Perspectives on Europe-USA Cooperation in Basic Science and Engineering Research

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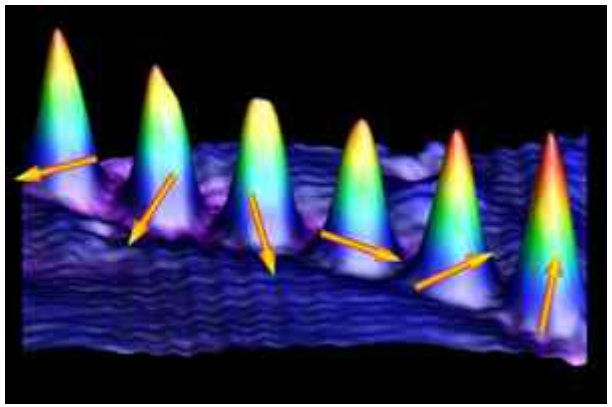
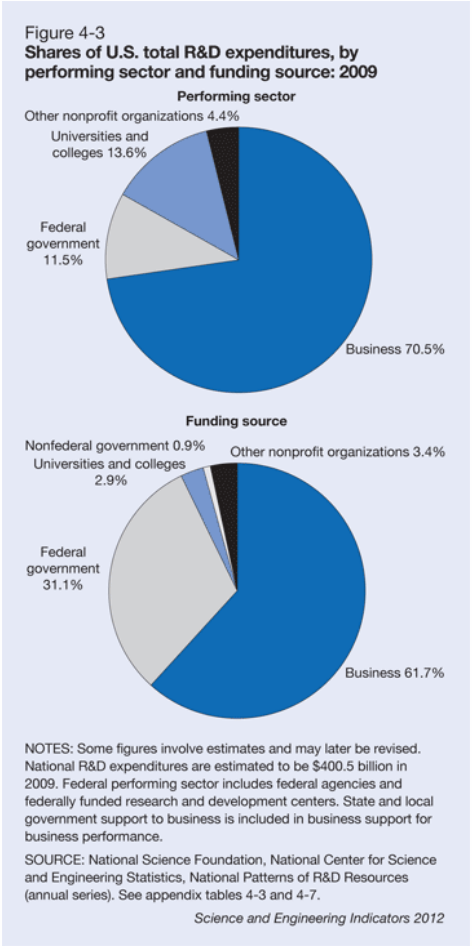


Physicists capture first images of atomic spin. S.W. Hla, Ohio U; A. Kubetzka and R. Wiesendanger, U. Hamburg; S. Heinze and P. Ferriani, Christian-Albrechts-Universität Kiel (PIRE)

The S&T Landscape in the U.S.A.

- Many R&D performers and funders: industry, federal and state governments, universities, non-profit organizations
- Office of Science and Technology Policy (OSTP) coordination of federal investments
- Diversity and decentralization

variety of options *and* complexity of interactions in R&D cooperation

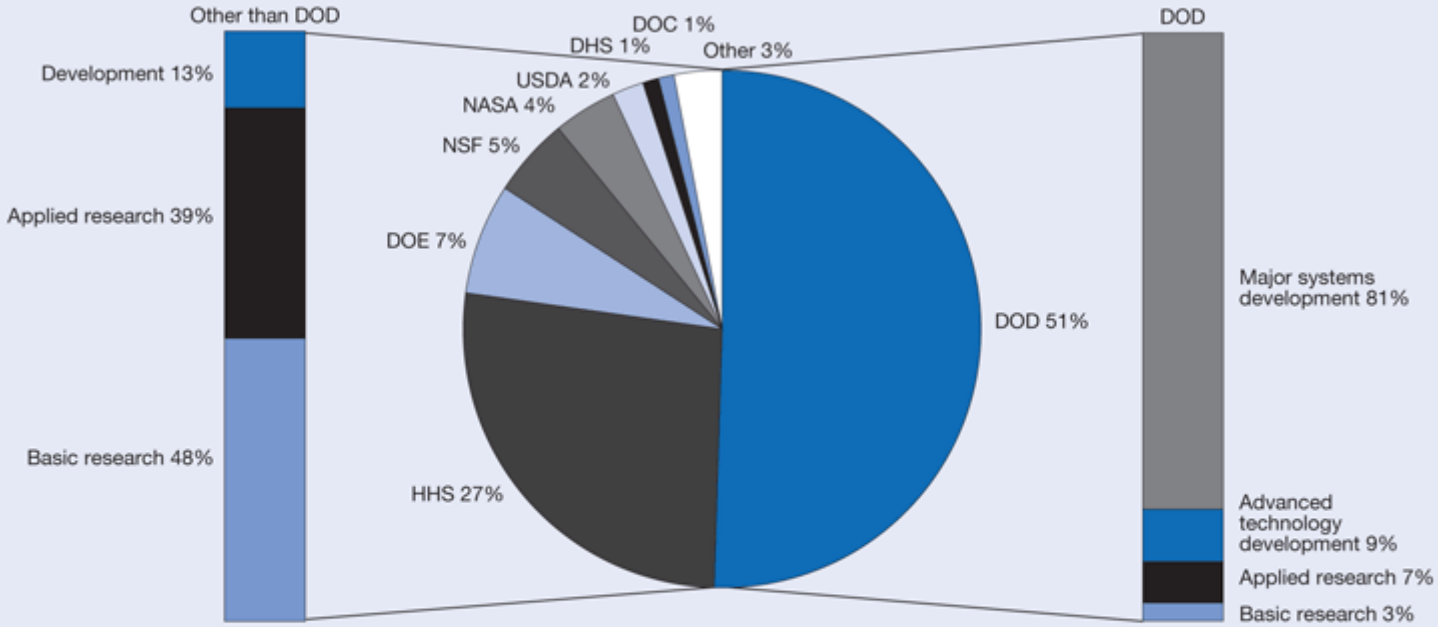


About The US National Science Foundation

- Independent Agency
- Supports basic research and education
- Funded by US Congress
- Low overhead; highly automated
- Uses grant mechanism
- Merit review process
- Awards to US institutions
- NSF operates no laboratories

NSF ~19% of Total Federal Basic Research

Figure 4-12
Federal obligations for R&D, by agency and character of work: FY 2009



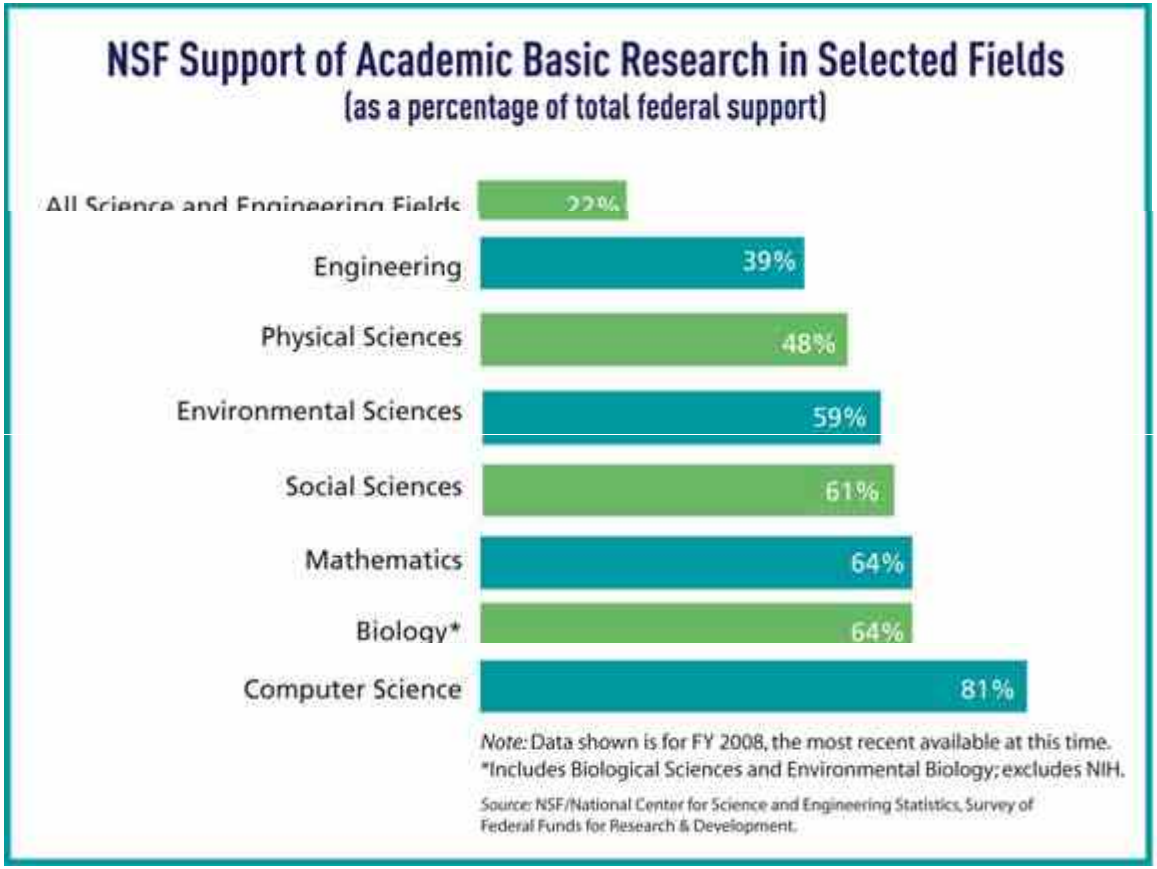
DOC = Department of Commerce; DOD = Department of Defense; DOE = Department of Energy; DHS = Department of Homeland Security; HHS = Department of Health and Human Services; NASA = National Aeronautics and Space Administration; NSF = National Science Foundation; USDA = Department of Agriculture

NOTES: Detail may not add to total because of rounding. Includes obligations from the additional federal R&D funding appropriated by the American Recovery and Reinvestment Act of 2009.

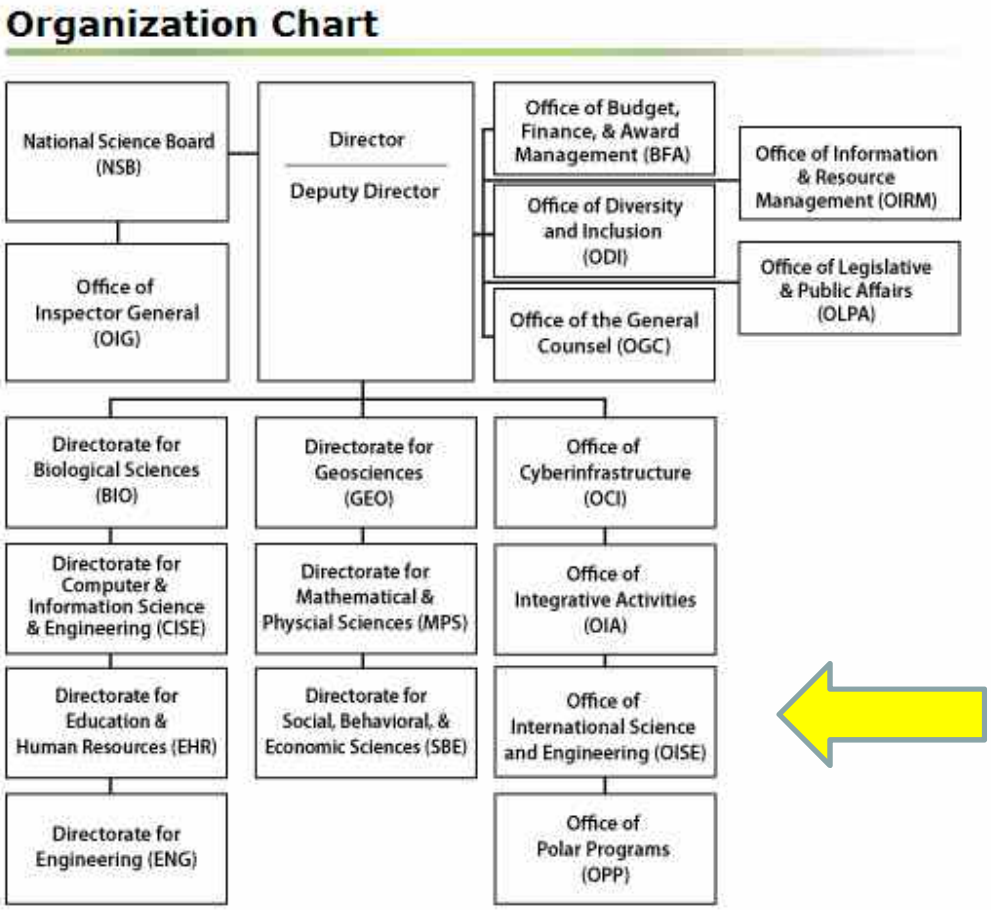
SOURCE: National Science Foundation, National Center for Science and Engineering Statistics, Federal Funds for Research and Development (FY 2009–11). See appendix table 4-31.

Science and Engineering Indicators 2012

NSF ~ 22% of academic research in S&E



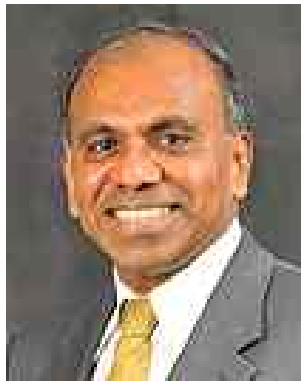
NSF: Discipline-based structure and interdisciplinary funding mechanisms



NSF by the Numbers

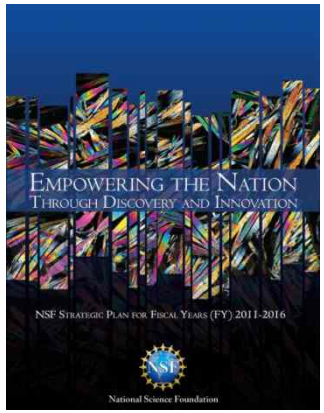
- FY 2012 budget $7 billion
- 1,300 employees - ~ 550 Ph.D. scientists and engineers, including ~150 'rotators'
- 55,000 proposals reviewed annually by some 50,000 reviewers
- 12,000 new awards each year
- median award is $128,000/year for 3 years
- supports 285,000 researchers postdoctoral fellows, trainees, teachers, and students annually

International Cooperation at NSF



The nation's commitment to research will … ***take on a more globally connected context*** *as the major issues and problems we face know no boundaries.*

Dr. Subra Suresh, Director NSF



Keep the United States globally competitive at the frontiers of knowledge by ***increasing international partnerships and collaborations****.*

NSF Strategic Plan 2011-16, Performance Goal

Complete list of international activities at www.nsf.gov/international

Benefits from international cooperation

- Leverage of intellectual and financial resources
- Access to unique research infrastructures
- Technically *and* interculturally competent S&T workforce
- More knowledge worldwide = net gain for all, as long as there is an open flow of information
- Science diplomacy – scientific cooperation as an essential element of foreign policy

Some cross-cutting international activities at NSF

- ***Partnerships for International Research and Education*** (PIRE)
- ***International Research Experiences for Students*** (IRES)
- ***Science Across Virtual Institutes*** (SAVI)

Some disciplinary international activities at NSF

- ***Collaborative Research in Computational Neuroscience*** (NIH and German Ministry of Education and Research)
- ***Collaborative Cyberinfrastucture Proposals with European Groups*** (with the EC; standardization, interoperability and access to scientific data across disciplines)
- ***International Collaboration in Chemistry*** (several countries worldwide)
- ***Materials World Network*** (several countries worldwide)

What works in international cooperation

- Benefit to all partners
- Alignment of goals and processes
- Recognition that added value is based on added effort
- Trust and good working relationships
- Stability of partners
- Adequate human and financial resources
- Support at program and upper management levels

Looking forward to seeing you at the Global Merit Review Summit, Arlington, May 14-15

Thank you for your attention!

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