



The national evaluation
of the NIH Diversity
Program Consortium

Data Brief

From the DPC Coordination and Evaluation Center at UCLA

May 2020

A Comparison of Intended Biomedical Majors Across Sexual and Gender Identity: A First Look from Freshmen at BUILD Sites

SUMMARY: There is limited information on the educational experiences of sexual and gender minority students (SGM, i.e., those who identify as part of the lesbian, gay, bisexual, queer [LGBQ] or transgender communities) in STEM. Data from the HERI 2016 Freshman Survey (TFS) at BUILD institutions indicate that among students intending to pursue biomedical majors, a smaller proportion of SGM students intend to pursue degrees in natural science and engineering (NSE) disciplines and a higher percentage intend to enter biomedical behavioral/ social science (BSS) disciplines relative to heterosexual and cisgender (HCG) students. Given the need to develop and expand the biomedical workforce, and considering that SGM status can be another dimension of diversity and inclusion, the experiences of SGM students aspiring to major in biomedical fields warrant further examination.

Sexual and Gender Minorities (SGM) in Biomedical Research

Examining the experiences of nationally underrepresented groups, as well as those who by virtue of their identities experience challenges with inclusion and equity within the culture of science, remains a priority for national policymakers and education stakeholders who seek to enhance diversity in the sciences. Recent research indicates that LGBQ college students are less likely to be retained in STEM¹ and that LGBQ STEM professionals experience disadvantages in the workplace such as lower job satisfaction, lack of support for diversity, and not having the increases in positive work experiences reported by non-LGBT employees when they become supervisors.²

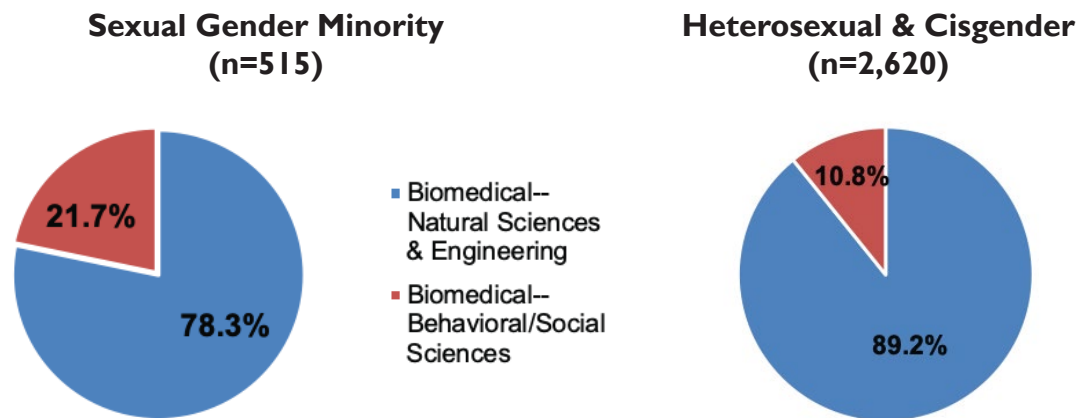
The National Institute on Minority Health and Health Disparities has recently designated sexual and gender minorities as a health disparity population for research purposes³ and NIH has a research office on SGM, showing a growing interest

in this population.⁴ A goal of the NIH Diversity Program Consortium (DPC) is to develop, implement, assess and disseminate innovative and effective approaches to research training and mentoring so that the biomedical sciences can benefit from the aptitudes, perspectives, interests, and experiences of individuals from all backgrounds, including those from underrepresented groups, to address complex scientific problems. To determine whether there were differences in SGM students' intentions to pursue majors in the biomedical sciences, we examined a cohort of students who began college in 2016 at institutions that received Building Infrastructure Leading to Diversity (BUILD) awards.

Data

Data are from the 2016 Higher Education Research Institute (HERI) The Freshman Survey (TFS) that was administered to first-year students at institutions across the 10 BUILD grantees. At

Figure 1. Proportion of Incoming First-Year, Full-time Students with Intentions to Major in Biomedical Natural Sciences and Engineering (NSE) or Biomedical Behavioral/Social Sciences (BSS) by Sexual Gender Minority Status (n= 3,135)



larger institutions, students were sampled with a goal of 400 biomedical and 100 non-biomedical student respondents. At smaller institutions, all students were asked to complete the survey. There were 4,325 students who responded to intended major and provided information on sexual orientation. Gender identity was also included for those responding. Biomedical sciences are based on the DPC approved list, which is somewhat different than the NSF-NIH listing of majors by including more clinical, engineering and natural sciences that reflect the BUILD programs.⁵

SGM Students Intentions to Pursue Biomedical Majors

The sample includes 4,325 student respondents, with 11.9% of respondents who identified as SGM (n= 515). Among the 515 students who identified as SGM, 58.1% (n=299) reported intending to major in the biomedical sciences, with 78.3% (n=234) who reported intentions to major in the natural sciences and engineering (NSE) disciplines compared to 21.7% (n=65) who reported an intent to major in the biomedical behavioral/ social sciences (BSS). Among the 3,810 students who identified as heterosexual and cisgender (HCG), 68.8% (n=2,620) reported an intent to major in the biomedical sciences, with 89.2% (n=2,336) who reported intentions to major in the natural sciences

and engineering (NSE) disciplines compared to 10.8% (n=284) of HCG students who reported an intent to major in the biomedical social behavioral sciences (BSS) (Figure 1). A pairwise chi-square test revealed that the percentage of SGM students with college major aspirations in the biomedical NSE fields compared to BSS fields significantly differs from HCG students $X^2 (1, N = 3,135) = 30.27, p < .001$.

Conclusion

These results indicate that among students intending to major in biomedical fields, the representation of SGM students varies by intended major, with the lower presence in NSE biomedical majors. While these data represent only a limited number of primarily teaching institutions, it suggests that more research is needed to understand differences in the interests and experiences in biomedical training programs between SGM and other students.⁶

* anthropology, psychology, sociology, and social work.

About the Diversity Program Consortium

The DPC is determining the effectiveness of innovative approaches to engage individuals from diverse backgrounds and help them prepare for and succeed in biomedical research careers. It supports transformative approaches to student engagement, research training, mentoring, faculty development, and infrastructure development.

About BUILD

Building Infrastructure Leading to Diversity (BUILD) consists of a set of 10 linked awards granted to primarily undergraduate institutions, each of which developed approaches intended to determine the most effective ways to engage and retain students from diverse backgrounds in biomedical research, and to prepare students to become future contributors to the NIH-funded research enterprise. BUILD is one of three initiatives within the Diversity Program Consortium (DPC). Further information can be found at: <https://www.diversityprogramconsortium.org/pages/nih>

Suggested Citation

Cobian, Krystle. A Comparison of Intended Biomedical Majors Across Sexual and Gender Identity: A First Look from Freshmen at BUILD Sites. Fact Sheet. Los Angeles, CA: Diversity Program Consortium (DPC) Coordination and Evaluation Center at UCLA. 2020. Publication 2020-2.

DPC Brief #2020-2

References

- ¹ Hughes, B. E. (2018). Coming out in STEM: Factors affecting retention of sexual minority STEM students. *Science advances*, 4(3). Note: STEM most closely maps to the Biomedical NSE category.
- ² Cech, E., & Pham, M. (2017). Queer in STEM organizations: Workplace disadvantages for LGBT employees in STEM related federal agencies. *Social Sciences*, 6(1), 12.
- ³ Sexual and Gender Minorities Formally Designated as a Health Disparity Population for Research Purposes. NIMHD. Director's Message. October 6, 2016. https://www.nimhd.nih.gov/about/directors-corner/messages/message_10-06-16.html.
- ⁴ <https://dpcpsi.nih.gov/sgmro>
- ⁵ https://www.diversityprogramconsortium.org/pages/biomedical_majors_list; <https://report.nih.gov/legacydatabook/help/FieldClassification.html>.
- ⁶ Freeman, J. (2018). LGBTQ scientists are still left out. *Nature*, 559, 27-28.



The Diversity Program Consortium's Coordination and Evaluation Center at UCLA, and the Enhance Diversity Evaluation, is funded by the National Institutes of General Medical Sciences under award number U54GMI19024.