

## School House Rock



## How can you impact policy?



Lis Cohen  
 Graduate Research Assistant/Co-lecturer  
 lis.cohen@utah.edu  
 www.WeatherOutreach.org

## Science Policy Outline

- Why should we care about policy?
- How did I develop my science policy knowledge?
- Science Policy 101
  - Who makes science policy?
  - How do they make policy?
  - How do policy makers get their science information?
  - How can you deliver science information effectively?

## Why we should care about policy

- Nothing is outside the politics realm.
- Very important to remember funding and programs can be cut if people do not know about them.
- Major decisions are being made and we want decision makers to be informed.

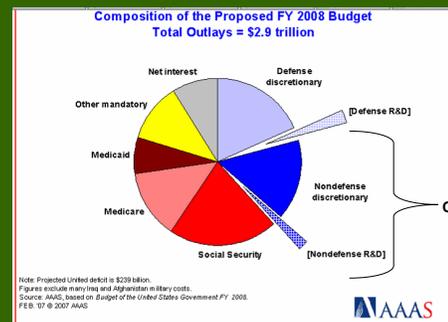
## Why we should care about policy

These issues are not going away.



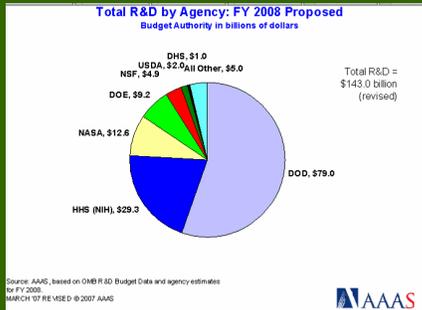
## Why we should care about policy

Science fitting into the entire US Budget



## Why we should care about policy

Who is getting funded?



Source: Kei Koizumi

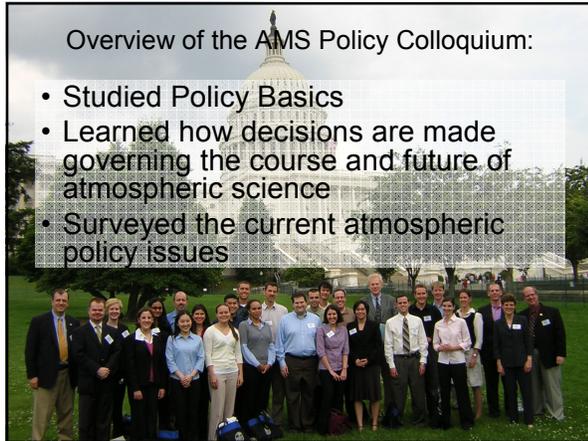
## How did I develop my science policy knowledge?

The American Meteorological Society Policy Colloquium  
An intense, ten-day immersion in atmospheric policy.



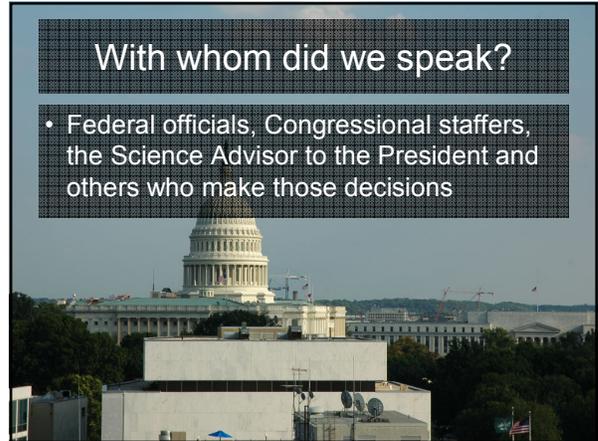
## Overview of the AMS Policy Colloquium:

- Studied Policy Basics
- Learned how decisions are made governing the course and future of atmospheric science
- Surveyed the current atmospheric policy issues



## With whom did we speak?

- Federal officials, Congressional staffers, the Science Advisor to the President and others who make those decisions



- Dr. John H. Marburger, III, Science Adviser to the President, and Director, Office of Science and Technology Policy
- Rick Anthes, President, AMS
- Keith Seitter, Executive Director, AMS
- Bill Hooke, Director, AMS Policy Program
- Toby Smith, Senior Federal Relations Officer, Association of American Universities
- Kei Koizumi, Director, R&D Budget and Policy Program, AAAS
- Scott Gudes, Chief of Staff, Senate Committee on the Budget
- Paul Higgins, Senior Policy Fellow, AMS
- Jonathan Black, Senate Committee on Energy and Natural Resources
- Sarah Horrigan, Office of Management and Budget
- David Verardo, National Science Foundation
- Gene Whitney, Assistant Director, Environment, OSTP
- Chuck Atkins, Chief of Majority Staff, House Science Committee
- Janet Poppleton, Chief of Staff (minority) House Committee on Science and Technology
- James Bradbury, AMS-UCAR Congressional Science Fellow, on staff for Congressman Jay Inslee (D-WA)
- Allyson Anderson, AGI Congressional Science fellow, Environment and Natural Resources

- Jonna Hamilton, on staff for Senator Richard Durbin, (D-IL)
- Michael MacCracken, The Climate Institute
- Lynne Carter, Regional Liaison
- Mike Slimak, Associate Director EPA
- Chris Mooney, author
- Matthew Nisbet, American University
- Vincent Kiernan, Assistant Dean, Georgetown's School of Continuing Studies
- Dr. Robert W. Corell Program Director, Global Change The H. John Heinz III Center for Science, Economics, and the Environment
- Dr. Eric Klinenberg, Associate Professor of Sociology New York University
- Dr. George M. Gray, EPA Assistant Administrator for Research and Development
- Molly Macauley, Senior Fellow, and Director of Academic Programs, Resources for the Future
- Cristina Chaplain, Director, Acquisition and Sourcing Management, Government Accountability Office
- David Arthur, Congressional Budget Office
- Kit Batten, Director of Environmental Policy, Center for American Progress
- Bryan Mignone, Brookings Institution
- Brenda Ekwurzel, Union of Concerned Scientists
- Tegan Blaine, U.S. Department of State
- Lauren Faber, British Embassy, Washington

## Overall Impression of these Policy Makers

- Very busy people
- Very intelligent
- Passionate about their work – are trying to do good things for the country
- Hard Working
- We can be politicians (run for office!)

## Who else participated?



## Developing my science policy knowledge

### – Two case studies

- National Assessment
- Mock Congressional Trial

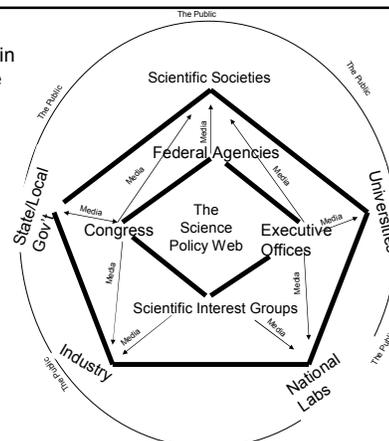
## Science Policy 101

- What is Science Policy?
- Who is involved in Science Policy?
- How is Science Policy Made?
- How do Policy Makers get Science Information?
- How can we Deliver Science Information Effectively?
- Understanding our Audience

## What is Science Policy?

Science Policy is very different from the conduct of science itself. While science is ideally value-free and objective, science policy is "concerned with the incentives and the environment for discovery and innovation; more mundanely, 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."<sup>12</sup>

## Who is involved in science policy?



## Who makes science policy?

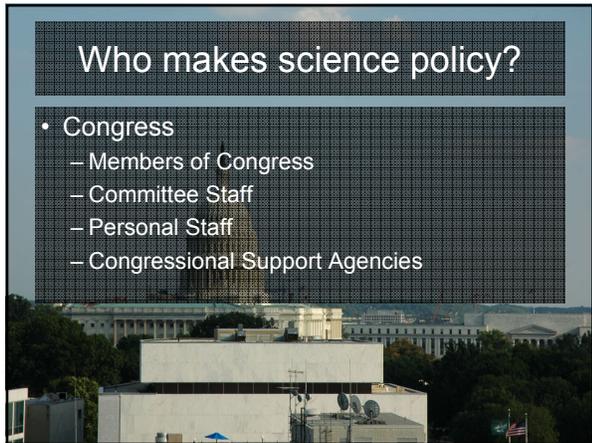


- White house/president
  - Office of Management and Budget (OMB)
    - Sign off on budget (this is an important slot, but often overlooked)
  - Office of Science and Technology Policy / Science Advisor

## Meeting with Dr. John H. Marburger, III, Science Adviser to the President, and Director, Office of Science and Technology Policy




## Who makes science policy?



- Congress
  - Members of Congress
  - Committee Staff
  - Personal Staff
  - Congressional Support Agencies

## Who makes science policy?

- Federal Agencies
  - NSF, HHS, DOE, NASA, DOD, EPA, NIST, NOAA, USGS
- The Courts 
- Higher Education Association

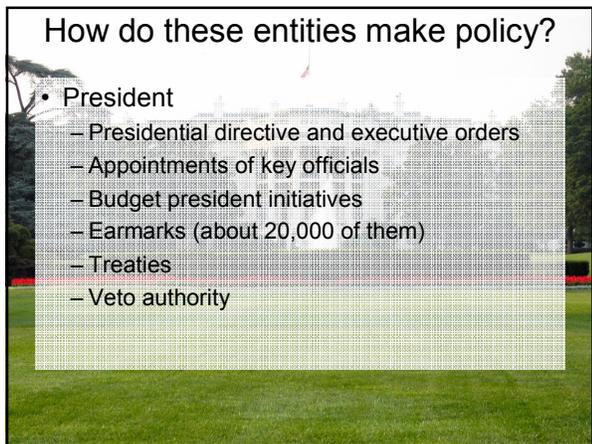






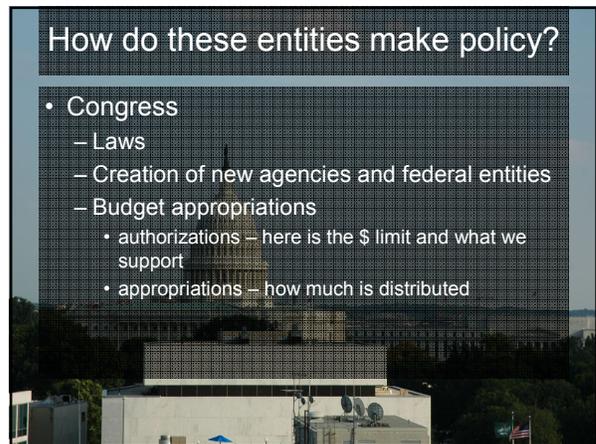


## How do these entities make policy?



- President
  - Presidential directive and executive orders
  - Appointments of key officials
  - Budget president initiatives
  - Earmarks (about 20,000 of them)
  - Treaties
  - Veto authority

## How do these entities make policy?



- Congress
  - Laws
  - Creation of new agencies and federal entities
  - Budget appropriations
    - authorizations – here is the \$ limit and what we support
    - appropriations – how much is distributed

## Understanding Our Audience

Senate	House of Reps
 Minority is slightly empowered  Larger offices with assistants (less interaction with their representative) Jurisdictions are different	 Tyranny of the majority  Small Offices (more time with rep) Jurisdictions are different Larger science presence about (70 staff working on science) Science and technology committee

Meeting with:  
 Chuck Atkins *Chief of Majority Staff, House Science Committee*  
 Janet Poppleton (chief of staff for Ralph Hall)

## Who are partner's in carrying out science policy?

- Universities –Us!
- National Labs
- Industry
- States
- Public







## How does congress get their science information?

- Congressional research library
- National Academies – National Research Council
- Office of Technology Assessment- no longer exists
- Contacts with scientists – you???




## How do senate members know what the public cares about?

- Not everyone travels, people come to them and show them.  
– appropriations committee
- People need to let their representatives know what they care about!

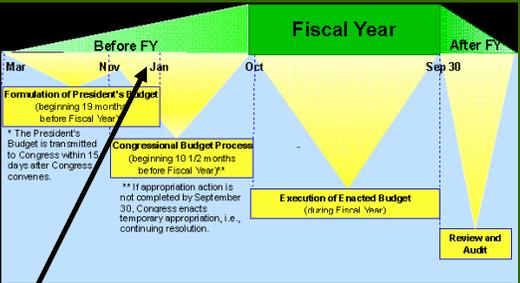
## How can we deliver science information effectively?

- Timing
- Understanding Our Audience
- Delivering a Message and Framing



## When can we impact the budget?

When the \$ decisions are being made.



Dec or January: Scientists can make appointments to speak with appropriations staff and offer expertise.

## Timing and Political Realities

- When programs are authorized by congress, it does not guarantee funding.
- Other issues and priorities can impact U.S. science.
- Scientists need to participate throughout the cycle.

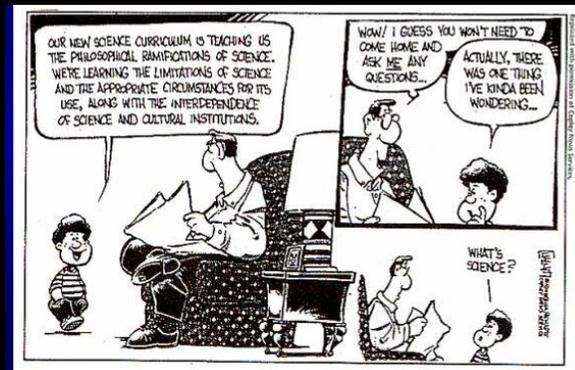
## Understanding Our Audience



“When I am getting ready to reason with a man, I spend one-third of my time thinking about myself and what I am going to say and two-thirds about him and what he is going to say.” Abraham Lincoln

## Understanding our Audience

What is Science?



## Understanding our Audience

Some policy makers see science as a “Means to and End”

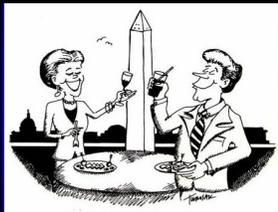


By Cartoonist Salvo Harris  
American Scientist

Information courtesy of Tobin Smith

## Understanding our Audience

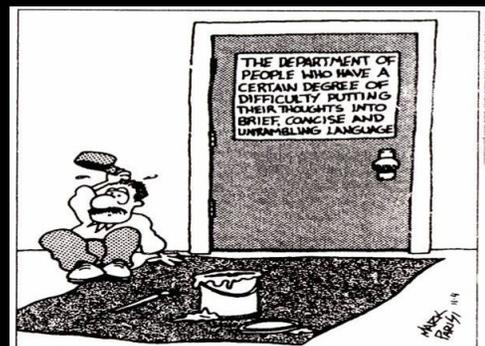
Policy World



- “I double majored in English and History and then went to Harvard Law, and you?”

## Understanding our Audience

Their view of the Scientific World???





## How can you be effective?

- Tell them why they should care.
- Craft and highlight key messages.
- Make sure you have the correct audience.
- Provide context for new findings.
- Anticipate and address potential misunderstandings.



Information courtesy: Susan J. Hossel

## How can you be effective?

- You have to have good arguments and statistics.
- Make it local.
- Do not use jargon and too much detail.
- Consider how the words can be taken out of context.
- Respond only to properly framed questions.



Information courtesy: Susan J. Hossel

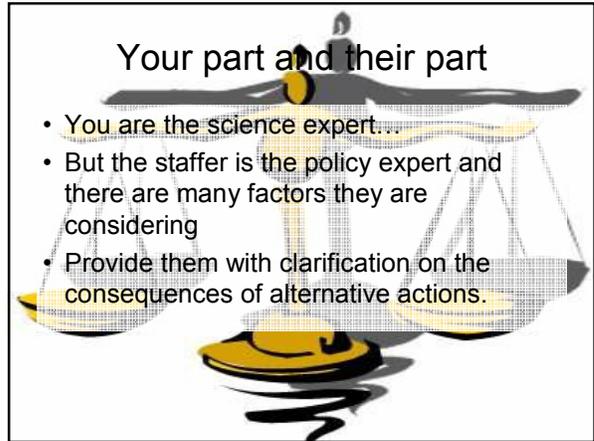
## Preparation

- Develop your talking points and your ask
- Assemble leave-behinds
  - Provide your contact information
  - Anticipate questions and have your answers ready
  - Select a group leader



## Your part and their part

- You are the science expert...
- But the staffer is the policy expert and there are many factors they are considering
- Provide them with clarification on the consequences of alternative actions.



## When you are there

- Thank them before you ask
- Be respectful even if they are not
- Stay on message
- Stick to your expertise
- Don't speak negatively about other constituent groups



## Make sure to...

- Ask for a commitment to support your issue.
- Offer to serve as a resource on science issues.
- Invite the legislator/staff to visit your lab or facility.

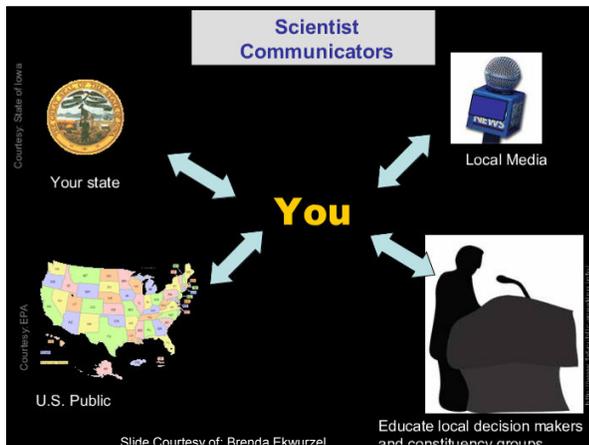


## How do you successfully work with the media?

- make contacts with reporters
- hit them with the exciting finding first, then give background information
- if someone calls you, ask for 10 minutes to prepare (look them up, science writer?)

## Conclusions

- We care about policy
- Apply for the AMS Summer Policy Colloquium  
<http://www.ametsoc.org/atmospolicy/ApplicationInformation.html>
- Science Policy 101
  - Many people are involved in science policy, even you!
  - Policy is made in a variety of ways.
  - Policy makers receive their science information from many different sources, you can be one of them.
- You can deliver science information effectively.
  - Understand your audience (motivations, no jargon).
  - Time your actions properly.
  - Recognize framing
  - Make contacts with local media, legislators and decision makers.



Thank you!

Lis Cohen – [lis.cohen@utah.edu](mailto:lis.cohen@utah.edu)

My policy notes can be found at:  
[www.WeatherOutreach.org/4.html](http://www.WeatherOutreach.org/4.html)

## Jobs

- Brookings is an Non Governmental Organization (NGO)- Funding comes from foundations and policy makers.
- Union of concerned scientists
- British Embassy on environmental issues ½ time looking out and in
- Ideas for grad students to get started:
  - summer internships
  - volunteering
  - Christine M. fellowship
  - NGO

## Societal Impacts

- Inuit people on the islands of Alaska and the story that Bob Corell told us about the senator not knowing what to do and the amount of money it would take to move all of these people and possibly lose their culture

## Heat wave (Eric Klinenberg)

- Electrical Grid couldn't handle the use, city wasn't prepared to take care of the people (ambulance and hospital gap)
- Two factors to watch - Rise of aging alone and the geography of vulnerability

## Popular Science vs. Reality

- Assumption: If the public knew more about process of science, then the public would view issues as scientists do
- Emphasis: science education and mass mediated popular science
- Communicating beyond the media: leaders (religious and community) and science navigators (e-mail leaders) use film to engage the masses and targeted audiences

## Hot topics for policy makers:

- Economics, law and policy
- Carbon Cycle modeling
- climate impacts and adaptations
- biodiesel - economics, business, scientists

## Academia vs. Research and Policy

- As long as you are working for a reputable institution ex. Brookings Institution- Think tank that is well respected, you can do both.
- Brookings is funded by policy makers though. You write op eds. You do radio and television interviews, convene meetings and public events. The research is driven by the scholars.
  - Often the company is government in exile (ex. former science advisors to the president). They are there to stay in touch with gov't officials. People are often chosen from Brookings to go back into the government.
  - 5 areas within brookings (foreign policy, economics, global development, etc) Bryan studies climate issues.
- Whenever you are in D.C. you are a policy maker **\_NOT TRUE**
  - you can still be objective
  - you need to communicate effectively

## Office of Science and Technology Policy

- 2 functions
  - reactive
    - need to know the technological aspects of everything
    - inform the president about science
      - use the experts
      - 30 technical people on staff
  - proactive
    - long term science strategy for the US
      - try to make the science budget coherent
    - generate reports
      - affects the budgets within agencies
      - they tell OMB what the nation needs to affect agency's budgets
- "This is the year of climate change" climate impacts will be studied. Gene Whitney
- Who works in OSTP
  - political appointees
  - USGS has an employee there (rotating position), NASA, NOAA

Information courtesy of: Gene Whitney

## Interesting notes about the House of Representatives

- Hearings: sometimes given just for show, to bring an issue to the record
- Witnesses: majority often gets many, minority might just get one
- Bills: might not be brought up depending on who is ranking and what he/she thinks about the topic
- Rules Committee: determines who can amend bills, etc

## How Policy is Made?

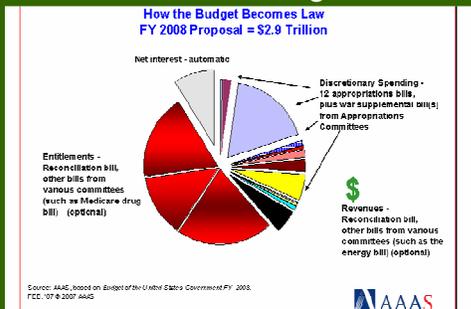
- Muddling through (incrementationism)
- Primordial soup (some rises up to the top)
- Whirlpools or centers of activities
- Iron triangles (subgovernment composed of administrative staff)

## Current Budget:

- Amount:
  - 2/3 of the budget is on autopilot
  - 1/3 is not ~ \$2.9 trillion
    - Trend: One out of every 7 discretionary spending dollars goes to R&D
    - Our country spends about 2.6% of our budget on science and China and Japan are spending 3%. No one knows what the right formula is

Information courtesy of Kei Koizumi

## How does Science \$ fit into the entire US budget?

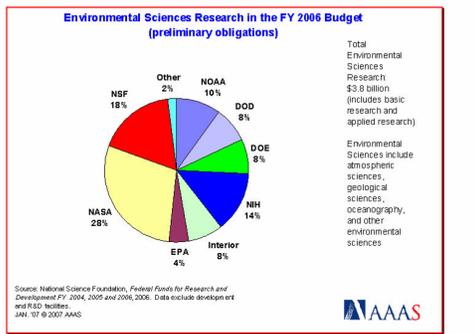


## Where is science funding going soon/now?

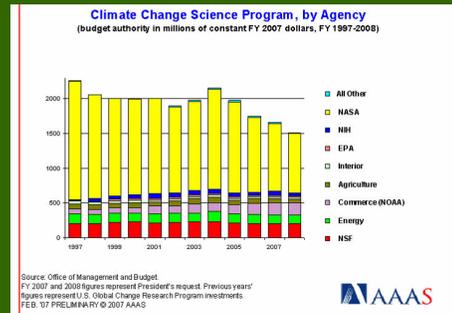
- Current initiatives:
  - American Competitiveness Initiative: physical sciences are a priority
    - Led to more money in NSF, DOE, Office of Science, NIST
  - Shift in spending to space missions has lowered money for environmental sciences, but with a new administration that could change.

Information courtesy of Kei Koizumi

## Environmental Sciences



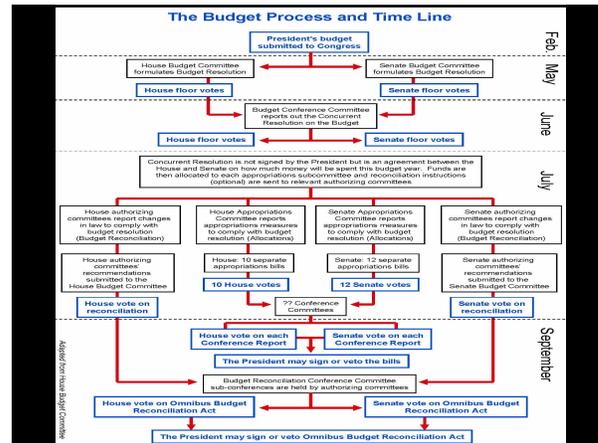
## Climate Change Science



Information courtesy of Kei Koizumi

Framing Science Issues	
Frame	Science Issue Defined As....
Social progress	Improving life, solving problems, master/harmony nature.
Economic develop.	Market benefits/competitiveness.
Pandora's box / Runaway science & fatalism	Call for precaution in face of possible impacts/catastrophe; Out-of-control monster, or action is futile, path is chosen.
Morality/ethics	Right or wrong, crossing/respecting boundaries.
Scientific uncertainty	What is known or unknown; evoking or undermining consensus, "sound science," peer-review.
Public accountability	Responsible use or abuse of power; "politicization," citizen responsiveness.
Third way/alternative path	Compromise solution, middle way between opposing sides.
Conflict/Strategy	Game among elites, battle of groups/personalities.

Mooney and Nisbet 2007



Lis' search on Thomas:

Entered: "Climate Change" in the Thomas website and found these bill numbers:  
 640 Bills from the 110th Congress ranked by relevance on "climate+change".  
 75 bills containing your phrase exactly as entered.  
 2 bills containing all your search words near each other in any order.  
 12 bills containing all your search words but not near each other.  
 551 bills containing one or more of your search words.  
 459 Bills from the 110th Congress ranked by relevance on "global+warming".  
 41 bills containing your phrase exactly as entered.  
 1 bill containing all your search words near each other in any order.  
 4 bills containing all your search words but not near each other.  
 413 bills containing one or more of your search words.

Timing and \$\$\$\$:

- October 1 is the first day of the budget
- Feb:
  - budget is released from the president and moves to the congress
  - authorization committees meet to guide spending decisions
- Dec or January:
  - SCIENTISTS: make appointments to speak with appropriations people and offer expertise
- Feb-June: congressional appropriations committees meet, they hold public hearings and gather testimony on the budget
- Spring: budget committees write a budget resolution
- June; house and senate work on appropriations bills (deadline of oct 1 rarely met)

Information courtesy of Kei Koizumi

What is science policy?

- "National Science Policy" refers to the set of federal rules, regulations, methods, practices, and guidelines under which scientific research is conducted. The process, procedures, and how those processes and procedures are implemented [is science policy]. Tobin Smith

Science for Policy

- Science for policy is different. That would refer to what policy makers need to know to make good decisions (ex. understanding how climate will impact their area and studies done to answer that question.)

## What is science policy?

- “National Science Policy refers to the set of federal rules regulations, methods, practices and guidelines under which scientific research is conducted. The process, procedures, and how those processes and procedures are implemented”. Tobin Smith

