

From Public Understanding to Public Engagement

NIH Council of Public Representatives
October 26, 2007



ADVANCING SCIENCE. SERVING SOCIETY

The whole science-society relationship is evolving

- A new paradigm is emerging for scientific communication with the rest of the public

Some (obvious) contextual thoughts about
the science-society relationship

Baseline truism:

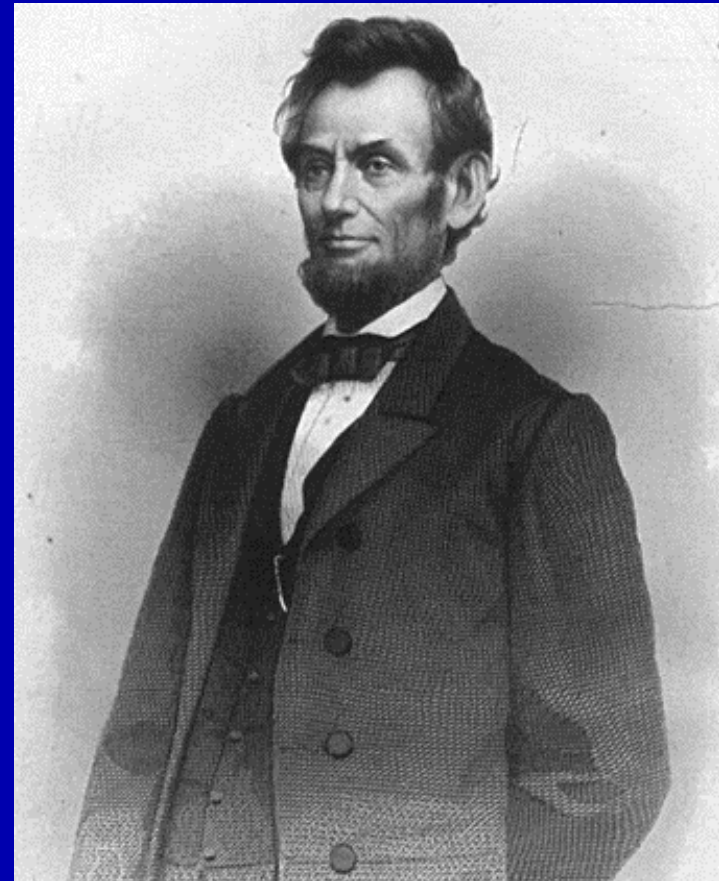
Science and technology (S&T) are ever-more imbedded in every aspect of modern life!

Corollaries:

- For people to prosper in modern society, they need fundamental understanding and comfort with S&T
- For science to prosper, the science-society relationship must be positive and strong

Public sentiment is everything. With public sentiment, nothing can fail; without it, nothing can succeed.

Abraham Lincoln



We have a problem

- The science-society relationship is experiencing significant tension
 - Has been eroding of late



As Charles Dickens would say.....

- We're living in the best of times
- And the worst of times



On the one hand

We're living in the best of scientific times



Advances in science are coming at a fantastic pace

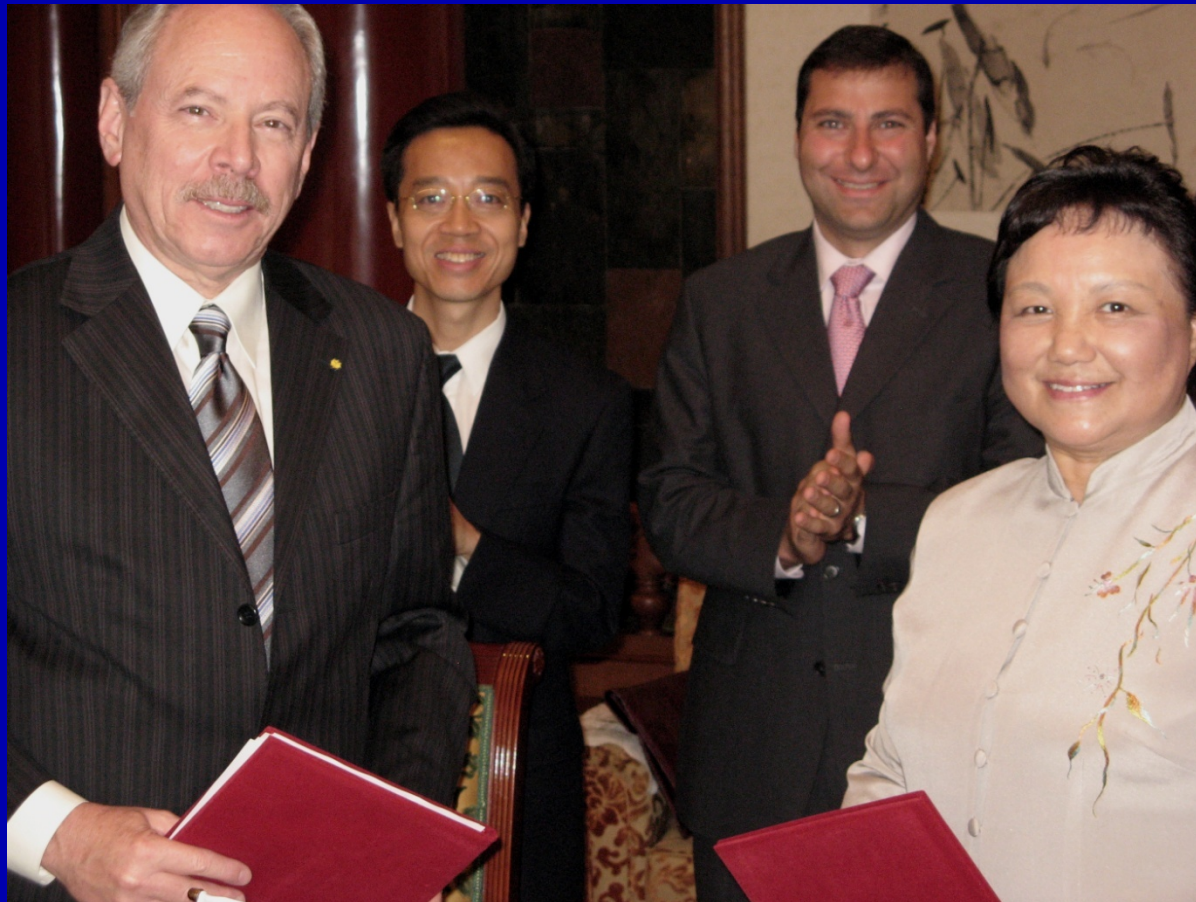
- The rate of incremental advance is accelerating
- New technologies are enabling quantum jumps in understanding
 - With great practical significance

On the other hand....

Other issues within science are not going so well...and negatively affect the broader (societal) context for science

- Incidents of scientific misconduct
- Human subjects concerns
- Animal welfare issues
- Conflict of interest problems

These problems are not unique to American society



These factors are internal to science

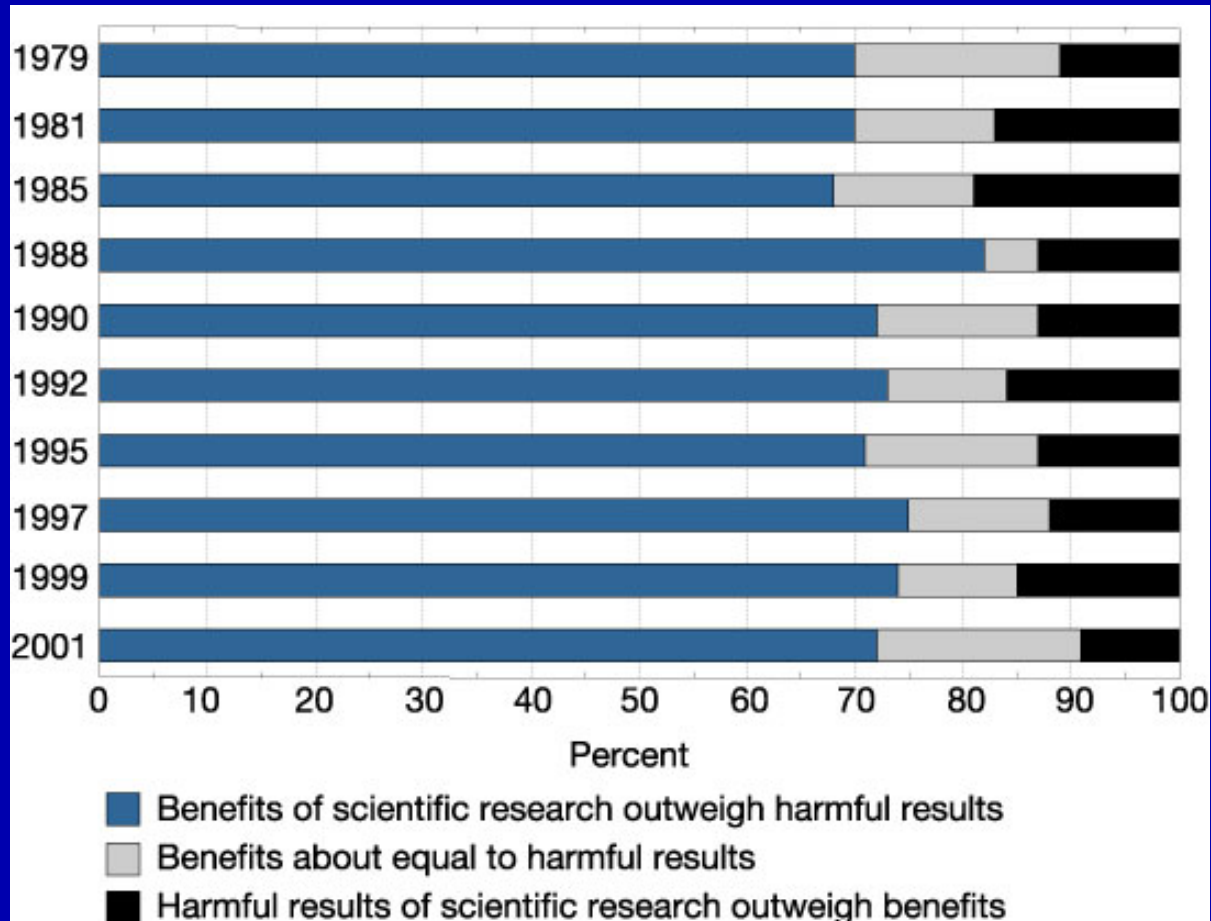
- There are problematic external factors as well



People generally still respect science and
technology....



U.S. public's view of scientific research

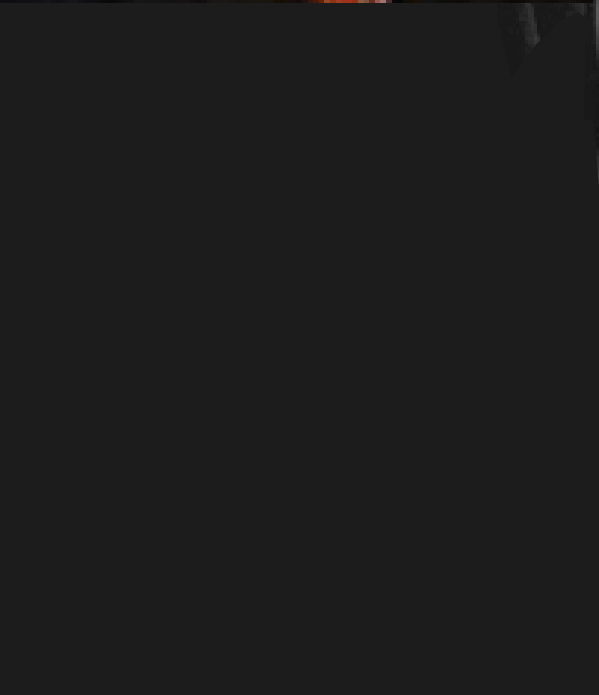


They have little understanding of what is and is not science

- 60% of Americans believe in extrasensory perception
- 41% think astrology is somewhat scientific
- 47% still do not answer “*true*” to the statement: “Human beings developed from earlier species of animals”



There's a lesson here!



People need to know more about science as an enterprise

- What makes something scientific?
- What is “research” all about?
 - What is and isn’t research?
- The limits of scientific investigation
 - Natural explanations of the natural world

Much science-society tension results from conflicts between scientific findings and

- Political/economic expediency
- Core human values

One political (economic) example...

- Is there climate change/global warming?



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Scientific issues that abut against values

- Cloning and stem cells
- Studying “personal” topics
 - Sex
 - Genetics of behavior
 - Intelligence
 - Aggression
 - Individual personality traits
- “Intelligent Design” versus evolution in science classrooms and science museums

Many neuroscience issues abut against human values

- The nature of the mind
 - Mind-body-soul concepts
 - Free will vs. determinism
- The ability for anyone to look into your brain and watch your mind in action
 - Darkest secret thoughts
 - Lie detecting

Overlay of values is having serious consequences for the whole science-society relationship

- Society wants to influence science
 - Rather than just the reverse
- Creating a growing divide between science and the rest of society
 - With negative consequences for both!

What can we do about the science-society
tension?

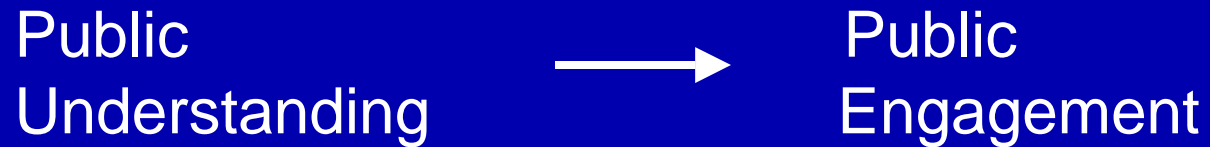
The typical response is to advocate more
public education about science

But we can't just “educate” our way out of it

- Not all problems result from lack of understanding
 - People do understand much of what we're saying or want to do
 - They don't like it
 - The conflict with their core values wins out over their view of societal benefits

We must go beyond public
education/understanding

Public Understanding +



This involves changing the nature of the communication

Communicating
to the public

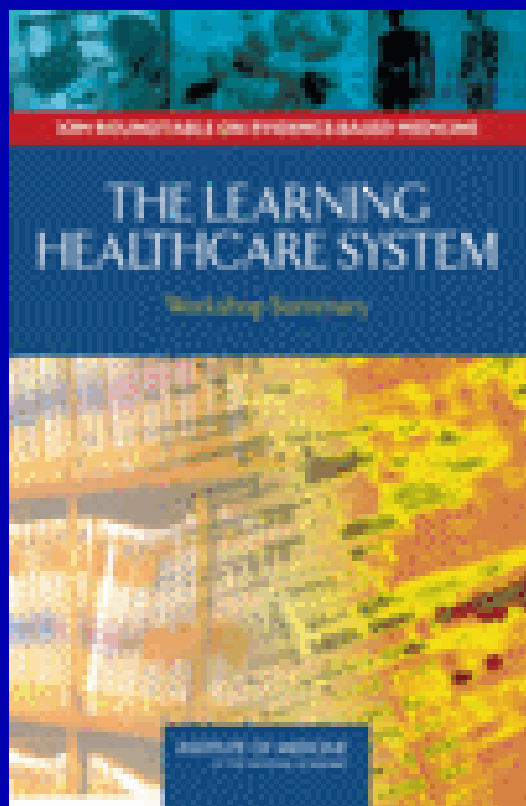


Communicating
with the public

It's not just about reducing tension!

- There is mutual benefit from greater public engagement
 - Genuine communication

IOM Roundtable on Evidence-Based Medicine



Emphasized the need for active roles of both patients and health care professional in evidence development and dissemination

Autism and the Environment

Background:

- Secretary of HHS requested the Forum provide a neutral venue to bring together scientists, autism community, and sponsors to identify and discuss the most promising scientific opportunities relating to the environment's potential impact on the development and progression of ASD.

→ 13 member Planning Committee included 3 IC directors and representatives from 4 different advocacy organizations

Workshop:

- About 50 people from all sectors
- Model of “public engagement” with science

Dissemination:

- Workshop proceedings with index of scientific opportunities in press
- Summary article submitted to *Pediatrics*

→ Hope to feed national research agenda



EURAB Report and Recommendations on Research and Societal Engagement

- Medical relief workers learning from local customary homeopathic practice
- Surgeon's recognizing how faith can help in recovery

Source: European Research Advisory Board,
European Commission, June 2007

Public engagement means listening (and responding) to the public about:

- Their concerns about science and technology and their concomitants
 - Risks and benefits
 - Encroachment on human values
- Their priorities among research areas
- Questions they would like or need us to answer
 - Help frame the research agenda

Government agencies need to be recipients
of and respond to engagement insights!

- They are accountable to the public
- They help set research agendas
- Public information
- Bully pulpits

Government R&D agencies should all initiate public engagement programs!

- Both NSF and NIH are exhorting or requiring outreach efforts

What are we talking about doing?

Public engagement can be done in a variety of ways

- Public forums/town meetings
 - Usually don't work well
- Visits with community groups
- Small group, problem-solving sessions
- Exploiting natural opportunities
 - Science museums and centers
 - Physicians offices
 - Over the neighbor's fence

AAAS Program Activities – Public Understanding and Engagement with Science and Technology

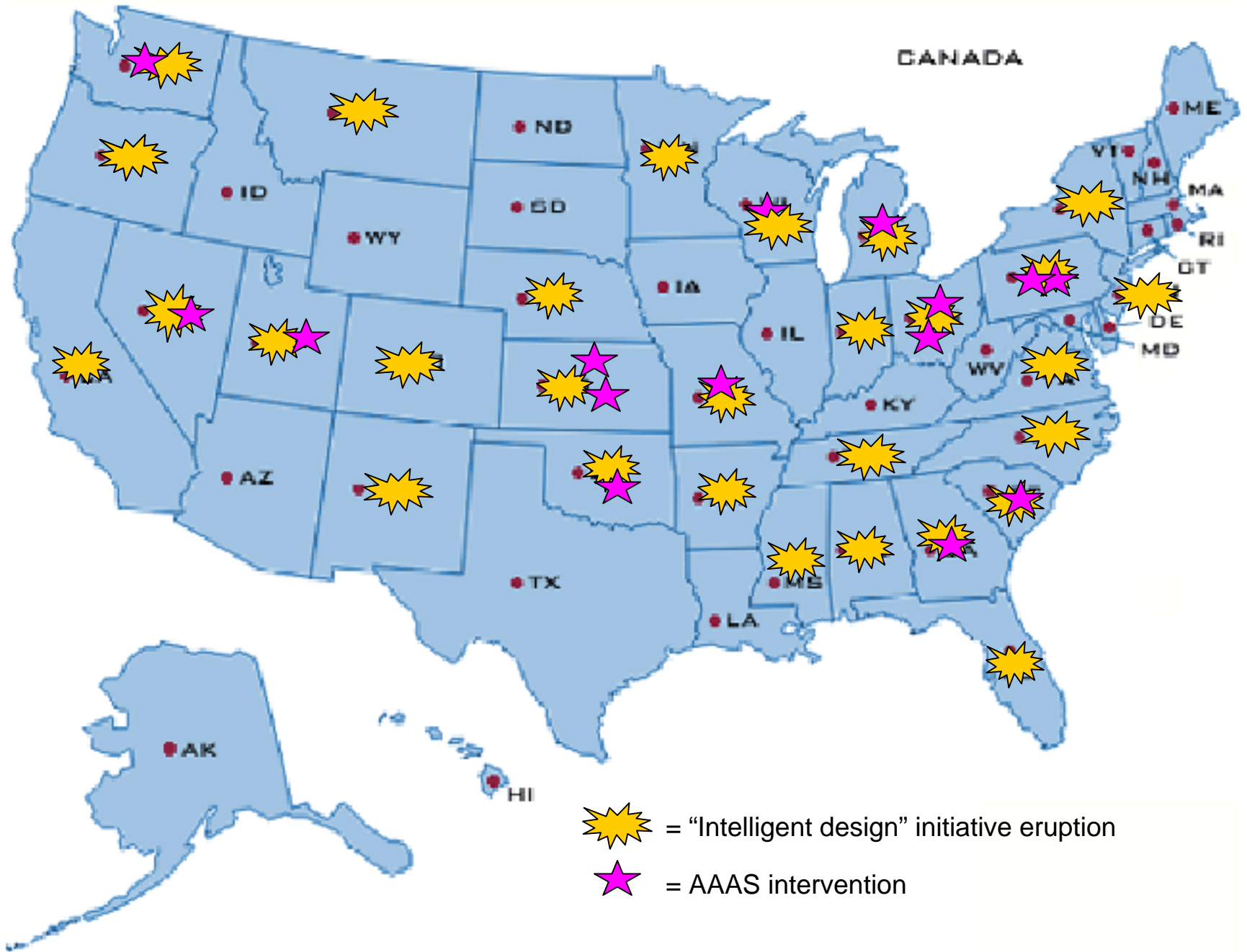
- Center for Public Engagement with Science and Technology
- Science Update – radio show
- EurekAlert! – web site for science journalists
- Family Science Days – annual meeting event
- Public Science Day
- Dialogue on Science, Ethics and Religion
- Science literacy projects
- Work with science museums and centers
- Town meetings
- *Meet the Scientists*
- Outreach to community organizations

AAAS “Glocal” strategy



Working with local opinion leaders and resources (AAAS “Glocal” Strategy)

- Local media and op-eds
- Clergy
- School officials
- Local government leaders/politicians
- Science museums and centers
- Community groups
- Town meetings



What am I asking of the scientific community?

We need scientists to:

- Build relationships with stakeholders, striving to foster mutual confidence and respect.
 - Be inclusive of diverse perspectives, sectors and cultures.
 - Practice “active listening”
- Build communication around issues informed by S&T, rather than specifics of the S&T itself.
- Practice openness
 - Put information, ideas and debate in the public realm

*Science Communications and Opportunities for Public Engagement,
Canadian Council of Science and Technology Advisors, 2003*

Barriers to science communication in the UK

- 64% claim the need to spend more time on research
- 20% agreed that scientists who engage are less well regarded by other scientists
- 3% cited peer pressure as a barrier

Source: Royal Society Consultative Group, 2006

Public engagement involves learned skills

- We need to build them into our training programs!

We need to train researchers to engage with the public!

- Talk to the press about their research results
- Reach out to their neighbors and community groups
- We need to tell our students it's good to do!!

AAAS is starting training activities

- Online communication training
- Regional training workshops for scientists and engineers
 - Partnership with NSF

This includes how to behave in this dialogue

- Scientists must stick to the facts
 - Do not express your personal values
- Do not go outside your specific area of expertise
- Find easily understood ways to connote your meaning
 - No jargon, no nuances
- Never violate the data
- Listen!

A healthy science-society relationship is
critical both for science and for society!

We Must Restore Equilibrium to the Science-Society Relationship

