

U.S. SCIENCE POLICY: ADVOCATING FOR SCIENCE IN AN ERA OF POLARIZED POLITICS & CONSTRAINED BUDGETS

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Association
of American
Universities

About AAU & Me

➤ Vice President for Policy at the AAU

➤ Research Funding & Science Policy Issues

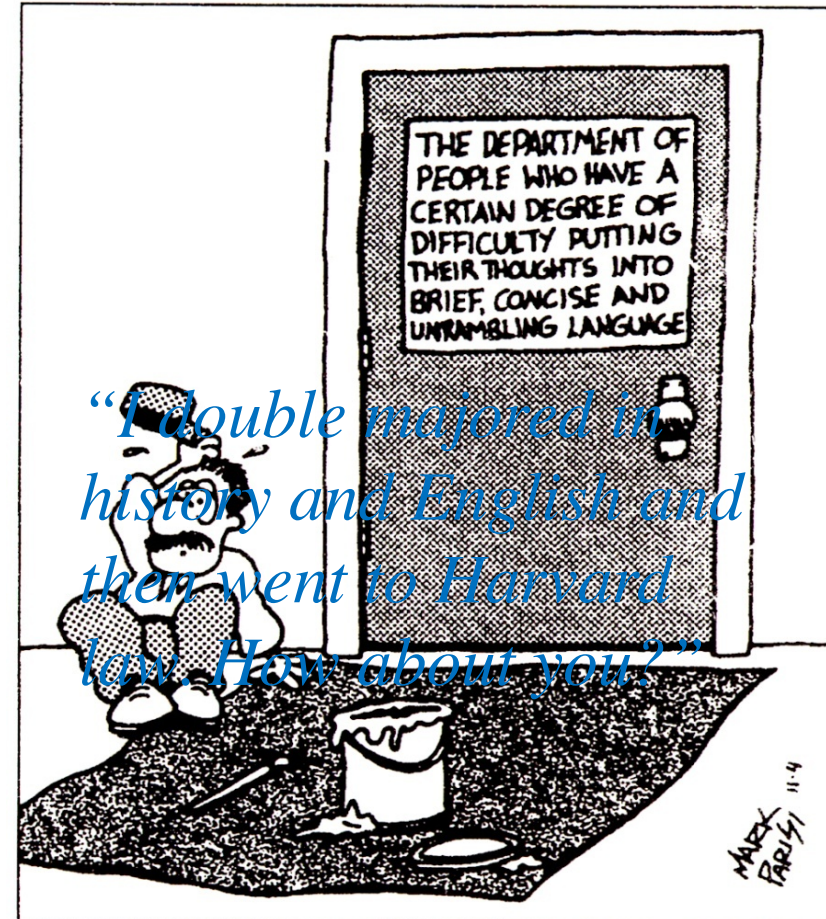
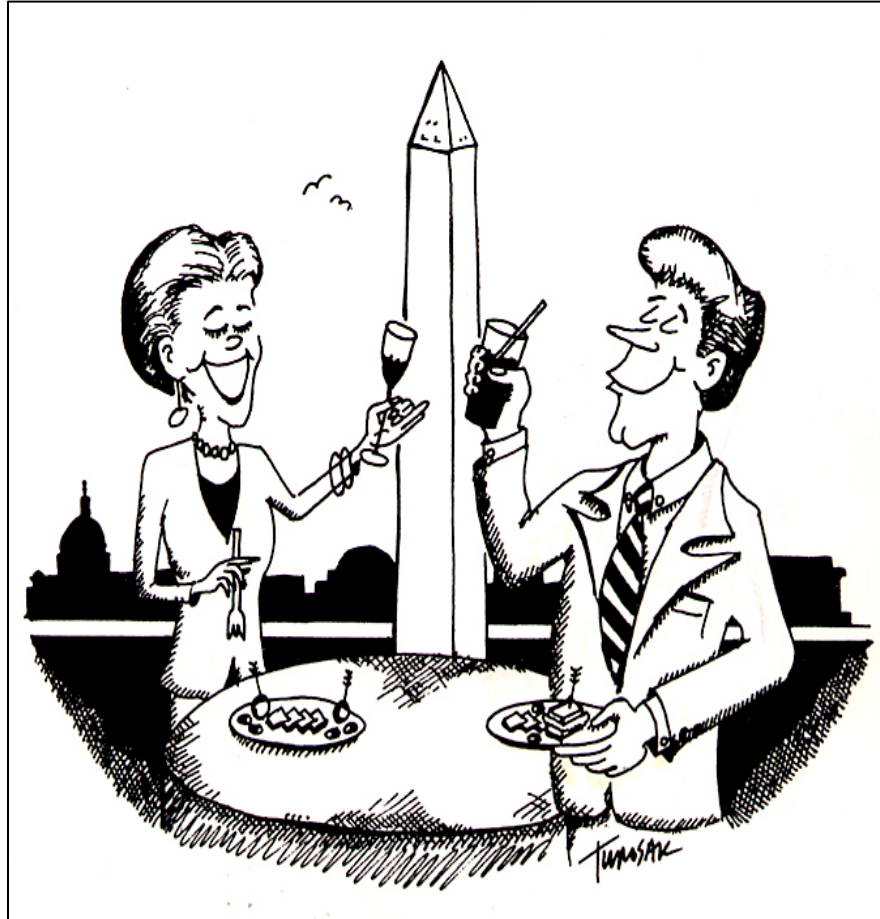
- Focus on innovation, competitiveness and science policy issues
- Advocacy, lobbying and coalition building
- Federal regulations and compliance
- Proactively shape government and university policy
- e.g. Undergraduate STEM Education Initiative

➤ “Cross Cultural Communications”

The business of making the work of scientists and engineers relevant to the layperson.



Two Cultures: Politicians & Scientists



"I double majored in history and English and then went to Harvard law. How about you?"

ATLANTIC FEATURE © 1995 Mark Parisi. Used with permission.

Defining the Cultural Divide

Scientists

Numbers

Quantitative

Objective

Specialists

Facts/evidence

Hate to make promises

Technical

Ask why

Money = research

Think long term

Science page

Politicians/ Policymakers

Words

Qualitative

Subjective

Generalists

Public opinion

Love to make promises

Political

Ask why they should care

Money = getting re-elected

Think short term

Front page

What is “Science Policy”

“National science policy” refers to the set of federal rules, regulations, methods, practices, guidelines under which scientific research is conducted.

- *Beyond Sputnik: National Science Policy in the 21st Century*
Neal, Smith, McCormick, University of Michigan Press (2008)



Science Policy vs. Science for Policy

- “Policy for Science” – decision making about how to fund or structure the systematic pursuit of knowledge
- “Science for Policy” – the use of knowledge to assist or improve decision making
- Grey area between policy for science & science for policy
- Constant interaction between the two, e.g. climate change and climate change research
- What happens when policy makers don’t like what science tells them? When politics comes into play?

The Difference Between Science & Science Policy

Phillip A. Griffiths, "Science and the Public Interest," *The Bridge*, Fall 1993.

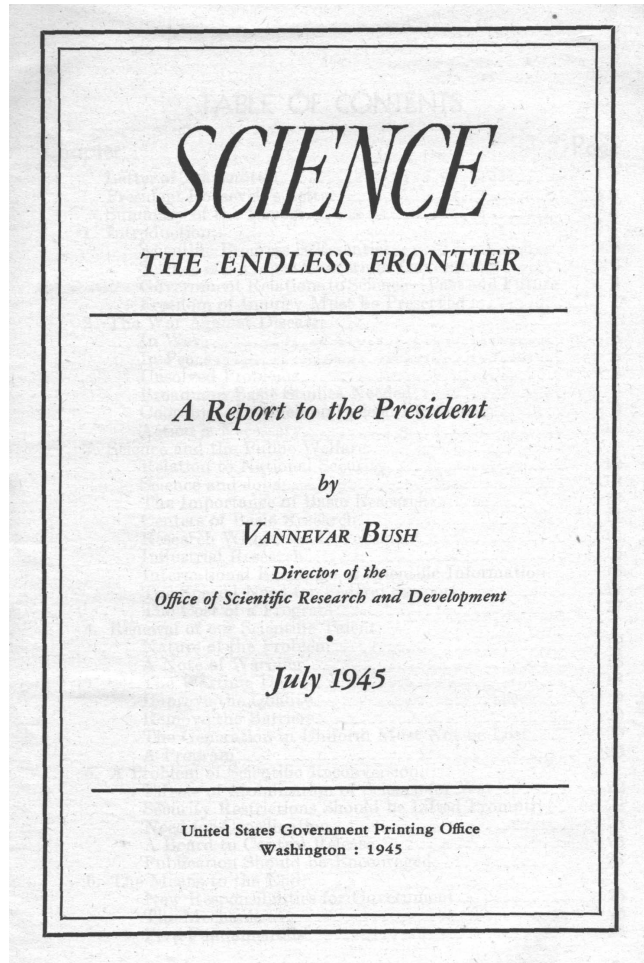
- While science is ideally value-free and objective...science policy deals with the effect of science and technology on society and considers how they can best serve the public. As such, it is highly visible, value-laden, and open to public debate.
- The subjective nature of science policy often makes it impossible to prove whether a specific policy is "right" or "wrong." Moreover, the evaluation of science policy outcomes is often driven by ideology as opposed to provable facts.
- This has led many in the scientific community to shy away from engagement in the policy process. Ironically, the scientific voice has thus been absent from debates over major policies affecting the scientific community and its work.

The Role of Science in the Formation of Policy

- Science is only one input into the policy-making process. Many other factors such as economics, ethics, budgetary trade offs, and public opinion must and will be factored into final policy decisions.
- Science is not policy-prescriptive.
- While it is important to ensure that policymakers are informed by science, it is important to keep politics out of science.
- Science and the policy-making process have been compared to “... Marriage partners who get along best when they respect each others differences.”

History of U.S. Science and Technology Policy

Science - The Endless Frontier



“Science can be effective in the national welfare only as a member of a team, whether the conditions be peace or war. But without scientific progress no amount of achievement in other directions can insure our health, prosperity, and security as a nation in the modern world.”

Science - The Endless Frontier, July 1945

A History Lesson in U.S. S&T Policy: Vannevar Bush & Harley Kilgore



Historical Considerations: The Bush-Kilgore Debate

Issues in the Creation of the NSF

- Merit vs. Geographical Diversity
- Who Appoints the NSF Director
- Fundamental vs. Applied Research
- Who Owns the Intellectual Property
- Social Science Research

OTTO VON BISMARCK

Chancellor of Germany from 1871 – 1890

“There are two things you don’t want to see being made -- sausage and legislation.”



Normal Legislative Process



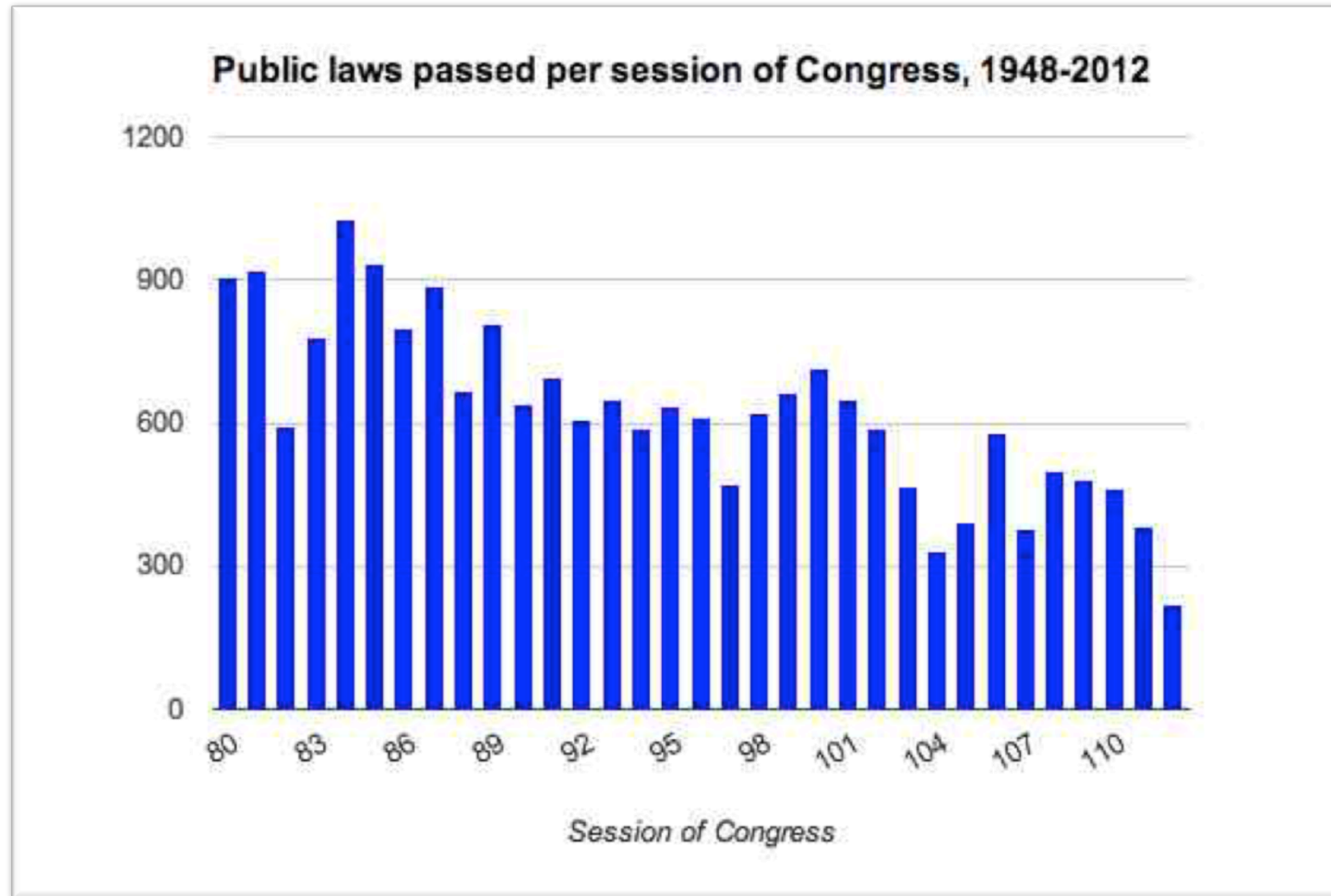
Legislative Process Today



“In a real sausage plant, everybody is on the same team, trying to produce bratwurst or knockwurst. In the legislative sausage factory, at least half the people don’t want to make sausage. Or they want to make a different kind. For the last few years, Republicans have said, ‘We won’t make sausage unless we control the recipe.’ ”

–Alan Rosenthal, Professor of Public Policy , Rutgers University,
New York Times, “If Only Laws Were Like Sausages,” December 4, 2010

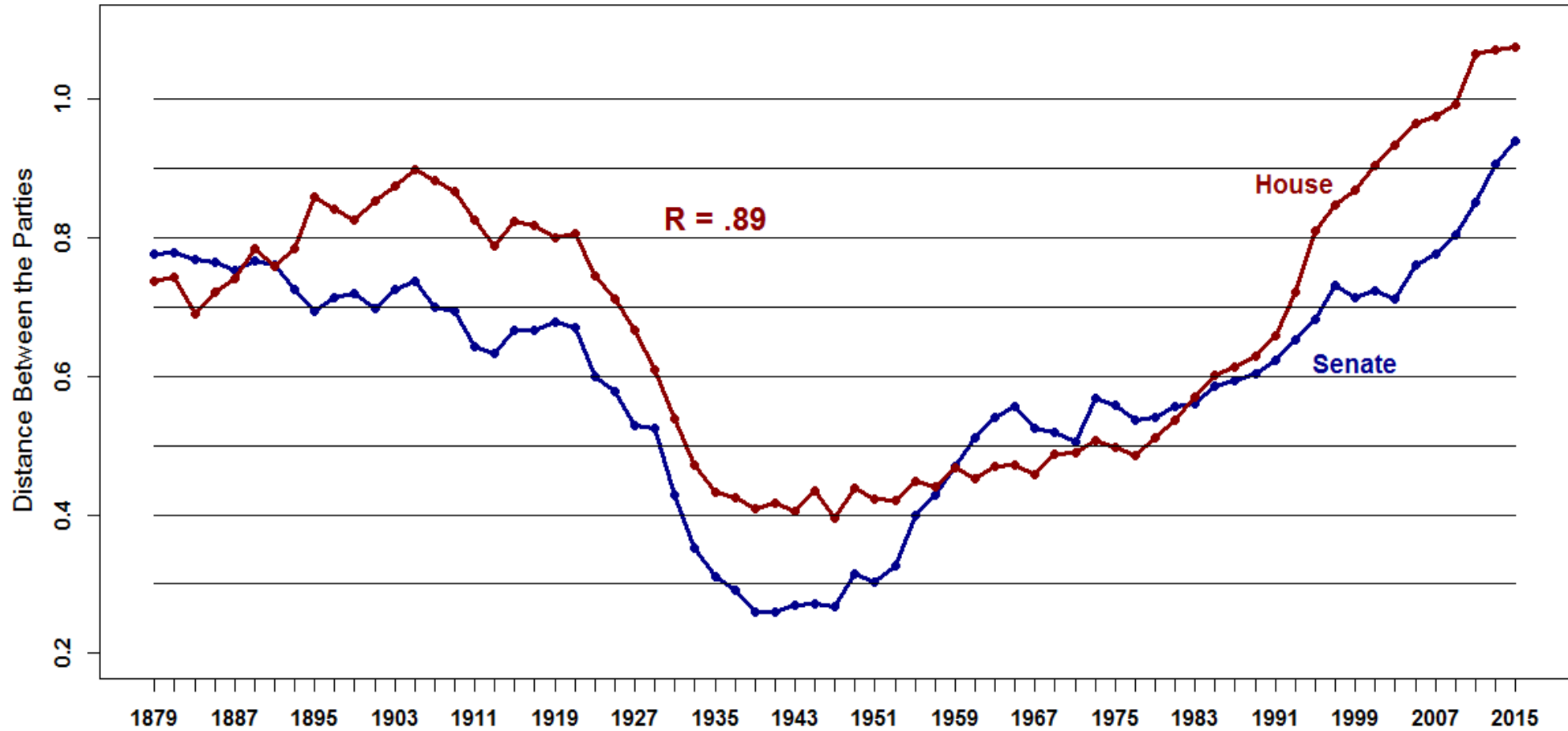
Legislative Productivity:



- 112th Congress (2011-2012): 284 Public Laws
- 80th Congress (1947-1948): 900 Public Laws
- 113th = 296 Public Laws 114th = 329 Public Laws

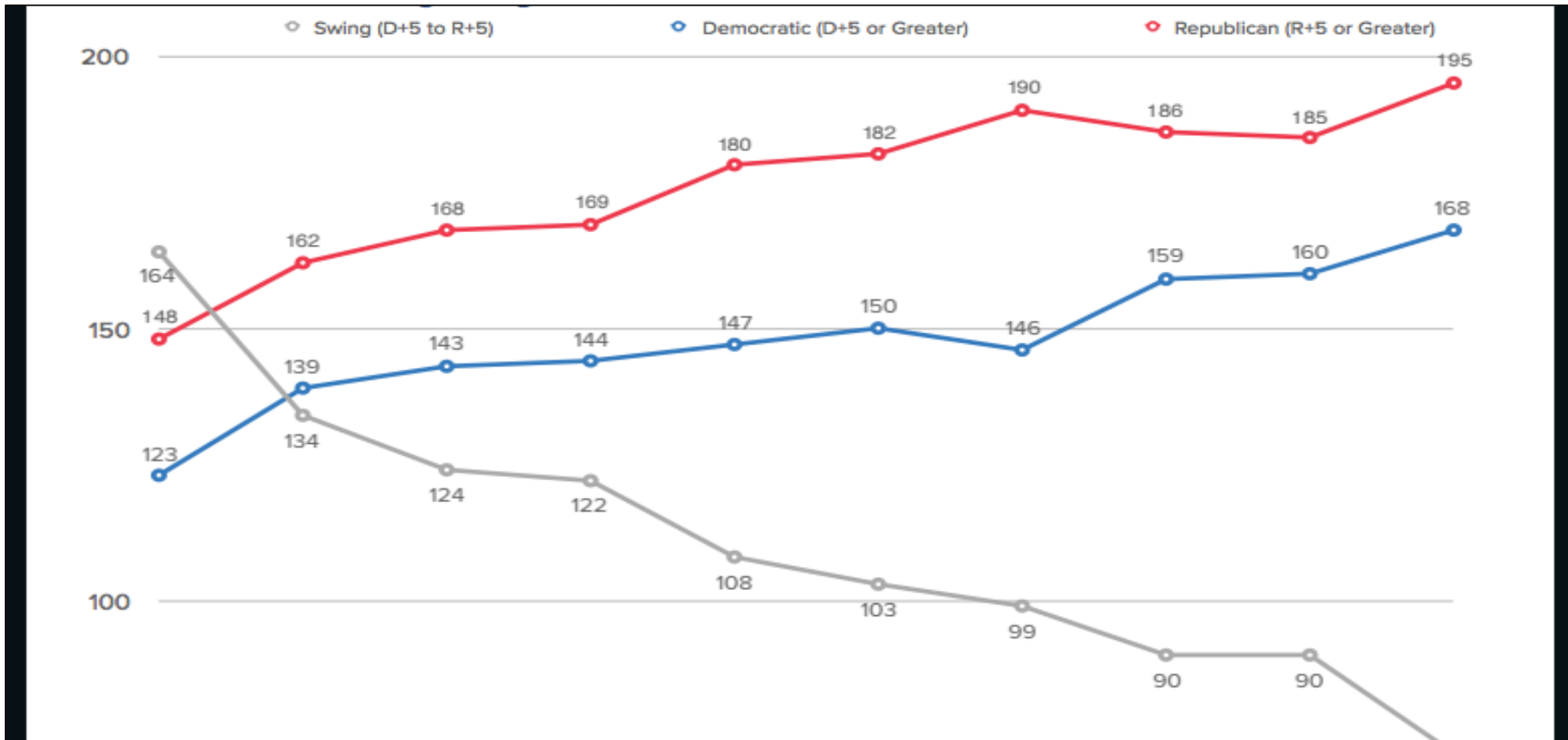
Party Polarization: 1879 - 2015

Party Polarization 1879-2015
Distance Between the Parties First Dimension



Polarized America/www.voteview.com

Number of Swing Districts at 20-year Low



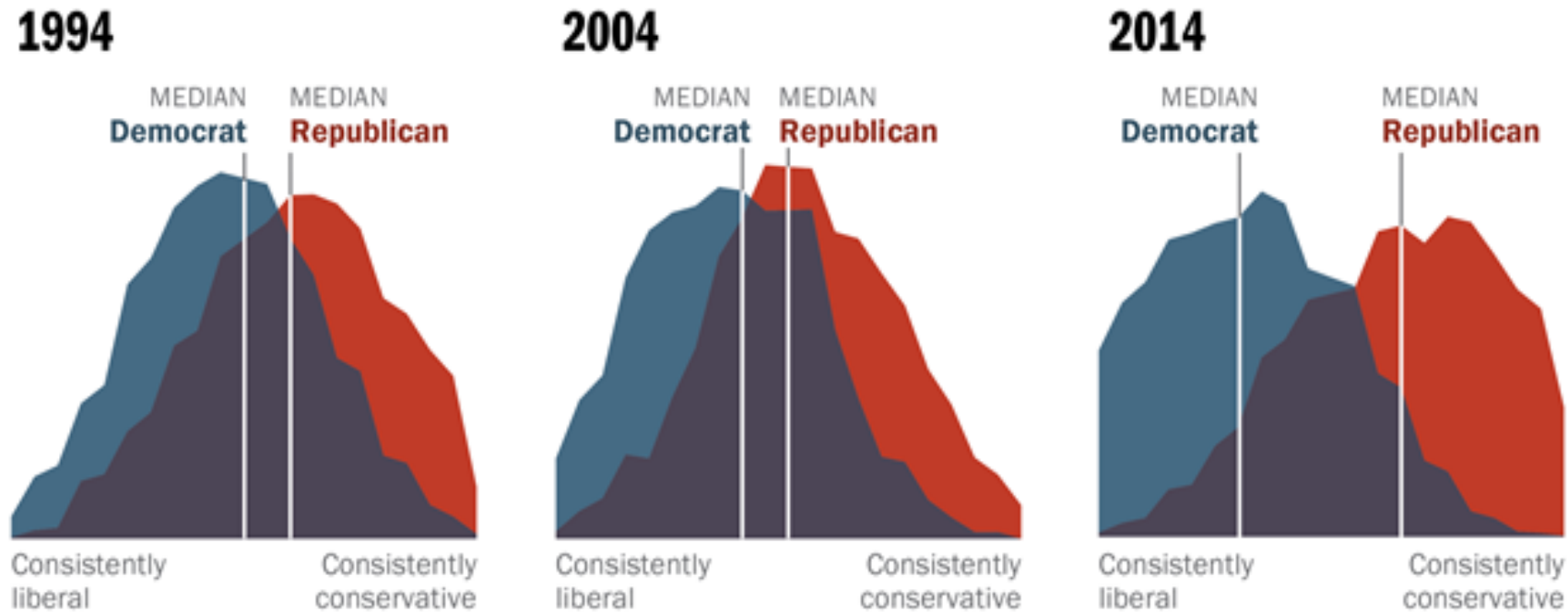
Down from 164 in 1996 to 72 in 2016

Source: *The Cook Political Report*

Increasingly Polarized Public

Democrats and Republicans More Ideologically Divided than in the Past

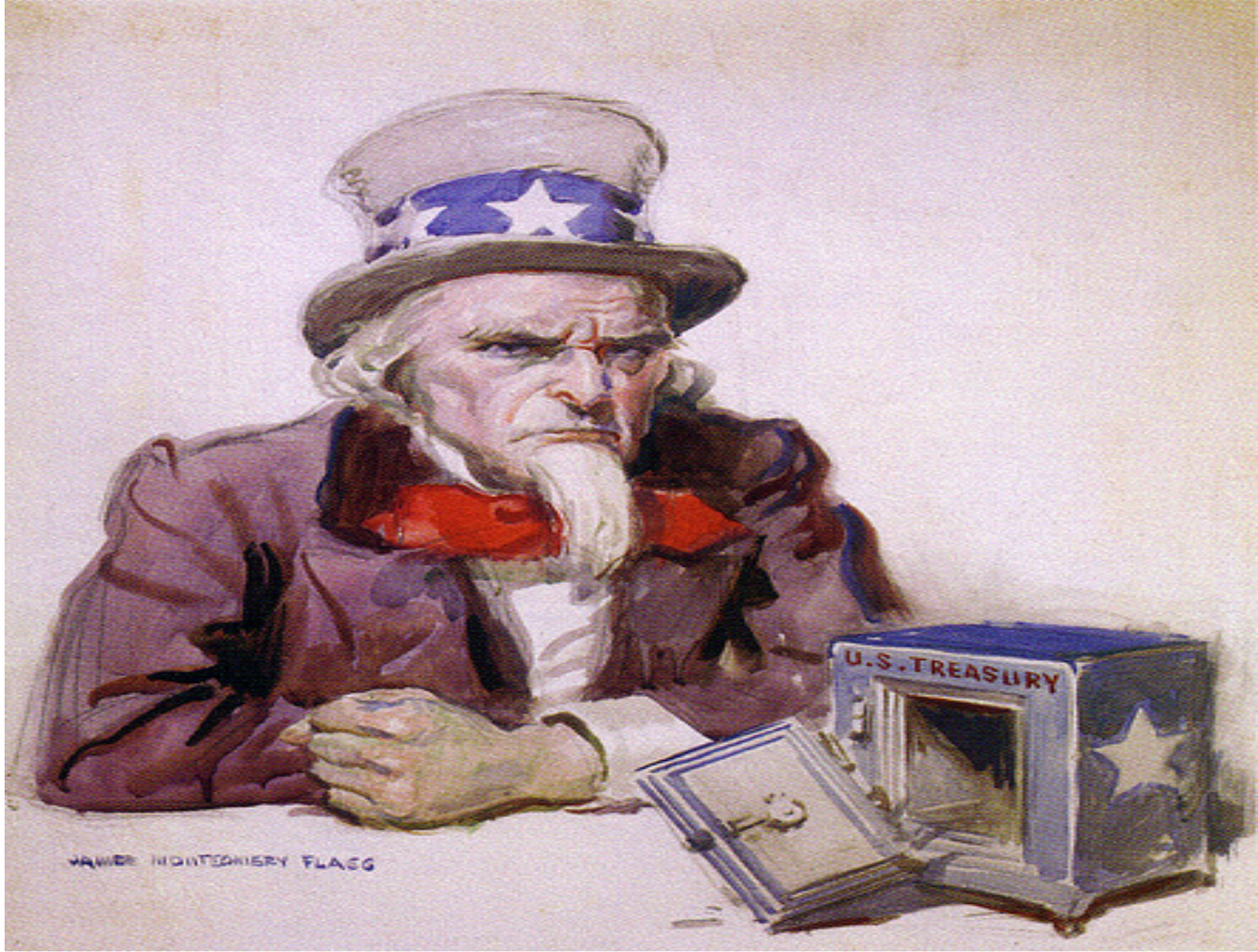
Distribution of Democrats and Republicans on a 10-item scale of political values



Source: 2014 Political Polarization in the American Public

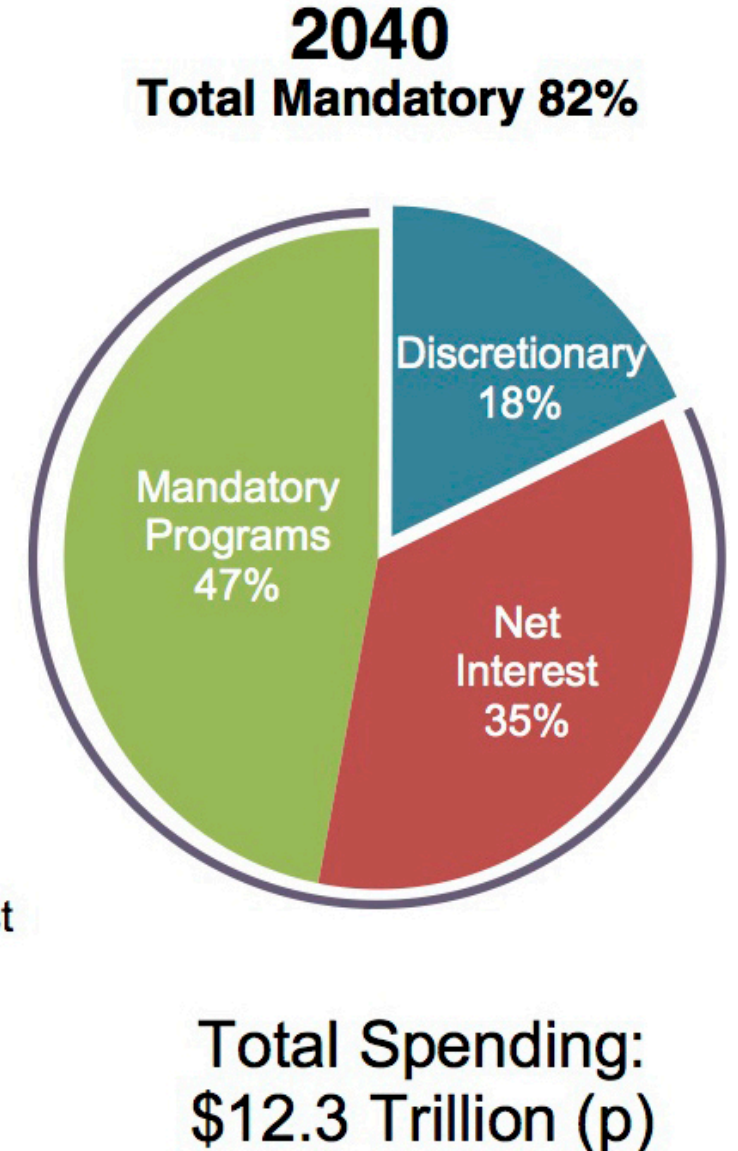
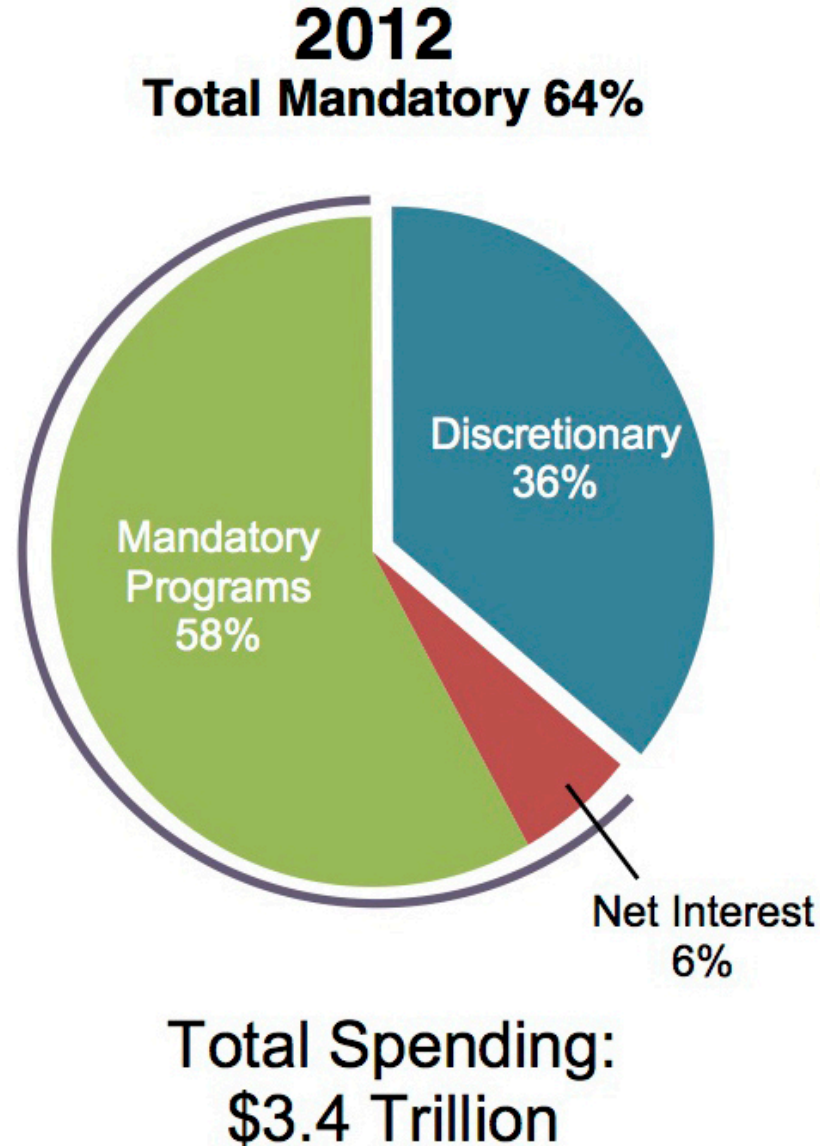
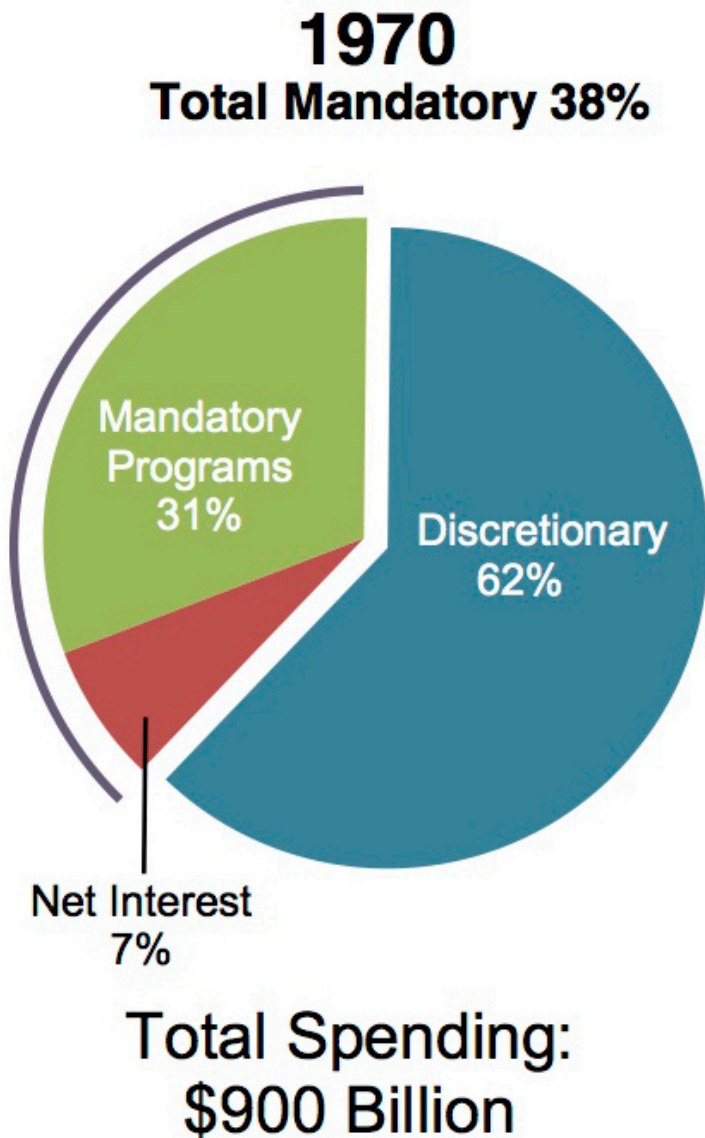
Notes: Ideological consistency based on a scale of 10 political values questions (see Appendix A). The blue area in this chart represents the ideological distribution of Democrats; the red area of Republicans. The overlap of these two distributions is shaded purple. Republicans include Republican-leaning independents; Democrats include Democratic-leaning independents (see Appendix B).

PEW RESEARCH CENTER



JAMES HONTEGNIERY FLAGG

Growth in Entitlements Means Less Money to Budget

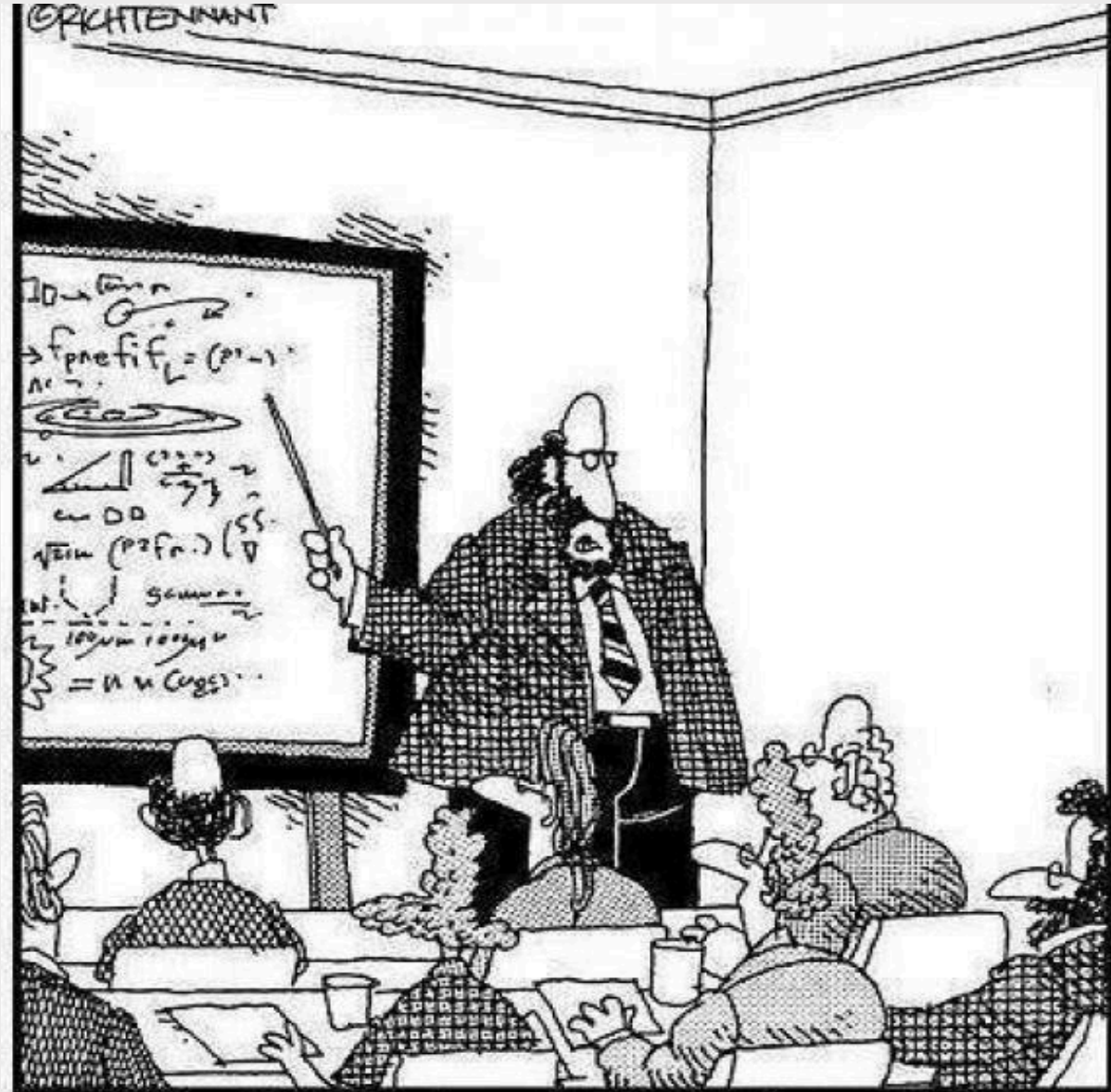


The Growing Innovation Deficit



<http://www.innovationdeficit.org>

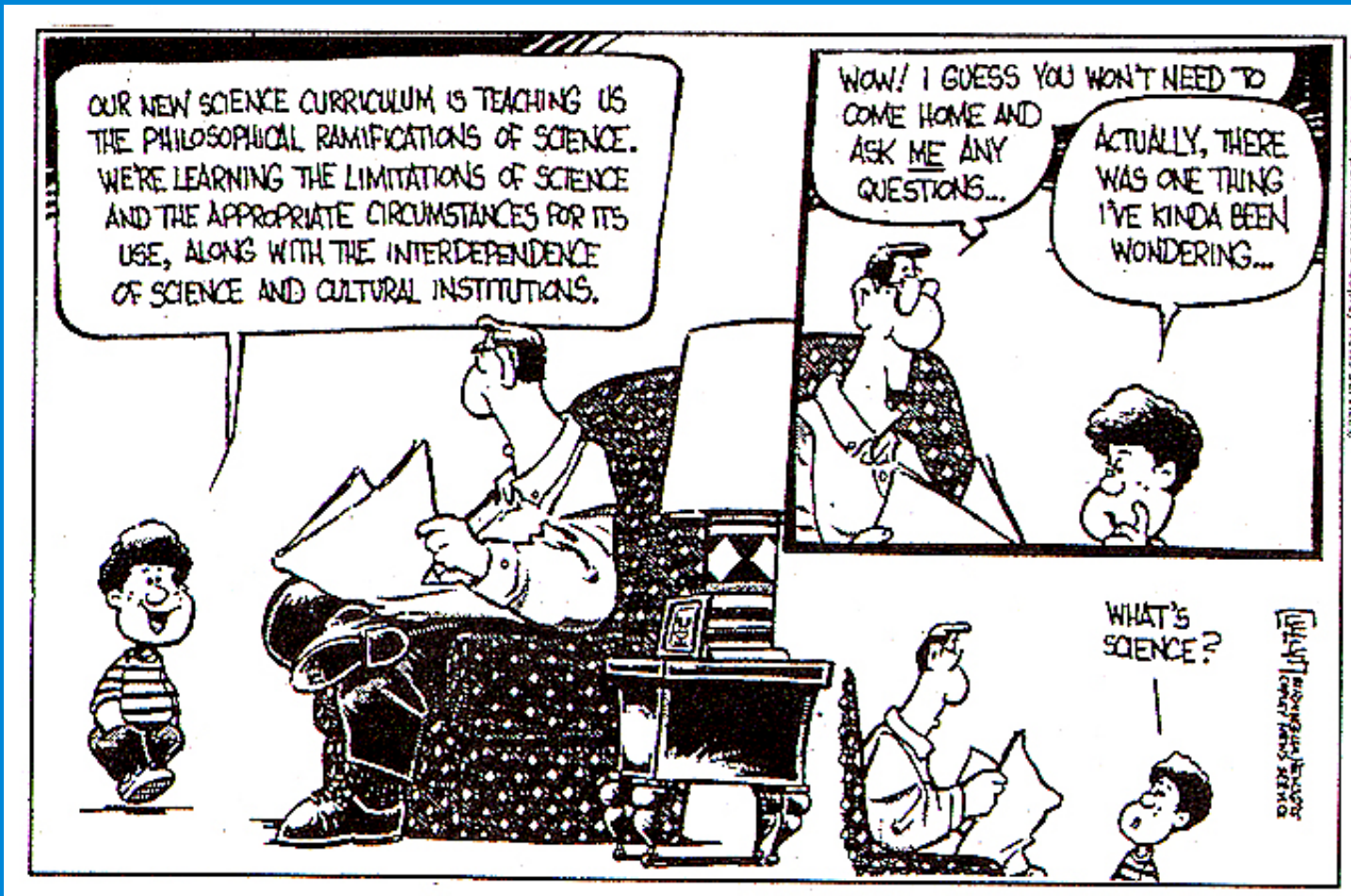
WHY UNDERSTANDING & ENGAGING IN SCIENCE POLICY MATTERS



“Along with ‘Antimatter,’ and ‘Dark Matter,’ we’ve recently discovered the existence of ‘Doesn’t Matter,’ which appears to have no effect on the universe whatsoever.”



Association
of American
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MANY
POLICYMAKERS
DO NOT
UNDERSTAND
SCIENCE

Few Members of Congress come from Science & Engineering Backgrounds

- Less than 3 percent have any background in science or engineering.
- There are 1.5 physicists, 1 mathematician, 1 micro- biologist and 1 chemist in the 115th Congress (all in the House).
- 8 members have engineering degrees while 21 have medical degrees.
- 218 have law degrees.
- 18 members have no educational degree beyond a high school diploma while only 24 have doctoral degrees.

Navigation Tips

- 1) All politics are local
- 2) All politics is personal

LCD Monitors

Speech Recognition
Technology

Lithium-Ion Batteries

Catalytic Converters

Synthetic Polymers

Shatterproof
Windshields

Power Windows

Center Brake Light

Semiconductors

AUTOMOTIVE APPLICATIONS OF BASIC RESEARCH

Federally funded research laid the foundation for many
technological advances contained in the modern car

Airbag Deployment
Sensors

CD Players

GPS

Remote Car Locks

Extended Tire Life

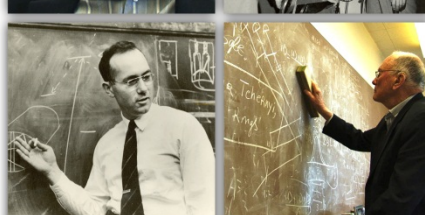
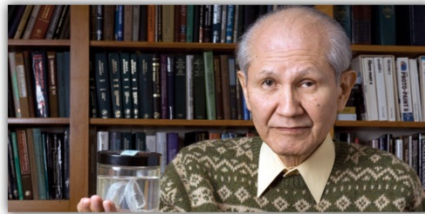
Car Bumpers

Produced by the Association of American Universities, www.aau.edu, Sept. 2010

For more examples, see the “Why University Research Matters” at: www.aau.edu.



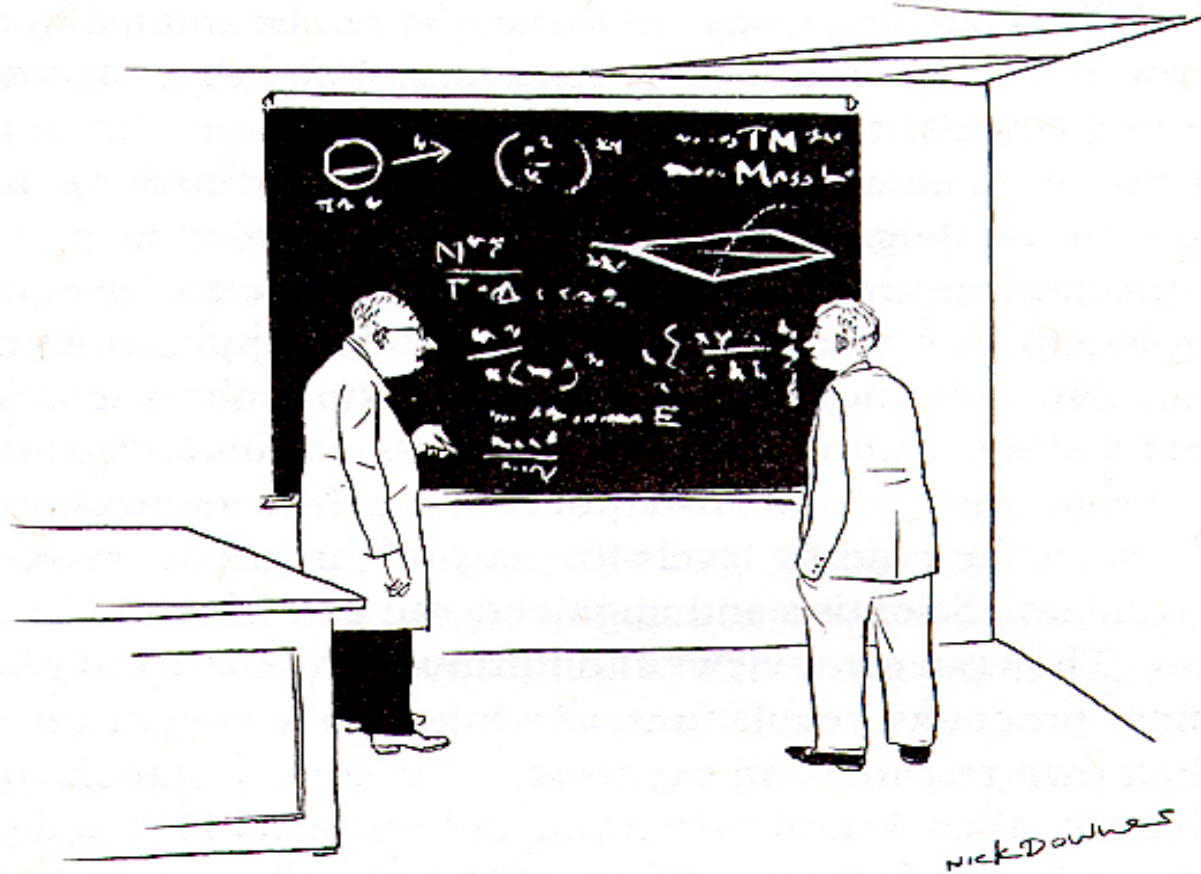
THE
GOLDEN
GOOSE
AWARD



Navigation Tips

- 1) All politics are local
- 2) All politics is personal
- 3) Build a relationship
 - of trust
 - that is mutually beneficial
 - offer to help; don't always 'ask'
- 4) Speak their language, not yours...

Language Matters



"IN LAYMAN'S TERMS? I'M AFRAID I DON'T KNOW ANY LAYMAN'S TERMS."

Navigation Tips

- 1) All politics are local
- 2) All politics is personal
- 3) Build a relationship
 - of trust
 - that is mutually beneficial
 - offer to help; don't always 'ask'
- 4) Speak their language, not yours...
- 5) ...but don't pretend to be a native
- 6) Know when to talk
- 7) Know to whom you are speaking

While Maps are Good, Tour Guides are Even Better!!!

1

University federal
relations officer

2

Scientific society
government
relations office

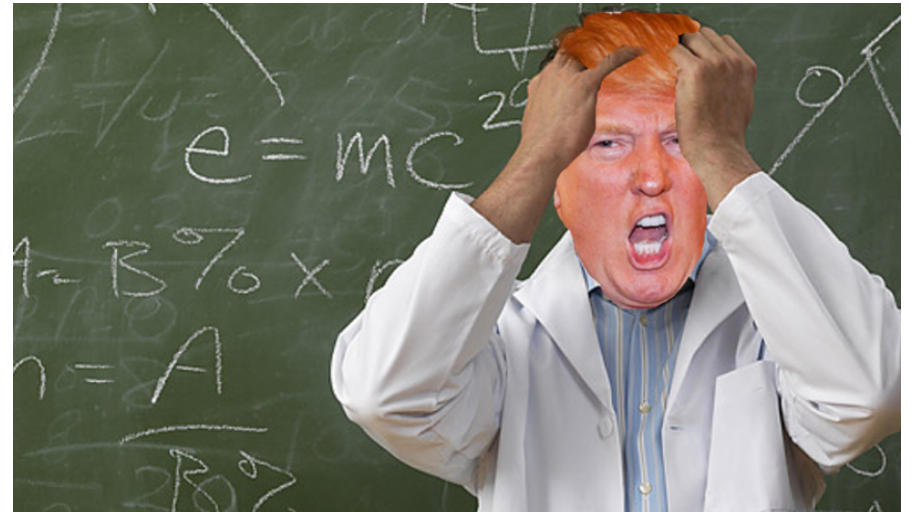
3

Congressional
Staff

- Personal Staff
- Committee Staff
- Local Staff

The Trump Administration & S&T Policy

- S&T Budget
- Appointment of key S&T positions
- Legislative Productivity
- Strategic Initiatives
- Univ-Govt. Partnership
- Regulatory reform
- Immigration
- Tax Reform



Thank you for your attention...



Contact Me



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AAU: www.aau.edu

ESEP: www.science-engage.org

Beyond Sputnik: www.sciencepolicy.us