



The national evaluation
of the NIH Diversity
Program Consortium

Data Brief

From the DPC Coordination and Evaluation Center at UCLA

April 2021

An early look at faculty perceptions of climate and institutional commitment to diversity at BUILD institutions

SUMMARY: The 10 NIH-funded BUILD programs are experiments at the student, faculty and institutional levels with the goal of creating a knowledge base to enhance diversity in the biomedical sciences. Two desired outcomes (also known as Hallmarks of Success) are 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) 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 analysis found few differences in perceptions of institutional climate and commitment among the faculty by their BUILD involvement in the early phase of the BUILD programs. This brief documents these differences in order to provide a baseline of faculty perceptions of institutional climate and commitment for future analyses of institutional change over time.

Background

Research has shown that institutional climates related to diversity and similar factors that contribute to a sense of belonging contribute to faculty retention and success for women and people of color in STEM^{2,3,4}. National results from the 2016-2017 HERI Faculty Survey note differences in perceptions of climate and institutional commitment in STEM faculty between women and men, and between individuals from Under-Represented racial and ethnic Groups (URGs), including American Indian/Alaska Native (AIAN), Black, and Latino faculty; and Well-Represented Groups (WRGs), including White and Asian faculty⁵. Their data show that women were more likely than men to feel that discrimination is a source of stress, and that White faculty were less likely than all other race/ethnicity groups to consider discrimination a source of stress. Research has also documented that campus racial climate has a statistically significant and programmatically relevant effect on URG faculty satisfaction⁶ and mental health⁷.

BUILD sites are implementing a variety of approaches focused on engaging students and faculty with the goal of creating sustainable, institutional change. Analyzing the baseline perceptions of institutional climate between BUILD involved and non-BUILD involved faculty can help us understand if and how the faculty members in this study differ from each at baseline. Future analyses of climate can indicate the extent to which institutional change at BUILD sites influenced their perceptions over time.

The Coordination and Evaluation Center (CEC) analyzed responses to the 2016-2017 HERI Faculty Survey from the 10 BUILD sites to assess the perceptions of institutional diversity and inclusion efforts on research training environments early in the BUILD program implementation. We used two constructs - perceptions of climate and institutional commitment to diversity. Campus climate for diversity is based on responses by faculty about how much they agreed or disagreed with five statements using a four point scale: 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; 5) and LGBTQ faculty are treated fairly. Perceptions of the institution's commitment to creating a diverse multicultural campus environment is a scale of how much of a priority the faculty believed each of the following items was at their institution using a four point scale: 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

The CEC launched the 2016-17 HERI Faculty Survey in spring 2017. This report includes respondents from the 10 BUILD grantees who responded to the survey. 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 which 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 5 is a medium effect size.

BUILD faculty were categorized into two exposure groups in order 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 this survey in October 2016 (labeled BUILD), and 2) those who did not participate in BUILD activities before then (labeled non-BUILD).

Perceptions of Climate for Diversity

We first analyzed the perceptions of institutional climate between men and women across the two groups. Overall, men report more significantly positive views of the climate at their institutions compared to women (Table 1). Results for women in the BUILD group report significantly lower ratings of institutional climate, as do women not involved with BUILD, compared to men in those categories. Yet, we see no significant differences in perceptions of climate between the BUILD and non-BUILD groups.

Table 1. Faculty Perceptions of Climate for Diversity by BUILD Participation⁸ and Gender

	Women		Men	
	Mean (SD)	N	Mean (SD)	N
BUILD	48.34 ^a (8.69)	149	51.26 ^a (8.81)	103
Non-BUILD	48.67 ^b (9.27)	242	53.00 ^b (8.46)	221

^{ab}Means with the same letter are significantly different using Duncan's multiple range test. p<.<.05

Second, we analyzed the data for potential differences between biomedical and non-biomedical faculty (Table 2). Here we see significant differences between the discipline groups within non-BUILD faculty, but not the BUILD faculty.

Table 2. Perceptions of Climate for Diversity by BUILD Participation and Discipline⁵

	Biomed - Natural Sciences and Engineering (NSE)		Biomed - Behavioral and Social Sciences (BSS)		Non-Biomed	
	Mean (SD)	N	Mean (SD)	N	Mean (SD)	N
BUILD	50.17 (8.66)	153	48.34 (7.92)	41	47.21 (10.02)	39
Non-BUILD	52.40 ^{ab} (8.57)	259	49.11 ^a (8.59)	74	48.14 ^b (10.09)	104

^{ab}Means with the same letter are significantly different using Duncan's multiple range test. p<.<.05

Next, we examined perceptions of climate between URG faculty compared with well-represented groups (WRG) according to BUILD involvement (Table 3). Here we see significantly higher ratings among the non-BUILD faculty from Well-Represented Groups compared to faculty from Under-Represented Groups who are non-BUILD.

Table 3. Perceptions of Diversity Climate by BUILD participation and URM status

	URG		WRG	
	Mean (SD)	N	Mean (SD)	N
BUILD	47.83 (9.80)	52	49.84 (8.52)	181
Non-BUILD	48.89 ^a (9.49)	114	51.46 ^a (8.95)	325

^aMeans with the same letter are significantly different using Duncan's multiple range test. p<.<.05

Lastly, we looked at climate rating by faculty of different ranks (Lecturer/Instructor, Assistant, Associate or Professor categories) and BUILD involvement (Table 4). The significant differences here were among the BUILD faculty, particularly between the Lecturer/Instructors whose rating were higher than those of Assistant or Associate professors.

Table 4. Perceptions of Diversity Climate by Faculty Rank

	Lecturer/Instructor		Assistant		Associate		Professor	
	Mean (SD)	N	Mean (SD)	N	Mean (SD)	N	Mean (SD)	N
BUILD	53.21 ^{ab} (9.72)	15	49.28 ^a (9.45)	92	48.88 ^b (8.08)	86	49.94 (8.37)	59
Non-BUILD	51.09 (9.27)	64	50.06 (8.90)	114	49.74	107	51.52 (8.86)	178

^{ab}Means with the same letter are significantly different using Duncan's multiple range test. p<.<.05

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 URGs, and diversifying the administration.

Faculty from well represented groups who were BUILD-involved (Table 5) reported higher levels of institutional commitment to diversity than URG faculty. We do not see any significant differences among the non-BUILD group.

We did not see any statistically significant differences in faculty perceptions of their institution's commitment to creating a diverse multicultural campus environment by gender or BUILD involvement. We also did not see statistically significant differences in perceptions of institutional commitment to diversity between biomed natural science, biomed social science or non-biomed faculty, regardless of their BUILD involvement.

Table 5. Perceptions of Institutional Commitment by BUILD Participation and URG Status

	URG		WRG	
	Mean (SD)	N	Mean (SD)	N
BUILD	49.50 ^a (11.08)	52	54.31 ^a (9.61)	179
Non-BUILD	52.60 (10.03)	113	53.24 (9.66)	324

^aMeans with the same letter are significantly different using Duncan's multiple range test. $p < .05$

Similar to perceptions of diversity climate, we see statistically significant differences in perceptions of institutional commitment to diversity among BUILD Lecturer/Instructors and Associate professors.

Table 6. Perceptions of Institutional Commitment by Faculty Rank

	Lecturer/Instructor		Assistant		Associate		Professor	
	Mean (SD)	N	Mean (SD)	N	Mean (SD)	N	Mean (SD)	N
BUILD	56.36 ^a (10.49)	15	53.33 (11.20)	84	51.81 ^a (9.30)	82	53.45 (9.30)	59
Non-BUILD	53.66 (9.91)	62	53.89 (9.50)	109	52.57 (10.04)	104	52.50 (9.78)	174

^aMeans with the same letter are significantly different using Duncan's multiple range test. $p < .05$

Conclusion

This analysis of faculty perceptions of climate and institutional commitment to diversity at the early stages of the BUILD program notes only a few variations between women and men faculty, and between URGs and WRGs. While the literature and earlier HERI reports use somewhat different measures for these concepts, the patterns we find are consistent with the other research. The lack of difference in perceptions of climate or commitment between BUILD-involved and non-BUILD groups suggests that all faculty have similar experiences of their campus, and that their perceptions are independent of BUILD involvement at this early stage.

The notably higher and statistically different ratings of climate and institutional commitment by biomedical/natural sciences faculty and Lecturer/Instructors who were BUILD-involved may be due to selection effects. Future analyses will assess if and how these perceptions change over time as an indicator of institutional changes during the BUILD programs. Foreseeable changes in ratings

by race/ethnicity, gender, or faculty rank may be due to how institutional changes impact their experiences based on their positionality rather than BUILD involvement. Thus, future analyses may benefit from including comparison institutions in the analysis, rather than just focusing on BUILD-involvement or demographic differences.

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. info@diversityprogramconsortium.org

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³ Johnson, D. R. (2012). Campus racial climate perceptions and overall sense of belonging among racially diverse women in STEM majors. *Journal of College Student Development*, 53(2), 336-346.

⁴ Jayakumar, U. , T. Howard , W. Allen , and J. Han. 2009. Racial Privilege in the Professoriate: An Exploration of Campus Climate, Retention, and Satisfaction. *The Journal of Higher Education* 80 (5): 538–563

⁵ Stolzenberg, E. B., Eagan, M. K., Zimmerman, H. B., Berdan Lozano, J., Cesar-Davis, N. M., Aragon, M. C., & Rios-Aguilar, C. (2019). Undergraduate teaching faculty: The HERI Faculty Survey 2016–2017. Los Angeles: Higher Education Research Institute, UCLA. At <https://www.heri.ucla.edu/monographs/HERI-FAC2017-monograph-expanded.pdf>.

⁵ The DPC identified a set of biomedical majors that reflects the targeted disciplines of the BUILD sites, which is somewhat broader than the NSF-NIH list used in their surveys of graduate and postdoctoral students. At https://www.diversityprogramconsortium.org/pages/biomedical_majors_list.

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⁷ Zambrana, R.E., Valdez, R.B., Pittman, C.T., Bartko, T., Weber, L. and Parra-Medina, D. (2021). Workplace stress and discrimination effects on the physical and depressive symptoms of underrepresented minority faculty. *Stress and Health*. At <https://doi.org/10.1002/smi.2983>.

⁸ In these analyses, BUILD involved means that a faculty member was listed as a registered participant in any BUILD activity.