



What's happening
in DC?

The Role of the Federal Government in Science & Technology

- Improve Nation's ability to:

- Innovate
- Enable Discoveries
- Sponsor development

Strengthen the Economy

- Enhance National Security
- Strengthen the Economy
- Improve Health & Well-being
- Foster an Educated Society

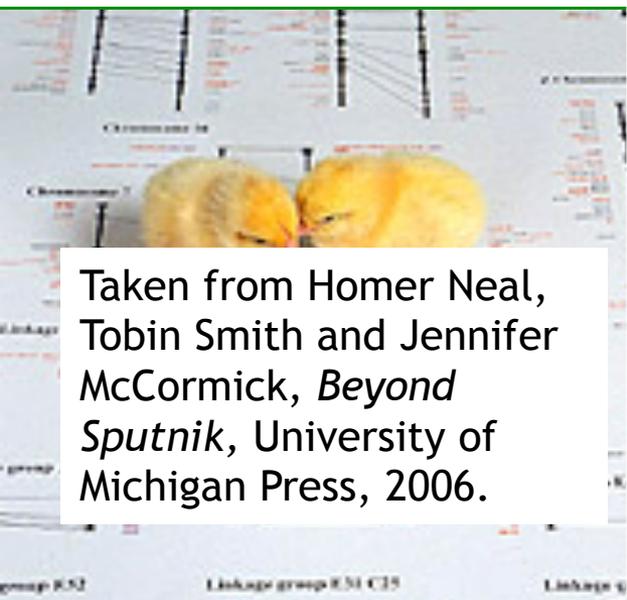
How Policy Gets Made: The Science Policy "Web"

Slide from:

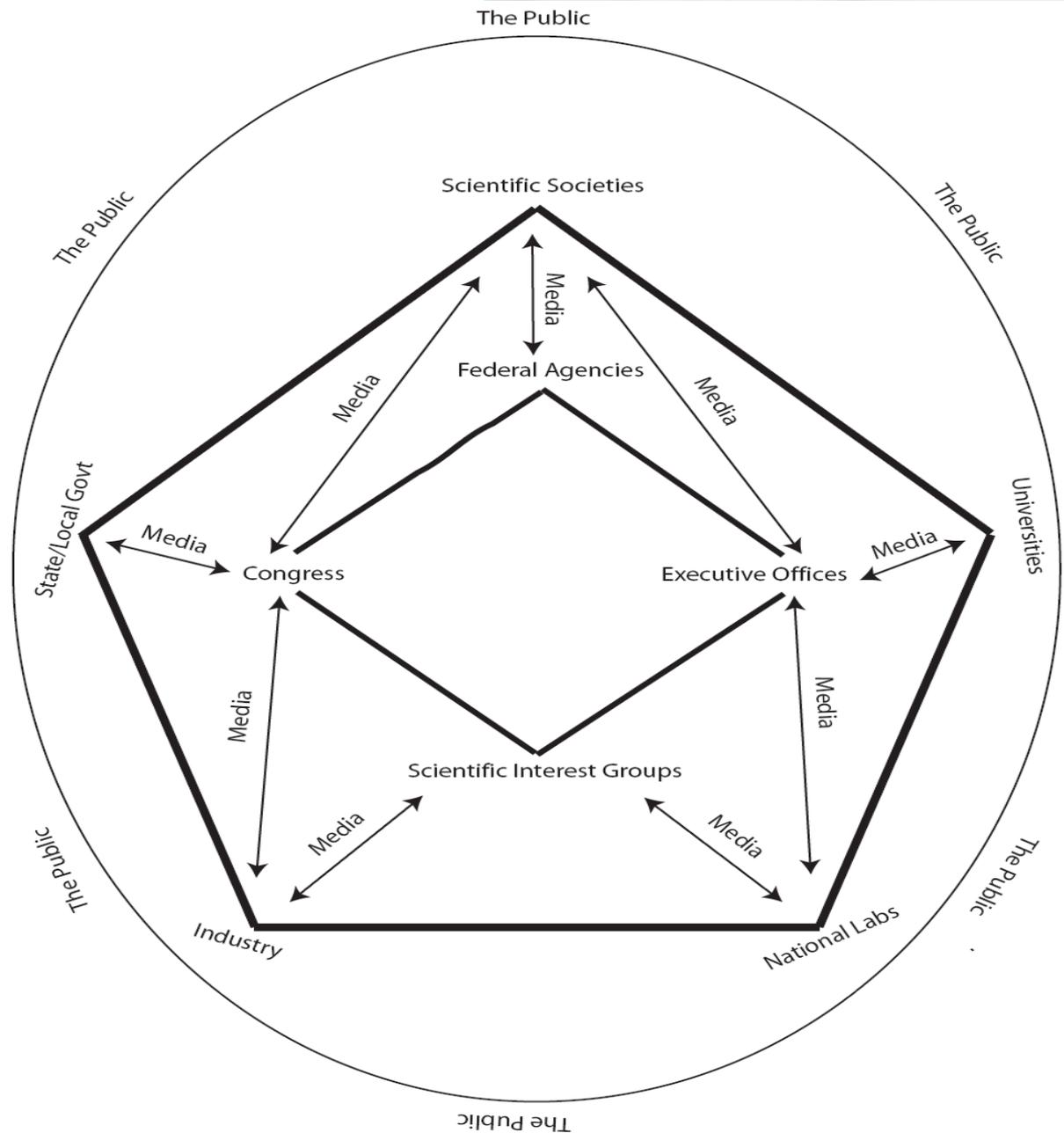
Matt Hourihan

AAAS R&D Budget and Policy Program

www.aaas.org/spp/rd



Taken from Homer Neal, Tobin Smith and Jennifer McCormick, *Beyond Sputnik*, University of Michigan Press, 2006.

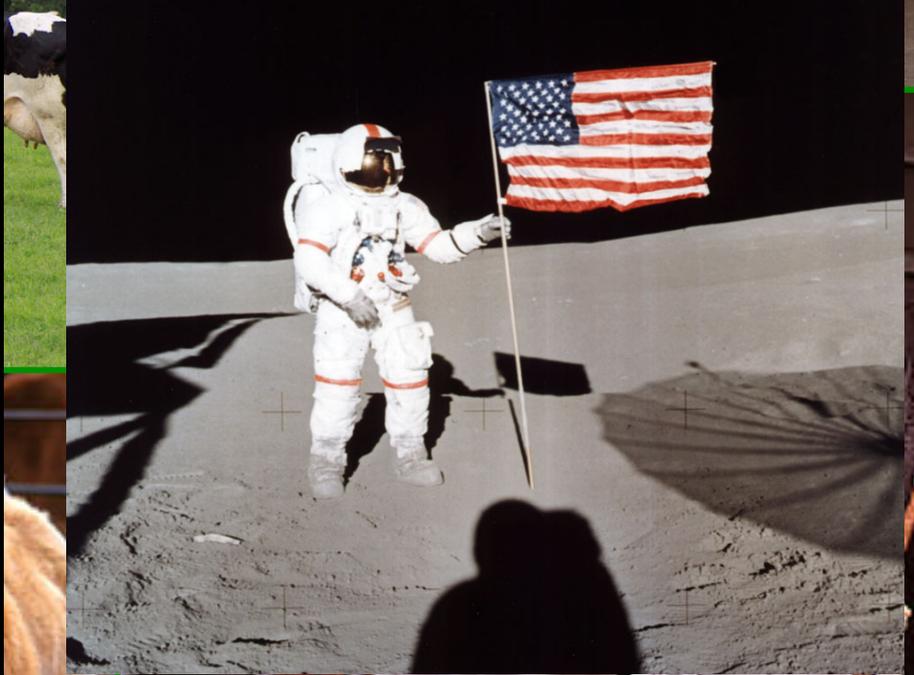
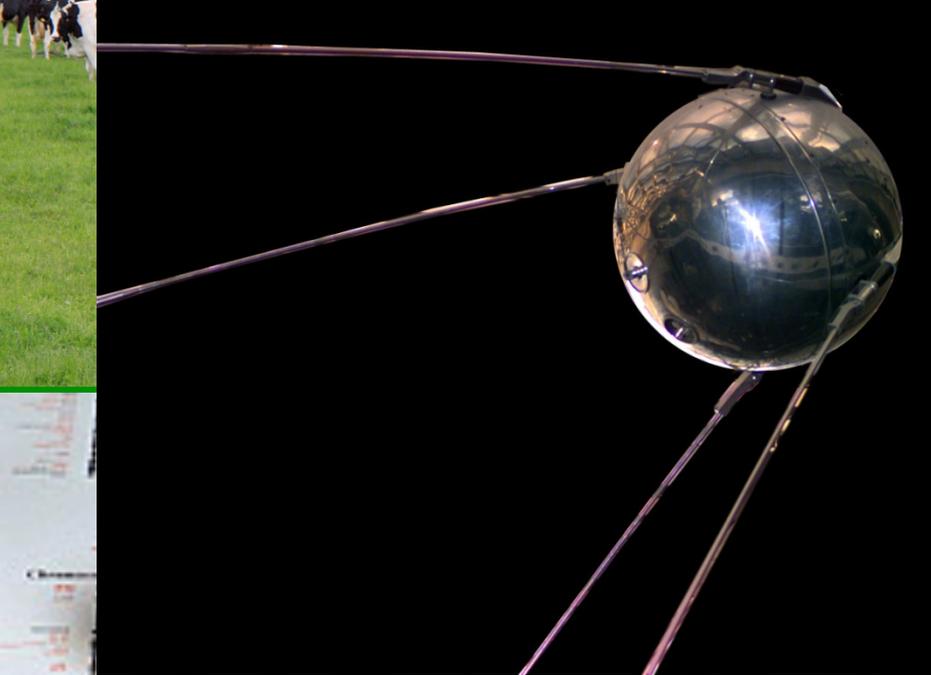


Setting Federal Science Policy

Facts + Values

- Priorities
 - Long term vs. Short term
- Budgets—Who is Funded?
 - How much?
- What is Funded?
 - Basic, Applied, Development
 - Education/Training/Workforce
- Global Arena
 - Competition/Cooperation (economics)
 - Science Diplomacy (food security)

Sputnik Moment





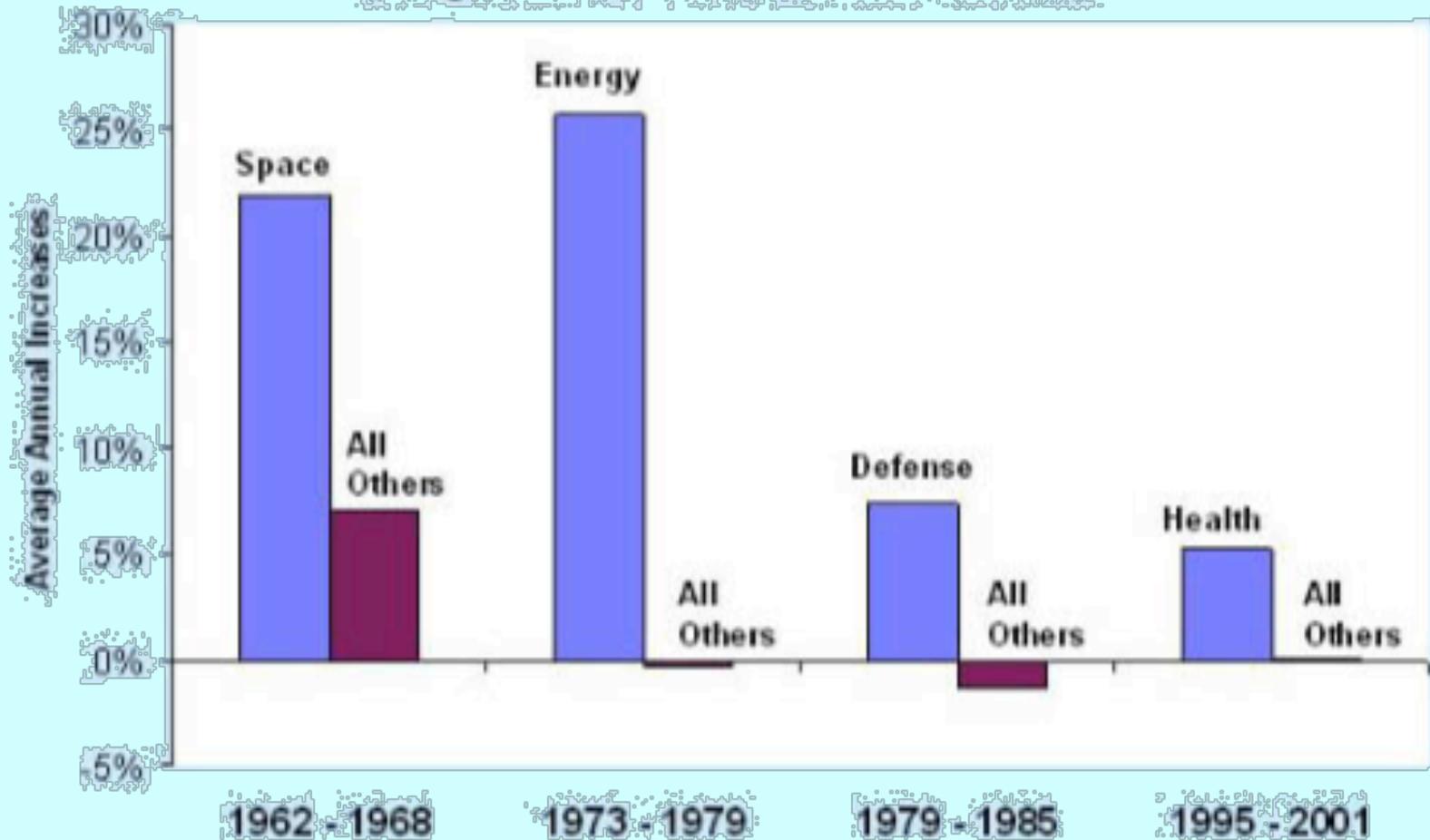
1862: 150 yrs ago.....

- 
- **An Act to Establish a Department of Agriculture**
 - *Established the Department's basic mission "to acquire and diffuse among the people of the United States useful information on subjects connected with agriculture in the most general and comprehensive sense of the word"*
 - **Morrill Land Grant College Act** –
 - *Provided public lands to U.S. states and territories for the establishment of colleges specializing in agricultural research and instruction*
- 

Historical Perspective

R&D Balance Includes Setting Priorities

(obligations in 1996 constant dollars)

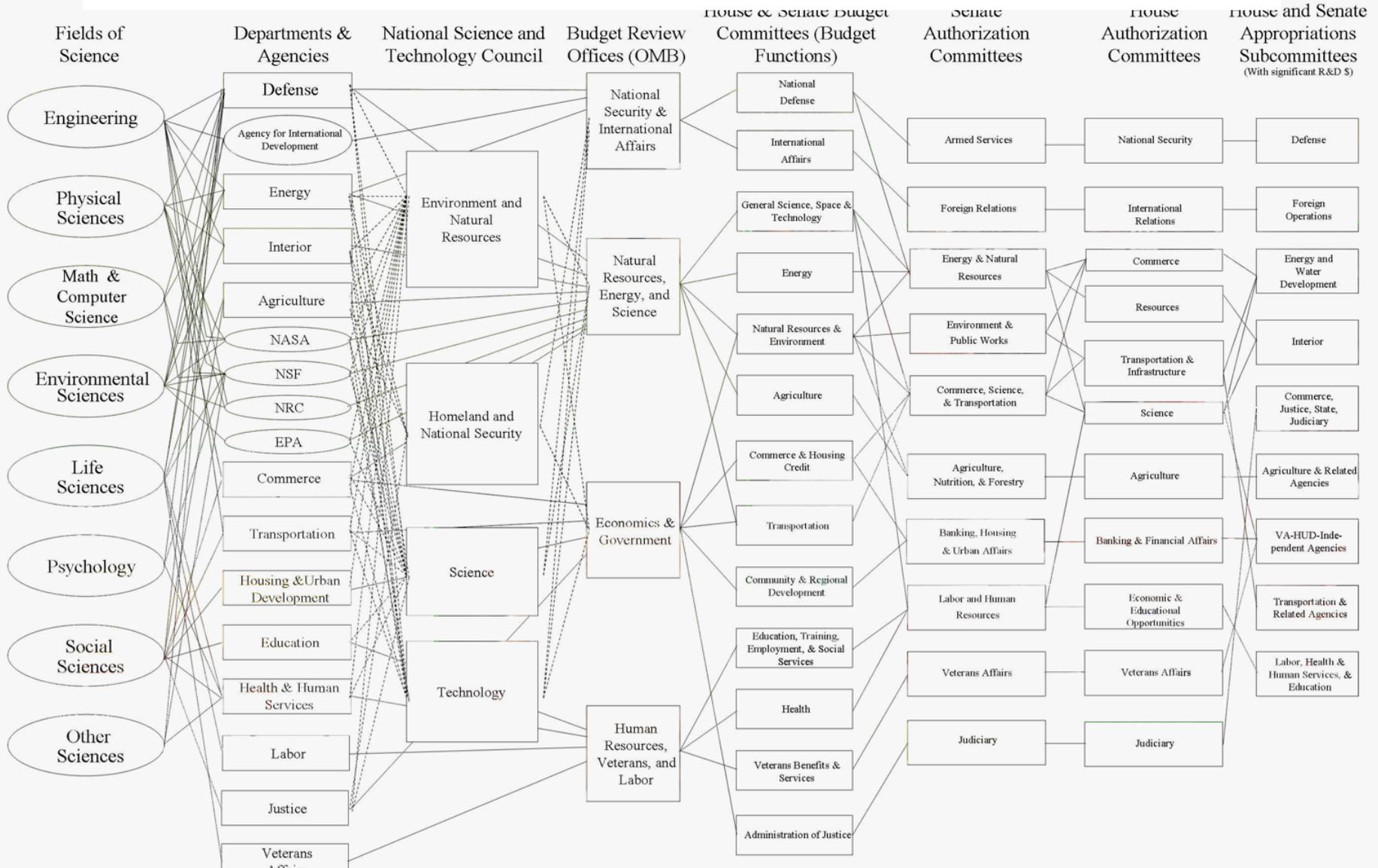


Source: National Science Foundation

How are America's S&T Priorities and Budgets Set?



Development of the Federal R&D Budget



Showing Fields of Science and Executive and Legislative Decision Units : Connecting lines indicate location of agency budget decisions, but not decision sequences

Research Priority Processes

Top down
(OSTP, OMB, Agency Leadership, Congress)

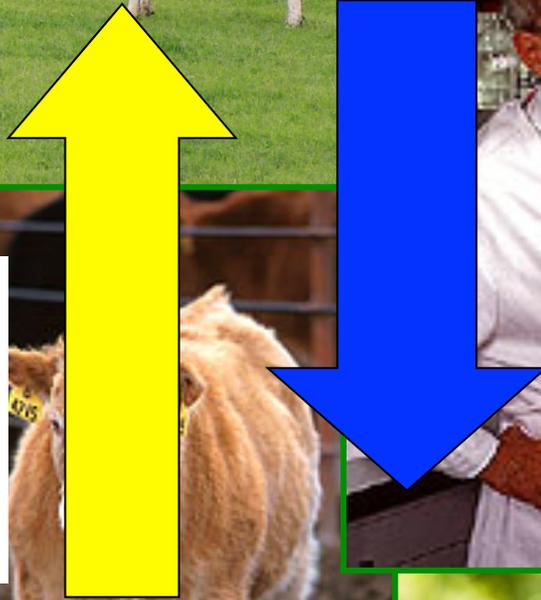
- Ideas
- Concepts
- Planning
- Capability
development

- Priorities
- Budget
- Strategic
Planning
- DECISIONS

Bottom up: YOU!
(Academia, Industry, Agency S&E Staff)

Research Priority Processes

Top down
(OSTP, OMB, Agency Leadership, Congress)



- NSF
- NIH
- NIFA/USDA**

-DOC
-DOD
-DOE
-Interior
-NASA
-USDA**

Bottom up
(Academia, Industry, Agency S&E Staff)



The President

Office of Management and Budget



OSTP

Other Boards, Councils, etc.



Independent Agencies:



The President Proposes



**Congress
Disposes**

Agency Competition for Funds

13 Separate House and Senate Appropriations Bills -- each assigned spending allocations:

- USDA is in Agriculture bill
- NIH, part of HHS, is in the Labor, HHS and Education appropriation bill
- NSF, NASA and NOAA are Dept of Commerce and Justice, Science & Related Agencies
- DoD is in the Defense bill
- DoE is in Energy and Water



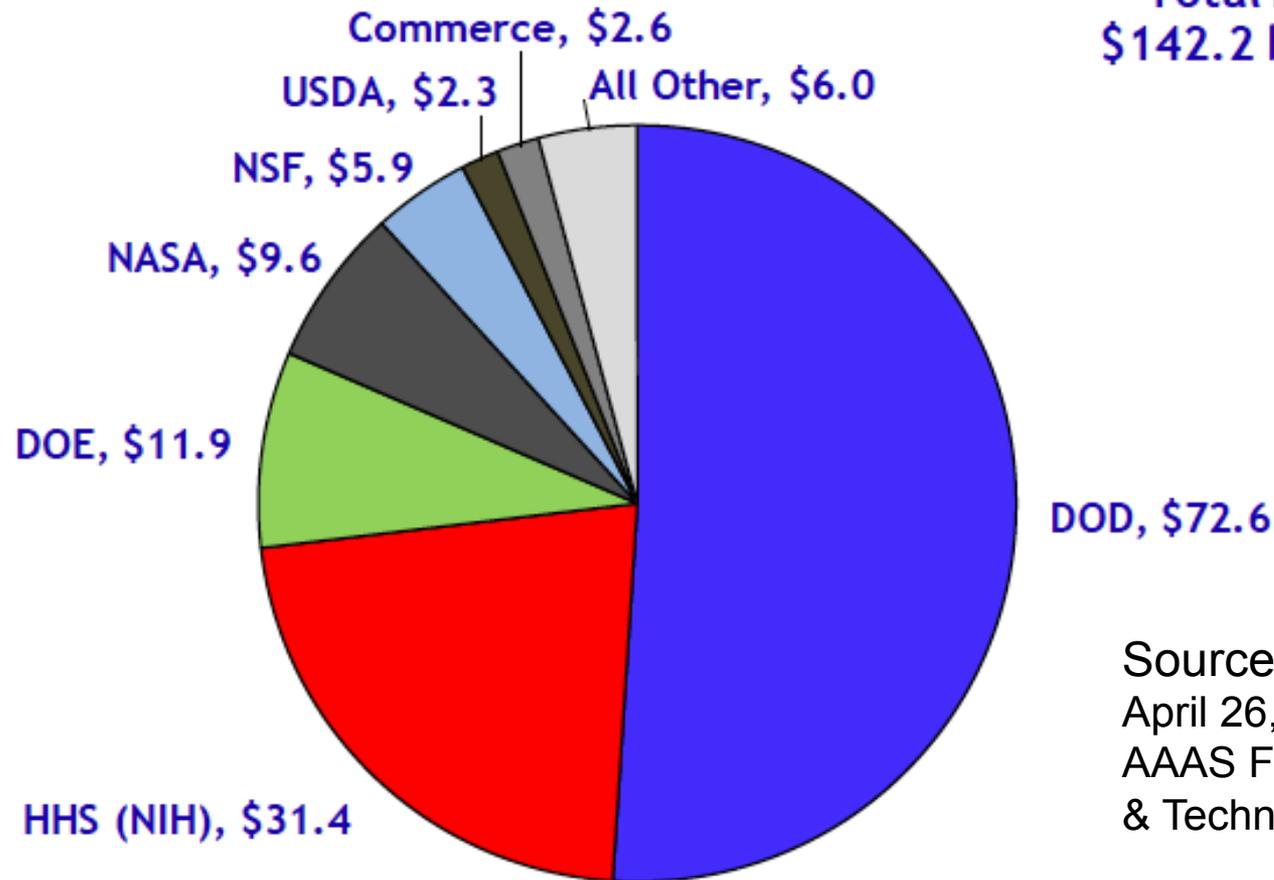
The Current Environment

- Election Year (6-mo. Continuing Resolution -- No 2013 Appropriations passed)
- Budget Control Act (Federal Discretionary Spending)
 - FY 2012 1.043
 - FY 2013 1.047
 - But further 8-10% reduction if **SEQUESTRATION** goes into effect
- Uncertain Timing and Process (CR, etc.)
- **Flat is the NEW Increase!**

Total R&D by Agency, FY 2013

budget authority in billions of dollars

Total R&D =
\$142.2 billion



Source: Matt Hourihan
April 26, 2012
AAAS Forum on Science
& Technology Policy

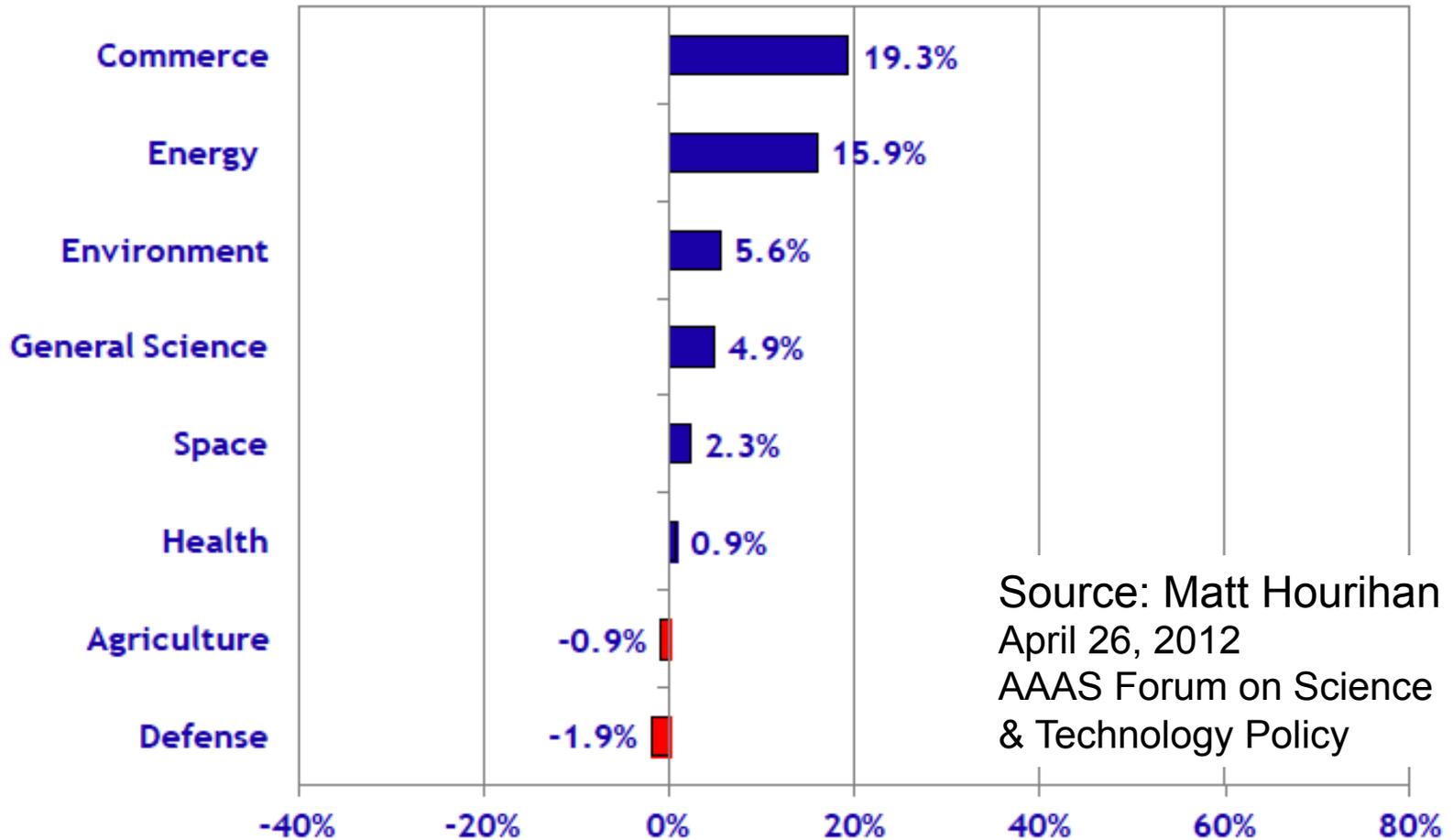
Source: OMB R&D data, agency budget justifications, and other agency documents.
R&D includes conduct of R&D and R&D facilities.

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FY 2013 R&D Budget Request by Function

percent change from FY 2012



Source: Matt Hourihan
April 26, 2012
AAAS Forum on Science
& Technology Policy

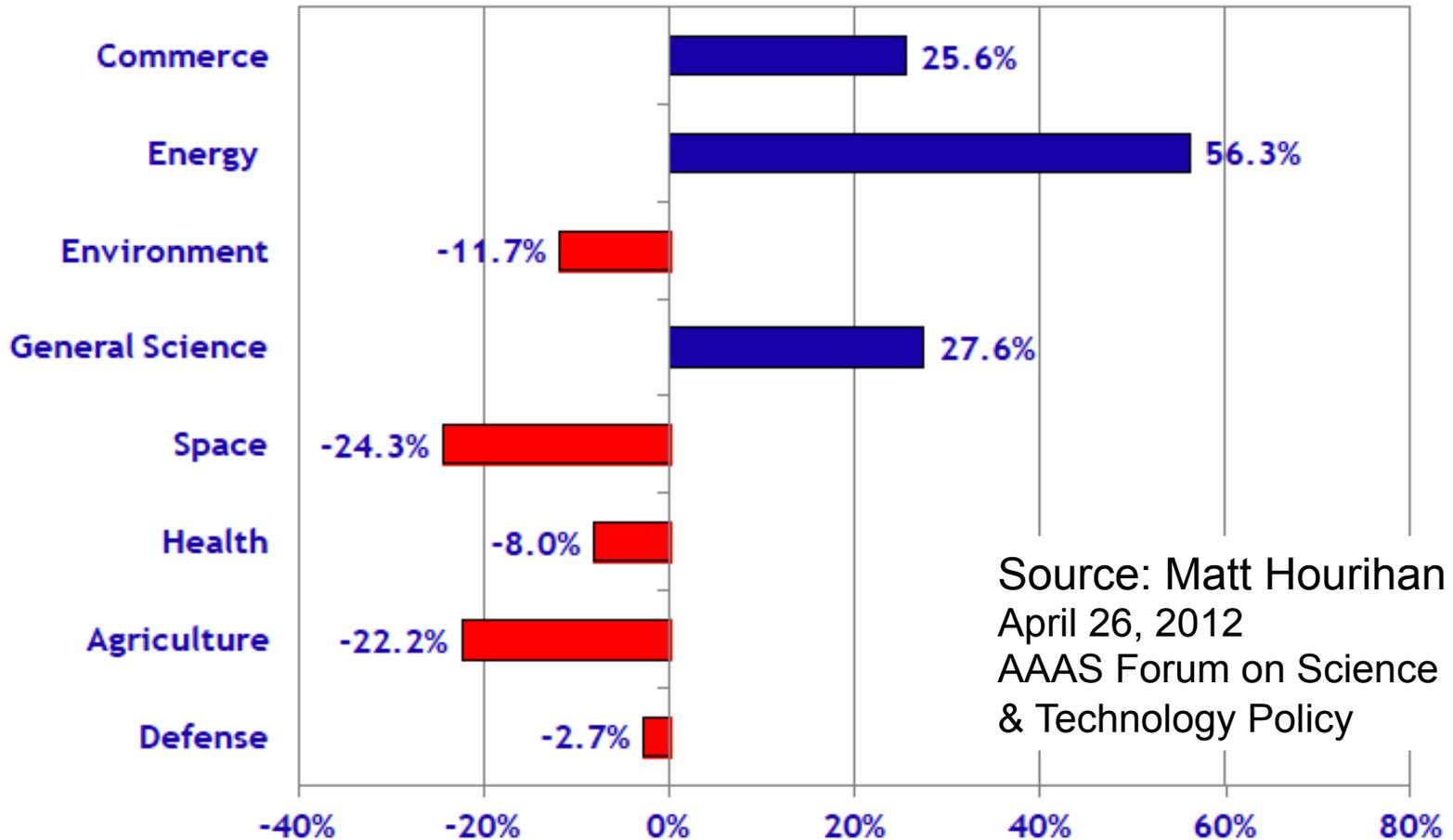
Source: OMB R&D data, agency budget justifications, and agency budget documents.
Environment includes natural resources R&D.

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FY 2013 R&D Budget Request by Function

percent change from FY 2003, Constant FY 2012 Dollars



Source: Matt Hourihan
April 26, 2012
AAAS Forum on Science
& Technology Policy

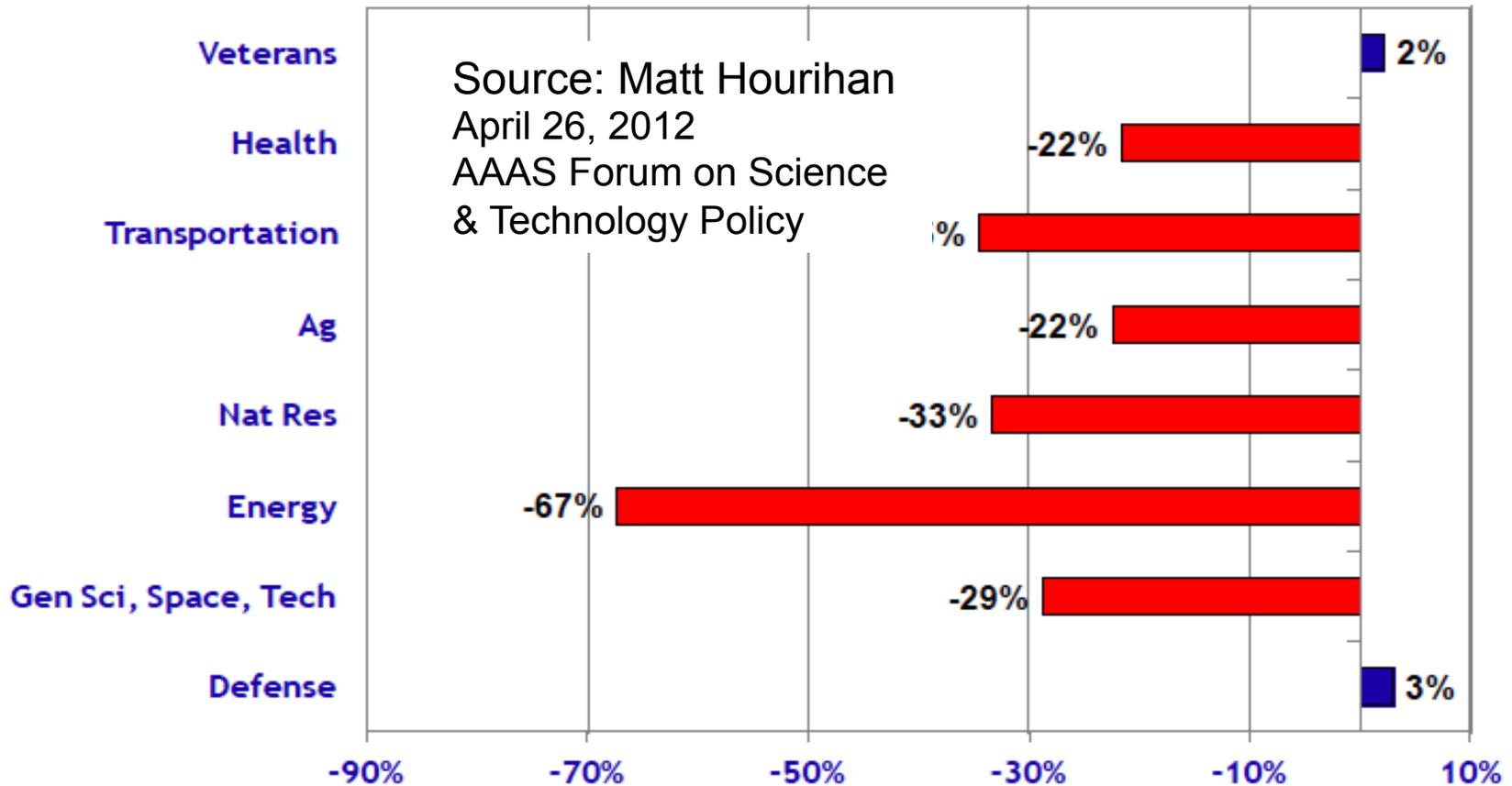
Source: AAAS Reports, OMB R&D data, agency budget justifications, and agency budget documents. Environment includes natural resources R&D.

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R&D Through 2021: House Budget + Alternative Sequester

Difference between House and Administration Budgets Over Nine Years



Source: AAAS estimates based on President's Request, House FY 2013 budget recommendations, and CBO analysis of Budget Control Act.

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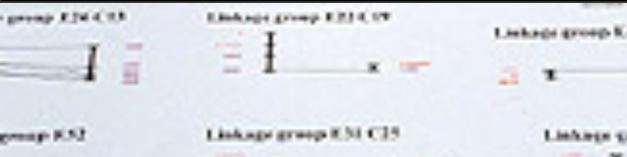




Vice President Biden called research spending “among the most critical parts” of the administrations’ stimulus spending, saying it was key to job growth and the nation’s economic competitiveness.

“Folks, this is where the future lies,” he said.

“Our economic future will grow from ideas that are incubating at universities. That’s the breeding ground and it always has been.”



Re-inventing our Strategy Requires Strategic Planning & Integration Across the Domains

- *5-10-20 Year Roadmaps*

- **Frontier Transformative Research**

- Goals
- Technology Needs
- Funding Sources

- **Innovation in Education**

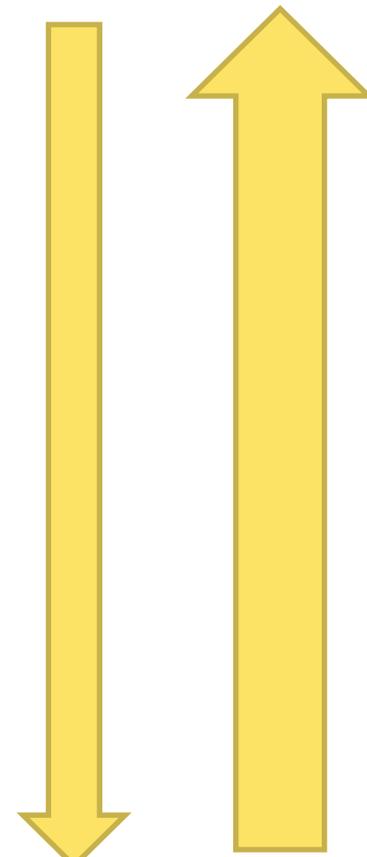
- K-12
- Undergraduate, Graduate, Postdoctoral Fellows

- **Knowledge Transfer**

- K-Gray
- University System of PR
- Economy

- **International**

- Govt to Govt
- Other sectors: Academia, NGO,



The Importance of Public Education and Advocacy

- NAS, AAAS
 - Studies and reports command attention of entire scientific research community
- NAAAS, ASAS, FAAS, SOAR, and other disciplinary specific groups
 - Identify opportunities, priorities, and explain benefits to globe/nation/public
- General public
 - Schools – engage next generation of researchers
 - Media – communicate the importance

- 
- Importance of Animal Science & Animal Agriculture
 - Economy: \$200BILLION/YR
 - Health
 - Importance of Continued Research Support
 - Sustained benefits—why should the public care?
 - What are the Critical Research Areas & Why?
 - Food Security..(hard name to understand!)
 - One Health (*Zoonoses* both economic and public health importance)
 - Lessons learned from Physics/ Astronomy/ & now Neuroscience:

Lessons Learned from Physics/ Astronomy, Plant Genome, GOESE & now Neuroscience

- Strategic Vision Document: Key Questions
 - Prioritization
 - Why NOW
 - Road Map: Research, Technology, Outcomes
 - Community Support/Bye-in: Acad, Industry, Non-Profits
 - Hearings and Briefings
 - Publicity/Press
- **Multi-Agency** Support
- Multi-Agency Advisory Committees
 - Government/NSTC
 - FACA Advisory Group: Acad/Industry/Non-Profit
- Champions in Congress
- Public Understanding and Support

Desired Outcomes

- *Prioritized* list of the most urgent issues facing animal agriculture
- *Prioritized* list of knowledge gaps that limit efficient and sustainable farm animal production systems
- Incorporation of priorities into USDA competitive grant programs or intramural research programs
- *Strategies to expand the base of support for infrastructure and operations for farm animal research, education, and extension*
- *Strategies to reinvigorate the partnership between academic departments and the allied animal industries*
- Better understanding and increased support for future needs of farm animal production systems by local, state, and federal decision makers, including the 2012 (2013) Farm Bill

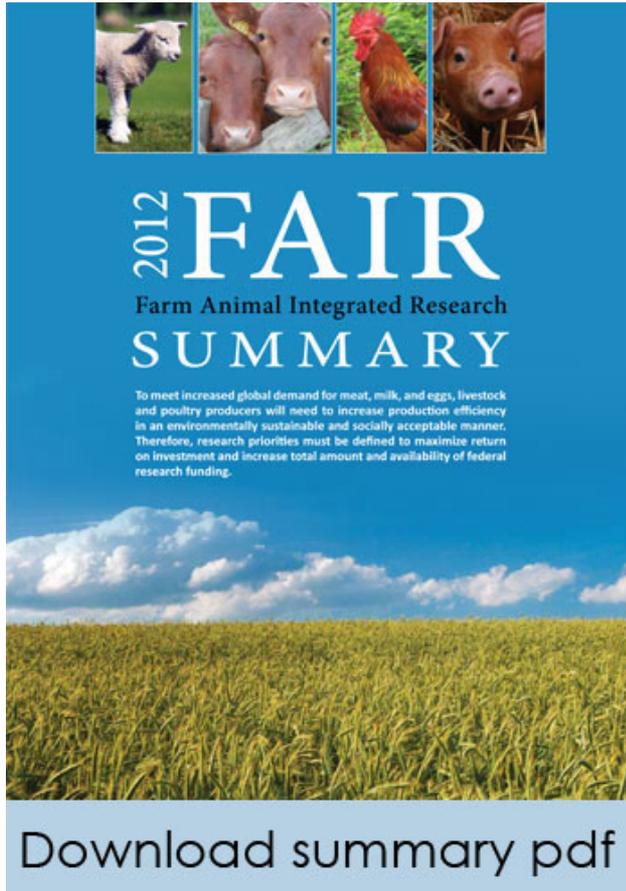
From Deb Hamernik's Presentation

Priorities

- Food Security
 - Efficient production & use of resources
- One Health
 - Animals, People, Planet
- Stewardship
 - Animal Well-Being and Environment

From Deb Hamernik's Presentation

Summary: 2 pages



From Deb Hamernik's Presentation

<http://www.asas.org/public-policy/asas-summary-of-fair-2012>



Timeline of Budget Preparation

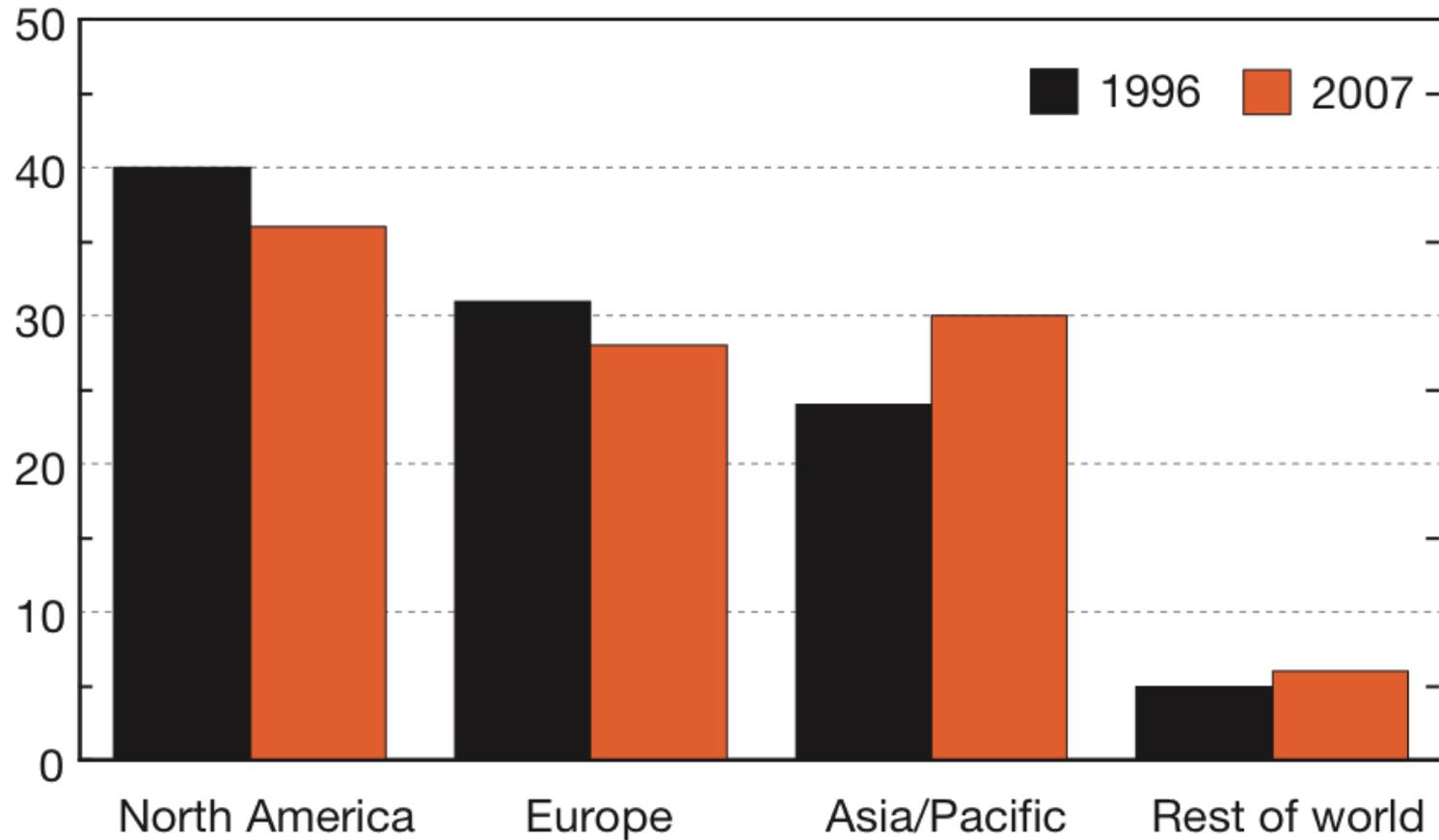
- OMB sends guidance letter in Spring
- OSTP/OMB sends priority memo for R&D in Spring*
 - Who is the Ag OSTP contact?
- Agencies prepare budget submissions
EMBARGOED DISCUSSIONS
- Agencies submit budgets to OMB/EOP (OSTP) in Fall
- Thanksgiving OMB letter to agencies
- Rebuttal
- Christmas final numbers are locked
- Preparation of Budget justifications, et al.
- President's budget submitted to Congress in February***
- Agencies began new budget process***
- **WHERE CAN YOU IMPACT THIS PROCESS**

Research is Global



Location of estimated worldwide R&D expenditures: 1996 and 2007

Percent



Look at Opportunities from OBLIQUE ANGLES

Federal : USDA

State and
Local
Governments

Federal: Other Agencies
NSF, NIH, USAID, EPA, USAID, DoE, etc.

Political and
Social Science

**Animal, Dairy,
Poultry Research**

Research in:
• Pharmaceutical
• Biotechnology
• Disease vectors

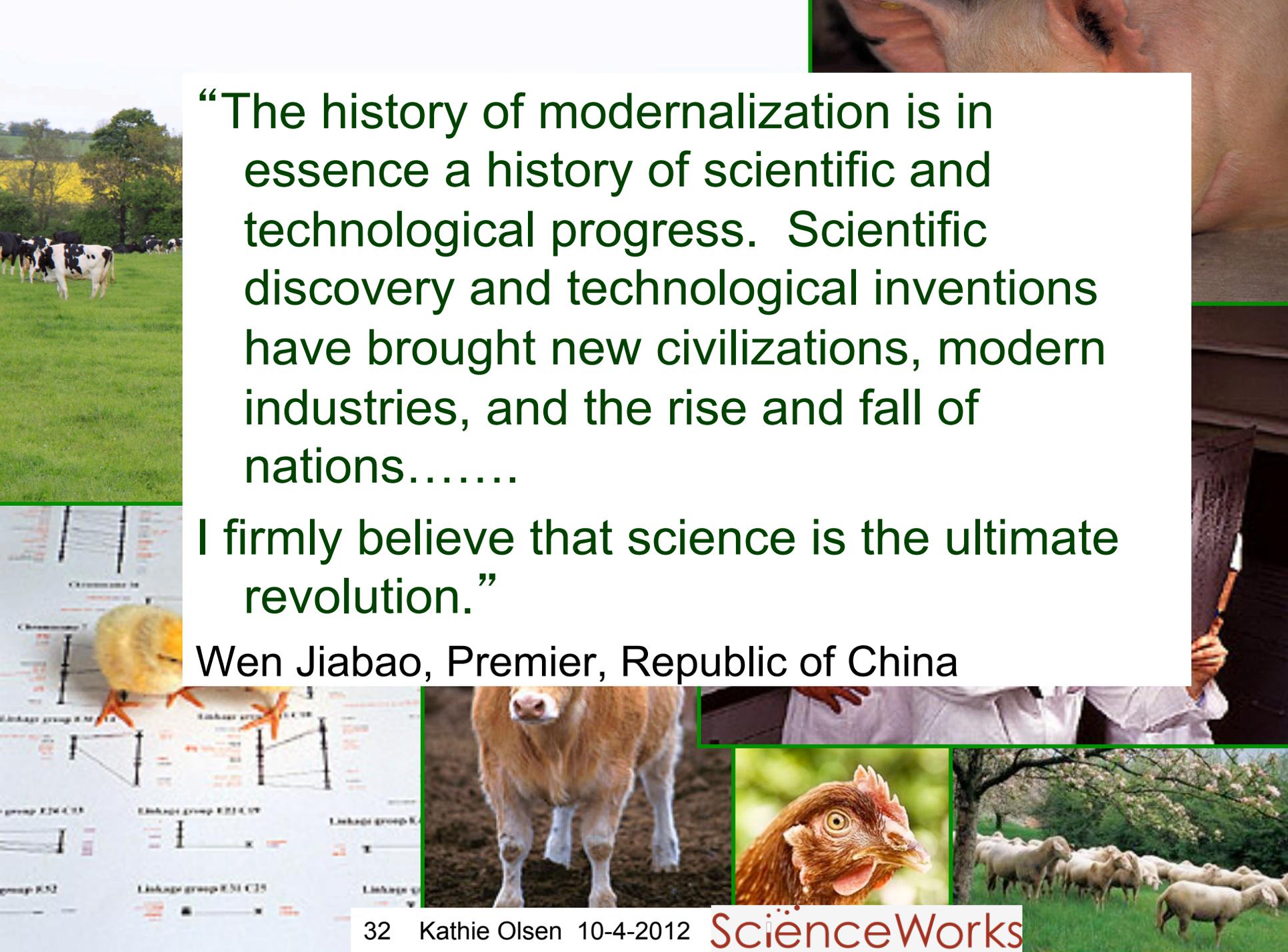
Energy &
Environment

US-EU
Biotechnology
Subcommittee

Technology Transfer

Science Diplomacy

Education &
Public Outreach



“The history of modernization is in essence a history of scientific and technological progress. Scientific discovery and technological inventions have brought new civilizations, modern industries, and the rise and fall of nations.....

I firmly believe that science is the ultimate revolution.”

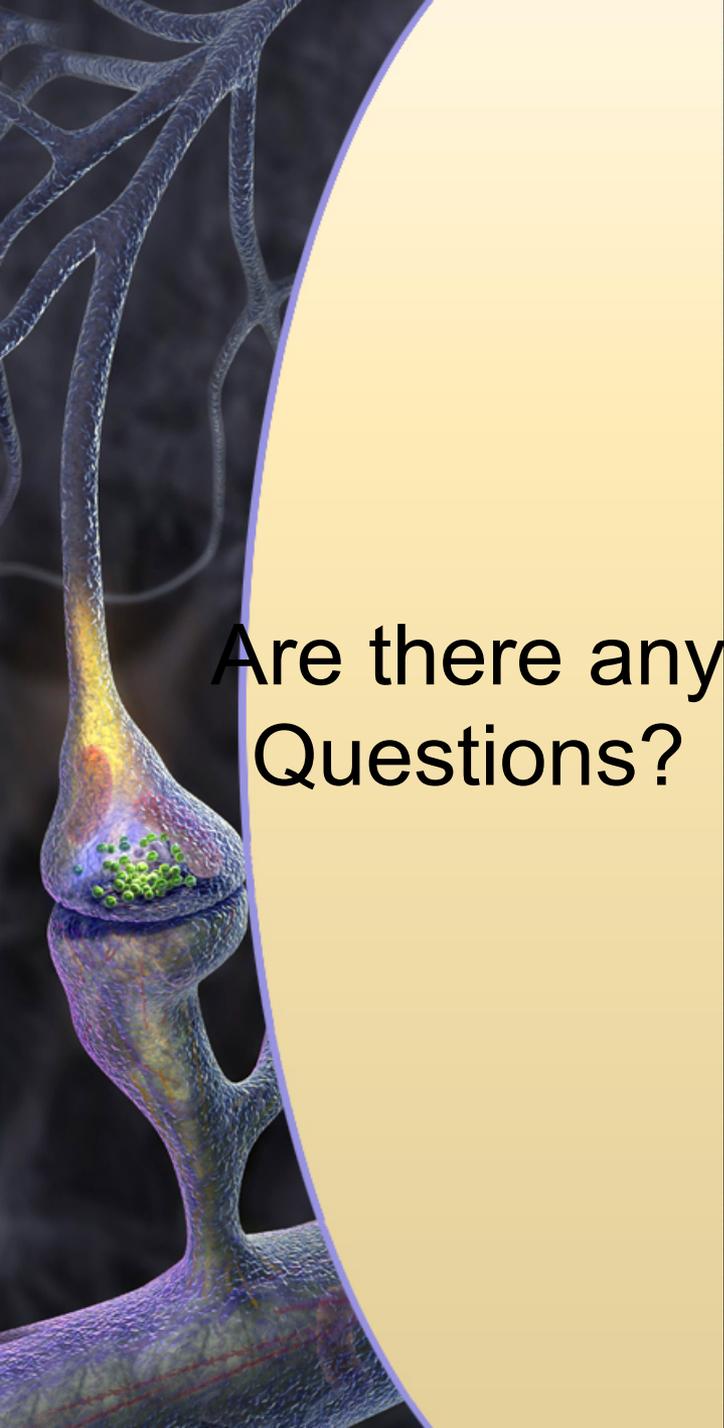
Wen Jiabao, Premier, Republic of China

Earth from Mars

you are here



*We do not yet know
of any other planet
capable of
sustaining life*



Are there any
Questions?



What is Sequestration?

- From Budget Control Act of 2011
 - Goes into effect automatically upon failure of the “budget supercommittee” to identify additional \$1.2 trillion in deficit reduction
- Goes into effect Jan 2, 2013
- \$109 billion in immediate, across-the-board cuts
- OMB projects \$5 billion (8.2%) overall in non-defense R&D cuts

Role of White House Office of Science & Technology Policy (OSTP)



- Provide S&T analysis and judgment for the President with respect to major policies, plans, programs, & budgets
- Lead the interagency effort to develop sound S&T policies and budget
 - Set forth (along with OMB) the R&D priorities to guide the agencies when developing their budget
 - Work closely with private sector (industry, academia & other scientific community) to match the federal S&T investments to their needs
- Build strong partnerships among federal, state and local governments, other countries, industry, academia & scientific associations