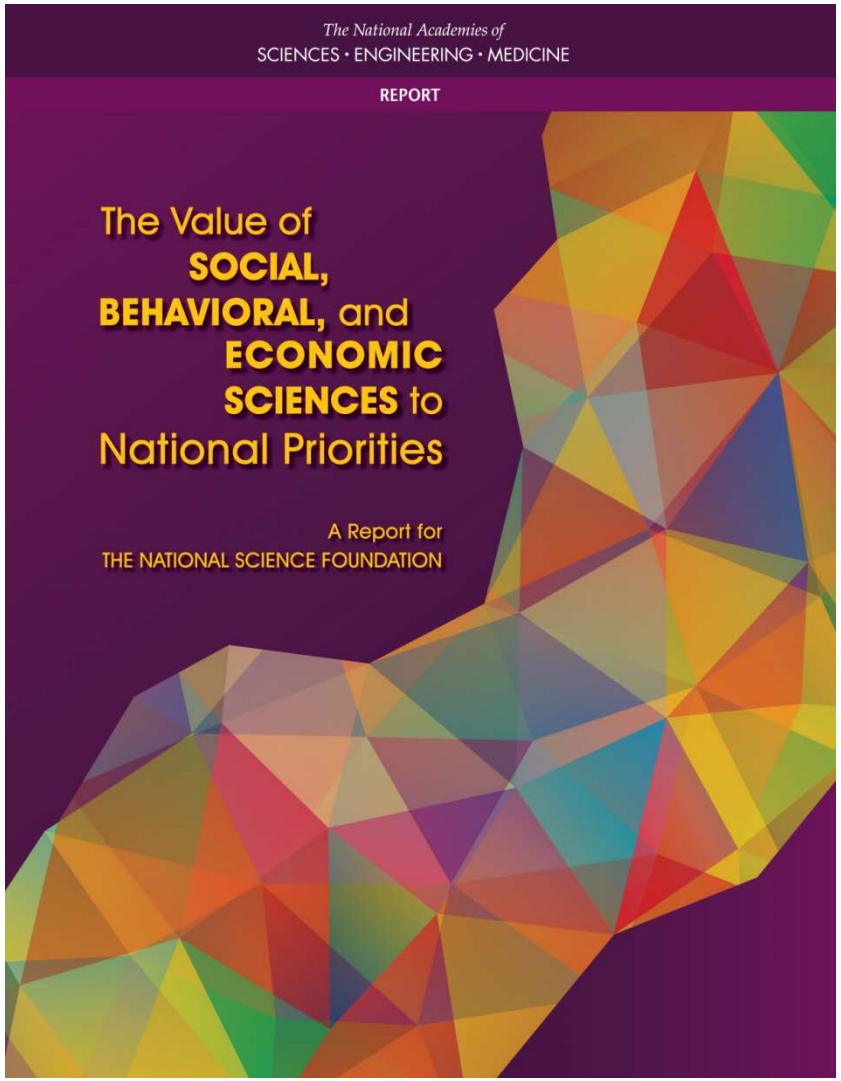
The National Academies of | SCIENCES ENGINEERING MEDICINE



Alan Leshner, Chair
Committee on the Value of Social, Behavioral, and Economic Sciences to National Priorities

Charge to the Committee

- Do the SBE sciences advance the NSF mission areas of **national health, prosperity, and welfare**; securing the **national defense**; and **promoting the progress of science**?
- Do the SBE sciences advance the **missions of other federal agencies?**
- Do the SBE sciences advance the **work of business and industry**?
- What are **priorities for NSF investment** in the SBE sciences, and what are **important considerations** for the NSF for future strategic planning?

The Social, Behavioral and Economic Sciences

- Anthropology
- Archaeology
- Economics
- Geography
- Demography
- Linguistics
- Neuroscience
- Political science
- Psychology
- Sociology
- Statistics

Committee on the Value of Social, Behavioral, and Economic Sciences to National Priorities

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DUNCAN WATTS, Microsoft Corporation, New York, New York

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Committee's Approach to the Task

- Reviewed past reports of the National Academies
- Drew on the expertise of committee members
- Identified illustrative examples of the contributions of SBE research

Cautions

- The committee did not attempt a comprehensive review of SBE research or of NSF-supported research.

- The committee does not claim that every SBE research grant serves the NSF mission or national needs.

Criteria for Selecting Examples of Research

- More basic than applied
- Addresses an issue important to society
- Requires minimal detailed technical explanation
- Informed policy or led to discoveries that have advanced national priorities or the work of business and industry
- Had applications in areas not typically associated with SBE
- Findings ran counter to common sense, intuition or generally held beliefs
- Dramatically advanced progress in science or illustrated a trend in science

Why Support Social, Behavioral and Economic (SBE) Research

- Virtually every major challenge the United States faces requires understanding the causes and consequences of people's behavior.
- Even those that at first glance appear to be issues only of medicine or engineering or computer science have SBE components.
- Like all sciences, the social sciences bring a rigorous, methodical approach to pursuing knowledge.

SBE Contributions Can Be Overlooked

- People tend to use “common sense” to understand behavior.
- SBE results can become the new “common sense.”
    - Newborns can remember and learn
- People often are not aware of sophisticated tools and insights from SBE sciences.
- Some findings do not fit with what people believe.

The Core Mission of NSF

- Promote the progress of science
- Advance the national health, prosperity, and welfare; secure the national defense
- Produce basic research for foundational understandings on a broad range of topics (as opposed to a particular problem or national need as for mission-focused agencies) and to develop innovative methods

CONCLUSION 1

Overall, the **social, behavioral, and economic sciences** produce a better understanding of the human aspects of the natural world, contributing knowledge, methods, and tools that **further the mission of NSF**.

Health

- The effect of social relationships on health
- Disparities in health and mortality

Prosperity and Welfare

- New ways to encourage individuals to save more for retirement
- Eyewitness testimony and the U.S. court system
- Bilingualism and language development
- Willpower and delay of gratification

National Defense

- Terrorism and counterterrorism
- Forecasting political instability
- Social network analysis for the military and national intelligence

Progress of Science

- Groundbreaking theories of human behavior
- Understanding how people and their circumstances change over time
- Simulations, modeling, and forecasting
- New methods of collecting and analyzing data

CONCLUSION 2

The understanding, tools, and methods provided by the **social, behavioral, and economic science**s--including research supported by the National Science Foundation--provide an essential foundation that **helps other agencies achieve their missions**.

Examples of Research that Further Federal Agency Missions

- Auctioning off radio frequencies (FCC)
- Moving from welfare to work (HHS and other)
- Improving national security, intelligence and counterterrorism (DoD and other agencies)
- Containing Ebola (CDC)

CONCLUSION 3

The **social, behavioral, and economic sciences** have provided advances in understanding and tools and methods that have been **applicable to business and industry** and that **enhanced the U.S. economy**.

Examples of SBE in Business and Industry

- Development of internet search engines
- Improving safety in the airline industry and in other settings
- Using the altitudes of the world population to inform product development and marketing

Preparing for the Future

Priorities and elements NSF should consider in its strategic planning

Recommendation 1

A SYSTEMATIC AND TRANSPARENT PLANNING PROCESS

- Articulate the most important scientific questions consistent with NSF mission areas.
- Specify resources and methods required to advance progress.
- Gather input that includes wide array of stakeholders; explain how input is used; engage with other agencies.
- Evaluate progress over time.

Recommendation 2

Attend to Current Trends in Science

- Collaborative and interdisciplinary research
- Convergence research
- Heavy dependence on large data sets

Recommendation 2

ATTEND TO CURRENT TRENDS IN SCIENCE

- Facilitate interactions between SBE sciences and other science fields
- Support team science
- Develop research infrastructure data management methods and measures
- Help other federal agencies and organizations address important national needs

Recommendation 3

SUPPORT FOR TRAINING

- Prepare the next generation of scientists to be more data-intensive, interdisciplinary, and team oriented.

Recommendation 4

COMMUNICATION OF SOCIAL, BEHAVIORAL, AND ECONOMIC RESEARCH

- Expand efforts to communicate results and value of NSF-supported SBE research and how it advances the NSF mission.
- Encourage the broader SBE sciences community to increase communication of results and societal relevance of SBE research.
- Provide resources, training and tools to scientists to develop communication skills.