



The national evaluation  
of the NIH Diversity  
Program Consortium

# Data Brief

From the DPC Coordination and Evaluation Center at UCLA

February 2023

## Self-reported Impacts of the COVID-19 Pandemic on Faculty Research Productivity, Creativity and Motivation from the 2021 Enhance Diversity Study, Faculty Annual Follow-up Survey

**SUMMARY:** In the Spring of 2021, the Enhance Diversity Study (EDS) invited professors, lecturers, and instructors from the DPC BUILD institutions to participate in the 2021 Faculty Annual Follow-up Survey (FAFS). Eight items were added to the FAFS 2021 to allow respondents to describe how the COVID-19 pandemic impacted their personal and professional life. This brief highlights responses from two of these items that focus on research productivity, creativity and motivation. These items provide insight on the impact of the COVID-19 pandemic on important DPC hallmarks. Over half the faculty respondents reported that their research productivity suffered as a result of the COVID-19 pandemic, and a majority of respondents (70%) reported that their research creativity or motivation decreased. Notably, women, junior, and mid-level faculty reported the most negative impacts. Future research will include follow up data points from the 2022 FAFS to further understand the impacts of the COVID-19 pandemic on the research activities of EDS participants.

### HALLMARKS OF SUCCESS:

- FAC-6 High self-efficacy as an independent biomedical researcher
- FAC-7 High self-efficacy in the ability to secure external funding
- FAC-8 Engaged in activities to secure research or research training funding
- FAC-9 Securing research or research training funding
- FAC-10 Evidence of scholarly productivity

### Introduction

The Coordination and Evaluation Center (CEC) at UCLA directs the Enhance Diversity Study (EDS): a large-scale, systemic, national, longitudinal evaluation of interventions targeting biomedical research training programs funded by the National Institutes of Health (NIH) and managed by the National Institute of General Medical Sciences (NIGMS) (Hurtado et al., 2017). The EDS collects annual survey data to track outcomes of interest (aka hallmarks of success) and invites faculty in biomedical fields (natural sciences, social sciences, and engineering) at each DPC BUILD institution to participate (Guerrero et al., 2022).

In the Spring of 2021, the EDS invited professors, lecturers, and instructors from the DPC BUILD

institutions to participate in the 2021 Faculty Annual Follow-up Survey (FAFS) (Enhance Diversity Study, 2021). At the same time, the COVID-19 pandemic was affecting every aspect of life, and in response, the CEC added eight pandemic-focused items to gauge how the pandemic influenced EDS faculty participants. This brief highlights responses from two survey items that may relate to the following hallmarks: FAC-6 High self-efficacy as an independent biomedical researcher, FAC-7 High self-efficacy in the ability to secure external funding, FAC-8 Engaged in activities to secure research or research training funding, FAC-9 Securing research or research training funding, and FAC-10 Evidence of scholarly productivity (Diversity Program Consortium, 2022). The

first item focuses on research productivity while the second is centered on research creativity or motivation. These items provide insight on the COVID-19 pandemic's impact on these DPC hallmarks.

This brief describes the self-reported impacts of the COVID-19 pandemic on faculty who participated in the 2021 Enhance Diversity Study Faculty Annual Follow-up Survey. Specifically:

1. To what extent did faculty feel their research productivity (e.g., manuscripts, grant writing, experiments) suffered as a result of the COVID-19 pandemic?
2. To what extent did faculty experience any changes in research creativity or motivation since March 2020 when the COVID-19 pandemic was declared?

3. Are there differences in self-reported impacts on research productivity, research creativity, or motivation by demographic subgroups (gender identity, racial/ethnic identity, BUILD program involvement, academic rank or campus type)?

These questions were answered by two items presented to FAFS respondents. The impact on research productivity was presented to respondents as part of a set of items (figure 1). For this analysis we focused only on the item concerning research productivity, which is defined as manuscripts, grant writing, and experiments within the red box in Figure 1. Respondents were provided a 5-point Likert scale response, ranging from “To a Very Large Extent” (1) to “Not at all” (5). There was an option to indicate “Choose not to respond”.

**Figure 1**  
FAFS Survey Question 44

OMB #0925-0747 Expiration Date: 05/31/2023

As a result of the COVID-19 pandemic (starting around March 15, 2020), please indicate the extent to which you:

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Feel confident in your ability to provide effective instruction exclusively online

To a very large extent    To a large extent    To some extent    To a small extent    Not at all    I choose not to respond

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Maintained communication with students that you mentor

To a very large extent    To a large extent    To some extent    To a small extent    Not at all    I choose not to respond

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Are concerned about your job security

To a very large extent    To a large extent    To some extent    To a small extent    Not at all    I choose not to respond

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Feel your research productivity (e.g., manuscripts, grant writing, experiments) has suffered

To a very large extent    To a large extent    To some extent    To a small extent    Not at all    I choose not to respond

Note. Red box highlights research productivity item.

The research creativity or motivation question was presented as part of a different set of pandemic related items, highlighted by the red box in Figure 2. Respondents were provided a 5-point Likert scale response, ranging from “Decreased a lot” (1) to “Increased a lot” (5) and an option to indicate “Can’t Rate”.

**Figure 2**  
FAFS Survey Question 46

OMB #0925-0747 Expiration Date: 05/31/2023

Since March 2020 when the COVID-19 pandemic started in the US, have you experienced any changes in the following?

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Access to mentors

Decreased a lot  Decreased a little  Did not change  Increased a little  Increased a lot  Can't Rate

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Access to mentees

Decreased a lot  Decreased a little  Did not change  Increased a little  Increased a lot  Can't Rate

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Opportunities to conduct research

Decreased a lot  Decreased a little  Did not change  Increased a little  Increased a lot  Can't Rate

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Opportunities to publish research

Decreased a lot  Decreased a little  Did not change  Increased a little  Increased a lot  Can't Rate

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Access to research facilities, supplies, or staff

Decreased a lot  Decreased a little  Did not change  Increased a little  Increased a lot  Can't Rate

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Research creativity or motivation

Decreased a lot  Decreased a little  Did not change  Increased a little  Increased a lot  Can't Rate

Note. Red box highlights research creativity or motivation item.

## Data

Of the 2,181 invited to participate in the 2021 Faculty Annual Follow-up Survey (FAFS), 669 responded. Not all respondents completed the survey; the two items of focus were towards the end of the survey and were completed by 526 respondents. Analysis was further restricted to responses from tenure-track faculty, as it is more difficult to determine the importance of research productivity for faculty in non-tenured teaching or administrative positions. The final sample was 408 for the research productivity item and 410 for the research creativity/motivation item. Differences by subgroups were examined using Chi-square analyses, excluding the “Choose not to respond” and “Can’t Rate” responses respectively.

**Gender Identity.** Overall, 52% of the respondents identified as a Woman, 46% identified as a Man, and 2% identified with an Other Gender Identity, which includes respondents who identified as a Trans Man (<1%), as a Trans Woman (<1%), as Gender queer/ Gender non-conforming (<1%), and those choosing not to answer (2%).

**Racial / Ethnic Identity.** Overall, 19% of respondents identified as Asian; 9% identified as Black or African American and 13% identified as Hispanic, Latina/o, or Spanish Origin and 53%

identified as White. We also created a category “Other” (7%) which included those who selected the survey option Other Race, Ethnicity or Origin (2%), Middle Eastern or North African (0.7%) and those who selected 2 or more categories (4%).

**BUILD Program Involvement.** Involvement with a BUILD program was defined by participating in at least one of the following BUILD activities by September 2020, the Fall prior to the survey: research training & support, pilot funding or lab grants. BUILD-involved respondents comprised 44% of total respondents.

**Academic Rank.** Rank was self-reported on the survey. For this brief, we analyzed data for those in tenure-track positions. Respondents were evenly distributed among the categories of Professor (35%), Associate Professor (35%), and Assistant Professor (30%). A total of 113 (21%) of 526 respondents indicated non-tenure track positions (Lecturer (n=45), Non-faculty or administrative position (n=42), Retired/Emeritus (n=10), Faculty but no rank or Adjunct Faculty (n=15)) and one response was missing this information.

**Campus Type.** Similar to the Student COVID-19 brief (Ramirez et al., 2022), the study sites were

categorized into three campus types based on institutional status as a minority-serving institution: Historically Black Colleges and Universities (HBCU), defined as a historically Black college or university established before 1964 whose primary mission is to educate Black Americans (17% of respondents); Hispanic-Serving Institutions (HSI), where 25% or more of full-time undergraduates identify as Hispanic (52% of respondents); and Other Campus Type, a combination of Asian American and Native American Pacific Islander-Serving Institutions (AANAPISI) and the institutions with a student demographic makeup that did not meet the definition of minority-serving institution classifications (31% of respondents) (National Center for Education Statistics, 2022; National Academies of Sciences, Engineering, and Medicine, 2019).

### Self-reported COVID-19 Pandemic Effects on EDS Participants

Overall, more than half (53%) of respondents felt that their research productivity suffered to a large or very large extent as a result of the pandemic (Table 1). Among subgroups, there were significant differences by gender identity, academic rank, and campus type. Women, Assistant or Associate Professors, and those at HBCUs or HSIs were more likely to report extensive disruption to research productivity. The data were further disaggregated by variation by rank within gender. Women who were Assistant or Associate Professors reported the highest disruption ( $p < 0.001$ , data not shown). There were no significant differences by racial/ethnic identity or BUILD involvement (data not shown).

**Table 1: Extent to which Respondents Reported their Research Productivity has Suffered as a Result of the COVID-19 Pandemic by Demographic Sub-Group and Campus Characteristics**

	n	To a Very Large Extent %	To a Large Extent %	To Some Extent %	To a Small Extent %	Not at All %
<b>Total</b>	408	32	21	28	12	7
<b>Gender Identity*</b>						
Man	186	23	27	32	12	6
Woman	213	41	17	24	11	7
Other	9	22	11	44	22	0
<b>Academic Rank*</b>						
Professor	144	24	17	33	17	9
Associate Professor	141	38	22	23	9	7
Assistant Professor	123	35	25	29	7	3
<b>Campus Type*</b>						
HBCU	68	38	18	31	4	9
HSI	212	37	20	23	13	7
Other	128	20	25	36	13	5

\*p-value <0.05 for gender sub-group differences by Chi-square

Overall, most respondents reported experiencing changes in levels of research creativity or motivation since March 2020 when the COVID-19 pandemic was declared in the US. Specifically, a third of the respondents reported that their research creativity or motivation decreased a lot and another 39% reported that it decreased a little (Table 2). Alternatively, 8% of respondents reported increased creativity and motivation since the start of the COVID-19 pandemic. There were significant differences in the changes reported by gender identity and academic rank, with women and Assistant or Associate Professors reporting the largest decrease in motivation. In stratified analyses, women Assistant or Associate Professors were more likely to report a sizable decrease in levels of creativity or motivation than other groups. There were no significant differences by racial/ethnic identity, BUILD program involvement or campus type (data not shown).

**Table 2: Extent to which Respondents Experienced Changes in Research Creativity or Motivation Since the Start of the Pandemic by Demographic Sub-Group**

	n	Decreased a Lot %	Decreased a Little %	Did Not Change %	Increased a Little %	Increased a Lot %
<b>Total</b>	410	31	39	22	6	2
<b>Gender Identity*</b>						
Man	188	22	45	27	5	1
Woman	213	40	32	18	8	2
Other	9	22	67	11	0	0
<b>Academic Rank*</b>						
Professor	143	24	41	31	4	0
Associate Professor	142	38	32	19	8	3
Assistant Professor	125	33	43	15	6	2

\*p-value <0.05 for gender sub-group differences by Chi-square

### Conclusion

The COVID-19 pandemic adversely affected EDS faculty respondents' research productivity, creativity, and motivation. Overall, faculty describe their research productivity as having suffered as a result of the COVID-19 pandemic; indeed, half of respondents described their productivity as suffering to a large extent. Faculty research creativity or motivation was also impacted during the pandemic. A majority of respondents (70%) reported that their research creativity or motivation decreased. Notably, women, junior, and mid-level faculty reported the most negative effects. These results describe the impact of the COVID-19 pandemic on research productivity among FAFS 2021 respondents during the Spring of 2021. Future research will include follow-up data points from the 2022 FAFS to further understand the differences in the effects of the COVID-19 pandemic on the research activities of EDS participants, including more objective measures of research productivity.

## 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](mailto:info@diversityprogramconsortium.org)

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