



Public Policy Colloquium

2010

Legislative Agenda

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Legislative Visits

- State of Initiatives relevant to engineering
- EDC positions
- Trips to congress and leave behinds

WHITE HOUSE BUDGET FY 2011

(released 2-1-10)



Total R&D

FY2010 Appropriation

\$150.5 billion

2011 Request

\$147.7 billion

Themes: Innovation, growth, environment

KEY AGENCIES

NATIONAL SCIENCE FOUNDATION

- **FY2010 Appropriation**
- **Total R&D**
- \$5.18 billion
- **Engineering**
- \$749 million
- **FY 2011 Budget %**
- **Total R&D**
- \$6 billion +8.2
- **Engineering**
- \$825.6 million +11

ENERGY

FY 2010 Appropriation

- **Total R&D**
\$10.6 billion
- **Science**
\$4.4 billion
- **ARPA-e**
- **Energy Frontier**
- **Innovation Hubs**
- **Re-Energyse**

• FY2011 Budget %

- \$11.2 billion +4.9
- **Science**
- \$4.6 billion 3.8
- +\$300 million
- +\$40 million
- \$55 million

DEFENSE

Fy 2010 Budget

Total R&D

- \$78.9 billion

Basic Research (6.1)

- \$1.8 billion

Applied Research (6.2)

- \$4.2 billion

Advanced Tech. Dev. (6.3)

- \$5.6 billion

DARPA

- \$3.2 billion

NDEP

- \$90 million

• FY 2011 Budget %

- Total R&D -2.8

- \$76.7 billion

- Basic Research (6.1) +11.1

- \$2.0 billion

- Applied Research (6.2) +5.4

- \$4.5 billion

- Advanced Tech. Dev. (6.3)

- \$5.3 billion -4.4

- DARPA -4.5

- \$3.1 billion

- NDEP

- \$109.9 million +22.1

NASA

• FY 2010 Appropriation	• FY 2011 Budget	%
• Total R&D		
• \$9.3 billion	• \$11 billion	+18.3
• Science		
• \$4.4 billion	• \$5 billion	+11.4
• Space Exploration		
• \$3.8 billion	• \$4.2 billion	+12.8
• Aeronautics		
• \$501 million	• \$579.6 million	+14.3
• Education		
• \$183 million	• \$145.8 million	-20

NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY (NIST)

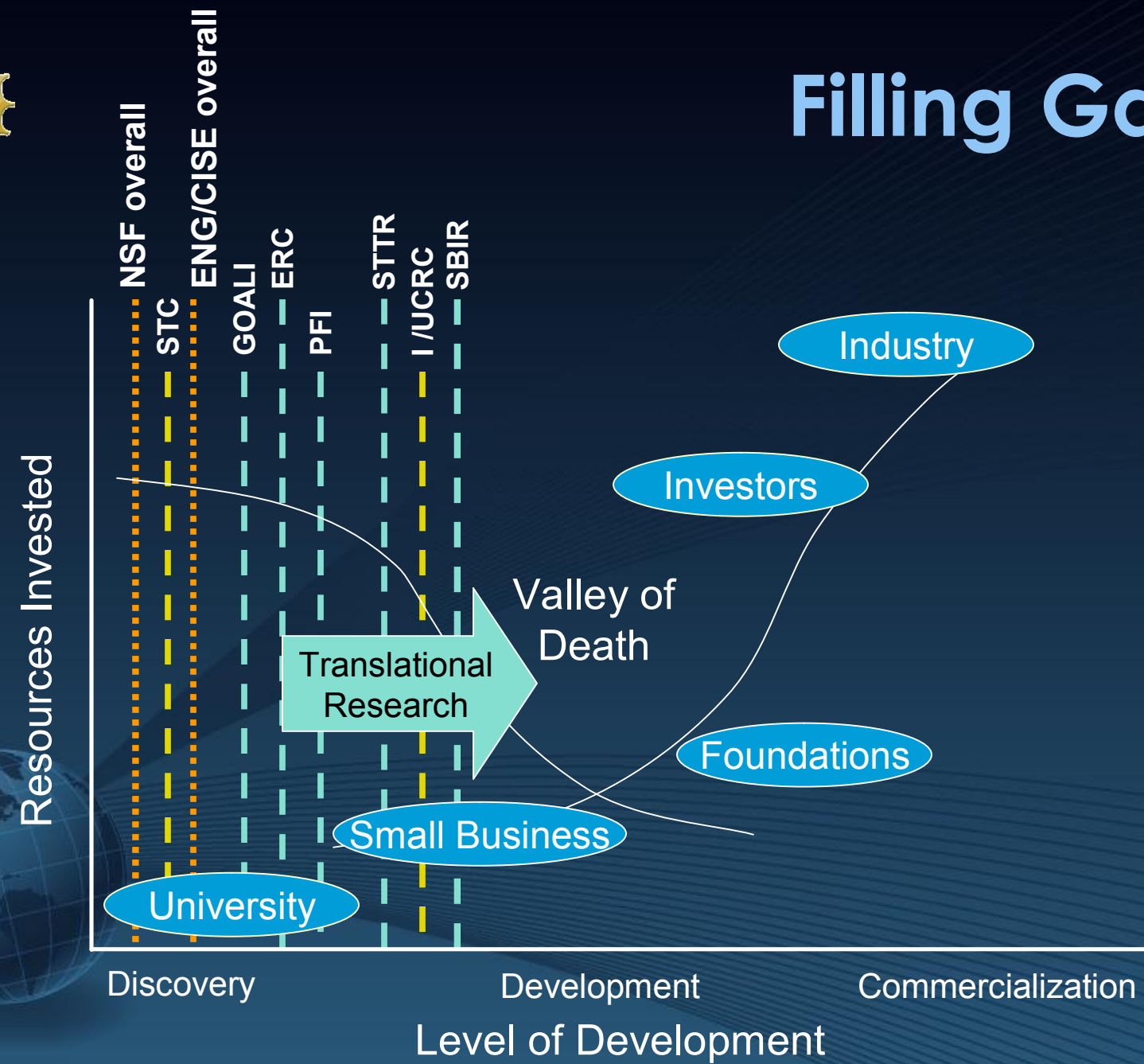
- | | | |
|--|-----------------------|-------|
| • FY 10 Appropriation | • FY 11 Budget | % |
| • Agency Total | | |
| • \$856.6 million | • \$918.9 million | + 7.2 |
| • Manufacturing
Extension Partnership | | |
| • \$124.7 million | • \$129.7 million | + 4 |

NATIONAL INSTITUTES OF HEALTH

- **FY 2010 Appropriation**
- **FY2011 Budget %**
- **Total R&D**
- \$30.4 billion
- \$31.4 billion +3.2
- **Biomedical imaging and bioengineering**
- \$317 million
- \$326 million +2.8

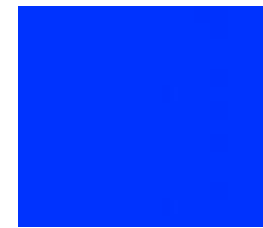


Filling Gaps



2011 Budget—Political Context

- Election year; deep partisan divide.
- 41 GOP senators; loss of Democratic filibuster-proof majority.
- Push for job-creation.
- Defense R&D; STEM education; competitiveness still draw bipartisan support.
- Divisions on energy, climate, earmarks.
- Mounting worry about deficit.



State Strategies

- You probably will support most of these initiatives.
- While you do not need to support all of the following bills as a state group or individual university, we will be most effective in taking a uniform position.

BILLS TO WATCH



- AMERICA COMPETES REAUTHORIZATION
- NASA REAUTHORIZATION
- ENERGY-CLIMATE
- STEM COORDINATION
- COMMUNITY COLLEGES
- PATENT REFORM
- UNIVERSITY RESEARCH PARKS
- TAX TREATMENT OF EMPLOYER -PROVIDED
EDUCATION SUPPORT.

America Competes

Enacted in 2007 in response to National Academies' *Rising Above the Gathering Storm*.

Strong bipartisan support; never fully funded.

Expires this fiscal year.

Status of reauthorization: House hearings only. Sponsor seeks House passage by Memorial Day.

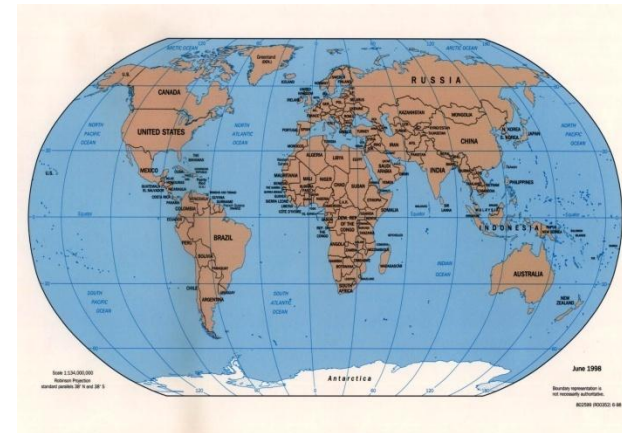
Agencies affected:

- National Science Foundation
- National Institute of Standards and Technology
- Department of Energy Office of Science
- Department of Education
- NASA
- White House Office of Science and Technology Policy

COMPETES (Cont.d)

Issues

- Doubling of research funding 2007-2017; steady increases in subsequent years.
- Balance between basic research and job stimulus.
- Undergraduate and Graduate Engineering Education
- K-12 Engineering Education.
- NIST reorganization.
- New programs?



Energy-Climate Legislation

- American Clean Energy and Security Act of 2009, **H.R. 2454**, passed the House in June. A Senate version is in committee. Final passage this year is in doubt. The House bill sets up a cap-and-trade system to curb greenhouse gases and calls for reducing carbon emissions by 83% of 2005 levels by 2050.

Issue of Concern:

- House bill would fund R&D from cap-and-trade revenue. Revenue stream could be unstable.
- Amount allocated for R&D falls far short of \$15 billion a year called for by president.



NUMEROUS ICEBERGS OFF BAFFIN ISLAND.

10,000 Trained by 2010 Act

H.R. 461

- Requires the National Science Foundation (NSF) to award competitive grants for basic research on innovative approaches to improve health care information systems, as well as for scientific and engineering activities to improve education in the health care information fields.
- Requires the award of NSF grants also to institutions of higher education to:
 1. establish multidisciplinary Centers for Informatics Research for conducting cutting-edge, multidisciplinary research to generate innovative approaches in health care information;
 2. establish or improve undergraduate and master's degree health care information programs, attract students to such programs, and provide them with experience in government or industry related to their studies.

Pending in House subcommittee on Research and Science Education

Biofuel Engineering Training Act

H.R. 3523

- Accreditation of undergraduate and graduate biofuel engineering programs.
- Study of industry need for engineers.
- Centers of Excellence for Biofuels Research and Training
- Portable fellowships of up to three years, funded by the Department of Energy, for students pursuing doctorates in biofuels engineering.
- Requires federal agencies, including national labs, to make research facilities available to accredited biofuel engineering programs.

Pending in House subcommittee on Energy and the Environment.

Community College Energy Training Act **H.R.3731**

- Provides grants to community colleges for workforce training and education in sustainable energy industries and practices.
(Pending in House Subcommittee on Higher Education, Lifelong Learning, and Competitiveness.)
- Related Senate legislation **s.1097** is before the Committee on Energy and Natural Resources.



NASA Re-Authorization

Issues:

- Human space exploration—how far; at what cost?
- Augustine estimate: \$3 billion more a year.
- Squeezing science to pay for exploration.
- New space vehicles to replace Shuttle. Are Orion and Ares the right choices?
- Unemployment caused by Shuttle retirement.
- NASA's growing role in earth studies and climate.
- Keep using International Space Station after 2015?
- Growing number of nations in space, along with more commercial traffic—how should U.S. respond?
- Priorities among: space; aeronautics; research; education.



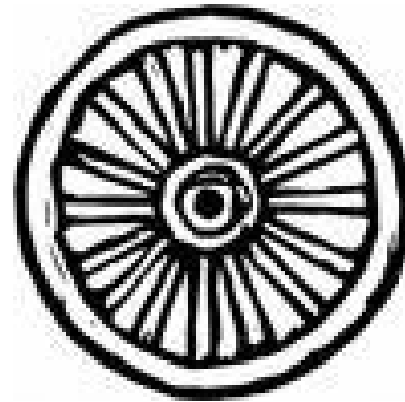
STEM Education Coordination

- STEM Education Coordination Act of 2009 (H.R. 1709) passed the House June 8, 2009.
 - Senate bill (S. 1210) introduced by Ted Kaufman. Pending in the space-science subcommittee.
- **Both bills:**
 - Establish a committee under the White House National Science and Technology Council.
 - Committee would be responsible for coordinating all federal programs and activities in support of STEM (science, technology, engineering, and mathematics) education.
 - A STEM education strategic plan would be updated every five years.
 - The director of the Office of Science and Technology Policy would make annual report to Congress.



PATENT REFORM ACT OF 2009 S. 515, H.R. 1260

- Replaces “first to invent” with “first inventor to file” similar to system used in most countries.
- Maintains grace-period rule.
- Allows patent applications by assignees.
- Backed by IT, Pharmaceuticals, Biologic, and mainline manufacturing industries
- Universities support Senate version.
- Status: Passed Senate Committee; pending on Senate floor.
- House version before the Judiciary Committee.



University Research Parks

SENATE: Building a Stronger America Act S. 583 (cleared committee)

Provides grants and loan guarantees to develop clusters of innovation and high technology.

HOUSE: Science Parks Research and Innovative New Technologies Act H.R. 4413 Awaiting committee action.



Employer-provided Educational Assistance

- **CURRENT LAW: Section 127 of the tax code** enables employees to receive up to \$5,250 in educational benefits each year from their employer tax-free.
- **Expires Jan. 1, 2011.**
- **Education, business and labor groups seek to make it permanent.**



E² for Innovation Act

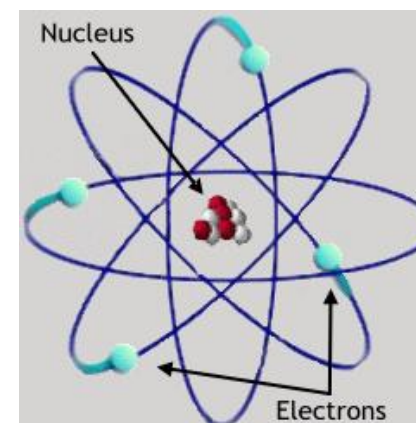
The Engineering Education for the Innovation Economy Act

- Sponsors: Sen. Ted Kaufman (D, Del.), and Sen. Kirsten Gillibrand, and Rep. Paul Tonko (both D,NY). Not yet introduced.
- Backed by more than 50 educational organizations and societies, including ASEE.
- Provides federal grants to states to plan, implement, and evaluate K-12 engineering education.
- Funded by Education Dept. in consultation with NSF.
- Follows report by National Academy of Engineering and National Research Council that engineering holds promise for improving K-12 science and math learning.
- Calls for “challenging content and achievement standards” for engineering curricula; teacher preparation; assessment; online learning tools; after-school programs.
- Complements other provisions of America COMPETES.



Possible Future Legislation

- **Nuclear R&D:** The House Science and Technology Committee plans to authorize broad research and development on enrichment, reprocessing, generation and storage of spent fuel.
- **Institute of Innovation:** A House Science subcommittee weighs creating a new agency within a cabinet department.
- **Permanent R&D Tax Credit**



Summary

- Thank congress for past support of engineering R&D, engineering education, and stem initiatives.
- Mention the contributions of engineering R&D and education to job growth, company creation, company retention. Your congressional representatives will especially appreciate examples
- Discuss impact of universities in bringing dollars to your state and providing graduates for industry in your state
- Ask for support of specific legislation that you want passed. For example, reauthorization of the America Competes Act (see leave behinds for bill numbers)
- Offer to support congressperson with testimony, expert advice or other activity
- Discuss issues particular to your state.