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May 27, 2022

National Institute for General Medical Sciences
National Institutes of Health
45 Center Drive
MSC 6200
Bethesda, Maryland 20892

RE: Request for Information (RFI): Initiatives that Improve Research Training, Career Progression, or the Educational Environment in the Biomedical Research Enterprise (NOT-GM-22-030)

Submitted electronically at https://www.research.net/r/NIGMS_TWD_RFI

Dear Drs. Gammie, Blatch, and Nelson,

The Association of American Medical Colleges (AAMC) appreciates the opportunity to provide feedback to the National Institutes of General Medical Sciences (NIGMS) on initiatives that improve research training, career progression, or the educational environment in the biomedical research enterprise. The AAMC (Association of American Medical Colleges) is a nonprofit association dedicated to improving the health of people everywhere through medical education, health care, medical research, and community collaborations. Its members comprise all 155 accredited U.S. and 16 accredited Canadian medical schools; approximately 400 teaching hospitals and health systems, including Department of Veterans Affairs medical centers; and more than 70 academic societies. Through these institutions and organizations, the AAMC leads and serves America's medical schools and teaching hospitals and the millions of individuals employed across academic medicine, including more than 191,000 full-time faculty members, 95,000 medical students, 149,000 resident physicians, and 60,000 graduate students and postdoctoral researchers in the biomedical sciences. In 2022, the Association of Academic Health Centers and the Association of Academic Health Centers International merged into the AAMC, broadening the AAMC's U.S. membership and expanding its reach to international academic health centers.

The AAMC shares NIGMS's commitment to building a strong and diverse biomedical research workforce. Academic medical centers play a leading role in training the next generation of scientists. These scientists enter a broad range of careers in which they apply critical thinking and analytical methods to support the research enterprise in roles such as biomedical researchers, academic and industry administrative leaders, writers, consultants, and policy makers. The AAMC is pleased that the NIGMS has reached out to the research and research training communities for input on their programs at the

undergraduate, graduate, and postdoctoral levels, and we have garnered perspectives from the academic medicine community¹ to provide this feedback.

Program benefits

Career success

Biomedical research training programs add enormous value to society by developing the next generation of biomedical researchers and scientists that support the advancements of new breakthroughs to improve health and transform health care. The NIGMS-supported programs provide research trainees at various stages of their career development the necessary skills-development, mentorship, and cohort-building for them to achieve successful careers. Participation in these programs is beneficial for career success.

Evidenced-based program development

The AAMC values NIGMS's commitment to evidenced-based program development and evaluation to identify new program opportunities and areas of potential improvement to existing programs. For example, NIGMS sought feedback from the community through requests for information and community conversations to identify potential new strategies for enhancing postdoctoral career transitions to promote faculty diversity, ultimately developing its new Maximizing Opportunities for Scientific and Academic Independent Careers (MOSAIC) program.²

Driver of change

The NIGMS-supported training programs provide impetus for institutions and the broader research community to implement changes that might not necessarily happen as quickly if the programs were not in place. For example, institutional and program leadership must commit to supporting research workforce diversity which leads to action on recruiting and program support. The impact of this commitment goes beyond the NIGMS-supported programs and can lead to broader institutional culture change, which may be harder to implement only from within. Other examples include programs being more trainee centric, implementing intersectional mentorship and sponsorship, and a strong institutional commitment.

Benefits beyond those supported directly on program

The NIGMS-supported training programs are beneficial to the individual students and postdoctorates who are appointed to the training programs, but also extend beyond those trainees to the departments and programs more broadly. Several constituents commented that all their trainees receive value from the structure, processes, and initiatives implemented at the institution through the programs. For example, one institution noted that driven by grant expectations, a new mentoring program was implemented for all graduate students at the institution, regardless of funding source.

Increasing program quality

The training program funding mechanism attracts students and postdoctorates that might have not considered their institution. For example, a constituent noted that their institution received an increase in the quality and diversity of program applicants once their program received Medical Scientist Training funding.

¹ Including the following AAMC professional development groups: the Group on Research Advancement and Development (GRAND); the Group on Research, Education and Training (GREAT); the Group on Women in Medicine and Science (GWIMS); the Group on Faculty Affairs (GFA); and the Group on Diversity and Inclusion (GDI)

² AAMC is a MOSAIC program cooperative agreement awardee and provides skill-building activities, mentorship, leadership development, and cohort building for MOSAIC scholars.

Suggested program improvements

Increased sharing across programs

Leadership of NIGMS-supported training programs should be encouraged to break down barriers to integration across different programs at the same institution. At some institutions, programs were said to be well-coordinated, especially those that share the same co-PIs or faculty. However, we also heard instances of this not being the case. For example, a commenter noted that their institution has multiple T32s, but the programs remain mainly division/department based, without intentional cross talk between the program directors. We suggest that training grant applicants are explicitly asked to describe how the new program would be connected to existing NIH-funded institutional training programs and describe efforts to avoid duplication, take advantage of shared resources, connect a cohort of trainees that can serve as peer and near-peer mentors, and share and learn from each other.

We also heard the desire for increased sharing and networking opportunities between the same programs at different institutions. NIGMS should consider facilitating increased opportunities for sharing, such as implementing a “pod model” where several grantees are brought together on a regular basis and partnering with organizations and professional societies to share practices and disseminate tools and resources.

Soliciting and leveraging broader input

Training program directors and staff should be expected to seek and acknowledge feedback from within and outside their institutions on the broader impacts of their program(s) and ways to improve the training experience and program outcomes. While some programs are required to have internal and external advisory committees, program directors should be held accountable to utilizing them effectively.

Support of healthy culture and environments and increase cohort building

Much attention is given to the technical aspects of a training program, such as the research skills-development, leadership and professional development, and mentorship. However, increased attention is needed to create an attractive, equitable, inclusive, and anti-racist learning and workplace environment. NIGMS should consider ways in which tools and resources on topics such as wellness, marginalization and isolation, conflict-resolution, difficult conversations, microaggressions, racial battle fatigue, building community, and networking can be shared across programs. In addition, cohort building activities, such as those integrated into the MOSAIC program, could receive increased emphasis and support.

Consider sharing and creating new possible models of administrative program support

While extremely valuable to have uniform data collection and thoughtful evaluation of training programs to assess success and implement improvements, the data collection and evaluation components of the training programs are often considered challenging and resource intensive. Larger institutions with multiple training programs may be able to add staff to manage data collection, largely at institutional expense (the facilities and administrative reimbursement for T32 programs is limited to 8 percent). The collection is more challenging for those institutions that have limited experience with these programs or those that have few programs and may lack centralized institutional administrative support. To avoid data collection and evaluation being a barrier for some to apply for the grants and favoring institutions that have a preexisting program support structure in place, it is recommended that the NIGMS facilitate sharing of existing administrative support models and consider possible new mechanisms for providing such support.

The AAMC encourages NIGMS and NIH to continue to look for ways to streamline administrative requirements, and make the information collected more usefully available.

Trainee engagement

An empowered and engaged trainee population can be leveraged to drive trainee-led initiatives that improve research training, the educational environment, and career progression. Graduate and postdoctoral programs oftentimes consist of multi-disciplinary umbrella research areas and departments, which can be a nexus not only for scholastic interests, but also a diverse educational and professional environment that fosters skills needed to thrive as a scientist. Training grants often have funds to support the development of such skills, such as communication workshops for scientists and grant writing refinement skills. Allowing trainees to play a leadership role in the assembly of such workshops and initiatives may lead to a greater sense of empowerment, professional networking, and ownership over their career progression. In addition, through training grants, various institutions have empowered trainees to organize and execute seminars that expose trainees to career and professional skills (e.g., a seminar that exposes students and postdoctorates to the breadth of careers available in biomedical science). Allowing trainees to drive such initiatives is important to foster the notion that there is a broad diversity in careers and trajectories for trainees.

The broader training environment

Many recent studies on ways to strengthen and diversify biomedical science training pathways have underscored the indispensable role of dedicated mentors. Many faculty already commit extraordinary effort and time into their mentoring responsibilities out of recognition that the nurturing and development of new scientists is faculty's highest professional calling. Our training environments, however, do not always adequately convey the importance of, or support for, the mentoring role, either with material support or professional recognition. A priority for the research community, and for the NIH and other funders, should be to continue to foster appreciation and recognition of mentoring among the faculties' other responsibilities in directing research projects or programs, and to provide tools and resources for faculty to become more effective mentors. NIGMS should consider how institutions can help mitigate the asymmetrical mentorship time expended by women faculty and women of color faculty. The faculty role is even more important in consideration that most training occurs on research project grants and not within training programs, as is often pointed out. While there may not be many direct levers available to NIGMS or other NIH institutes and centers, the agency should underscore the importance of mentoring in its messaging and policies however it can. Consistent messaging is persuasive, and can affect internal institutional processes, even including decisions around advancement, promotion, and tenure. Moreover, even dedicated mentors and sponsors can learn to be more effective, particularly by organizing in teams – which the AAMC believes is especially important for achieving a more diverse biomedical research workforce and for diversifying training programs' career outcomes. NIH programs and resources, including networking opportunities, for promoting team mentoring would also be useful.

Receiving feedback on trainee experiences

The AAMC encourages NIH to continue to reach out for feedback on trainee (and faculty and mentor) experiences. In the revision of the T32 programs, the NIH shared summaries of the input received from the community, and we believe that was helpful to create a sense of dialogue and trust that such feedback is both used and useful. The NIH should continue to find opportunities to share summaries of the information it does receive on these programs.

The AAMC appreciates the opportunity to submit these comments. If you have any questions regarding this response, please contact me at rmckinney@aamc.org or Jodi Yellin, PhD, Director, Science Policy, at [jyellin@aamc.org](mailto: jyellin@aamc.org).

Sincerely,

A handwritten signature in blue ink that reads "Ross McKinney, Jr., MD". The signature is written in a cursive style with a large initial "R" and a distinct "MD" at the end.

Ross McKinney, Jr., MD
Chief Scientific Officer