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by submission to
http://grants.nih.gov/grants/guide/rfi_files/nih_dbrw/add.cfm

Re: NOT-OD-12-031; Request for Information (RFI): Input into the Deliberations of the Advisory Committee to the NIH Director Working Group on Diversity in the Biomedical Research Workforce

Dear Drs. Tuckson, Ruffin and Tabak:

The American Association of Immunologists (AAI), the largest professional association of immunologists in the world, representing more than 7,400 basic and clinical immunologists, appreciates this opportunity to submit comments to the Working Group on Diversity in the Biomedical Research Workforce of the Advisory Committee to the NIH Director (ACD) as the Working Group seeks ways to enhance diversity, including among underrepresented minorities, persons with disabilities, and persons from disadvantaged

backgrounds (henceforth referred to as "underrepresented minorities"), within the biomedical research workforce.

AAI agrees with recent comments made by NIH Director Francis Collins, M.D., Ph.D., and Dr. Tabak that "[t]he NIH mission can only be achieved if the best and brightest biomedical researchers, regardless of race, ethnicity, disability, socioeconomic background, or gender, are recruited and retained in our workforce." (Collins and Tabak, "Weaving a Richer Tapestry in Biomedical Science", *Science* 333, 940; 2011). As a result, AAI is deeply concerned about the findings of the recent report "Race, Ethnicity, and NIH Research Awards" (Ginther *et al*., *Science* 333, 1015; 2011), which found that NIH grant applications from African American scientists have a 10 percentage points less likely to be funded.[1] AAI agrees with the conclusion of Drs. Collins and Tabak that "…the findings of Ginther *et al*. and others indicate that NIH's current approaches and those of other stakeholders have not gone far enough to facilitate and encourage the recruitment and advancement of underrepresented minorities in biomedical research. This is unacceptable."

AAI recognizes that NIH's commitment to fostering workforce diversity is deep. In addition to establishing this Working Group, the NIH Diversity Task Force (of the NIH Director's Steering Committee) is examining issues related to race, ethnicity, economic disadvantage, and disability. And NIH supports numerous programs – both established and new – that are designed to enhance workforce diversity. [2]

AAI appreciates that the Working Group has already reviewed the Ginther *et al.* findings, as well as additional data made available by NIH, and has begun this thorough public effort to develop recommendations for the NIH Director to consider. AAI also recognizes that NIH has already taken steps to address the Ginther *et al.* finding that service on an NIH peer review committee correlates with success in grant applications, by initiating a new Early Career Reviewer program within the NIH Center for Scientific Review (CSR) to help all

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[1] ***According to the authors, "proposals with strong priority scores were equally likely to be funded regardless of race…., we find that Asians are 4 percentage points and black or African-American applicants are 13 percentage points less likely to receive NIH investigator-initiated research funding compared with whites. After controlling for the applicant's educational background, country of origin, training, previous research awards, publication record, and employer characteristics, we find that black applicants remain 10 percentage points less likely than whites to be awarded NIH research funding." The authors also report that "these data indicate that black and Asian investigators are less likely to be awarded an R01 on the first or second attempt, blacks and Hispanics are less likely to resubmit a revised application, and black investigators that do resubmit have to do so more often to receive an award."***

[2] ***These programs include the Minority Access to Research Careers (MARC) Program, Minority Biomedical Research Support, Research Centers at Minority Institutions, Diversity Supplements, "NIH Director's Pathfinder Award to Promote Diversity in the Scientific Workforce program, the trans-NIH Research on Causal Factors and Interventions that Promote and Support the Careers of Women in Biomedical and Behavioral Science and Engineering program, and the National Institute of General Medical Sciences (NIGMS) awards for Research to Understand and Inform Interventions that Promote the Research Careers of Students in Biomedical and Behavioral Sciences." (Collins and Tabak, 940) The Ginther et al. findings suggest that these programs must be evaluated to determine if they are achieving their goals.***

junior faculty, including underrepresented minorities, better understand how study sections work and how grant applications are evaluated and scored. However, because we are concerned that this funding disparity may have already adversely impacted the careers of African American scientists, we urge the NIH to move expeditiously to both determine the source(s) of this funding disparity and take appropriate remedial action, with the goal of ensuring equal treatment of all scientists based on merit.

In response to the specific queries raised in the RFI (listed below), AAI recommends the following:

Query 1. The Biomedical Research Workforce Pipeline

AAI believes that the workforce pipeline begins early in a student's education, and urges NIH to support efforts of professional societies and organizations to engage and support students, including underrepresented minorities and girls, in the study of science in elementary and secondary education. In addition, NIH should explore opportunities to work with the Department of Education, the National Science Foundation, and other federal agencies to support science education at the elementary, secondary, and undergraduate (college) level. Engaging students early will not only benefit them academically, but also foster the early mentoring that can be crucial in advancing a student's career.

One initiative that NIH already supports, the Science Education Partnership Award (SEPA) program (http://www.ncrrsepa.org/about), is an excellent tool to engage young minds earlier in the workforce pipeline. As you know, SEPA is a competitive grants program, targeted primarily at K-12 students, that sponsors partnerships among researchers, educators and community groups to improve student understanding of health sciences. NIH should consider ways to help SEPA reach, and have a greater influence on, underrepresented minorities and girls.

NIH also supports the Minority Access to Research Careers (MARC) program, which was established by the National Institute of General Medical Sciences (NIGMS) to increase the number of highly-trained underrepresented minorities (as defined by the MARC program) in the biomedical and behavioral sciences. (See footnote 2, above, and http://www.nigms.nih.gov/Training/MARC/MARCDescription.htm.) Through training grants to institutions, and Fellowships to students seeking a biomedical-related Ph.D., the MARC program has strengthened the research training opportunities for underrepresented groups for more than 36 years.

The NIH should also continue to support or enhance professional efforts and programs that seek to increase the participation of underrepresented minorities and women in the transition from graduate degree to post-doctoral positions, as well as into the first independent position. More importantly, the efficacy of all of these programs should be monitored to ensure that they are performing as desired.

Query 2. The role of mentorship in the training and success of biomedical researchers throughout their careers

Quality mentoring is essential to the advancement of a researcher's career. Fortunately, most biomedical researchers view mentoring students as a fundamental and rewarding part of their job. Professional societies often recognize the importance of this relationship: every year, for example, AAI presents the AAI Excellence in Mentoring Award, which recognizes that "[a] dedicated mentor significantly influences a trainee's professional development and career."

Researchers may not, however, be aware of specific needs or concerns of underrepresented minority or women scientists. NIH can help by identifying these concerns and challenges, providing guidance and resources tailored to these needs, and supporting society and institutional programs/efforts to address such concerns, potentially through grants or grant supplements to support programs which mentor underrepresented minority or women scientists at various stages of their career.

NIH should also support efforts by professional societies to mentor grant applicants, including underrepresented minorities, on the preparation of applications prior to submission. For, example, AAI has established such a program: Grant Review for Immunologists Program ("GRIP"), which helps new investigators prepare their NIH grant proposals by matching them with established investigators who have significant, successful grant writing expertise.

Query 3. The influence of role models whose qualities and characteristics can positively affect the training and success of underrepresented biomedical researchers through their careers

Positive role models are very important to all young scientists. For underrepresented minority and women scientists, it is especially important to meet and communicate with other underrepresented minority and women scientists who have been successful despite facing challenges. Many professional societies, including AAI (see # 5), have programs to bring together successful minority and women scientists and other professionals to speak to - and network with - young underrepresented minority and women scientists and peers.

Query 4. The role of NIH messaging in encouraging underrepresented researchers to apply for NIH fellowships and grants

NIH must continue to communicate with underrepresented biomedical researchers to ensure that it is aware of, and responsive to, the community's unique needs. Because underrepresented minority and women scientists want an even playing field - and fairness - for all applicants, AAI recommends that NIH a) periodically communicate that reduction and eventual elimination of racial and ethnic health disparities will be hard to achieve without the contribution and support of biomedical researchers of all ethnic groups and

b) support Requests for Applications (RFAs) related to health disparities, for which underrepresented minority scientists would be actively encouraged to apply.

In addition, because NIH is a well respected institution that has an important voice within and beyond the biomedical research community, NIH should support initiatives that highlight contributions of underrepresented minority and women scientists in biomedical research to counteract implicit societal bias, including bias that may affect the objectivity of grant reviewers or other decision makers.

Query 5. The role of institutional infrastructure support and climate as a factor in the success of underrepresented researchers

AAI believes that institutional infrastructure support and climate play an important role in the success of underrepresented researchers. With respect to academic and other institutions, AAI recommends that, in addition to requiring equitable practices for the recruitment and retention of underrepresented minority and women scientists, institutions which receive research funds from federal agencies also monitor success rates for promotion of underrepresented minority and women scientists.

As a professional society, AAI provides special activities directed toward support and encouragement of our minority members. Through the AAI Minority Affairs Committee (MAC), AAI develops programs to advance the scientific development and career opportunities for underrepresented minority scientists. Among those activities are networking and mentoring opportunities, including identifying minority scientists who are available as speakers (through a "speakers' list," publicly available on our web site), as participants on review panels, as members of editorial boards, and for other professional activities as the need arises. Through a grant from the Federation of American Societies for Experimental Biology (FASEB) (funded by the National Institute of General Medical Sciences), AAI supports MAC activities at the AAI annual scientific meeting and courses. These activities include the Minority Scientist Travel Awards, which enhance minority student and faculty participation at the meeting and AAI courses in immunology), the AAI Minority Scientist Guest Lecture, and the AAI MAC Careers and Networking Roundtable program. AAI appreciates the support it has received from NIH (via FASEB) for these important programs, and encourages NIH to continue supporting professional society efforts in this regard.

Query 6. Factors in the Review Process

AAI believes that equitable review of grant applications is of paramount importance in order to achieve and sustain diversity throughout the scientific community, and to ensure the success of the biomedical research enterprise.[3]

[3] Although Ginther et al. conclude that their "models do not fully explain the funding gap," they identify the review process as worthy of additional research, in order to understand why African American applicants did not receive a priority score at the same rate as the full sample.

AAI appreciates that the Working Group is considering whether the lower funding rate for African American scientists results from unfair evaluation of their grant applications. The peer review system evaluates not only the scientific merit of grant applications, but also other factors, including the area of research, the societal impact of the proposed studies, the qualification and productivity of the investigators, and the institution in which the research will be conducted. This information is important for reviewers to know in order to be able to assess whether the proposed research can succeed. It is important, however, for NIH to ask whether the steady drop in NIH pay lines over the last decade has made it even more difficult for members of review panels to assess scientific merit fairly, rather than relying on the investigator's institution or educational pedigree. Overemphasis on institutional affiliation or pedigree could perpetuate biases that could, consciously or unconsciously, disadvantage underrepresented minority and/or women scientists. Such an approach could have resulted in unacceptable discrimination in grant review and funding, and if continued, will undermine the efforts of the NIH and the federal government to attract and retain underrepresented minority and women scientists within the biomedical research workforce.

As the preeminent biomedical research agency in the world, NIH should know the answers to these questions before implementing solutions that may not work or may exacerbate the problem. NIH should conduct research on its peer review system to identify the source of the funding disparity identified by Ginther *et al.*, determine the best ways to redress any bias, and foster diversity. In the meantime, AAI recommends that NIH take immediate action to:

- help make reviewers aware of conscious and unconscious bias and approaches to handling such bias, potentially during orientation sessions prior to receiving the application package
- ensure that Scientific Review Officers (SROs) and Institute program officers are aware of conscious and unconscious bias, and are able to respond to incidents reflecting bias
- work to increase the number of underrepresented minority and women reviewers on review panels and continue to monitor success rates based on ethnicity to assess whether NIH needs to take additional action to address any disparity

At this time, AAI does not recommend requiring the disclosure of the ethnicity of grant applicants or "anonymizing" applications. Neither approach, absent evidence for the need, will foster the fair evaluation of grant applications. "Anonymizing" the grant application would require the elimination of biosketches, which are a pivotal part of the review process and are required for the evaluation of applicants' qualifications for performing the proposed work.

Although AAI realizes that it is impossible to undo any past damage that may have resulted from bias, AAI urges that any Working Group recommendations 1) rapidly remediate any unfair treatment of African American scientists with regard to grant funding, and 2) ensure, going forward, that appropriate measures and policies are in place for equal treatment of all scientists on the basis of merit.

AAI stands ready to assist NIH in this effort and greatly appreciates the agency's commitment to addressing this problem. Please contact either of us, or AAI Director of Public Policy and Government Affairs Lauren Gross at lgross@aai.org, or 301-634-7743, if we can be of any assistance.

Sincerely,

Leslie J. Berg, Ph.D.
President

Derry C. Roopenian, Ph.D.
Chair, AAI Committee on Public Affairs

cc. Francis Collins, M.D., Ph.D.
Director, National Institutes of Health