

Enhancing Diversity in Science

Working Together to Develop
Common Data, Measures, and Standards



A Workshop Summary Report
Washington, DC
May 2012

Executive Summary

Studies of the United States scientific workforce repeatedly and consistently show that ethnic and racial minorities are underrepresented across all science disciplines. In 2007, an interdisciplinary group of professional associations and scientific societies¹ began working together to draw attention to the need to enhance diversity in the sciences. In 2008, that informal coalition held a leadership retreat, “Enhancing Diversity in Science: A Leadership Retreat on the Role of Professional Associations and Scientific Societies,” which focused on the need to broaden participation in the sciences and brought together 98 leaders from 37 professional associations, and scientific societies, as well as representatives from universities, federal agencies, and private foundations. The overwhelming consensus from that meeting warned that if the United States is to remain the world’s leader in science it must respond to a number of critical challenges.

The meeting further underscored the lack of very basic scientific tools, relevant metrics, and standardized data across a broad spectrum of educational institutions. These included the elements needed to evaluate the efficacy of diversity programs, comprising both individual and group efforts, and numerous programs aimed at effectively mentoring and retaining individuals throughout their careers. Establishing such a capacity would help generate and maintain the broad support of policymakers and the public necessary to meet the goal of producing a diverse scientific workforce. In addition to the need for common data and measurement, the leaders agreed that approaches are also necessary for tracking rates of participation in the sciences of underrepresented minorities at different career stages.

Given the great necessity for measurement and tools to assist in implementing many of the recommendations from the 2008 Leadership Retreat report, along with recommendations from other reports that aim to enhance and increase diversity in science, these organizations decided to continue their joint efforts. In 2009, the groups formalized their partnership, creating the Collaborative for Enhancing Diversity in Science (CEDS). In March 2009, CEDS, in conjunction with 60 diverse organizations across the spectrum of education and science, held a congressional briefing, “Building a Diverse Scientific Workforce: Collaboration for Com-

petitive and Healthy Nation²,” to discuss the importance and challenges of increasing the diversity of America’s scientific workforce.

Workshop organizers invited prominent researchers, leaders from the National Institutes of Health (NIH) and the National Science Foundation (NSF), and representatives of universities, professional associations, scientific societies, and foundations working to increase diversity in the sciences to make presentations. An initial set of presentations provided overviews of the issues related to participation and achievement in the sciences across diverse groups, evaluation of approaches to support diversity in the sciences, and efforts to develop common measurement approaches. Afterwards, workshop participants broke into smaller groups to focus on building consensus on issues related to broadening participation in the scientific fields.

Collaboration on a common set of high-priority measures has the potential to inform, target, and strengthen efforts to increase diversity in the sciences across participating institutions. The process of working toward common measurement in itself also provides an opportunity for mutual updates on data tracking efforts and initiatives that government agencies sponsor, and in which colleges, universities, foundations, and nonprofits participate.

¹ AAAS Center for Careers in Science and Technology, the American Educational Research Association (AERA), the American Sociological Association (ASA), the American Psychological Association (APA), the Association of American Medical Colleges (AAMC), the Federation of American Societies for Experimental Biology (FASEB), the Institute for the Advancement of Social Work Research (IASWR) and the Society for Research in Child Development (SRCD)

² <http://www.cossa.org/diversity/briefing/WorkforceDiversityBriefing.pdf>



The workshop was sponsored by the: **Eunice Kennedy Shriver National Institute of Child Health and Human Development** (NICHD) *in collaboration with the National Institutes of Health [Office of Behavioral and Social Sciences Research (OBSSR), Office of Research on Women's Health (ORWH) National Institute on Drug Abuse (NIDA), National Institute on Minority Health and Health Disparities (NIMHD)], the National Science Foundation (NSF) [Directorate for Education & Human Resources (EHR) -- *Historically Black Colleges and Universities Undergraduate Program (HBCU-UP), and Research on Gender in Science and Engineering (GSE)*; Directorate for Social, Behavioral and Economic Sciences (SBE) -- *Division of Behavioral and Cognitive Sciences (BCS) (Social Psychology) and the Division of Social and Economic Sciences (SES) – Economics, Science of Organizations, and Sociology*], the **Alfred P. Sloan Foundation** (Sloan), **Robert Wood Johnson Foundation** (RWJF), and the **William T. Grant Foundation** (W.T. Grant).*

Overarching Workshop Recommendations

This meeting strongly confirmed that steps are needed to increase the comparability of both administrative and survey data collected on diversity in the scientific workforce. Achieving agreement on what data elements are high priority to collect and on specific measures to use will make it possible to aggregate findings across studies and to coordinate efforts to increase diversity across agencies, universities, and organizations. At present, unfortunately, there is little consistency in what data are collected and how they are collected.

Just as important, there is widespread acknowledgement of the crucial need to understand the effectiveness of approaches, such as fellowships and mentoring, to strengthening diversity in the workforce, though it is generally agreed that there is a need for an integrated summary of the research in this area that cuts across disciplinary boundaries. Similarly, there

“Diversity and excellence have always been keys to science, to scientific advancement, to creativity and innovation and to productivity. Diversity in science has long been recognized as requiring that we encourage variability in theoretical, methodological, and other perspectives. It took us somewhat longer to recognize that diversity and excellence in science also require that we not only tap all the talent available by broadening the community of scientists to include those from diverse backgrounds, but that we also acknowledge that such inclusiveness is fundamental to the vitality and excellence of science.”

—Sally T. Hillsman, executive officer, American Sociological Association

is agreement that in addition to studying effects on individual targets of intervention efforts, research is needed that considers the social context, environment, and culture of the institutions, programs, and/or departments in which these students and professionals participate, allowing for a nuanced understanding of perceptions and experiences with programs to enhance diversity. The inclusion of data collected from program providers as well as program participants is important for both bringing programs to scale and to sustaining them.

Finally, methodological consideration across the range of different data collection methods is also imperative. Efforts are required to minimize respondent burden, include the highest data priority elements, and provide data formats that allow the

“Where evidence is weak, we should build a knowledge base to support better decisions in the future.”

—Cora Marrett, deputy director, National Science Foundation

basis for summary variables that inform the efforts to diversify and encourage enrollment and retention of students and professionals.

Overarching Recommendation No. 1:

Establish a federal interagency working group of federal science agencies and the Department of Education to examine and define common data elements that all federally supported programs and individuals would be required to collect for tracking and evaluation purposes. The White House Office of Science and Technology Policy (OSTP) should take the lead and the National Institutes of Health (NIH) and the National Science Foundation (NSF), the primary supporters of federal research and training, should serve as co-chairs of this interagency working group, similar to their collaboration on the STAR Metrics program.

The first task of the federal interagency working group should be to jointly sponsor a National Academy of Sciences’

(NAS) study with two goals: (1) to summarize existing evaluation studies of programs, approaches, and interventions to support diversity; and (2) to review current data collection efforts by agencies, colleges and universities, and other organizations in order to make recommendations on common data elements.

Overarching Recommendation No. 2:

Develop a permanent central web-based repository for data on diverse populations in the science pipeline, as well as publications focusing on this issue.

Overarching Recommendation No. 3:

Launch a new set of fellowships focused on increasing diversity in the scientific workforce using a public/private partnership and taking into account recent research and practice on the structuring of fellowships and training experiences.