National Advisory Council for Human Genome Research

February 22, 2021

Concept Clearance for RFA

Grants for New Investigators to Promote Diversity in Genomics Research (R01)

Purpose:
The National Human Genome Research Institute (NHGRI) proposes to issue a Request for Applications (RFA) for New Investigators to Promote Diversity in Genomics Research (R01 Clinical Trial Optional). This program is intended to provide funds for New Investigators from diverse backgrounds, including those from groups underrepresented in the biomedical sciences, to pursue independent genomic research within the mission of NHGRI. NIH awards are made to institutions, but for the purposes of this Concept Clearance, the terms 'applications' and 'awards' refer to those senior and key personnel on applications and/or awards, respectively.

Background:
There are many benefits to fostering a diverse workforce, for example promoting diversity of scientific ideas, understanding different perspectives from researchers and maintaining cultures of inclusive excellence in the genomic research community. The goal of enhancing the diversity of the genomic workforce is also likely to synergize with efforts to increase the diversity of individuals participating as investigators in genomics research, an increasingly urgent need in both genomic research and applying genomics in clinical care. Indeed the 2020 NHGRI Strategic Vision (PMID: 33116284) lists "Champion a diverse workforce" as one of the guiding principles/values for human genomics. To pursue this, the NHGRI recently published its action agenda for building a diverse genomics workforce (Bonham, Green, 2021 AJHG), the result of an intensive year-long task force effort to develop a workforce diversity strategic plan and produce initiatives needed to enhance diversity, including addressing groups nationally underrepresented in the genomics research workforce. This initiative is part of that emerging portfolio and is intended to address the third strategic goal of that action agenda, to develop and support research transition programs to independent genomic research careers.

The NIH has issued a notice of NIH's interest in diversity NOT-OD-20-031. This NIH statement describes four categories of individuals who are underrepresented populations in the U.S. biomedical, clinical, behavioral and social sciences research enterprise: A) individuals from certain racial and ethnic groups; B) individuals with disabilities; C) individuals from certain disadvantaged backgrounds; and D) women under certain circumstances. This NIH statement provides the justification for these assertions.

While some progress is being made at early career levels, the only category we have data from is underrepresented racial and ethnic groups. For example, the NIH's Scientific Workforce Diversity Office reported that 14% of PhDs in STEM fields (science, technology, engineering, math) were awarded to URM candidates in 2018, up from 7% in 2000-2008, and that 14% of career (K) applicants identified as Black/African American or Hispanic/Latinx in 2018, up from 11% in 2013. While these modest gains still need considerable improvement, they contrast sharply with the 6.8% representation of Black/African American and Hispanic/Latinx applicants for R01s, a proportion that has barely budged from 6.2% in 2013 (https://diversity.nih.gov/sites/coswd/files/images/docs/SWD_Progress_2020_Infographic_Final.pdf). Success rates of R01 and R01-equivalent applications are also roughly 40% lower for URM investigators than non-minority applicants, with choice of research topic

(community and population level research vs. more fundamental and mechanistic investigations) accounting for a sizeable proportion of that gap (PMID: 31633016). Our goal is to achieve equity and provide opportunities for researchers from diverse backgrounds, including those from groups underrepresented in the genomics workforce. Unfortunately, NHGRI's proportion of awards to URM investigators for R01 and R01 equivalent grants was less than half that for NIH overall. This glaring underrepresentation in NHGRI's R01 portfolio calls for urgent attention to invite and improve greater diversity in the genomics workforce. Indeed, given the critical need for improved understanding and application of the genomics of non-European ancestry populations, NHGRI should be exceeding, and not simply matching, NIH's performance in this area.

NHGRI is currently signed on to Small Grants for New Investigators to Promote Diversity in Health-Related Research PAR-19-222. That PAR offers R21 support to meritorious applications from individuals that 1) the institutions consider candidates from diverse backgrounds, including groups from those underrepresented and 2) have not received significant research support.

Proposed Scope and Objectives:
This program is modeled on PAR-19-222 and would support research performed by investigators who are individuals from diverse backgrounds, including those from underrepresented groups (as described in NOT-OD-20-031).

The goal is to enhance the diversity of the genomics workforce. Eligibility criteria will include applicants who meet the NIH criteria for New Investigator (including Early Stage Investigators, a subset of New Investigators). New Investigators are investigators who have not previously competed successfully for substantial, independent funding from NIH.

Applicants to NHGRI may propose any research topic suitable for an R01 within the NHGRI mission, as described on the NHGRI website for the Division of Genome Sciences, the Division of Genomic Medicine, and the Division of Genomics and Society. Other topics may be accepted by other Institutes and Centers if they participate.

This FOA is designed to provide additional opportunities for individuals from diverse backgrounds, including those from groups underrepresented in the genomics workforce, to obtain an R01 grant, which is both a recognized standard of success in obtaining NIH research funding and a significant career milestone. New Investigators and Early Stage Investigators consist of a greater percentage of underrepresented racial/ethnic groups and women compared to experienced investigators; focus on their career stage could enhance transition to later stages (Nikaj et al., 2018).

Relationship to Ongoing Activities:
NHGRI participates in PAR-19-222 R21 "Small Grants for New Investigators to Promote Diversity in Health-Related Research," providing support for New Investigators from diverse backgrounds to conduct small exploratory research projects. MOSAIC K99/R00 (Maximizing Opportunities for Scientific and Academic Independent Careers) supports an earlier career stage to launch successful, independent research careers for investigators from diverse backgrounds. The R01 proposed in this concept would complement these opportunities. Relative to the R21, the proposed RFA offers standard project periods and budgets to applicants with substantial preliminary data. Relative to the K99/R00, the proposed RFA offers support to investigators that have already transitioned to independent research positions. Relative to the parent R01 (PA-20-185) the proposed RFA offers set aside funds and review as a cohort.

Mechanism of Support and Funds Anticipated:
NHGRI is proposing the R01 grant mechanism for this initiative. NHGRI anticipates funding 5-7 applications each year of the 3-year RFA, for an approximate set aside of $5.25M total cost in the first fiscal year. Each award is limited to $500K direct costs per year and scientific projects are limited to 5 years.