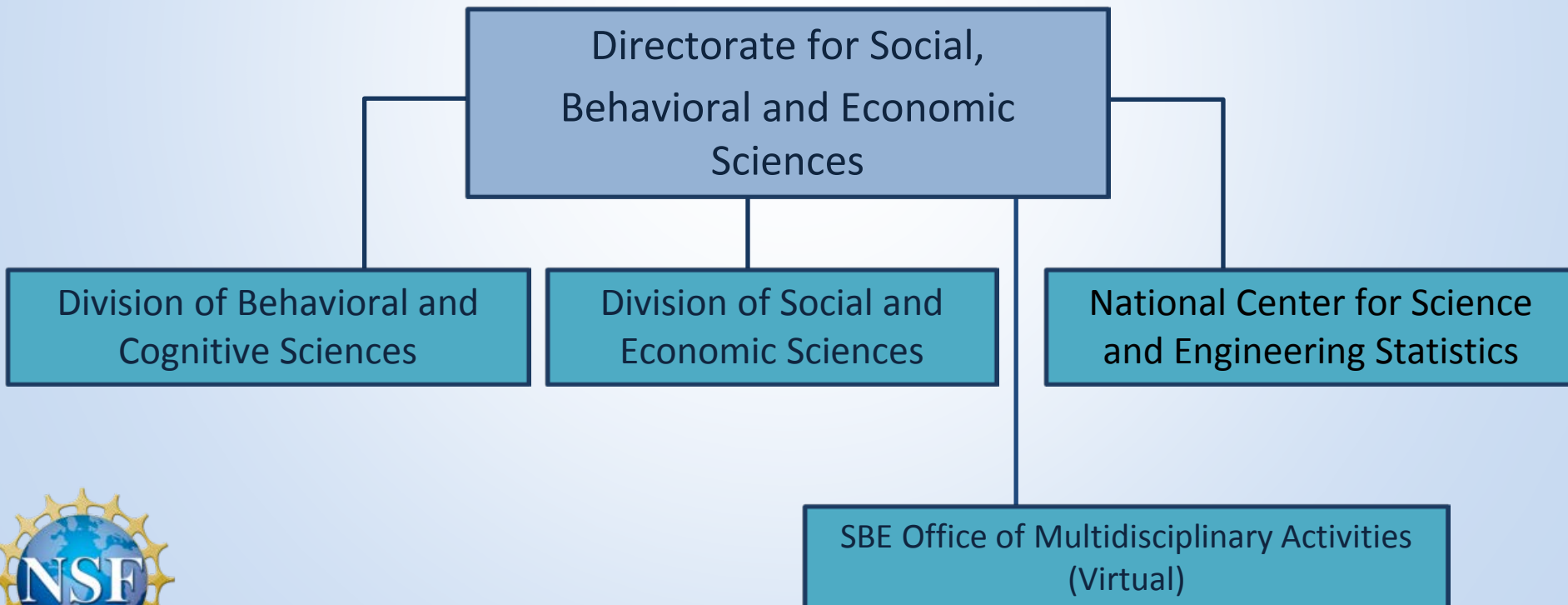


Social, Behavioral and Economic Sciences at NSF

Joanne Tornow

Acting Assistant Director



Why study human behavior and social organizations?

Energy



and policy journals *Energy Policy* and *The Energy Journal* have high impact factors, and *The Electricity Journal* has to be added to compile a regulatory journal. I found four worthwhile journals on understanding of the influence of social dimensions on energy use: a focus towards science, engineering and economics are either social sciences and the humanities; a lack of interdisciplinary collaboration and the under-representation of outside authors of these three minority groups.

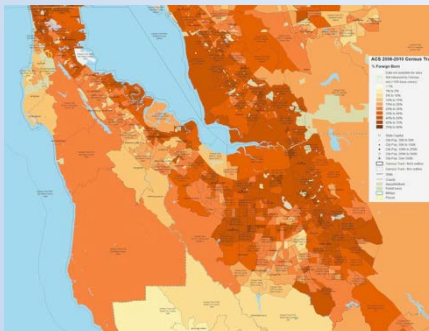
For instance, technology subjects, the complexity of choice-making, and the human dimensions of energy use and environmental change were rarely covered (see *Engelstedt et al.*). Most articles (83%) focused on advanced energy production systems, such as nuclear reactors, sources of renewable electricity and biofuels, or the technical elements of electricity generation, transmission and distribution — hardware — rather than the human software behind it. Single devices such as cooking stoves, bicycles, light bulbs and distributed generation were studied in less than 3.3% of articles. Behaviour and energy demand was investigated in less than 2.2% of papers. If this work is being published, it is in non-technical sociology, psychology and public affairs journals that few energy researchers read.

DISCIPLINE AFFILIATION
Social-science authorship and citations are also relatively low (see *Publishing Trends*). Science, engineering, economics and statistics account for most than half (57%) of institutional affiliations as reported by authors; non-economic social sciences for less than 20%. Sociology, geography, history, psychology, communication studies and philosophy each constituted less than 1%, and author affiliations.

Energy studies need social science

A broader pool of expertise is needed to understand how human behaviour affects energy demand and the uptake of technologies, says Benjamin K. Sovacool.

Migration



Inequalities

**The War on Poverty:
50 Years Later**
A House Budget Committee Report

**Expanding Opportunity
in America**
A Discussion Draft from the House Budget Committee

**Science
Special Issue
23 May 2014
The Science of
Inequality**

Risk Communications



Political Conflict



Methodologies



Administrative Records



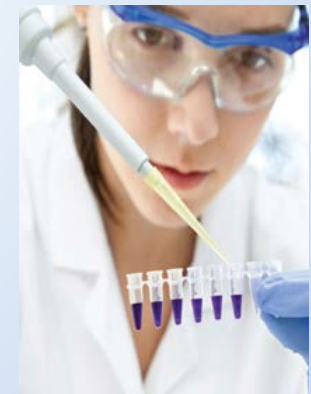
Surveys



Functional Near
Infrared
Spectroscopy



fMRI



Biospecimens₃



Biological Anthropology
Cognitive Neuroscience
Linguistics
Social Psychology

How does the human brain produce cognition and behavior?



Perception, Action and Cognition
Science of Learning Centers
Decision, Risk and Management Sciences
Developmental and Learning Sciences
Documenting Endangered Languages



Brain, cognition and behavior: Fundamental insights

Effect of social environment on cognitive function

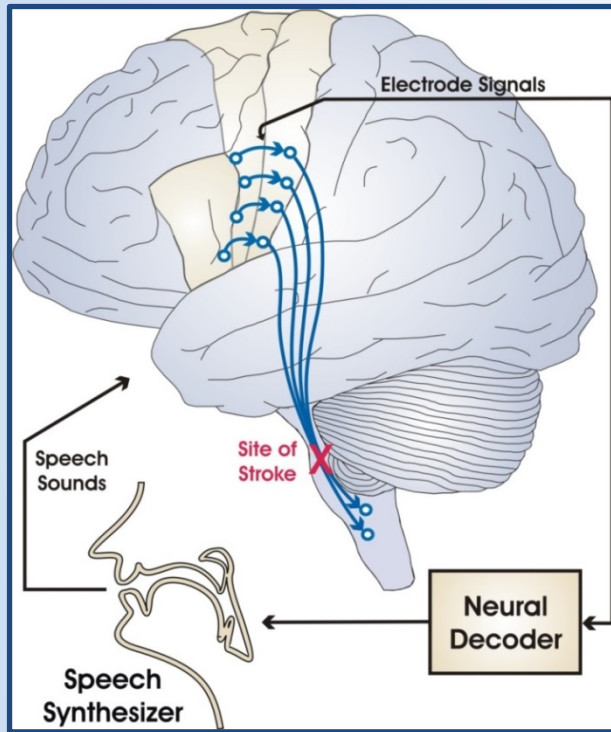


*Learning
Decision-making*



Brain, cognition and behavior:

Real world impact



Helping paralyzed people communicate



Understanding nonverbal communication across cultures



Economics
Sociology
Political Science
Archaeology and Archaeometry
Cultural Anthropology

How, when and why do we
cooperate or compete?
When does conflict arise?



Social Psychology
Law and Social Sciences
Decision, Risk and Management Sciences
Science, Technology and Society
Science of Science and Innovation Policy



Cooperation, competition, conflict: Fundamental insights

Causes of war, conditions of peace



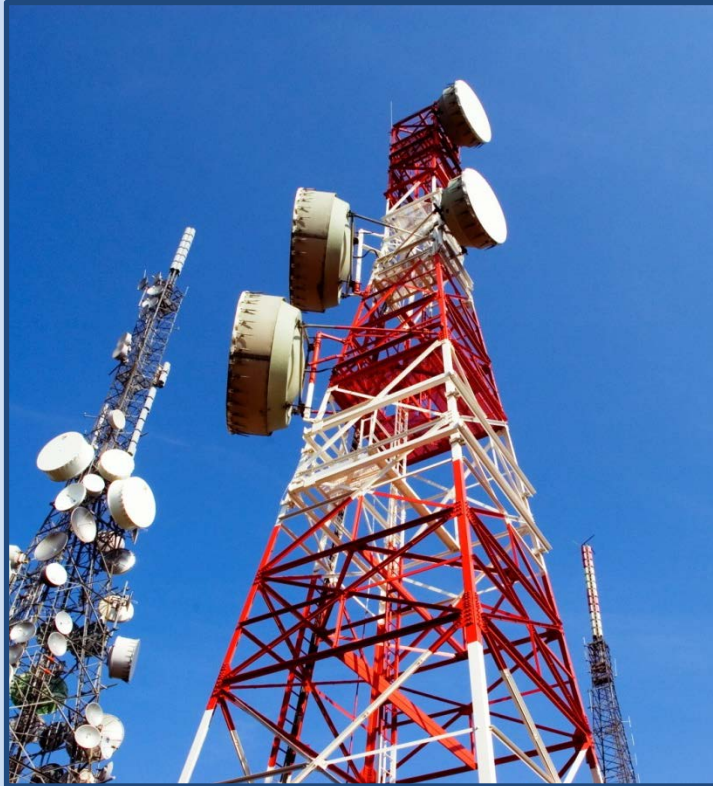
How markets work



Diplomacy and foreign policy
US and world economies
Allocation of resources



Cooperation, competition and conflict: Real world impact



Auctioning the airwaves



2009 Nobel Prize

Economic governance of
common resources



Cognitive Neuroscience
Biological Anthropology
Geography and Spatial Sciences
Dynamics of Coupled Natural and Human Systems
Science, Technology, and Society

Human behavior in context: time and space



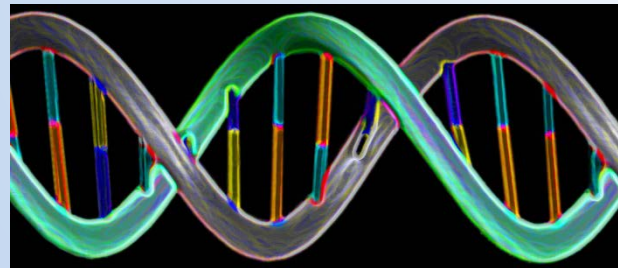
Archaeology and Archaeometry
Cultural Anthropology
Documenting Endangered Languages
Political Science
Sociology
Methodology, Measurement, and Statistics
Science of Science Innovation and Policy



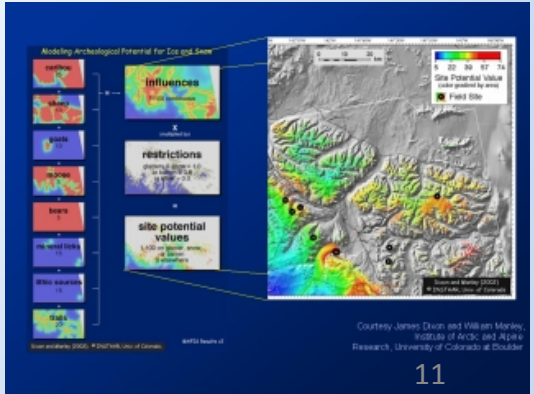
Time and space: Fundamental insights

Human origins

Geographic information systems



*Evolutionary genetics
and health
Planning and land use
Disaster response*



Courtesy James Dixon and William Morley, Institute of Arctic and Alpine Research, University of Colorado at Boulder



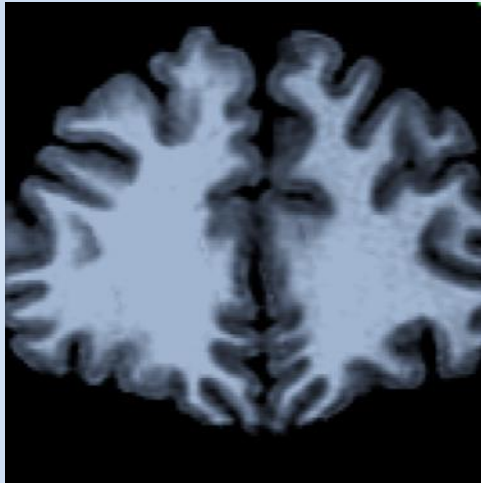
Time and space: Real world impact



Real time, hand-held mapping



NSF Priorities: Cognitive Science and Neuroscience

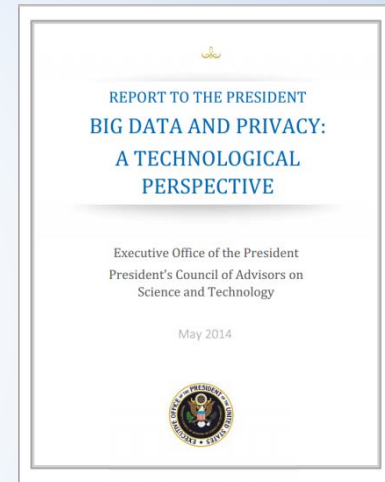


BRAIN Initiative: “accelerate the invention of new technologies...will open new doors to understanding how brain function is linked to human behavior and learning...”



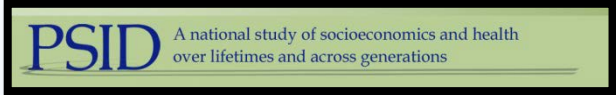
NSF Priorities:

Secure and Trustworthy Cyberspace



Privacy: a social-psychological construct
Text-mining and language technologies
Market-based incentives to enhance cybersecurity

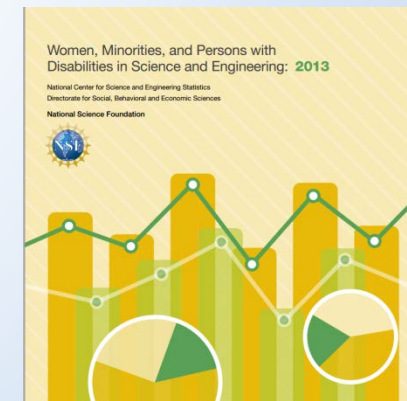
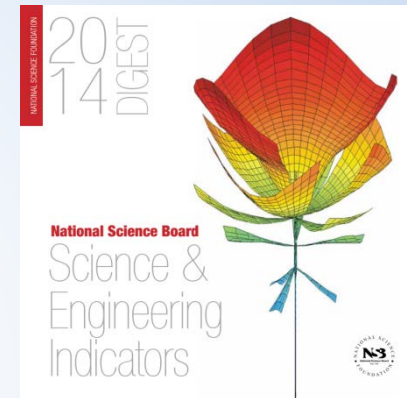
NSF Priorities: Big Data



*Access to Data
Social media
SBE Surveys*

National Center for Science and Engineering Statistics

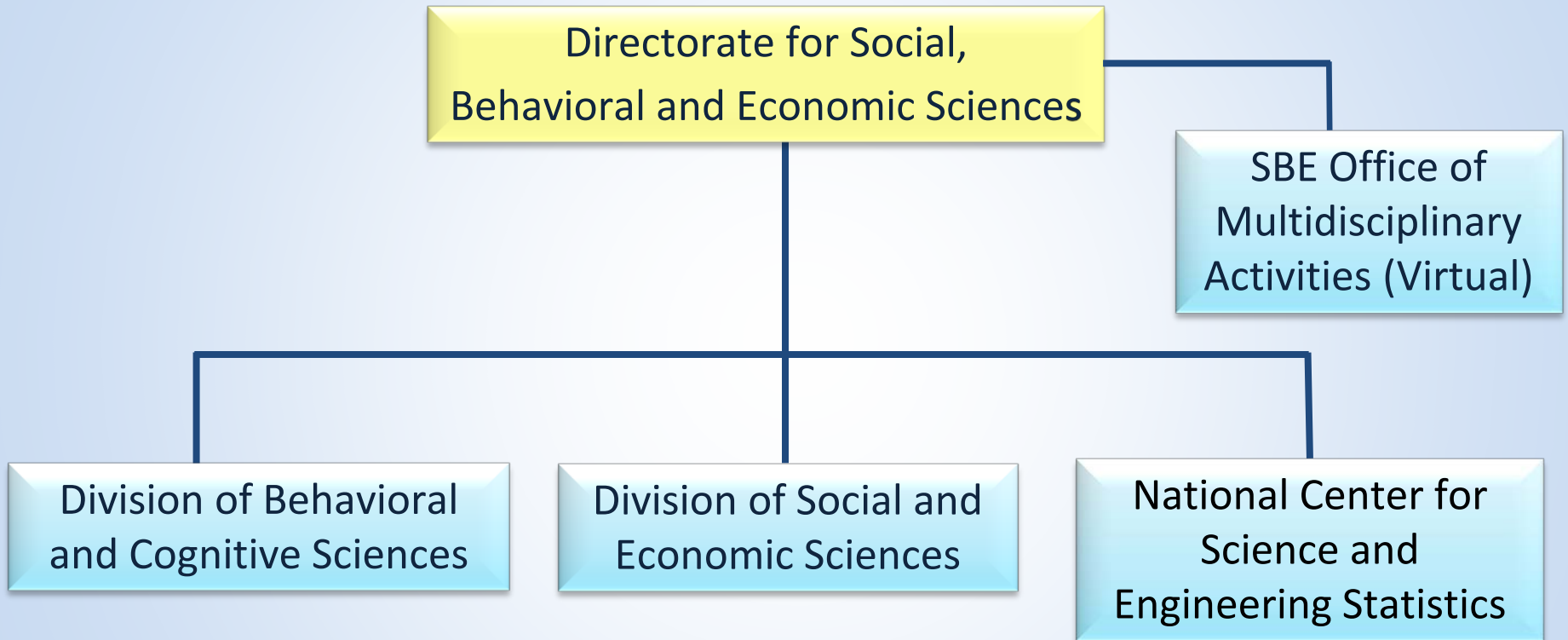
- Nation's primary source of data and analysis on the science and engineering enterprise
- Congressionally-mandated publications:
 - Science and Engineering Indicators
 - Women, Minorities and Persons with Disabilities in Science and Engineering



Thank you!

Back up Slides

NSF SBE OVERVIEW



BEHAVIORAL AND COGNITIVE SCIENCES DIVISION (BCS)

...supports research to develop and advance scientific knowledge about humans spanning areas of inquiry including brain and behavior, language and culture, origins and evolution, and geography and the environment.

BCS Standing Programs

- Cognitive Neuroscience
- Perception, Action and Cognition
- Developmental and Learning Sciences
- Social Psychology
- Geography and Spatial Sciences
- Archaeology and Archaeometry
- Biological Anthropology
- Cultural Anthropology
- Linguistics
- Documenting Endangered Languages



SOCIAL AND ECONOMIC SCIENCES DIVISION (SES)

...seeks to enhance our understanding of human, social and organizational behavior by building social science infrastructure, and by developing social disciplinary and interdisciplinary research projects that advance knowledge in the social and economic sciences.



SES Standing Programs

- Economics
- Political Science
- Sociology
- Law and Social Sciences
- Decision, Risk and Management Sciences
- Science of Organizations
- Science, Technology and Society
- Methodology, Measurement and Statistics

SBE Office of Multidisciplinary Activities

- Coordinating SBE's crosscutting activities, including:
 - Interdisciplinary Behavioral and Social Science Research (IBSS)
 - SBE Postdoctoral Research Fellowships (SPRF)
 - SBE Research Experiences for Undergraduate Sites (SBE REU Sites)
 - Science of Learning Centers (SLC)
 - Science of Science and Innovation Policy (SciSIP)