

**U.S. HOUSE OF REPRESENTATIVES
COMMITTEE ON SCIENCE, SPACE, AND TECHNOLOGY
SUBCOMMITTEE ON RESEARCH AND SCIENCE EDUCATION**

HEARING CHARTER

*Social, Behavioral and Economic Science Research: Oversight of the Need for
Federal Investments and Priorities for Funding*

**Thursday, June 2, 2011
10:00 am – 12:00 pm
2318 Rayburn House Office Building**

1. Purpose

On Thursday, June 2, 2011, the Subcommittee on Research and Science Education will hold a hearing to examine the need for Federal investments in the social, behavioral, and economic sciences; to better understand the impact of this type of research; and to assess its value to the American taxpayer. The hearing will also examine Federal research funding and priorities for these sciences at the National Science Foundation, including the fiscal year 2012 budget request.

2. Witnesses

Dr. Myron Gutmann, Assistant Director, Directorate for Social, Behavioral, and Economics Sciences, National Science Foundation.

Dr. Hillary Anger Elfenbein, Associate Professor of Organizational Behavior, Olin Business School, Washington University in St. Louis.

Dr. Peter W. Wood, President, National Association of Scholars.

Ms. Diana Furchtgott-Roth, Senior Fellow, Hudson Institute.

3. Overview

- The social, behavioral, and economic sciences consist of a wide array of fields, including anthropology, archaeology, economics, geography, linguistics, history, neuroscience, political science, psychology, sociology, criminology and law. Often multidisciplinary in nature, the social sciences can provide insight into human behavior that is essential to developing and understanding new technologies and science.

- The main support for basic research in the (non-medical) social and behavioral sciences comes from the National Science Foundation (NSF), accounting for approximately 58 percent of federal support for basic research at U.S. colleges and universities.
- Within NSF, the Directorate for Social, Behavioral, and Economic Sciences (SBE) is responsible for the varied research endeavors that fall under these sciences. SBE has requested \$301.1 million for FY12, an 18 percent increase from FY10 enacted funding levels. SBE supports approximately 58 percent of Federally funded basic research in academic institutions in the social, behavioral, and economic science fields.

4. Background

Social, Behavioral, and Economic Sciences

The social, behavioral, and economic sciences focus on human activity. Historically rooted, evidence of these sciences can be traced to ancient philosophers, scientific pioneers of their time. The focal point of social, behavioral, and economic sciences is the analysis of the human brain, human behavior, and the actions of groups and organizations. “The social, behavioral and economic sciences comprise a number of different disciplines focused on the common goal of developing a deeper understanding of human beings at every level, from brains, to individual behavior, to societies...The quest for deeper understanding of humans is key to managing society’s most critical challenges.”¹

Anthropology, archaeology, economics, geography, linguistics, neuroscience, political science, psychology, sociology, and statistics are just some of the diverse fields that fall under the social, behavioral, and economic sciences. From research about historical migration patterns to research about speech patterns, these sciences cross a myriad of issues that have influenced or will affect human development.

Examples of research in the social, behavioral, and economic sciences include the study of the human behavior under stress in order to understand and address the effects of combat tours of duty or extended deployments; the study of nuclear deterrence strategy during the Cold War; examining the causes and consequences of criminal behavior; and economic measurements regarding the effects and significance of Federal budget deficits.²

The Federal Role

Policy researchers and economists tend to agree that public investment in science can yield high rates of return to society. “Without the data, research, and analyses that [social, behavioral, and economic] scientists can provide, there is a greater likelihood of engaging in ineffective or

¹ *Social, Behavioral and Economic Research in the Federal Context*, National Science and Technology Council, Subcommittee on Social, Behavioral and Economic Sciences, January 2009.

² *Fostering Human Progress: Social and Behavioral Science Research Contributions to Public Policy*, Consortium of Social Science Associations, October 2001.

counterproductive policies.”³ Examples of scientific progress and policy applications stemming from social, behavioral, and economic sciences are abundant. Collecting data after natural or man-made disasters is essential for preparing for potential catastrophes, training emergency response teams, and planning emergency procedures. Research on the spread of infectious disease utilizes statistical models accounting for numerous variables allowing for a better understanding of how and why disease spreads as well as the identification of methods to mitigate the spread of disease. Complex national security missions, which range from counterinsurgency to security and stability operations, are better served by a security force that understands and appreciates the individual, tribal, cultural, ethnic, religious, social, economic, and other aspects of the local human terrain.

In January 2009, the Bush Administration released a National Science and Technology Council Report, *Social, Behavioral and Economic Research in the Federal Context*, providing the most recent assessment of the Federal role and opportunities for the social, behavioral, and economic sciences in order to “provide policymakers with evidence and information that may help address many current challenge areas in society, including education, health care, the mitigation of terrorism, the prevention of crime, the response to natural disasters, and a better understanding of our rapidly changing global economy.”⁴

The report listed three foundational research themes: 1) Understanding the Structure and Function of the Brain in order to provide insight into individual behaviors; 2) Understanding the Complexity of Human Societies and Activities to capture the webs of interpersonal and interorganizational ties within and across populations; and 3) Understanding Human Origins and Diversity.

In addition, the report identified four key priority research areas for the Federal government: 1) Develop specific tools and technologies for social, behavioral, and economic studies; 2) improve methods for collecting and managing data; 3) Build more integrated systems to allow for sharing across data sets; and 4) Focus on scientific questions with immediate policy implications to ensure that policies generate evidence of their efficacy.

While calling for “sustained investment and ongoing dialog among Federal agencies, academic and private sector researchers, and policymakers,”⁵ the report also notes that not all social, behavioral, or economic sciences “require or are even appropriate for government support. For example, consumer behavior and the successes and failures of commercial marketing campaigns are major targets of SBE research but are well funded through industry support.”⁶

Federal Funding

Basic and applied research in the social, behavioral, and economic sciences is funded out of a number of federal agencies, led by the National Institutes of Health (NIH) and the National

³ Social, Behavioral and Economic Research in the Federal Context, National Science and Technology Council, Subcommittee on Social, Behavioral and Economic Sciences, January 2009, p. 5

⁴ Ibid, cover letter.

⁵ Ibid, p. 2

⁶ Ibid, p. 6

Science Foundation (NSF). According to research funding statistics compiled by NSF⁷, a total of \$1.12 billion was obligated to basic and applied research in all social sciences for fiscal year 2009 (FY09), including economics. Psychology was counted separately and was funded at a total of \$1.86 billion in FY09, of which \$1.71 billion was funded by Health and Human Services (primarily NIH). Federal support for academic research in particular was \$733 million for social sciences and \$856 million for psychology.

The basic Federal research funded in the social, behavioral, and economic sciences focuses on understanding why humans think, feel and act the way they do; the study of interpersonal behavior from small groups to global forces; how humans relate to the rest of the natural world; and how we came to possess our uniquely human abilities. The main support for basic research in the (non-medical) social and behavioral sciences comes from the NSF, accounting for approximately 58 percent of federal support for basic research at U.S. colleges and universities. In some fields, including archaeology, political science, linguistics, and non-medical aspects of anthropology, psychology, and sociology, NSF is the predominant or exclusive source of federal basic research support.

The SBE budget request for FY12 is \$301 million, an 18 percent increase over FY10. Approximately 14 percent of SBE's budget is used not for basic research but to fund the collection and analysis of data on science and engineering research, education, and workforce trends (including the data presented here), resulting in the biannual "S&E Indicators."

The National Science Foundation

The social, behavioral, and economic sciences have been funded since the late 1970s at the National Science Foundation (NSF), originally as part of a combined Directorate with biological sciences. In the 1990s, the Directorate for Social, Behavioral, and Economic Sciences (SBE) was established. The SBE Directorate seeks to "promote the understanding of people and their lives by supporting research that reveals basic facets of human behavior; to encourage research that helps provide answers to important societal questions and problems; to work with other scientific disciplines to ensure that basic research and the solutions to problems build upon the best multidisciplinary science and to provide mission-critical statistical information about science and engineering in the U.S. and the world".⁸

The SBE Directorate supports research that sustains a primary knowledge of human behavior and interaction, social and economic systems, and organizations and institutions. To improve the understanding of science and engineering, SBE provides tools for tracking human and institutional resources required to build the nation's science and engineering infrastructure. Furthermore, the SBE Directorate works to supply evidence and resources to respond to many of today's challenges, ranging from education to terrorism. SBE funded scientists, who cover myriad scientific fields, perform interdisciplinary research that takes advantage of a new set of tools and holds the promise of providing insights and solutions not otherwise available. Research conducted through SBE includes efforts to restructure regulatory mechanisms, assess

⁷ Preliminary data for FY2009 federal research obligations. National Center for Science and Engineering Statistics, National Science Foundation. Data are based on self-reporting by agencies. In many cases, especially where there is interdisciplinary work, it is hard to tally exact dollars spent on one field or another, so these values are at best an estimate.

⁸ <http://www.nsf.gov/sbe/about.jsp>

the impact of economic policies on economic growth, and understand the implications of tax policy changes in order to bolster work to strengthen the U.S. economy.

It is important to note that while most of the research currently funded by NSF in the social and behavioral sciences is not driven by any one application, the line between basic and applied research in these fields can often be blurred. For example, a sociologist interested in the successes and failures of teamwork in a small business environment might make fundamental discoveries applicable to other environments, including the military. As a result, much of the academic research currently funded by NSF may ultimately find application in national security (or other fields), even when the research was focused on non-military populations.

The SBE Directorate has requested \$301.1 million for FY12, an 18 percent increase from FY10 enacted funding levels.⁹ In total, the Directorate supports approximately 3,500 senior researchers, 2,500 graduate students, 1,330 undergraduate students and 700 postdoctoral researchers and other professionals at U.S. universities and research institutions. Currently, SBE funding accounts for 3.6 percent of the entire NSF budget.

The SBE Directorate participates in a number of crosscutting and NSF-wide projects. The Directorate is organized in four parts:

Division of Behavioral and Cognitive Sciences

The Division of Behavioral and Cognitive Sciences (BCS) supports research and related activities to advance scientific knowledge about humans, spanning anthropology, geography, and cognitive and behavioral sciences. Fields of study include cognitive neuroscience, language and culture, origins and evolution, and the environment. The FY12 budget request for BCS is \$105.9 million, a 12 percent increase from FY10 enacted funding levels.

Division of Social and Economic Sciences

The Division of Social and Economic Sciences (SES) works to improve the understanding of human, social and organizational behavior and economic, political and social institutions. Research conducted through SES includes projects preparing for and mitigating the effects of natural disasters and projects focusing on human cognition and behavior. The FY12 budget request for SES is \$113.8 million, nearly a 15 percent increase from FY10 enacted funding levels.

Office of Multidisciplinary Activities

The Office of Multidisciplinary Activities (SMA) is a central location for SBE activities that work across disciplinary boundaries. SMA works to develop infrastructure support for interdisciplinary activities and helps to seed future multidisciplinary activities. Minority Postdoctoral Research Fellowships (MPRF), Research Experiences for Undergraduates (REU) Sites, Science of Science and Innovation Policy (SciSIP), and agency-wide Science of Learning Centers (SLCs) are funded out of SMA. The FY12 budget request for SMA is \$43.4 million, over a 60 percent increase from FY10 enacted funding levels.

⁹ All budget details come from the *National Science Foundation FY 2012 Budget Request to Congress*, Social, Behavioral and Economic Sciences Section

National Center for Science and Engineering Statistics

The National Center for Science and Engineering Statistics (NCSES) collects, interprets, analyzes, and disseminates objective data on science and engineering, including the widely used biennial *Science and Engineering Indicators*. NCSES data collections include those related to U.S. competitiveness and STEM education. NCSES is required to supply information that is useful to practitioners, researchers, policymakers, and the public, and as such releases nearly 30 reports annually. The FY12 budget request for NCSES is \$38 million, nearly a 10 percent increase from FY10 enacted funding levels.

Major investments in the FY12 SBE Directorate budget request include:

- \$57 million, a 174 percent increase, for clean energy research in the Science, Engineering, and Education for Sustainability (SEES) portfolio (NSF priority investment). In addition to supporting the SEES Sustainability Research Networks, Sustainability Energy Pathways and Postdoctoral Fellowships, funding will also strengthen “existing climate research and energy investments, and [support] both existing and new investments in understanding energy use and in decision making, coastal communities, and vulnerability and resilience.”
- \$12 million in new funding for the NSF-wide Cyberinfrastructure Framework for 21st Century Science and engineering (CIF21) to fund Observation Data network Pilots, Research Data on Innovation, research on understanding and designing the 21st century networked society, and improved access to the large surveys supported by SBE.
- \$12 million in new funding for research on cybersecurity, economics and society as part of NSF’s commitment to research in the area of cybersecurity. SBE’s specific role will be to support the Cyber Economic Incentives theme within Comprehensive National Cybersecurity Initiative (CNCI).