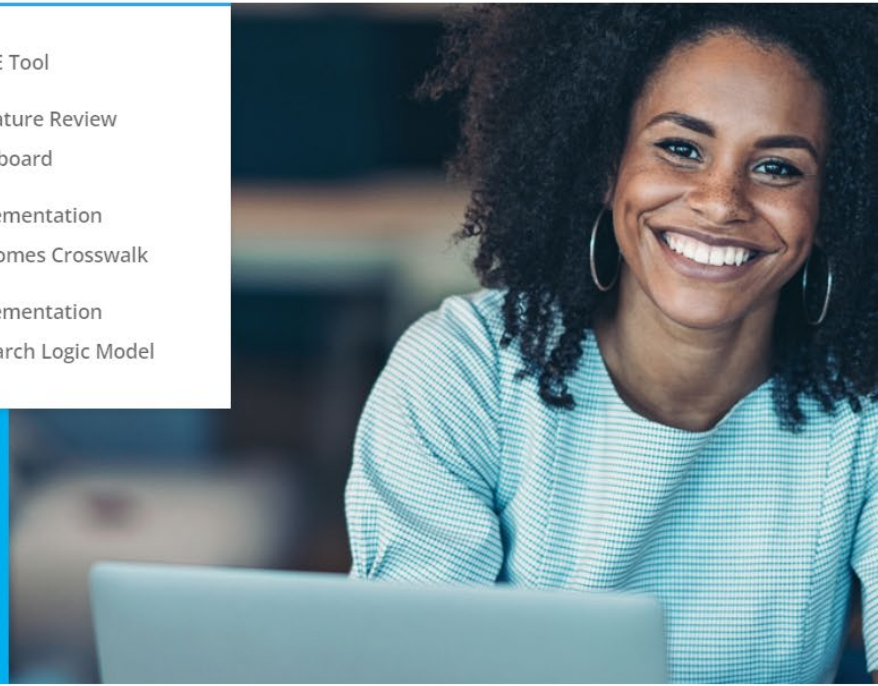
HIV Implementation Science Coordination Initiative

Tools | EHE Supplement Harmonization | IS Navigation | News & Events | Resources

- AGILE Tool
- Literature Review Dashboard
- Implementation Outcomes Crosswalk
- Implementation Research Logic Model

Advancing Implementation Science, Ending the HIV Epidemic

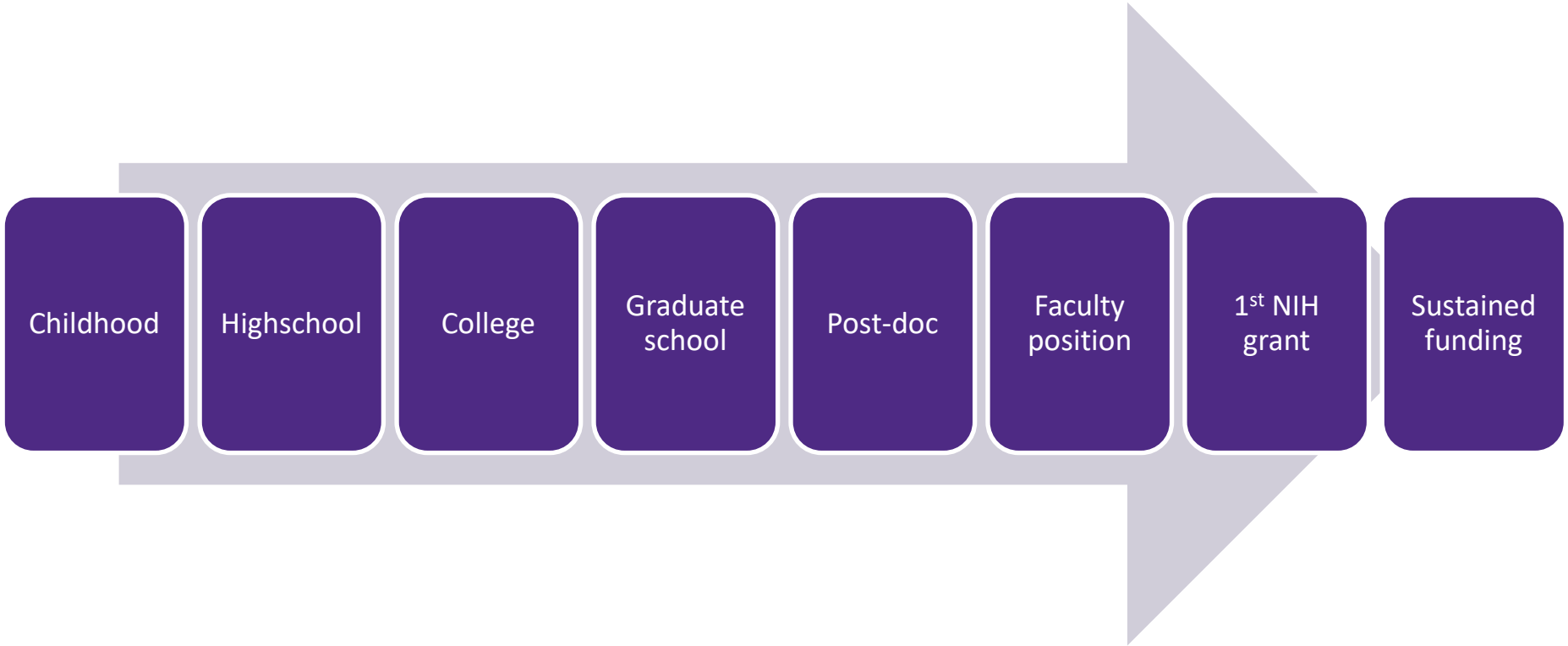
hivimpsci.northwestern.edu



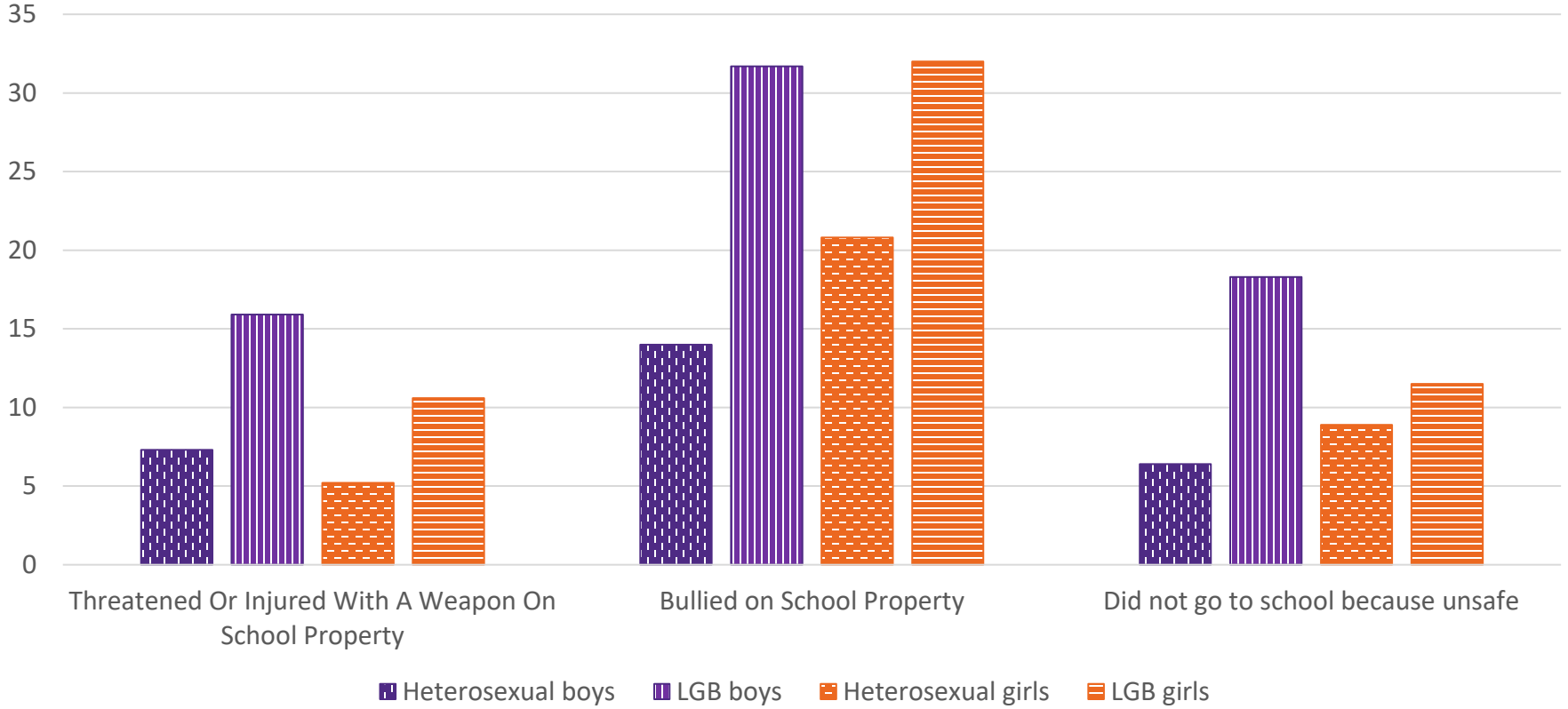
Leaders in Implementation Science

The Implementation Science Coordination Initiative (ISCI) provides high-quality technical assistance for Ending the HIV Epidemic (EHE) funded implementation research (IR) teams and creates opportunities to share generalizable knowledge to help end the HIV epidemic in the United States.

Road to NIH-funded scientist



CDC YRBS National Data, 2019



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https://nccd.cdc.gov/Youthonline

PLOS ONE

RESEARCH ARTICLE

Identifying leaks in the STEM recruitment pipeline among sexual and gender minority US secondary students

Casey D. Xavier Hall[1,2], Christine V. Wood[2], Manuel Hurtado[1], David A. Moskowitz[3], Christina Dyar[4], Brian Mustanski[1,2]*

1 Institute for Sexual and Gender Minority Health and Wellbeing, Northwestern University, Chicago, IL, United States of America, **2** Department of Medical Social Sciences, Northwestern University, Chicago, IL, United States of America, **3** Department of Public Health Sciences, The University of Chicago, Chicago, IL, United States of America, **4** College of Nursing, Ohio State University, Columbus, OH, United States of America

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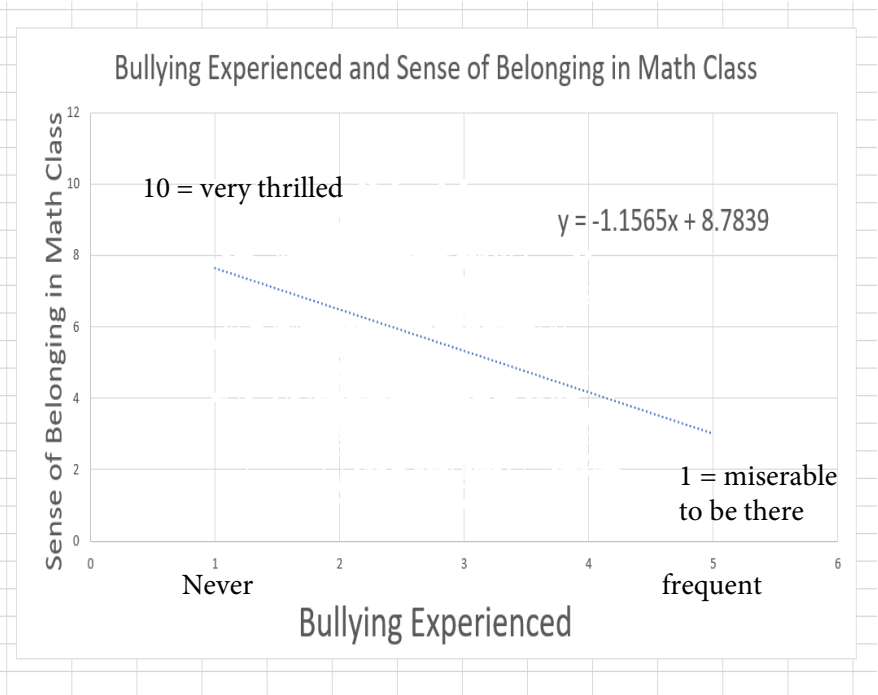
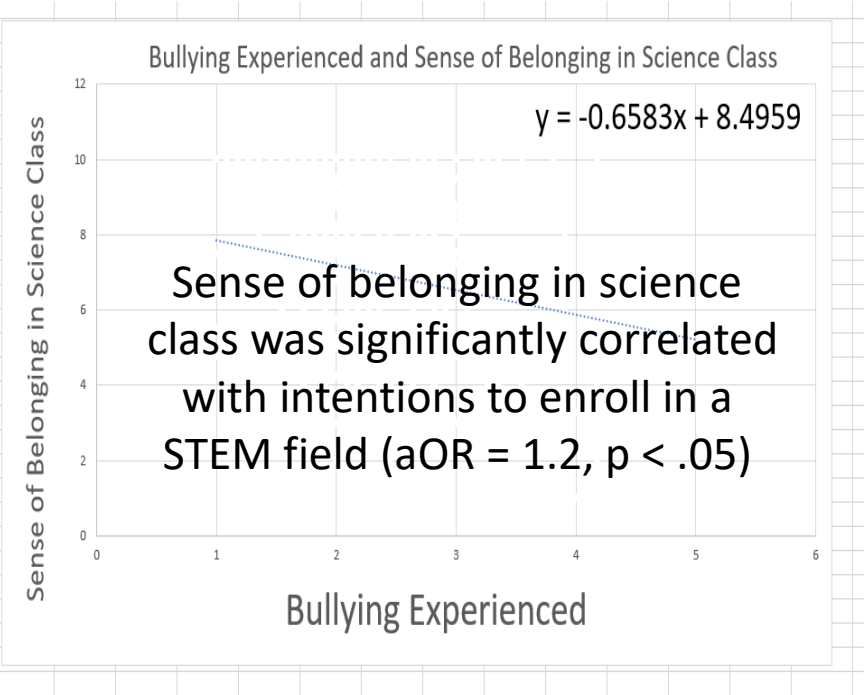
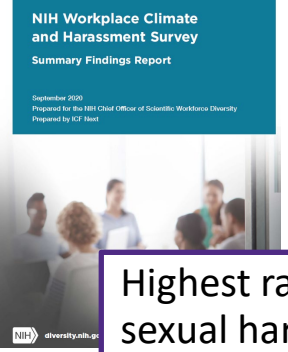
Experiencing bullying was significantly negatively associated with sense of belonging in STEM learning environments.



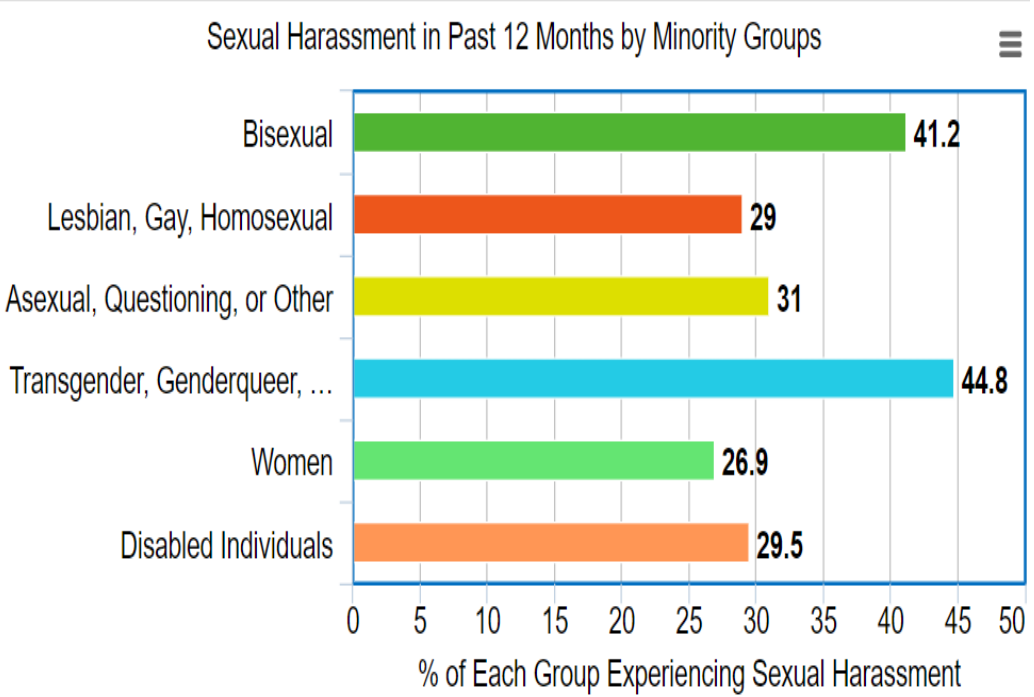




Results: Sexual Harassment in Past Twelve Months by Group

Highest rates of experiencing sexual harassment were among individuals identifying as transgender, genderqueer, gender non-conforming, or other gender identity (44.8%) and bisexual individuals (41.2%) (NIH, 2020).

20% of straight/heterosexual individuals experienced sexual harassment, which is lower compared to sexual minority groups (NIH, 2020)



SCIENCE ADVANCES | RESEARCH ARTICLE

SOCIAL SCIENCES

The intersectional privilege of white able-bodied heterosexual men in STEM

Erin A. Cech

A foundational assumption of science, technology, engineering, and math (STEM) inequality research is that members of the most well represented demographic group—white able-bodied heterosexual men (WAHM)—are uniquely privileged in STEM. But is this really the case? Using survey data of U.S. STEM professionals ($N = 25,324$), this study examines whether WAHM experience better treatment and rewards in STEM compared with members of all 31 other intersectional gender, race, sexual identity, and disability status categories. Indicating systematic advantages accompanying WAHM status, WAHM experience more social inclusion, professional respect, and career opportunities, and have higher salaries and persistence intentions than STEM professionals in 31 other intersectional groups. Decomposition analyses illustrate that these advantages operate in part as premiums—benefits attached to WAHM status that cannot be attributed to variation in human capital, work effort, and other factors. These findings motivate research and policy efforts to move beyond a single axis paradigm to better understand and address intersectional (dis)advantages in STEM.

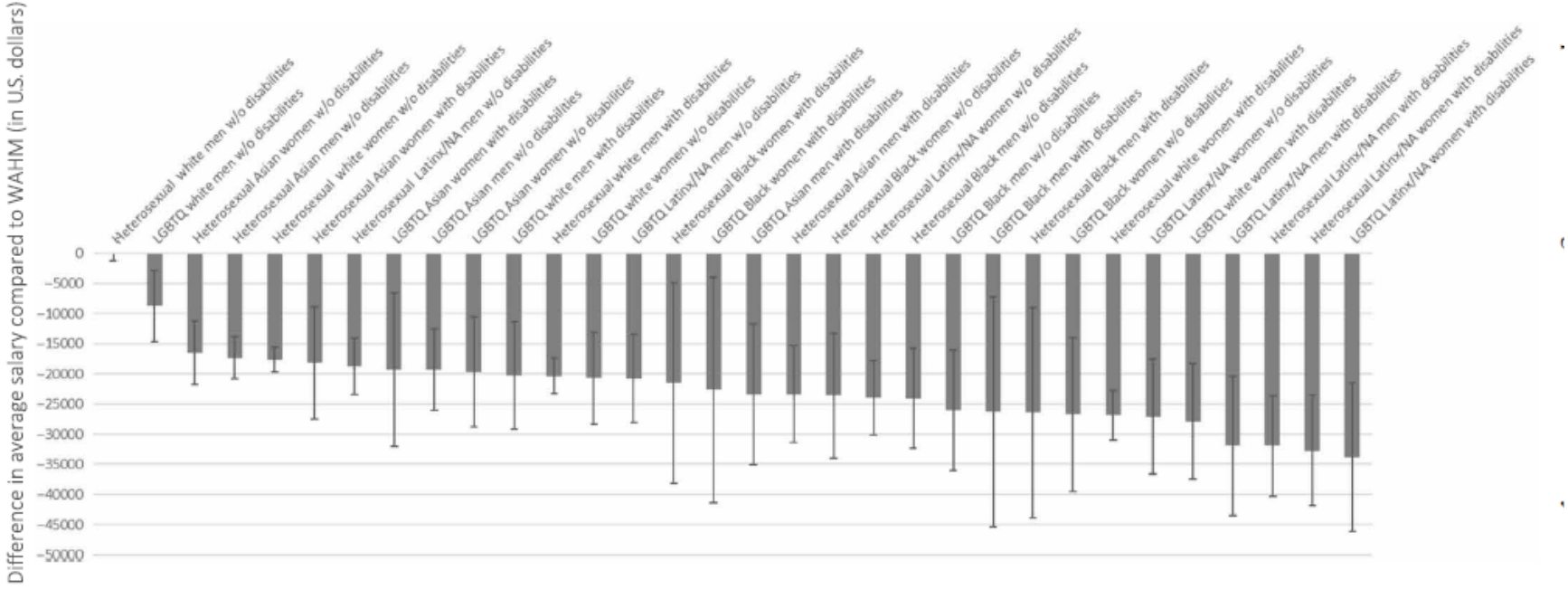
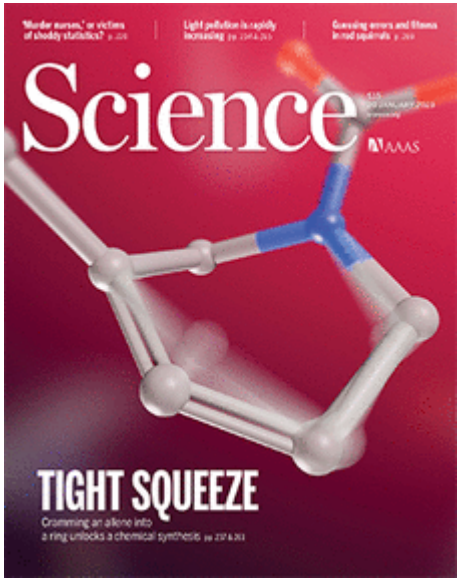


Fig. 4. Average annual salary of STEM professionals, by intersectional demographic category, centered at mean for WAHM and arranged by size of differential from WAHM. Predicted means for each category, holding constant variation by STEM field, employment sector, highest education, and age. Values represent the salary differences of each group compared to WAHM. Values were produced by OLS regression models with gender × race × LGBTQ status × disability status interaction terms. See the "Supplemental analysis" section in Materials and Methods for details. Error bars represent 95% confidence intervals. $N = 25,324$.



WORKFORCE

NSF under fire for not tracking sexual orientation

In major demographic survey of scientists, agency will only query gender identity

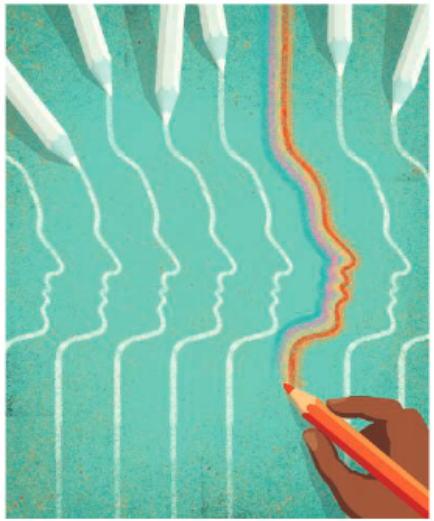
By **Katie Langin**

The U.S. National Science Foundation (NSF) says it does not plan to include a question about sexual orientation in a major national workforce survey, prompting hundreds of researchers to send a letter of protest.

Last month, the agency submitted its plans for the 2023 National Survey of College Graduates (NSCG), a biennial survey of more than 160,000 U.S. bachelor's degree holders with a focus on the science and engineering workforce, to the Office of Management and Budget (OMB) for approval. Many LGBTQ scientists were pleased that the survey will, for the first time, include a question about gender identity for all respondents. But the absence of a sexual orientation question is "incredibly disappointing," says Ramón Barthelemy, an assistant professor at the University of Utah who has studied the experiences of LGBTQ scientists in physics. Speaking as a gay man, he says, "We have fought so hard for so long to try to get representation in the scientific community, and what NSF is communicating to us is, they don't want us to have that representation."

The agency had raised hopes in 2021 when it pilot tested questions about gender identity and sexual orientation on the NSCG. Advocates took that as a sign that in coming years the agency would fully implement those questions in its suite of workforce surveys, some think the survey should offer more options, such as nonbinary and gender-fluid. Gender is "quite an expansive spectrum," says Abby Ray, a microbiology Ph.D. student at the University of California, Davis, and vice president of communications for oSTEM, an organization that represents LGBTQ+ people in STEM. For oSTEM's own data collection efforts, "We try to give as many options as possible so people have a chance to see themselves represented," they say.

The addition of a gender identity question



instance, race, disability, or income. "If they really want to stick to what they're claiming, then they should release the data," says Jon Freeman, an associate professor of psychology at Columbia University who has spent the past 5 years advocating that NSF collect data on LGBTQ scientists. An NSF spokesperson wrote in a statement to *Science* that the agency "will make those and other methodological findings available to the public later this year."

It's "perplexing," says Nancy Bates, a retired federal statistician. She points out that questions about sexual orientation have been asked in other federal surveys for years and have generally performed well. "There's less debate and sort of worry about measurement error for that particular question, as opposed to gender identity," says Bates, who co-chaired a National Academies of Sciences, Engineering, and Medicine working group that issued recommendations in 2022 detailing best practices for measuring sexual orientation and gender identity.

The NSF spokesperson said the agency will continue to explore whether to add a sexual orientation question to future workforce surveys. "The findings [from the 2021 pilot test] are already helping inform questions for future surveys. However, the results indicated that additional research and testing are needed to ensure it results in accurate data that protects privacy," the spokesperson added.

#7: SGM people should be consistently and explicitly included in federal scientific workforce diversity initiatives.

Items asking SGM identities should consistently be included scientific workforce and pipeline surveys.

Join ISGMH and AAAS for workshop on SGM in STEM pipeline (see ISGMH website soon for details).

Thank you funders and staff

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The Science of Drug Abuse & Addiction

National Institute of Mental Health

National Institute of Allergy and Infectious Diseases

National Institute on Minority Health and Health Disparities

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#1: The field has done an exceptional job of documenting the existence of SGM disparities across a range of health domains.

#2: SGM health research is growing, but some groups are still very underrepresented (i.e., women) and much of the research is observational rather than testing interventions.

Many major health disparities still understudied (e.g., suicide, smoking, cancer, violence).

#3: Social progress and health research have yet to translate into shrinking SGM health disparities. Why is that?

#4: Research needs to move beyond documenting disparities to address the mechanisms that drive them using multilevel interventions.

#5: We need more research on medical outcomes and studies that identify the biological mechanisms linking minority stress the medical outcomes.

#6: Integrate implementation science into our clinical research to help accelerate interventions into practice to improve SGM health.