

# Social, Behavioral & Economic Sciences Directorate

*Advisory Committee*

*May 13, 2015*



# Outline

- I. Good news
- II. SBE budget update (Fiscal years 2015, 2016)
- III. Core programs
- IV. Cross-directorate initiatives
- V. On the horizon
- VI. Preview of Advisory Committee meeting agenda



# Good News!

- I. Census Bureau will retain the field of degree and marital history questions on the 2016 American Community Survey (community response mattered)
- II. SBE-funded investigators receiving honors
  - 2014 Sveriges Riksbank Prize in Economic Sciences in Memory of Alfred Nobel (1)
  - 2014 MacArthur Fellows (3)
  - 2015 Carnegie Fellows (16)
  - 2015 Guggenheim Fellows (10)
  - 2015 American Academy of Arts and Sciences Fellows (6)
  - 2015 Election to the National Academies (9 members; 1 foreign associate)
  - 2015 Daniel Patrick Moynihan Prize (1)
  - 2015 John Bates Clark Medal (1)
- III. SBE 2015 Budget Request approved
- IV. Increased support from NSF Office of Legislative and Public Affairs



# SBE Budget Update

- SBE FY 2015 Budget is **\$272.20** Million
  - Increase of **6%** over FY 2014
- SBE FY 2016 Request is **\$291.46** Million
  - Increase of **7% (+\$19.26 M)** over FY 2015



# Drivers of the SBE Budget

- Enhance research investments that advance fundamental knowledge in the SBE sciences
- Support interdisciplinary research and training to capitalize on synergies that emerge when individual disciplines converge on common research questions
- Participate in cross-directorate activities in which a comprehensive understanding of human behavior is central
- Continue NCSES's work as the Nation's leading provider of statistical data on the Science and Engineering enterprise



# Allocation by Division (Millions)

Division	FY 2014 Actual	FY 2015 Actual	FY 2016 Request	FY 2016 Percent Change from FY 2015
<b>SES</b>	<b>\$95.87</b>	<b>\$97.72</b>	<b>\$105.13</b>	<b>+7.6%</b>
<b>BCS</b>	<b>\$93.10</b>	<b>\$94.47</b>	<b>\$101.79</b>	<b>+7.7%</b>
<b>SMA</b>	<b>\$28.14</b>	<b>\$29.25</b>	<b>\$30.23</b>	<b>+3.4%</b>
<b>NCSES</b>	<b>\$39.73</b>	<b>\$50.76</b>	<b>\$54.31</b>	<b>+7.0%</b>
<b>Total</b>	<b>\$256.84</b>	<b>\$272.20</b>	<b>\$291.46</b>	<b>+7.1%</b>



# SBE's Core Programs

## SBE Office of Multidisciplinary Activities (SMA)

- Science of Science and Innovation Policy
- Research Experiences for Undergraduate Sites
- SBE Postdoctoral Research Fellowships
- Science of Learning
- Interdisciplinary Behavioral and Social Science Research

## Behavioral and Cognitive Sciences (BCS)

- 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 (SES)

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

## National Center for Science and Engineering Statistics (NCSES)

- Collection, analysis, interpretation, and dissemination of objective data on the science and engineering enterprise:
- Research and Development
  - Science and Engineering workforce
  - U.S. competitiveness in science, engineering, technology, R&D
  - Condition and progress of STEM education in the U.S.



# New Research Solicitations

- Science of Learning: Collaborative Networks
- Resource Implementations for Data Intensive Research in the Social, Behavioral, and Economic Sciences (RIDIR)

## Dear Colleague Letters

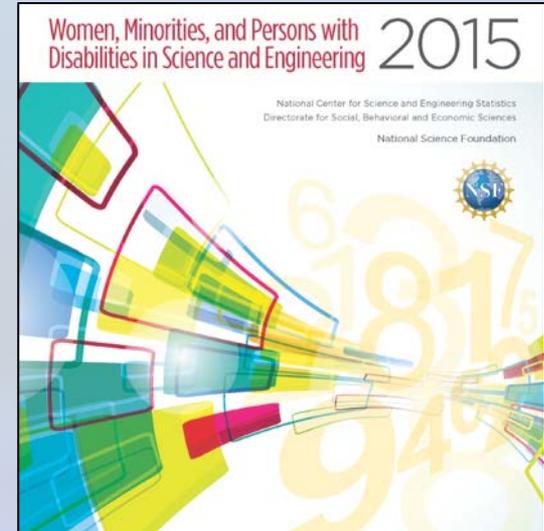
- Stimulating Research Related to the Science of Broadening Participation
- Science, Engineering, and Education for Sustainability (SEES): Interactions of Food Systems with Water and Energy Systems



# National Center for Science and Engineering Statistics (NCSES)

NCSES will initiate new projects that support:

- development of enhanced data access tools, techniques, and visualizations
- new data collection techniques building on administrative data and other “big data” sources
- questionnaire redesign and survey improvements



# Understanding the Brain

- Cross-directorate activity to enable the scientific understanding of the full complexity of the brain in action and in context
- SBE focus is to understand the dynamic relationship between brain structure and activity and human cognition and behavior.



# Risk and Resilience: Critical Resilient Interdependent Infrastructure Systems and Processes (CRISP)

- Understand responses to risks from
  - extreme natural events (hurricanes; earthquakes)
  - people (terrorism; human error)
- Build more resilient infrastructure systems



# Innovations at the Nexus of Food, Energy, and Water Systems (INFEWS)



- Enhance capacity to explore the interactions among food, energy, and water systems
- Explore the social, political, economic, and cultural dimensions of the food, energy, and water systems

## Cyberinfrastructure Framework for 21st Century Science, Engineering and Education (CIF21)



- Support development of user-friendly, large-scale, next-generation data resources and analytical techniques through the Resource Implementations for Data Intensive Research in the Social, Behavioral, and Economic Sciences (RIDIR) program
- Support innovative SBE big data applications through the BIGDATA program

## Secure and Trustworthy Cyberspace (SatC)

- Support research at the interstices of the social and computer sciences to achieve secure practices through both market mechanisms and behavioral incentives
- Continue to support research on Privacy in Today's Networked World
- “Cybersecurity is a socio-technical problem — technology alone is not going to solve the problem. . . . The social dimension of security is important.”  
- CISE AD Jim Kurose, 1/27/2015



# Urban Science



- Support research that addresses organizational, social, psychological, political, geographic, and economic issues associated with rapidly developing and evolving smart city ecosystems
- Ultimate goal: make cities more livable, workable, and sustainable

# Inclusion across the Nation of Communities of Learners that have been Underrepresented for Diversity in Science and Engineering (NSF INCLUDES)

- Long-term goal: fund new research, models, and partnerships that lead to demonstrable progress in meeting the challenge of broadening participation in science and engineering
- Expand, re-frame, and improve alignment of directorate-based broadening participation efforts for greater impact
- FY 2016 pilots
  - Networks for STEM Excellence
  - Empowering All Youth for STEM



# On the Horizon

- Committees of Visitors (August, 2015)
  - SBE Office of Multidisciplinary Activities (Catherine Eckel, Chair)
  - Division of Behavioral and Cognitive Sciences (JW Harrington, Chair)
- COV reports to be presented at fall, 2015 SBE Advisory Committee meeting
- Congressional interest



# H.R. 1806, the *America COMPETES Reauthorization Act of 2015*:

- I. “A bill to provide for technological innovation through the prioritization of Federal investment in basic research, fundamental scientific discovery, and development to improve the competitiveness of the United States, and for other purposes.”
- II. Objective: “To renew and maintain the Nation’s international leadership in science and technology ...”
- III. America Competes Act states: “Taxpayer-supported research investments administered by the Foundation should serve the national interest.”
  - Congruent with the NSF mission “to promote the progress of science; to advance the national health, prosperity and welfare; to secure the national defense”



**Research & Related Activities Account**  
**FY 2015 Enacted and FY 2016 Request to Congress compared with FY16 House America**  
(Dollars in Millions)

Activity	FY 2015 Enacted	FY 2016 Request	FY 2016 House Reauth	FY 16 Reauthorization over FY 2016 Request	
				Amt	Pct
BIO	\$731	\$748	\$835	\$87	11.6%
CISE	\$922	\$954	\$1,050	\$96	10.0%
ENG	\$892	\$949	\$1,034	\$85	8.9%
GEO	\$1,304	\$1,365	\$1,200	-\$165	-12.1%
MPS	\$1,337	\$1,366	\$1,500	\$134	9.8%
SBE	\$272	\$291	\$150	-\$141	-48.5%
<i>BCS, SES, SMA</i>	\$221	\$237	\$100	-\$137	-57.8%
<i>NCSES</i>	\$51	\$54	\$50	-\$4	-7.9%
OISE	\$49	\$51	\$39	-\$13	-24.5%
IA	\$425	\$459	\$378	-\$82	-17.8%
<i>IA Programs</i>	\$266	\$289	\$210	-\$79	-27.3%
<i>EPSCoR</i>	\$160	\$170	\$167	-\$3	-1.6%
U.S. Arctic Research Commission	\$1	\$1	\$1	-	-
<b>Research &amp; Related Activities</b>	<b>\$5,934</b>	<b>\$6,186</b>	<b>\$6,186</b>	<b>-</b>	<b>-</b>

Totals may not add due to rounding.

- Sets funding levels by directorate
- Reduces Education and Human Resources Directorate budget by 10%



# If America COMPETES is enacted: Impact on SBE

## I. Budget

- Reduces overall SBE budget by 45% (to \$150 million)
- BCS, SES, SMA reduced by 58% (to \$100 million)
- NCSES reduced by 8% (to \$50 million)

## II. Potential programmatic Impact

- No new awards in core BCS, SES, SMA research programs
- No SES, BCS, SMA support of new initiatives
- Hampers NCSES efforts to improve public access to data, assess potential advantages of integrating administrative and survey data, and develop of new measures of innovation.

“In my personal opinion, the COMPETES bill as it now stands is bad for science, it’s bad for scientists and engineers, bad for the federal science agencies, and damaging to the world-leading U.S. scientific enterprise.”

- John Holdren, Assistant to the President for Science and Technology, Director of the White House Office of Science and Technology Policy, and Co-Chair of the President's Council of Advisors on Science and Technology (April 30, 2015)



# Next Steps

- H.R. 1806 America Competes to House Floor?
- 36 organizations opposing H.R. 1806; from the Computing Research Association:
  - “Research in several key areas of computing — including cyber security and human-computer interaction (HCI) -- Is significantly informed by work emanating from the SBE Directorate. The insight into human behavior provided by SBE-funded work is critical to understanding how best to design and implement hardware and software systems that are more secure and easier to use. In cyber security work, where the human is often the weakest link in the chain, it is especially crucial to understand the varying motivations and usage patterns that dictate how people interact with their machines, and the expertise in studying those issues in large part resides in the social, behavioral, and economic sciences. In HCI work, expertise in social, behavioral, and economic sciences is critically valuable in creating workplace systems that foster collaboration and creativity, creating disaster response systems that influence people to effectively find shelter and assistance, and creating systems that motivate medical adherence and complicate with medical treatment.”
- Ranking member has introduced alternative America Competes Act (H.R. 1898)
- Senate?



# AC Meeting Agenda (Today)

- NSF Public Access Plan
- Report from SBE AC Subcommittee on Replicability in Science
- 2020 Themes/*Rebuilding the Mosaic* Portfolio Analysis
- Women, Minorities and Persons with Disabilities in Science and Engineering
- Science of Broadening Participation
- Statistical Sciences at NSF Subcommittee Update
- Dinner (Kapnos Taverna)

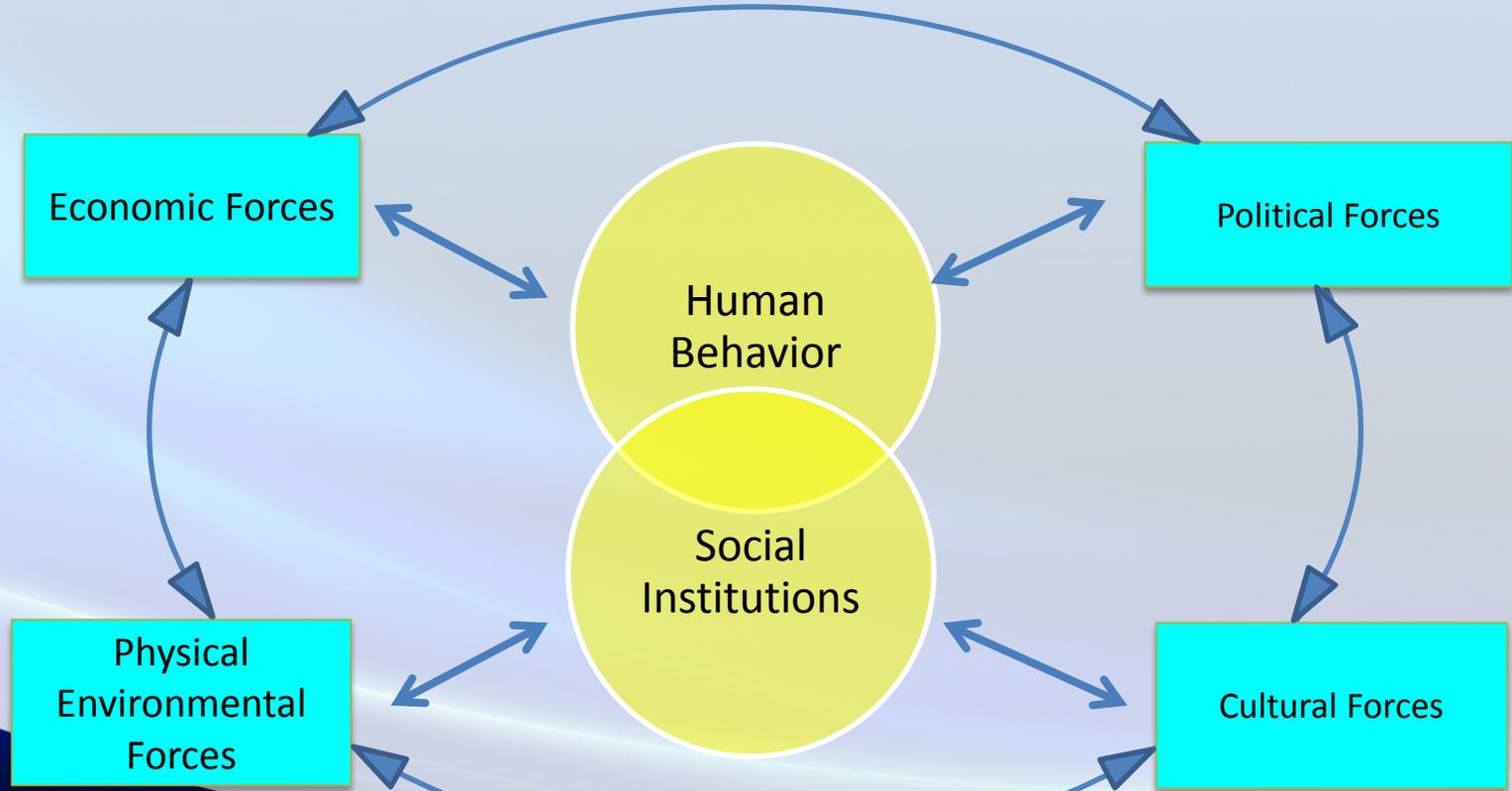


# AC Meeting Agenda (Tomorrow)

- Meeting with NSF Leadership
- Decision-Making under Uncertainty/Risk and Resilience
  - NSF Activities
  - Investigator Panel (presentations and discussion)
    - Dr. Susan Cutter, University of South Carolina
    - Dr. Charles Redman, Arizona State University
    - Dr. M. Granger Morgan, Carnegie Mellon University
  - Discussion of future directions for SBE research



# SBE Research in a Nutshell: A Heuristic Framework



Thank you!

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# In Case of Emergency...

# THE 411

## NSF's Rally Points

*Take the time to know where NSF meets during an emergency. You'll be glad you did.*



### Did you know?

**NSF has two rally points: Welburn Square is the main rally point where everyone should report after exiting Stafford I and II.**

If Welburn Square is not inhabitable or we need to move away from Stafford I and II, we will report to Quincy Park – about 5 blocks northeast of NSF. You can see a map of Quincy Park [here](#).

**BE SMART. BE INFORMED. BE PREPARED.**