

# Statisticians and Science Policy



A Professional Society (and U.S)  
Perspective

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# Outline

- ASA Science Policy
- A few examples
- Observations
  - Advantages/Opportunities
  - Challenges/limitations
  - Guidelines
- Conclusions
- How to get involved

# ASA Director of Science Policy

- Board Approved 2007
  - Continued strong ASA leadership support
- Objectives:
  - Raise the profile of statisticians in policy making
  - Advocate on interests of statisticians
    - E.g., research funding, federal statistical agencies, statistical literacy ...

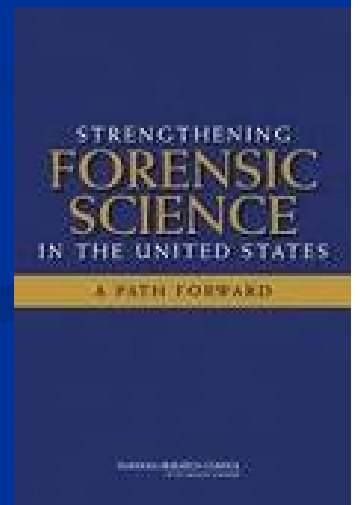
→ This talk: raising the profile

Assumed Goal: To have statisticians consulted and/or statistical perspectives incorporated

# Forensic Science

2009: National Academies' *Strengthening Forensic Science in the U.S.: A Path Forward (SFS)*

- Documents deep and broad spread scientific problems in forensic science
- Calls for **independent** National Institute for Forensic science (NIFS)
- Two statisticians on committee



# Forensic Science: 2010

- ASA
  - April: ASA Board Statement endorsing SFS
  - March: “High Cost of Weak Forensic Science,”  
*Amstat News*
- U.S. Congress (May): Senate Judiciary Committee (SJC) issues draft bill outline; has Office of Forensic Science (OFS) in Department of Justice (DoJ)
- ASA (June): letter expressing concern for OFS in DOJ

# Forensic Science: 2011

- U.S Congress:
  - January: SJC Bill introduced; places OFS in DOJ
  - January: Senate Commerce, Science and Technology Committee (CSTC) forensic science in 2011 agenda
- ASA
  - March: ASA letters to SJC and CSTC on placement of OFS/NIFS
  - June: ASA Capitol Hill Visits
  - August: JSM session and *Amstat News* piece, "Putting the Science in Forensic Science"

# Climate Change

- ASA Climate Change workshop, 2007
  - ➔ ASA endorses main IPCC AR4 conclusions
- ASA Ad Hoc climate change policy committee
  - Established 2008
  - ASA Member Initiative Funding
  - 5-6 Days of Capitol Hill visits to date
  - Continuing Committee in 2010
  - “Statisticians Comment on Status of Climate Change Science,” *Amstat News*, March 2010

# Climate Change (Cont'd)

- Form Washington group of science society representatives: coordination & information sharing, 2008
  - Joint congressional briefings (e.g., 2010 briefing with Richard Smith)
  - 2009 letter: Climate change happening; humans primary driver. Signed by 19 science organization heads
  - Climate Science Day on Capitol Hill (5 statisticians participated)

# Climate Change (Cont'd)

## ■ Challenges:

- Climate science highly politicized in U.S.
- Informing versus Lobbying
- Communication science: talking climate science to “skeptics/deniers” reinforces their position (Dan Kahan, *Nature*, January 2010)
- Recognition for role of statisticians in climate science?

e.g., National Academies' *America's Climate Choices* panels lacked statisticians; IPCC; ...

# Election Auditing

- Compare hand count of ballots to machine count for a sample
- Most U.S. election auditing is fixed percentage (vs. margin-dependent)
- Risk-limiting audits: limit the risk of failing to correct a wrong machine-count outcome
  - Protocol for when to stop counting
- Methods advancing rapidly

# Election Auditing (cont'd)

- ASA involvement:
  - election auditing workshop, 2007 & 2009
    - Election officials, computer scientists, political scientists, voting advocates
  - Members: active in listserves; advising election officials
  - Board statements/endorsements, 2008 (2) & 2010

# Election Auditing (cont'd)

## ■ Challenges

- Election official needs (simpler the better)
- Rapid advance of methods
- Short time scales of legislation
- Member time

# Observations

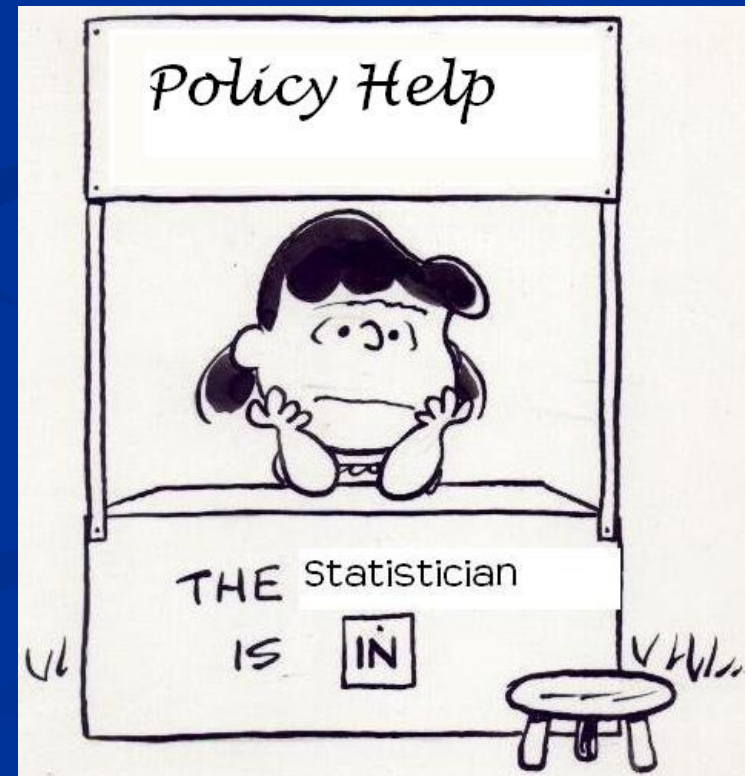
- Advantages/Opportunities
  - Statistics/statisticians everywhere (diverse interests)
  - Statisticians honest/impartial brokers
  - Perceived value increasing?
  - Value-added immense

# Observations: Challenges/Limitations

- Science/Policy line: staying on science side
- General ignorance for what statisticians do (including within science community)
- Perceptions of statistics
- Statisticians: not a lot of experience with policymakers
- Lack of time for statisticians
- Diverse interests

# Some Guidelines

- Initiative: we must reach out, self-advocate
  - Meetings, articles, policy briefs, ...
  - Don't assume they know what statisticians do
  - Start in our "backyard"?
- Materials: must have clear, simple message, picture = thousand words
- Find your allies



# ASA Science Policy Model

- Science policy director is facilitator/prompter
- Prioritize on many factors:  
member expertise, importance to ASA,  
likelihood for success, broader support, ...

Find group of experts

→ Reach Consensus on message & strategy

→ Pass recommendation to ASA leadership

→ Act

# Conclusions

- Immense potential for statisticians in policymaking
- Need to take initiative
- Need to be more vocal (including in science community)



# How to get involved

- Speaking out:
  - Blogs
  - Letters to the editor, op-eds
  - ISI/ASA/your-society newsletter (e.g., *Amstat News*), *Science/Nature*
  - ...
- [pierson@amstat.org](mailto:pierson@amstat.org)

# Links

- ASA Science Policy (Letters, Board Statements, columns):

<http://www.amstat.org/outreach/>

- *Amstat News* pieces:

<http://magazine.amstat.org/>

- ASA science policy blog:

<http://community.amstat.org/>

Thank You! (pierson@amstat.org)