

The Science of Broadening Participation Workshop
National Science Foundation, June 23-24, 2008

In June 2008 The Social, Behavioral, and Economic (SBE) sciences directorate sponsored a day and half long workshop on the Science of Broadening Participation (SBP). The SBP employs a variety of theoretical and methodological approaches to answer research questions related to issues of access, opportunity and inclusion in STEM fields and beyond. This area of inquiry addresses important questions that deal with the inequitable distribution of educational and economic opportunities. Moreover, the SBP sheds light upon the ways that this inequity impacts the achievement of women, underrepresented minorities and persons with disabilities. By using an evidence-based approach, the SBP suggests effective strategies and prescriptions aimed at ensuring the participation of members of underrepresented groups.

The workshop was made possible by a grant from the Social Psychology program to Dr. Denise Sekaquaptewa of the University of Michigan, and included more than 25 distinguished researchers and scholars from across SBE fields. Importantly, the workshop provided a forum for the exchange and dissemination of scientific findings and theoretical perspectives related to the representation and participation of women, minorities and persons with disabilities in STEM fields.

Invited Participants

Elijah Anderson, Department of Sociology, Yale University

Marc Bendick, Bendick and Egan Economic Consultants, Inc., Washington DC

H. Russell Bernard, Department of Anthropology, University of Florida

Rebecca Bigler, Department of Psychology, University of Texas-Austin

Anne Charity, Department of English Language and Literature,
College of William and Mary

Donna Christian, Center for Applied Linguistics

Faye Crosby, Department of Psychology, University of California-Santa Cruz

Ron Eglash, Department of Science and Technology Studies,
Rensselaer Polytechnic Institute

Mark Hernandez, Department of Civil, Environmental, and Architectural Engineering,
University of Colorado-Boulder

Vincent L. Hutchings, Department of Political Science and Institute for Social Research,
University of Michigan

Ann Kingsolver, Department of Anthropology, University of South Carolina

Corinne Kirchner, Sociomedical Sciences and Sociology, Columbia University and American Foundation for the Blind,

Judith Kroll, Department of Psychology, Pennsylvania State University

Alison Konrad, School of Business, University of Western Ontario,

Victoria Lawson, Department of Geography, University of Washington

Helen Longino, Department of Philosophy, Stanford University

Samuel R. Lucas, Department of Sociology, University of California-Berkeley

Ali Modarres, College of Natural & Social Sciences, California State University-Los Angeles

Donna Nelson, Department of Chemistry and Biochemistry
University of Oklahoma

Mary Margaret (Peggy) Overbey, Understanding Race and Human Variation
Project, American Anthropological Association

Dianne Pinderhughes, Department of Political Science, University of Notre Dame

Ruth Delois Peterson, Department of Sociology, Ohio State University

Victoria Plaut, Department of Psychology, University of Georgia

Quinetta Roberson, Industrial & Labor Relations School, Cornell University

Joni Seager, Department of Geography, CUNY Hunter College

Workshop Aims

The aim of the workshop was to bring together a broad array of researchers whose work informs the SBP. This enabled in-depth discussion of research and theoretical perspectives that focuses on understanding ways to expand participation in STEM. Although there are examples throughout the SBE sciences of research that is conceptually and thematically well poised to fit within the SBP, the research findings generally exist within their specific disciplinary boundaries. For example, whereas sociologists and psychologists may each unearth the mechanisms driving the stigmatization that characterizes the experiences of women in engineering, they do this by asking different questions, employing different methods and disseminating findings to different outlets. Importantly, the workshop facilitated the exchange of empirical research findings across multiple disciplines typically isolated from one another.

Workshop Format:

A large proportion of the meeting involved individual research presentations followed by specific Q & A sessions. Research presentations were given by representative workshop participants from each of the SBE fields and included the following:

"Social-psychological and situational influences on academic outcomes for women and African American students" (Denise Sekaquaptewa).

"The Effects of Stereotypes, Models, and Values on Girls' Occupational Interests: Evidence from Experimental Studies" (Rebecca Bigler).

"What Bilinguals Tell Us about Language and the Mind" (Judith Kroll).

"Sociological Research and Theory on Disability and Participation: The Stickiness and Limits of Labeling Theory, and the Appeal of Ambiguity" (Corinne Kirchner).

"Education and Opportunity in the United States: Persistent Myths and Hidden Realities" (Samuel R. Lucas).

"Disentangling Diversity and Inclusion in Organizations" (Quinetta Roberson).

"Measuring Inclusion in the Workplace: A Somewhat Economics Perspective" (Marc Bendick).

"Wedge Politics: The Structure and Function of Group Cues in Contemporary American Politics" (Vincent L. Hutchings).

"Concentric Circles of Engagement: Participatory Research Examples from South Carolina and Sri Lanka" (Ann Kingsolver).

"Geographies of Social Difference and Participation" (Victoria Lawson).

Workshop Outcomes

Following the presentations, all workshop participants engaged in cross-disciplinary conversations stimulated by the following types of questions. Detailed answers constitute draft elements of the workshop's outcomes (i.e., recommendations) and appear after each question below.

1. How recognizable and prevalent is research on broadening participation across disciplines? Are some more engaged in this than others? If so, which ones and why?
 - Psychology, sociology and organizational sciences have produced a great deal of work relevant to SBP. Unfortunately, this work is not always characterized as such because of the emphasis on basic science.
 - Because of the tendency towards devaluation of those fields most likely to carry out research in SBP, the work is often cloaked, hidden, or identified as something else.

- Failure to pitch this work as such results in under-identification and under-utilization of relevant and useful research findings in SBP that hinders progress in this area.
2. What are the major challenges to conducting research on broadening participation?
 - Lack of an organized research agenda.
 - Devaluation of research on SBP.
 - Need for “broader” participation of researchers engaged in SBP.
 3. What are the most important knowledge needs to effectively broaden participation? What do we most need to know?
 - Theoretical perspectives most useful for guiding research and policy development in this area.
 - How to strengthen societal impact, rather than “good faith” gestures.
 - What is the scope of a BP initiative (i.e., exactly what groups are targeted?).
 - Consensus in terminology and understanding across disciplines engaged in SBP.
 - Information for hands-on “diversity professionals” who are often unaware of actual SBE research findings.
 4. What can researchers engaged in the science of broadening participation do to better inform policy and practice?

Conduct research on participation. This includes and is not limited to:

- Identifying the variables and dimensions of diversity that are important to participation.
 - Monitor status and progress of groups in organizational and societal systems.
 - Identify causal process, moderators and interactions to determine the chain of causality.
 - Identify factors that lead to success for some members of marginalized groups.
5. What role can the SBP play in program evaluation?
 - Can help to identify best participation criteria by which proposals will be evaluated by different NSF programs (e.g., accommodating persons with disabilities, training members of historically underrepresented minority groups).
 - Underscore the importance of funding adequately enough to get large enough samples to draw reasonable inferences about understudied groups.

- Encourage inclusion of historically underrepresented groups in all aspects of research process.
6. Should federal funding agencies have a program that supports research on the science of broadening participation? Why, or why not?
- Yes, but accountability for recipients is critical.
 - Concerns with creation of a separate SBP program which risks “ghettoization.”
 - Support for SBP research should take place that integrates it within existing programs.
 - Create a clearinghouse of “best practices” based on empirical research from SBE fields.
 - Create an Office of Diversity Accountability.
 - Establish training grant requirements to educate researchers about BP.