



The national evaluation  
of the NIH Diversity  
Program Consortium

# Data Brief

From the DPC Coordination and Evaluation Center at UCLA

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## Changes in faculty perceptions of climate and institutional commitment to diversity at Building Infrastructure Leading to Diversity (BUILD) institutions, 2017 to 2020

**SUMMARY:** This data brief focuses on two “Hallmarks of Success” specifically related to institutional climate: 1) commitment to efforts that create, enhance, and/or maintain diversity and inclusion at all levels of the institution (INST-1), and 2) evidence of creating, enhancing, and/or maintaining diverse, inclusive, and culturally appropriate research and research training environments (INST-2) (Diversity Program Consortium, 2022a). BUILD faculty members at BUILD institutions are in a key position to assess institutional climate, diversity and inclusion efforts, and institutional commitment to diversity. This data brief reviews results from the 2017 and 2020 HERI Faculty Surveys to assess changes in faculty perceptions of climate and institutional commitment to diversity at BUILD sites from 2017 to 2020.

### Background

Research has shown that institutional climates supportive of diversity and factors that contribute to a sense of belonging contribute to faculty retention and success for women and individuals from racial and ethnic groups underrepresented (URM) in science, technology, engineering, math, and medicine (STEMM) (Hurtado et al., 2012; Jayakumar et al., 2009; Johnson, 2012). A previous DPC brief on this topic noted some variation in perceptions of climate and institutional commitment to diversity between female and male faculty and between URM (American Indian/Alaska Native (AIAN), Native Hawaiian/Pacific Islanders (NHPI), Black, and Latino faculty) and well-represented racial groups (White and Asian faculty) at BUILD institutions in 2017, but not between BUILD and non-BUILD groups (Guerrero, 2021). The lack of difference in perceptions of climate or commitment between BUILD and non-BUILD groups suggests that faculty from both groups have similar campus experiences and that their perceptions were independent of BUILD involvement at the early stages of implementation. This analysis assesses

if and how these perceptions have changed over time, which may serve as indicators of institutional changes at BUILD sites over the program period.

The Coordination and Evaluation Center (CEC) analyzed responses to the 2017 and 2020 HERI Faculty Survey from the 10 BUILD sites to assess faculty perceptions of institutional diversity and inclusion efforts in research training environments. We used two constructs: perceptions of climate and perceptions of institutional commitment to diversity. Perceptions of campus climate for diversity is based on responses by faculty about how much they agreed or disagreed with five statements using a four-point Likert scale (ranging from Strongly Agree, Somewhat Agree, Disagree Somewhat, Disagree Strongly): 1) this institution has effective hiring practices and policies that increase faculty diversity; 2) this institution takes responsibility for educating underprepared students; 3) faculty of color are treated fairly; 4) women faculty are treated fairly; and 5) LGBTQ faculty are treated fairly. Perceptions of the institution’s commitment to creating a diverse

multicultural campus environment is evaluated by how much the faculty believed each of the following items was a priority at their institution, using a four-point Likert scale (ranging from Highest Priority, High Priority, Medium Priority, Low Priority): 1) recruit more traditionally underrepresented students; 2) promote gender diversity in the faculty and administration; 3) promote racial and ethnic diversity in the faculty and administration, and 4) develop an appreciation for multiculturalism.

## Data

This analysis includes data from faculty respondents from the 10 BUILD grantee institutions who responded to both the 2017 and 2020 Higher Education Research Institute (HERI) Faculty Surveys (n=467). HERI produces nationally normed data from over 20,000 full-time undergraduate teaching faculty. The individual responses on the constructs were scored using Item Response Theory (IRT) to create a single score that was normalized using all institutions in the HERI survey to have a mean of 50 and a standard deviation of 10. A difference of 2 units is considered small and a difference of 5 units is a medium effect size.

Faculty were categorized into two exposure groups to capture potential differences in perceptions of institutional climate and commitment among them early in the implementation of this effort. The two groups are: 1) those who participated in BUILD activities prior to the launch of the 2020 survey in October 2019 (labeled BUILD), and 2) those who did not participate in BUILD activities before October 2019 (labeled non-BUILD).

The analysis was conducted using data from faculty members who responded to both the 2017 and 2020 surveys (n=467). Within BUILD and non-BUILD groups, analyses were stratified by gender, discipline (classified as Biomedical – Natural Sciences and Engineering, Biomedical – Behavioral and Social Sciences (Diversity Program Consortium, 2022b) or Non-Biomedical, URM status, and faculty rank. Change over time within groups was assessed using paired t-tests and the difference in change over time between groups was assessed using analysis of variance on the change scores.

## Perceptions of Climate for Diversity

Table 1 reports perceptions of institutional climate for the BUILD and non-BUILD groups stratified by gender, discipline, URM status, and faculty rank. Women in both the BUILD and non-BUILD groups reported significant declines in perceptions of institutional climate for diversity from 2017 to 2020. Scores among men in both the BUILD and non-BUILD groups also decreased from 2017 to 2020, but the changes were not statistically significant.

In analyses stratified by discipline, statistically significant decreases in perceptions of climate were found over time among the Biomed – Natural Science and Engineering discipline groups, for both BUILD and non-BUILD faculty. No significant change over time was found for Biomed – Behavioral and Social Sciences or the non-Biomed faculty groups, for either BUILD or non-BUILD.

In analyses stratified by under-represented racial and minority group (URM) versus well-represented group status (WRG), there were significant declines from 2017 to 2020 among the WRG BUILD and non-BUILD groups. There was little change over time among URM faculty.

When examining responses by faculty rank, several notable results emerged. Significant decreases over time within groups were observed for Assistant Professors and Full Professors who were BUILD faculty, and Associate Professors who were not involved with BUILD. There were some significant differences between groups in change over time: among Lecturers/Instructors, BUILD faculty reported a significantly steeper decline than non-BUILD faculty, and among Associate Professors, those involved in BUILD showed an increase while those not involved in BUILD showed a decrease. Furthermore, BUILD-involved lecturers/instructors showed a large decrease that was significantly different from the change in any of the other seven groups, and BUILD-involved Associate Professors showed an increase, which differed significantly from the change observed in any of the other seven groups.

**Table 1: Faculty Perceptions of Climate for Diversity by BUILD Participation, 2017 – 2020**

	BUILD			Non-BUILD		
	N	2017: Mean (SD)	2020: Mean (SD)	N	2017: Mean (SD)	2020: Mean (SD)
<b>By Gender</b>						
Women	116	48.02 (9.31)	46.42 <sup>a</sup> (8.90)	80	49.37 (8.38)	47.42 <sup>a</sup> (8.84)
Men	74	51.69 (8.59)	50.59 (8.20)	73	53.39 (8.46)	52.10 (8.34)
<b>By Discipline</b>						
Biomed – Natural Sciences and Engineering	109	50.59 (8.56)	49.05 <sup>a</sup> (8.27)	87	52.36 (8.45)	49.92 <sup>a</sup> (8.49)
Biomed – Behavioral and Social Sciences	35	47.44 (10.11)	46.43 (8.78)	26	50.15 (7.11)	49.12 (7.85)
Non-Biomed	32	47.44 (10.16)	46.19 (10.72)	35	49.37 (9.65)	49.25 (10.29)
<b>By URM Status</b>						
Under-Represented Racial and Minority Groups	45	47.03 (10.08)	46.23 (9.17)	24	47.27 (10.99)	47.32 (10.89)
Well-Represented Groups	135	50.15 (8.89)	48.72 <sup>a</sup> (8.80)	124	51.97 (7.86)	50.14 <sup>a</sup> (8.25)
<b>By Faculty Rank</b>						
Lecturer/Instructor	11	54.96 (10.62) <sup>c</sup>	50.96 (8.82)	25	50.36 (8.73)	50.02 <sup>b</sup> (7.27)
Assistant Professor	64	49.71 (9.98) <sup>a</sup>	46.83 (9.44)	29	50.29 (8.25)	48.34 (8.50)
Associate Professor	69	47.55 (8.77) <sup>d</sup>	48.72 (8.51)	30	50.63 (9.57)	47.58 <sup>ab</sup> (9.72)
Full Professor	46	50.61 (7.72) <sup>a</sup>	48.01 (8.52)	70	52.14 (8.48)	50.74 (9.28)

<sup>a</sup> p<.05 for within-group change over time; <sup>b</sup> p<.05 for difference in change over time between BUILD and non-BUILD; <sup>c</sup> p<.05 for difference in change over time between BUILD Lecturer/Instructor and all seven other groups; <sup>d</sup> p<.05 for difference in change over time between BUILD Associate Professor and all seven other groups.

### Institutional Commitment to Diversity

Whereas faculty perceptions of campus climate are based on responses about how much they agreed or disagreed with statements about campus actions, perceptions of the institution’s commitment to creating a diverse multicultural campus environment are based on a scale of how faculty believed their institution prioritized activities such as recruiting students and faculty from URM groups and diversifying the administration.

When examined by faculty rank, there was only one statistically significant change over time in perceptions of institutional commitment to diversity, which was among Full Professors not involved in BUILD, who reported a significant increase.

In general, there was little change over time in perceptions of institutional commitment to diversity. In analyses stratified by gender, discipline, and URM status, some groups showed slight decreases from 2017 to 2020 while others showed slight increases, but the changes were not statistically significant.

**Table 2: Faculty Perceptions of Institutional Commitment to Diversity by BUILD Participation, 2017 – 2020**

	BUILD			Non-BUILD		
	N	2017: Mean (SD)	2020: Mean (SD)	N	2017: Mean (SD)	2020: Mean (SD)
<b>By Gender</b>						
Women	109	52.00 (10.39)	52.87 (8.64)	73	54.83 (9.6)	55.68 (9.87)
Men	69	54.43 (10.21)	53.68 (8.78)	72	53.01 (8.70)	54.22 (6.51)
<b>By Discipline</b>						
Biomed – Natural Sciences and Engineering	106	53.54 (10.81)	54.36 (8.94)	84	52.83 (9.26)	54.19 (7.98)
Biomed – Behavioral and Social Sciences	35	51.24 (9.12)	51.76 (8.41)	25	54.04 (9.57)	53.95 (9.55)
Non-Biomed	31	52.94 (10.48)	51.49 (7.73)	34	56.30 (8.68)	56.78 (7.90)
<b>By URM Status</b>						
Under-Represented Racial and Minority Groups	45	51.05 (11.90)	49.90 (7.18)	23	52.39 (10.13)	52.88 (8.11)
Well-Represented Groups	131	53.77 (9.91)	54.54 (8.81)	121	54.20 (9.04)	55.22 (8.31)
<b>By Faculty Rank</b>						
Lecturer/Instructor	10	57.39 (11.80)	55.05 (7.95)	24	52.43 (8.39)	53.07 (8.23)
Assistant Professor	56	54.23 (11.26)	55.19 (8.4)	27	55.94 (8.37)	55.03 (8.11)
Associate Professor	67	50.41 (9.91)	52.55 (8.61)	28	56.50 (8.89)	54.13 (9.21)
Full Professor	45	54.13 (8.93)	53.71 (9.43)	67	52.48 (9.61)	55.96a (8.15)

<sup>a</sup> p<.05 for within-group change over time

## Conclusion

This analysis of change over time in faculty perceptions of climate and institutional commitment to diversity at BUILD grantee institutions found that perceptions of climate generally decreased over time, with statistically significant decreases observed for women, faculty in Biomedical – Natural Sciences and Engineering disciplines, and well-represented groups. However, for these groups, the magnitude of the changes was generally small (1 or 2 points at most) and did not differ between BUILD-involved and non-BUILD groups.

More varied results were observed when perceptions of climate were examined by faculty rank, although these differences were not always statistically significant. The largest decline in climate perceptions was among Lecturers/Instructors involved in BUILD, whose mean scores decreased by 4 points. The largest positive change was among BUILD-involved Associate Professors, whose mean scores increased by more than 1 point. For both groups, their change over time differed from their non-BUILD counterparts. BUILD-involved

Assistant and Full Professors showed declines in perceptions of climate, but their change did not differ from that of their counterparts. These results suggest that the impact of BUILD involvement on climate perceptions might be different for faculty of different ranks.

In contrast to perceptions of climate, this analysis found little evidence of change from 2017 to 2020 in perceptions of institutional commitment, regardless of gender, discipline, URM status, or BUILD involvement. The only evidence of change was for Full Professors not involved in BUILD, who had a mean increase of 3.5 points.

We conducted these analyses to assess changes in perceptions over time because such changes might serve as potential indicators of institutional changes at sites as a result of the BUILD programs. The general lack of increases in positive perceptions may be due to the slow nature of institutional changes. It is also possible that the faculty respondents included in our sample are not fully representative of the faculty at these

institutions. We will need to analyze data from the case studies being conducted at sites to see if and how the qualitative data compares to the results presented here.

### 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 here: <https://www.diversityprogramconsortium.org/pages/nih>

### Publication and Contact Information

This data brief is published by the Diversity Program Consortium's (DPC) Coordination and Evaluation Center (CEC) at UCLA, 1100 Glendon Ave. Suite 850, Los Angeles, CA 90024.  
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