Communicating Science: Tools for Scientists and Engineers

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Why do scientists participate in communication & outreach activities?

• Public funding
• Fulfill “broader impacts” or other outreach funding requirement
• Skills relevant for other areas of your career – funding, policymakers, etc.
• Better awareness of public perceptions
• Find ways to make science of interest and relevant to people’s everyday lives
• Brings personal meaning to your work
• AAAS skills development program for scientists interested in public outreach and science communication

• Workshops and Web site

• Launched February 2008 at AAAS Annual Meeting
www.aaas.org/communicatingscience
Making the case for communication

- Why is communicating – to the public, media, policymakers – often difficult for scientists?

- What are the barriers?

- Why is it important?
Climate “jargon”

- Anthropogenic v. human-caused
- Spatial v. space / Temporal v. time
- Radiation v. energy
- Positive trend v. upward trend
- Enhance v. increase
- Uncertainty v. range
- Theory v. understanding
Different Styles of Communication

Scientist
- Background
- Supporting Details
- Results/Conclusions

Public
- Bottom-line
- So What?
- Supporting Details
Today’s workshop

- Defining your audience
- Developing messages about your research
- Media interviews – types and examples
- Interview practice
- Other ways to communicate to public
- Tools and resources
Defining your audience

• Think about who you are talking to
• It’s important to consider your audience’s interests, not just your own
• Helps you better position your messages to reach them
Who’s “the general public?”

- Demographics
- Geographic location
- Level of scientific understanding
- Experiences with science, or your topic:
  - As student
  - As professional
  - As public official or policy-maker
  - Positive/negative
  - Recent/long ago
Scientific v. public understanding of climate change

- Global warming is a very serious or somewhat serious problem.
  - Scientists: 92%  - Public: 70%

- Warming is due to human activity.
  - Scientists: 84%  - Public: 49%

Pew Research Center and AAAS, July 2009

“….No one has any obligation to listen to you. So what you say has to be relevant…what has to come across is what the new research or finding would mean to the average person.”

Mariette DiChristina, Acting Editor-in-Chief, Scientific American
Developing a message helps you

- Define the agenda
- Remember what you want to say
- Get back to your point
- Handle questions
- Speak briefly, or at length
- Speak without notes
- Speak without jargon
Messages help your audience

- Remember your message
- Pay attention
- See parallels to their own lives
- Connect with you, trust you
Good messages are

• Miniature
• Memorable
• Meaningful
Miniature

- 3 key points help you organize
- Works as a short message
- Can be expanded for longer communications/talks
- Serves as an outline for you and your audience
What can 3 points describe?

- 3 focuses of your research
- 3 steps of your process
- 3 research questions you pursued
- 3 results you found
- 3 possible applications
- Get ready to write yours in a few minutes!
Memorable

- Gives cues to you and your audience
- Helps you remember
- Helps audience remember
- Alliteration, similar sounds, analogies, popular culture references
Meaningful

- Message should mean something to you and your audience
- Audience targeting
- Sometimes meaning lies in the process, adventure, experience
- What did it mean to you, as a person?
- Chance to convey passion, frustrations, excitement for your work
“I asked one scientist about why one alternative energy source is better than another, and he launched back into the history of civilization and how cavemen used fire. When we got to the discovery of oil in Pennsylvania, I stopped him.”

Ira Flatow, Host, NPR’s Talk of the Nation: Science Friday
Write your 3 key points
“You do not really understand something until you can explain it to your grandmother.”

*Albert Einstein*
Scientist volunteer?
Media interview types

- Newspaper
- Magazine
- TV – recorded or live
- Radio – recorded or live
- Online publication
- Podcast
- Skype
- Blog
- “Source”
Sample Interviews and Critique

- How well does the scientist get his/her message across?

- What techniques does he/she use to communicate clearly?

- Suggestions for improvement?
Interview:

John Holdren on Late Show with David Letterman
- April 17, 2008

• How well does the scientist get his/her message across?

• What techniques does he/she use to communicate clearly?

• Suggestions for improvement?
News Story:

White House report on climate change,
NBC News
- June 16, 2009

http://www.msnbc.msn.com/id/21134540/vp/31394804#31394804
• How well does the scientist get his/her message across?

• What techniques does he/she use to communicate clearly?

• Suggestions for improvement?
News Story:

Vacuuming the Reef, New York Times
- February 2009

• How well does the scientist get his/her message across?

• What techniques does he/she use to communicate clearly?

• Suggestions for improvement?
Break
Interview practice

- Organize yourselves into groups of 3.
- Choose someone with whose work you are less familiar.
- I’ll provide you with questions. Please give each other helpful critique on your answers.
Ask each other:

- What is the most interesting thing you discovered in a recent project?
- What does this finding mean to the average person?
- What are the next steps for this research?
How did you do?

- Jargon
- Miniature
- Memorable
- Meaningful
Enhancing your message

- Gestures
- Visual examples
- Language
- How to adjust for the camera
On-camera practice

At each table, choose:

• 1 scientist to videotape, 1 camera operator
• Work on the message as a group
• Answer “Who are you and what are you working on?” in 2 min. or less
• Turn off camera and bring to front
• When finished, read EOS article on communicating climate change
Opportunities to communicate science

- Your website, blogs, Twitter, YouTube
- Share images and video online
- Partner with other educational institutions
- Science cafes and community speaking
- Speaker bureaus
- Get to know reporters who cover your topic – local, national, international
Resources

- Handout packet
- **Communicating Science website:** [www.aaas.org/communicatingscience](http://www.aaas.org/communicatingscience)
- Public affairs and science writers at LDEO and Columbia University
Thank you!

Please fill out the survey before joining us for lunch.