



National Institutes of Health Diversity Supplements: Pathway to Independence

Executive summary

The National Institutes of Health (NIH) is a prime source of research funding for biomedical scientists. However, historically funding has not been distributed equitably across racial groups, with NIH R01 and career-development grants awarded at disproportionately low rates to Black and Latino scientists. To remedy the disparities, the NIH has created funding mechanisms and highlighted existing programs, such as its diversity supplement awards.

The NIH developed workforce diversity supplement awards in 1989 to increase participation by members of historically marginalized groups (HMGs), such as those from certain racial groups, women, individuals with disabilities, and those from other disadvantaged backgrounds at all career stages. Since their inception, the awards have been underutilized despite being successful at increasing the number of HMGs in scientific careers. In November 2022, the NIH workforce diversity office held a [seminar](#) about the successes and impacts of diversity supplements.

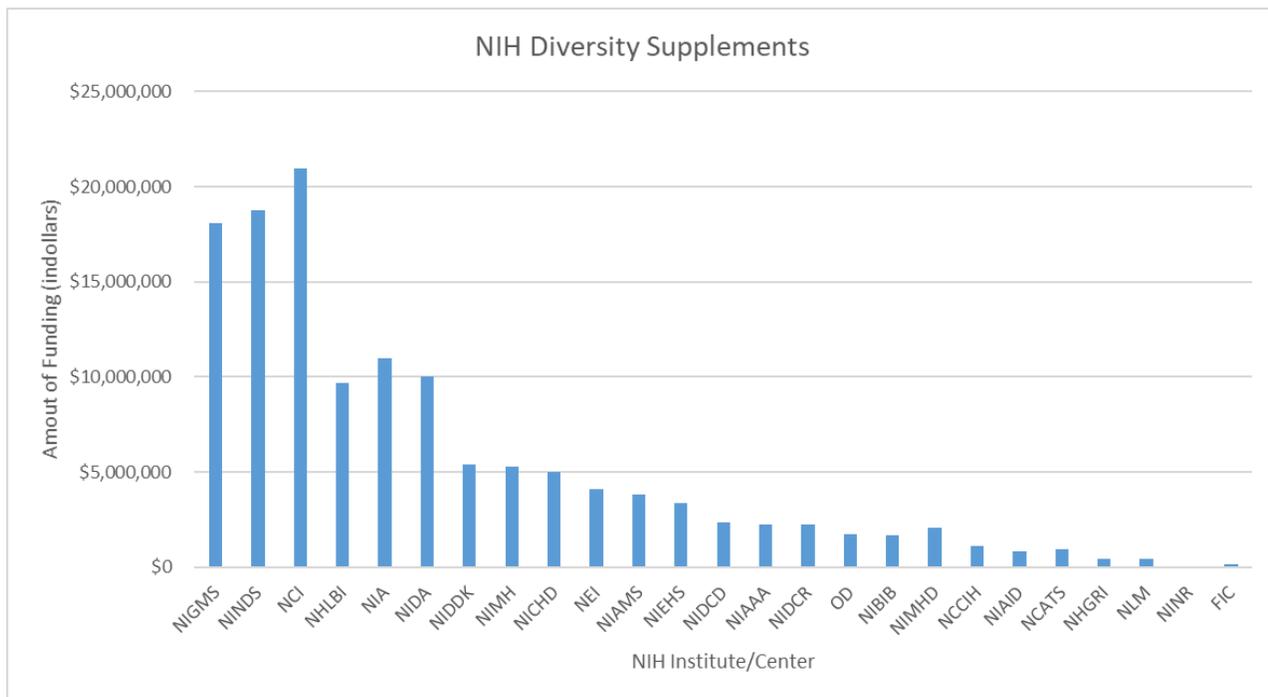
However, the successes vary between participating institutes and centers as each IC administers the supplements differently. Our analysis found that the NIH institutes and centers that are excelling in awarding diversity supplements not only require more from their awardees, but they are also providing additional programming to support awardees in obtaining a pathway to independent research funding.

Scope of problem

Diversity supplements have proved to be effective in increasing diversity in STEM careers, specifically in [academia](#). However, due to institute-specific application requirements, the supplement programs are not administered in the same fashion across all participating institutes and centers.

A [2021 study](#) found that from 2005 to 2020, NIH diversity supplements were successful in increasing diversity in the biomedical workforce, but there was a lack of data on the supplement program, including the administration of the supplements.

To understand the attributes of the administration of diversity supplements across participating institutes and centers, the American Society for Biochemistry and Molecular Biology public affairs staff conducted an analysis of the application requirements for diversity supplements for each NIH IC.



NIH Institute or Center	Fellowship or career development submission required/encouraged	Has additional programming	Programs
National Institute of General Medical Sciences	YES	YES	Application must include Individual Development Plan
National Institute of Neurological Disorders and Stroke	YES	YES	Building the Nerve Podcast
National Cancer Institute	YES	YES	CURES Program
National Heart, Lung, and Blood Institute	YES	NO	N/A
National Institute on Aging	YES	NO	Application must include an Individual Development Plan
National Institute on Drug Abuse	YES	YES	NIDA Office of Diversity and Health Disparities (ODHD) Diversity Supplement Workshop

National Institute of Diabetes and Digestive and Kidney Diseases	YES	NO	N/A
National Institute of Mental Health	YES	NO	N/A
Eunice Kennedy Shriver National Institute of Child Health and Human Development	YES	NO	N/A
National Eye Institute	NO	NO	N/A
National Institute of Arthritis and Musculoskeletal and Skin Diseases	NO	YES	Diversity Supplement Scholars program
National Institute of Environmental Health Sciences	NO	YES	Diverse Researcher's Integrated Virtual Engagement Network (Driven)
National Institute of Deafness and Other Communication Disorders	YES	YES	National Institute Deafness and other Communication Disorders Diversity Scholars program
National Institute of Alcohol Abuse and Alcoholism	NO	NO	N/A
National Institute of Dental and Craniofacial Research	YES	NO	N/A
National Institute of Biomedical Imaging and Bioengineering	YES	NO	N/A
National Institute on Minority Health and Health Disparities	YES	NO	N/A
National Center for Complementary and Integrative Health	NO	NO	N/A
National Institute of Allergy and Infectious Diseases	NO	NO	N/A
National Center for Advancing Translational Sciences	YES	NO	N/A

National Human Genome Research Institute	YES	YES	NHGRI Research Training and Career Development Annual Meeting
National Library of Medicine	NO	NO	N/A
National Institute of Nursing Research	NO	NO	N/A
Fogarty International Center	NO	NO	N/A

Top 10 institutes and center	Number of active diversity supplements (FY 2022)
National Institute of General Medical Sciences	310
National Institute of Neurological Disorders and Stroke	277
National Cancer Institute	232
National Heart, Lung, and Blood Institute	139
National Institute on Aging	138
National Institute on Drug Abuse	115
National Institute of Diabetes and Digestive and Kidney Diseases	78
National Institute of Mental Health	68
Eunice Kennedy Shriver National Institute of Child Health and Human Development	62
National Eye Institute	58

Methods

Using the publicly available NIH Reporter tool, we identified the number of diversity supplements from [FY 2018 through FY 2022](#) (funding opportunity announcement number PA-21-071; total of 1,823 projects were associated with diversity supplements) awarded to projects funded by each participating institute. For analysis of unique attributes, we referenced the inclusion or exclusion of required submission of fellowship (F) or career development (K) grants as well as additional professional-development programming to increase the production of grant awards, publications and retention in STEM-related careers. These attributes are used by [NIH program officers as measurements of productivity](#) and are used to [evaluate the impact](#) of the awards.

Results

Our analysis found similar attributes among the institutes and centers that award the most diversity supplements, with the institutes issuing the most awards requiring or encouraging the submission of fellowship (F) or career development (K) awards and offering additional programming or mentorship programs.

Additional programming included activities such as a two-day grant application and professional-development [workshop](#) by the National Institute on Drug Abuse and the “Building up the Nerve” [podcast](#) by the National Institute of Neurological Disorders and Stroke, which provides resources and information on grant cycles and career development. Upon analysis of these programs, we found that the top awarding institutes — [NIGMS](#), [NINDS](#) and [NCI](#) — all held these attributes, submission to F or K awards and professional-development programs.

While most of the results revealed that institutes with the [largest number of active awards](#) funded high numbers of supplement awards, our analysis found that, among the highly active institutes, one institute, NIAID, interestingly, ranks low in issuing diversity supplements: It had issued only 14 supplements under the current funding announcement compared with similarly funded institutes, such as NIGMS and NCI, which awarded 310 and 232 diversity supplements in fiscal year 2022, respectively.

To standardize diversity supplements across all participating institutes and centers, we recommend the NIH implement the following changes:

- All institutes should require the submission of fellowship, career-development or research project grants.
- All institutes should provide or share professional- and career-development opportunities with diversity supplement awardees.
- All institutes should perform outreach on diversity supplements to professional societies, conferences and social media outlets.

Policy recommendations for NIH

Recommendation 1: Participating institutes and centers should require submission of fellowship (F) and career development (K) awards for diversity supplement awardees. The NIGMS, NINDS, NIA and NCI all require or encourage the submission of fellowship and early-career awards for diversity supplement awardees. With funding disparities among underrepresented groups persisting, providing a pipeline to independent funding is key to retaining more historically marginalized groups in academia and other scientific careers.

Recommendation 2: NIAID should coordinate with NIGMS and NINDS to restructure the institute’s diversity supplement program and allocate more funding for diversity supplement awards.

Recommendation 3: Participating institutes and centers should provide additional programming for scholars, including but not limited to grant writing workshops, networking programs and podcasts. Institutes with higher numbers of diversity supplements offer programming for networking and professional-development opportunities.

Policy recommendation for Congress

Recommendation 4: Allocate more funding for diversity supplements, specifically for NIGMS and NINDS. Overwhelmingly, NIH supplements have proved successful in increasing retention and diversity in scientific careers. Both NIGMS and NINDS have demonstrated success in providing pathways to independent research careers.

Conclusion

NIH diversity supplements can be a successful funding mechanism to increase diversity at all career stages in the biomedical science enterprise. Understanding specific requirements of and standards held by the top-issuing diversity supplement programs can inform policies to strengthen these programs across the NIH. At the top-issuing institutes and centers, diversity supplement programs are administered similar to scholar programs by providing additional resources and requirements to support an independent research career. To ensure that all participating NIH institutes are achieving success and meeting the goals of the supplements, all institutes should adopt the programming practices of NIGMS, NCI and NINDS.

Sources

1. Ginther DK, Schaffer WT, Schnell J, et al.. Race, ethnicity, and NIH research awards. *Science*. 2011;333(6045):1015-1019. doi: 10.1126/science.1196783
2. Hill KA, Desai MM, Chaudhry SI, Nguyen M, Boatright D. NIH Diversity Supplement Awards by Year and Administering Institute. *JAMA*. 2021 Dec 21;326(23):2427-2429. doi: 10.1001/jama.2021.19360. PMID: 34932089; PMCID: PMC8693216.