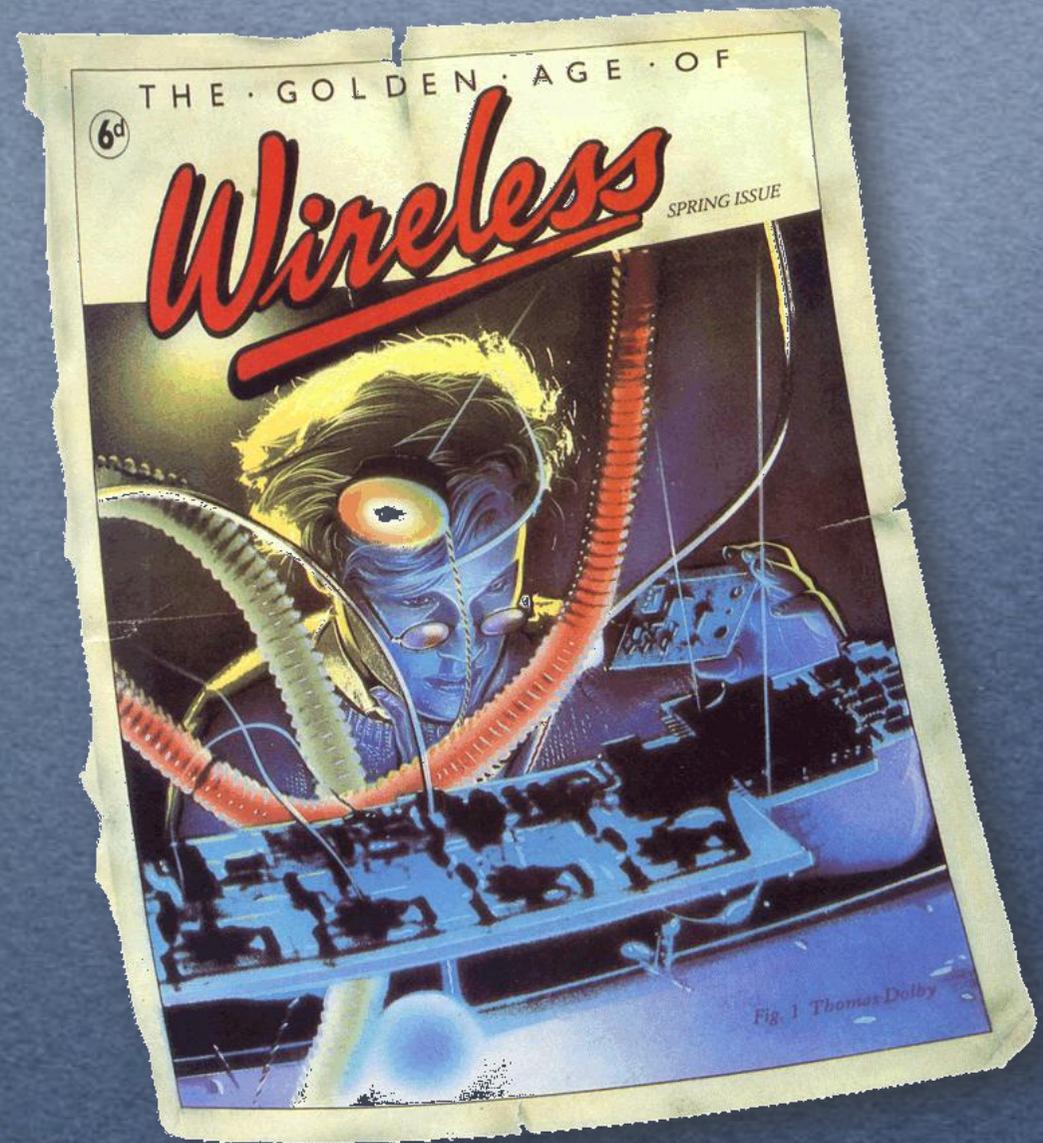


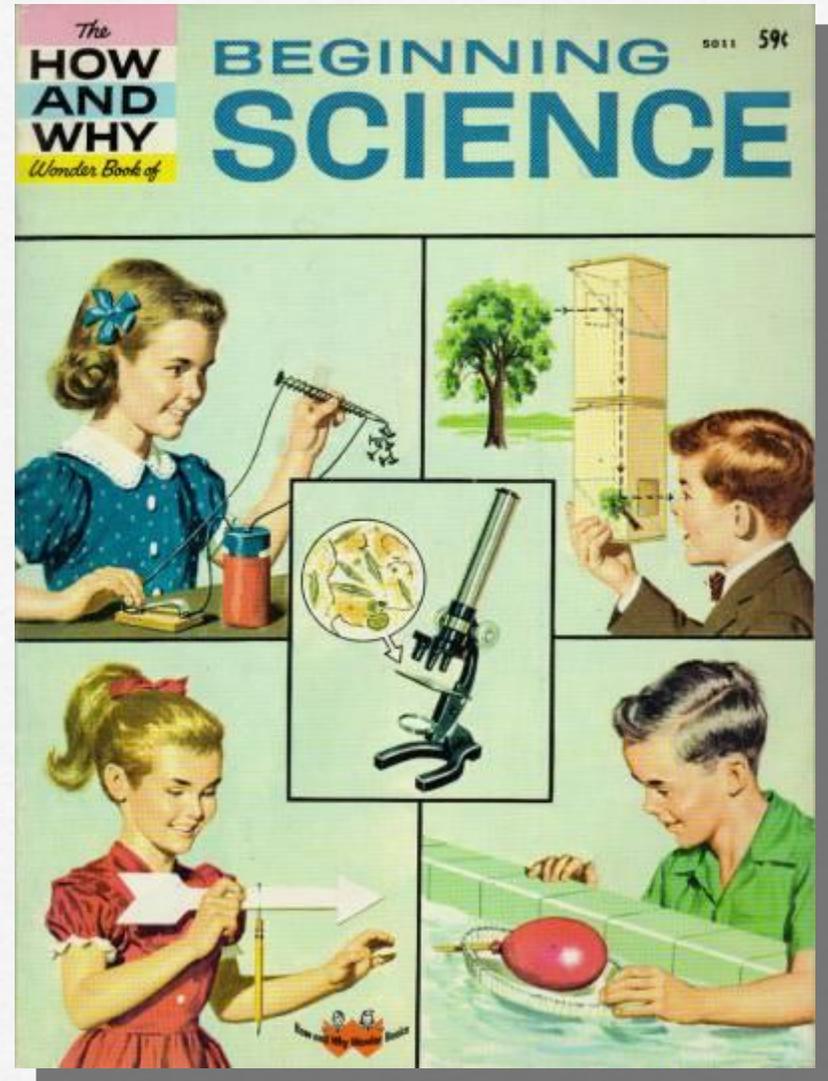
# Blinded by Science!

Communicating complex  
scientific information during  
a time of crisis



# What will we talk about?

- Us and Them!
- Clash of the Titans  
(Release the Kraken!!)
- What we have here is...a failure to ko-mune-eee-kate
- How to train your scientist

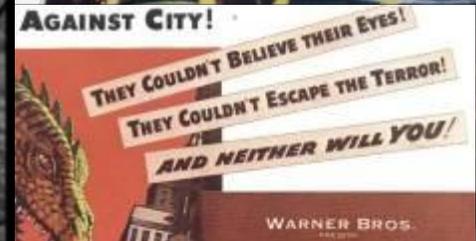


# Us and Them

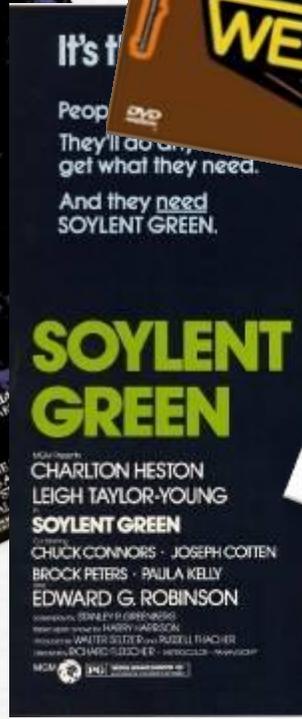
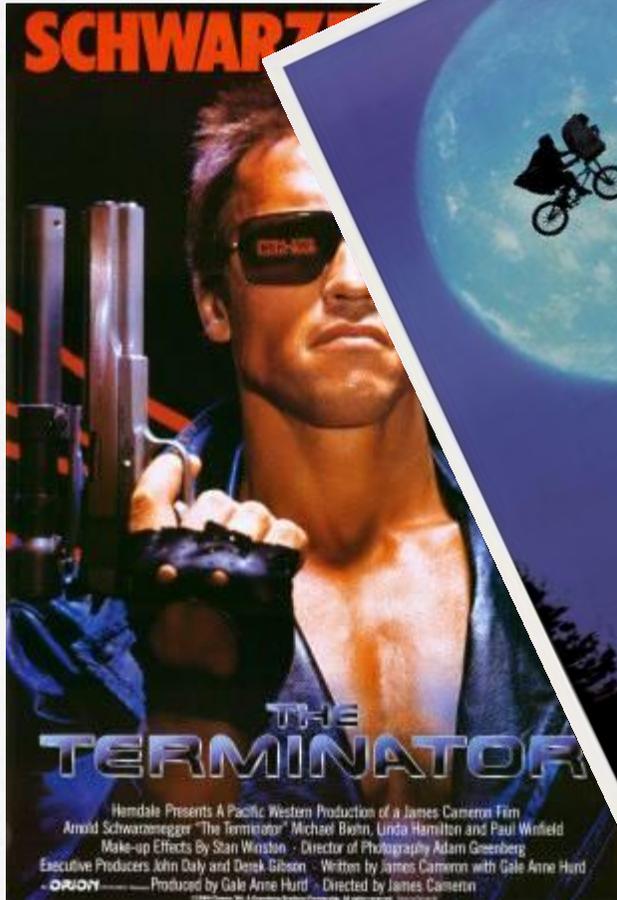
How does the public view science – and how do scientists view the public



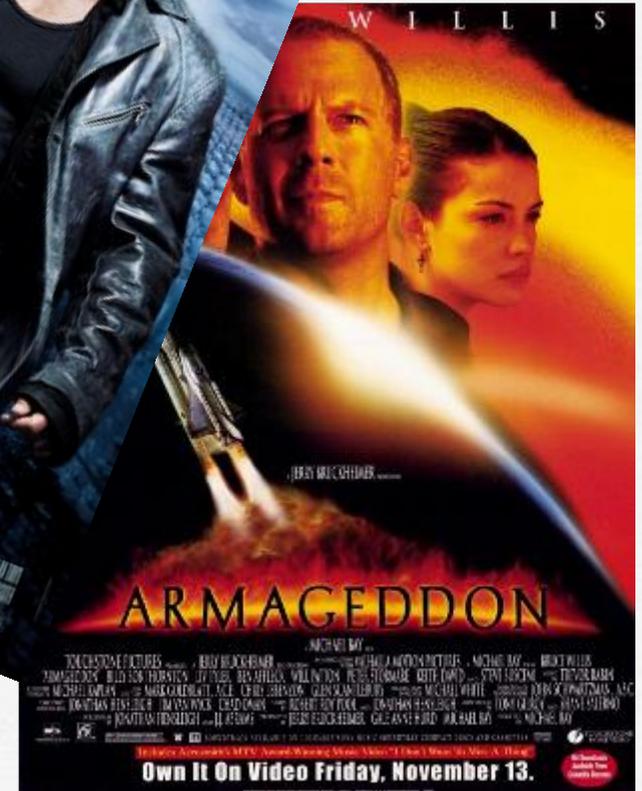
# Pop Culture



# Pop Culture



# Pop Culture



# Pop Culture - the Mad Scientist

- Victor Frankenstein
- Rotwang
- Dr. Strangelove
- Eldon Tyrell
- Dr. Walter Bishop
- Dr. Horrible



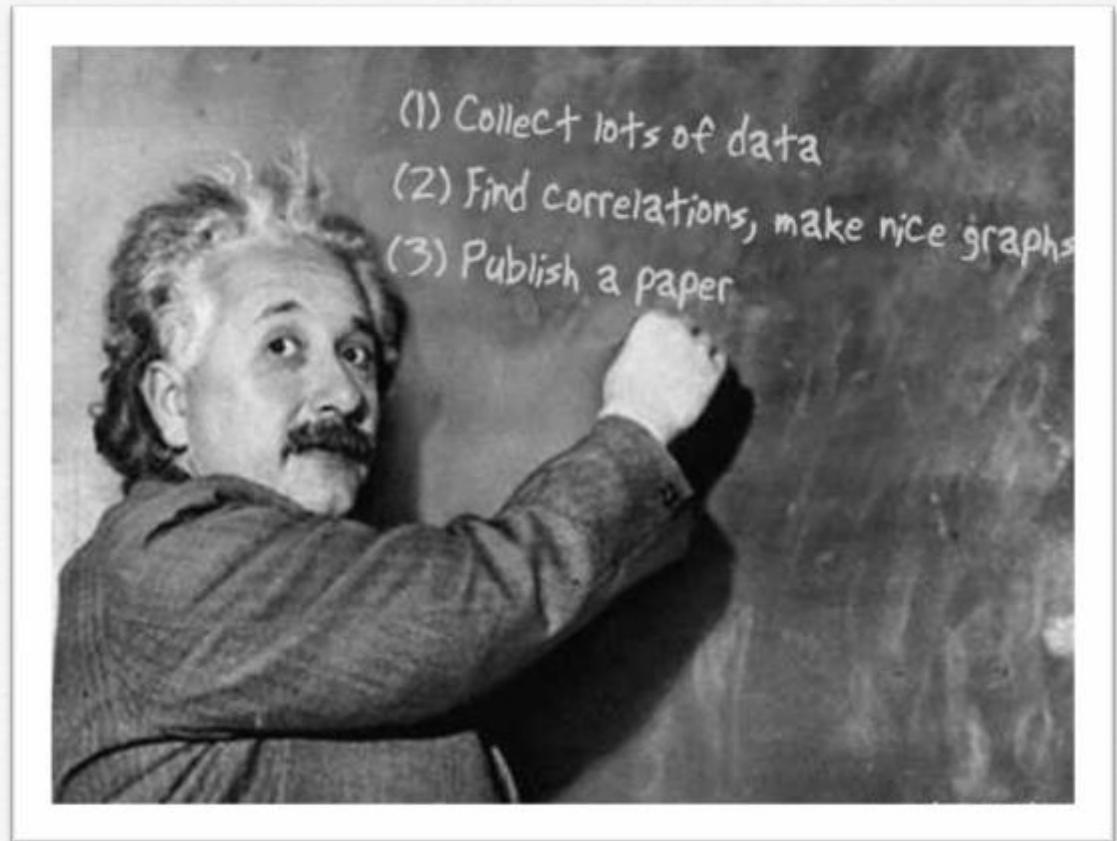
# Most people like scientists...

- 84% think science has a positive effect on society
- 70% think scientists contribute a lot to society's well being



# Scientific Authority & Trust

- People generally trust scientists - unless perceived as part of interest group or an advocate
- Trust is default - unless dismantled by counter-expertise



Unfortunately  
the love isn't  
necessarily  
shared...



# Us and Them...

Most scientists think that the public is ignorant and that the news media is irresponsible



# Scientists are not happy...

- 49% fault public for unrealistic expectations about speed of scientific achievements
- 85% see the public's lack of scientific knowledge as a major problem



**They may have  
a point...**



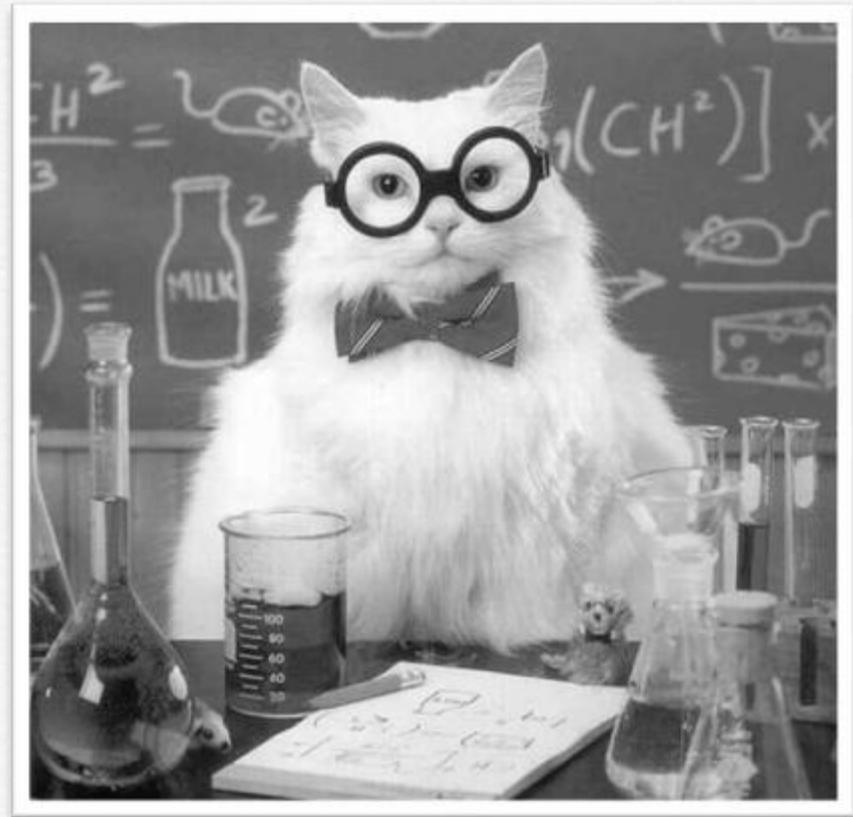
# What the public doesn't know...

- 38% don't know the father's gene decides the sex of baby
- 55% can't explain why you see lightning before you hear thunder
- 51% don't know lasers work by focusing light instead of sound



# What the public doesn't know...

- 47% don't know that electrons are smaller than atoms
- 28% don't know that the Earth revolves around the Sun
- 49% don't know that it takes the Earth one year to revolve around the Sun



# What the public knows...

- 33% think astrology is "science"
- 19% with grad/professional degrees think astrology is "science"



"The trouble with the world is not that people know too little, it's that they know so many things that just aren't so."

-Mark Twain

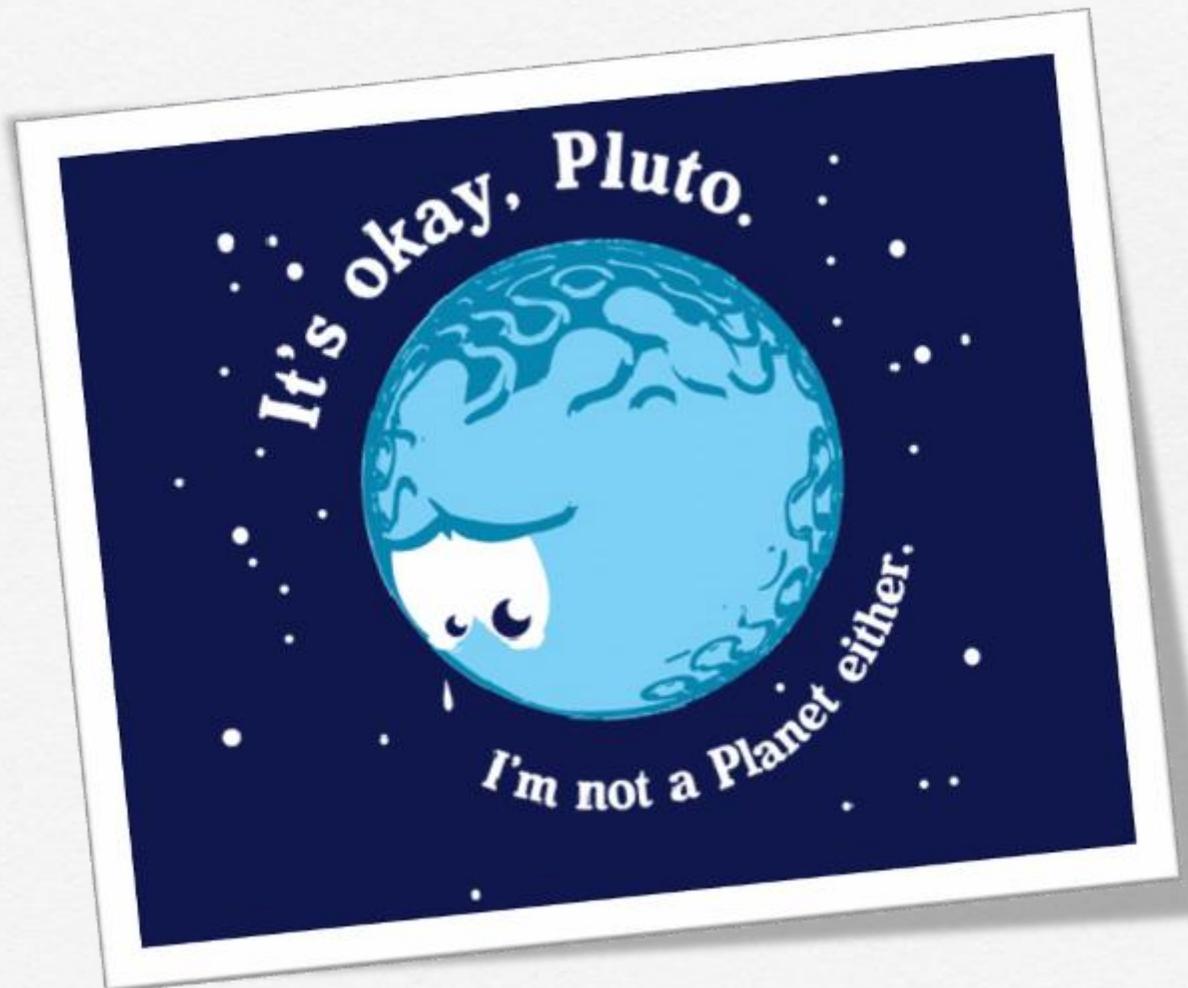


# Getting "Plutoed"

**plutoed** [ploo-towed],  
verb

1. to be demoted  
without due cause or  
reason

2. to demean another  
to make them feel as  
though they don't  
amount to anything. As  
the scientists did to  
Pluto.



# Science and the News Media



# Scientists and the News Media

- 76% say major problem for science is news reports don't distinguish between solid and sloppy findings
- 48% say news media oversimplification is a major problem



# The News Media and Science

- 2008 CNN shut down Science, Space, Tech and Environment unit
- 2009 The Boston Globe shut down Science section
- In 5 hours of cable news you'll get 1 minute of science and tech news



# Cultural Clash of the Titans

Scientists and reporters work in two very different and distinct cultures

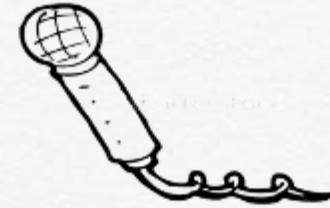
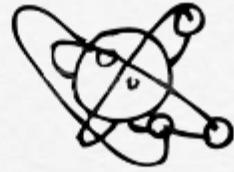
These cultures often clash making communication difficult

**RELEASE THE KRAKEN!**



**(actual size may vary)**

# Let's compare



Slow and methodical

Need for speed

Detail and accuracy

Accurate-but "big picture"

Specialists

Generalists

Inclusive

Narrow

Detached, factual

Emotional

# Working With Media - Benefits

- Balanced / more informed stories
- Reach more people
  - New research connections
  - New funding sources
  - You may inspire future scientists!
- Enhance public image
- Improve sponsor relations



# Our Audience - The Public

It is easy to forget who we are trying to reach when talking to a reporter!

- Peers
- Community members
- Co-workers
- Friends and family
- Sponsors
- Other stakeholders



# Talk to Me

Keys to clearly  
communicating science and  
technology



# Communicating science



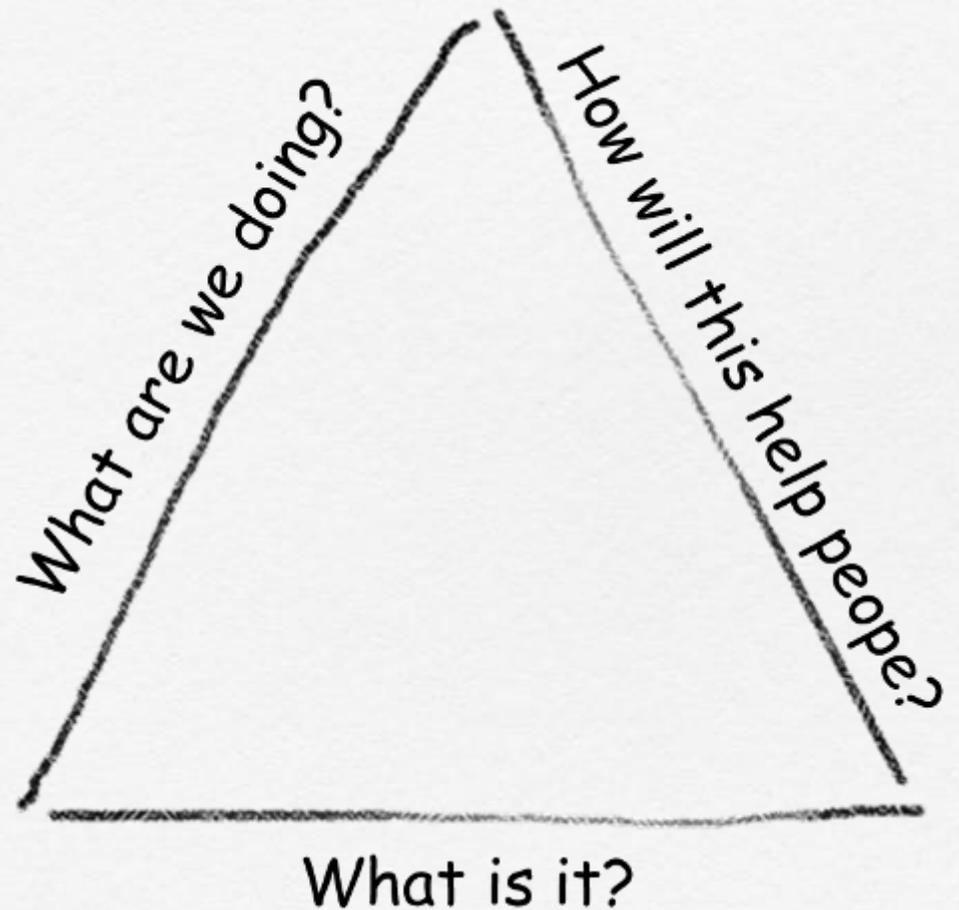
- Tell a "story"
- Don't make promises that can't be delivered - avoid the "hype" cycle
- "Frame" the issue

# Framing Information

## Message Triangle

Can be useful in developing a "frame":

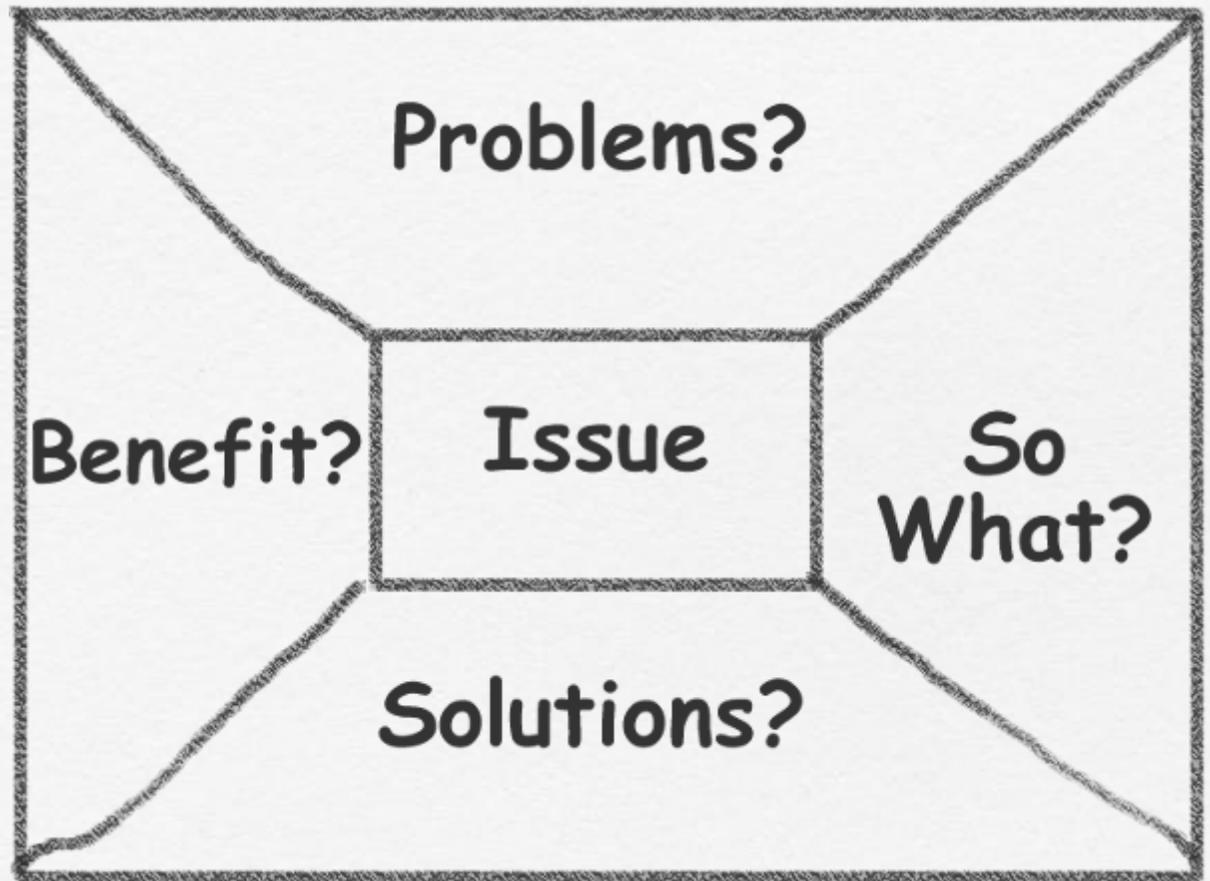
- What is it?
- What are we doing?
- How will this help people?



# Framing Information

## Message Box

- Explain what you do
- Prepare for interviews
- Refine presentation
- Polish abstract



# Scary Words!

Words are rife with connotation - and can be very powerful in explaining, persuading, enraging, or scaring the heck out of us!



# Framing - Loaded Language

Wording that attempts to influence the listener or reader by appealing to emotion.

Particularly persuasive because it preys on human propensity for acting immediately based upon an emotional response



# Loaded Language - example

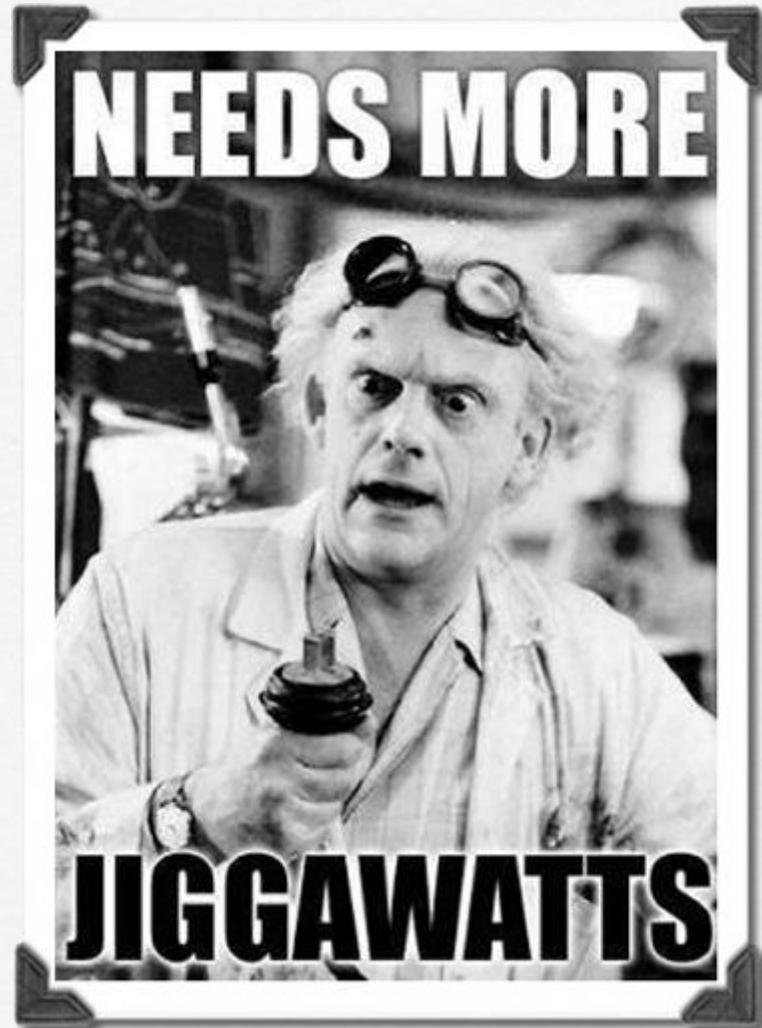
When Kraft Foods invented processed cheese, traditional cheese makers wanted the new cheese to be labeled "embalmed cheese".

The U.S. government considered it disparaging and labeled it "process cheese"



# Communicating science

- Avoid jargon
- Make technical details clear
- Keep it simple - think 8<sup>th</sup> grade level
- Everyday or simple comparisons



# Demonstrations are good!

- Gives good visuals
- Makes the story interesting to the reporter
- Can make otherwise dry subject fun!



# Five things to remember...

- Help people understand
- Help the reporter understand
- Help your sponsors
- Help your organization build its reputation
- Help yourself



# During a crisis

- A crisis or emergency may bring scientific endeavor to spotlight
- Crisis may heighten concern or fear
- Long term affect on work or public opinion



# A quick bit of clarification...

- Risk
- Crisis
- Emergency



# Why we do it...

Effective risk/crisis communication grants many long- and short- term benefits, including:

- Getting important information to people when they need it
- Creating and/or enhancing organization authority and credibility
- Enhancing control over information (framing)
- Providing damage control for agency image
- Calming public fear and anger

# Be afraid...be very afraid

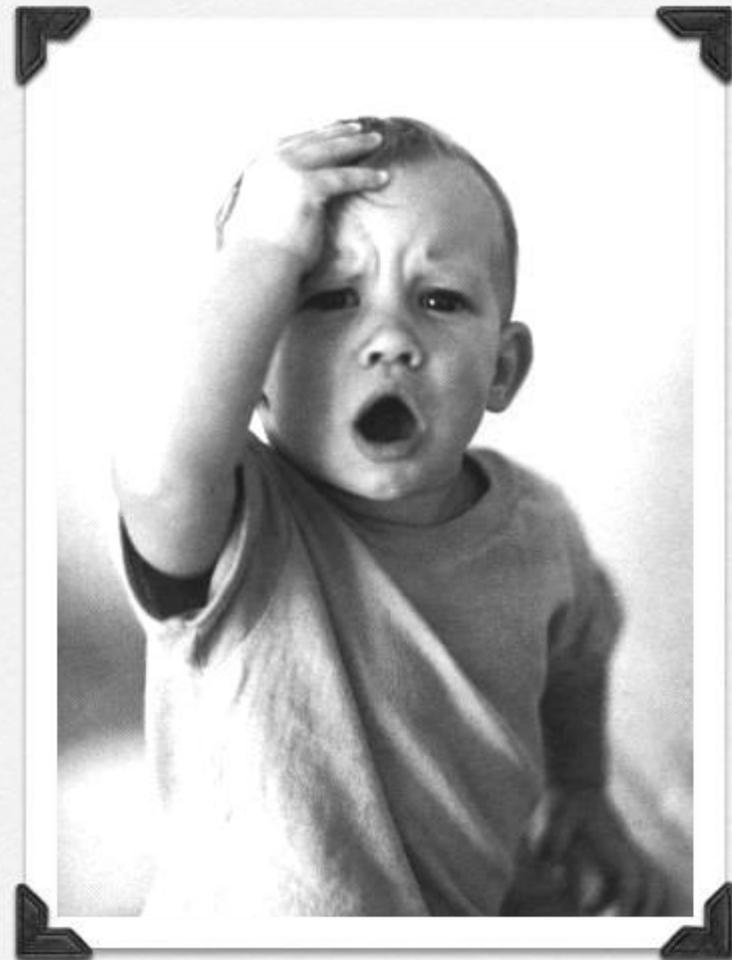
The human brain is hardwired for fear

- Fear is contagious
- We pay attention if others are paying attention too
- Control diminishes fear
- Credible experts (trustworthy) diminish fear
- Natural or human created?
- Uncertainty = fear



# Keep it simple

- During a time of crisis people will be under stress
- While under stress our ability to process and understand information is diminished
- Simple, direct messages, directions, actions to take
- Graphics help!

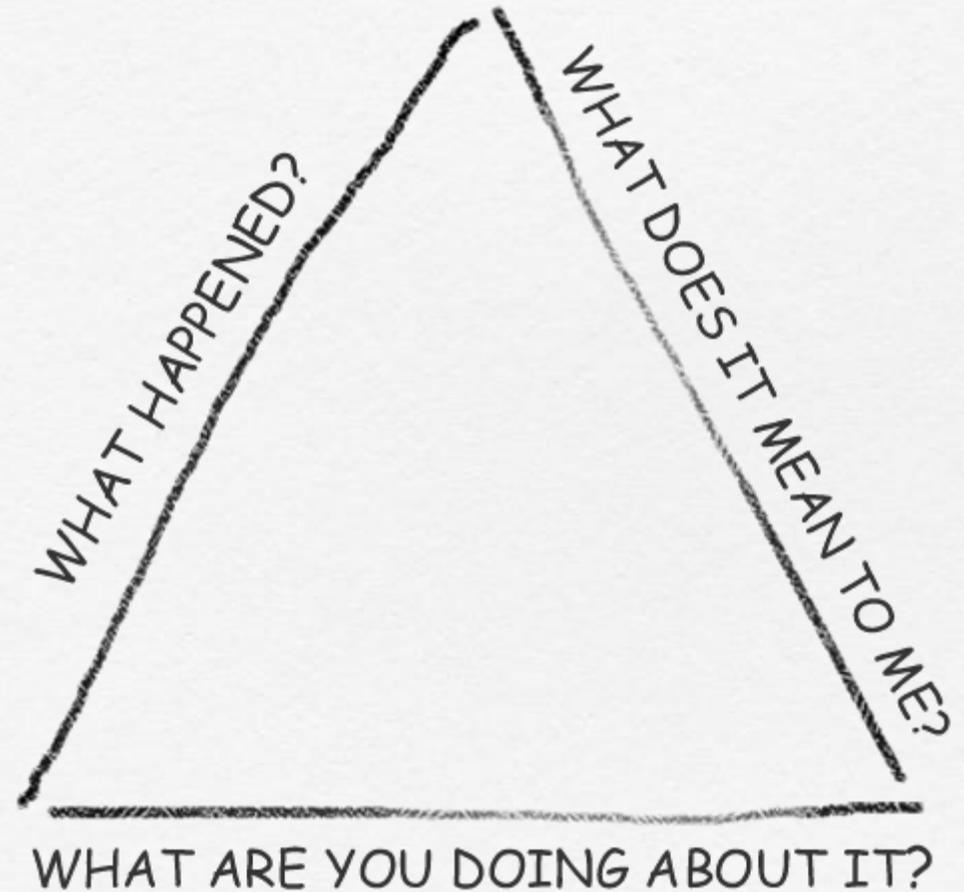


# What The Public Wants To Know

## Another Message Triangle

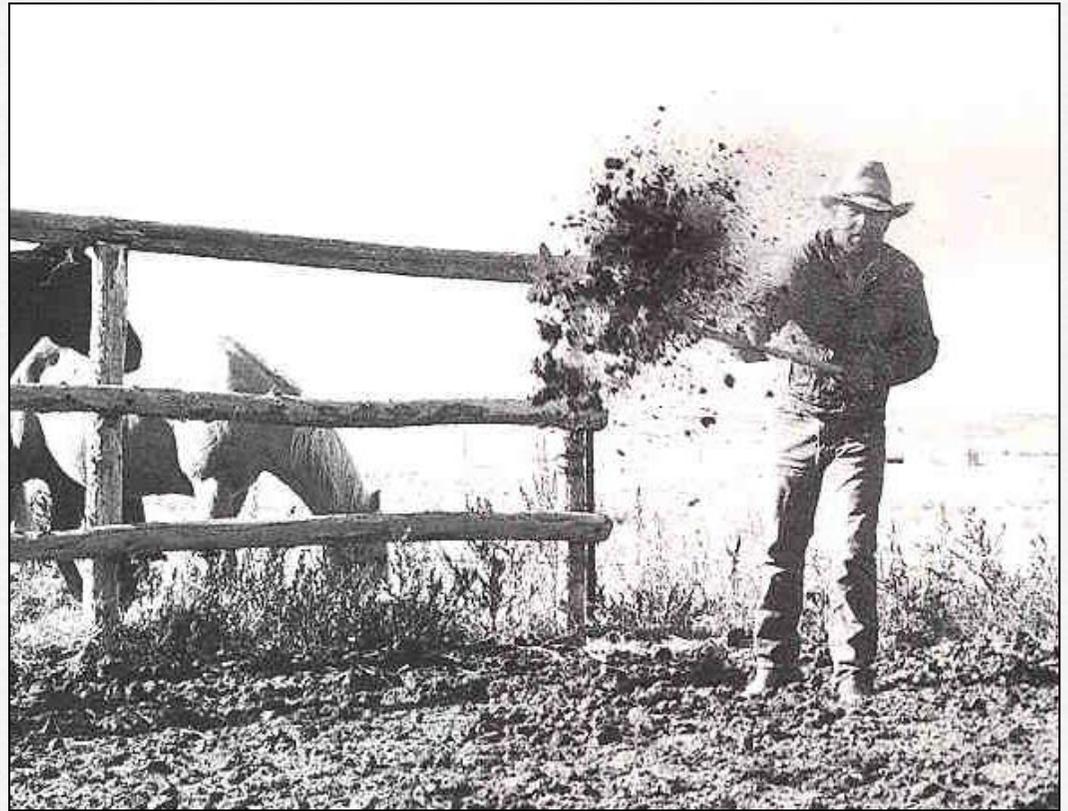
People just want to know three things:

- What happened? (or might happen)
- What does it mean to me?
- What are you doing about it?



# Timing is everything!

How your agency/profession handles the first hours of any crisis will often define its reputation for the duration of the event and perhaps long after

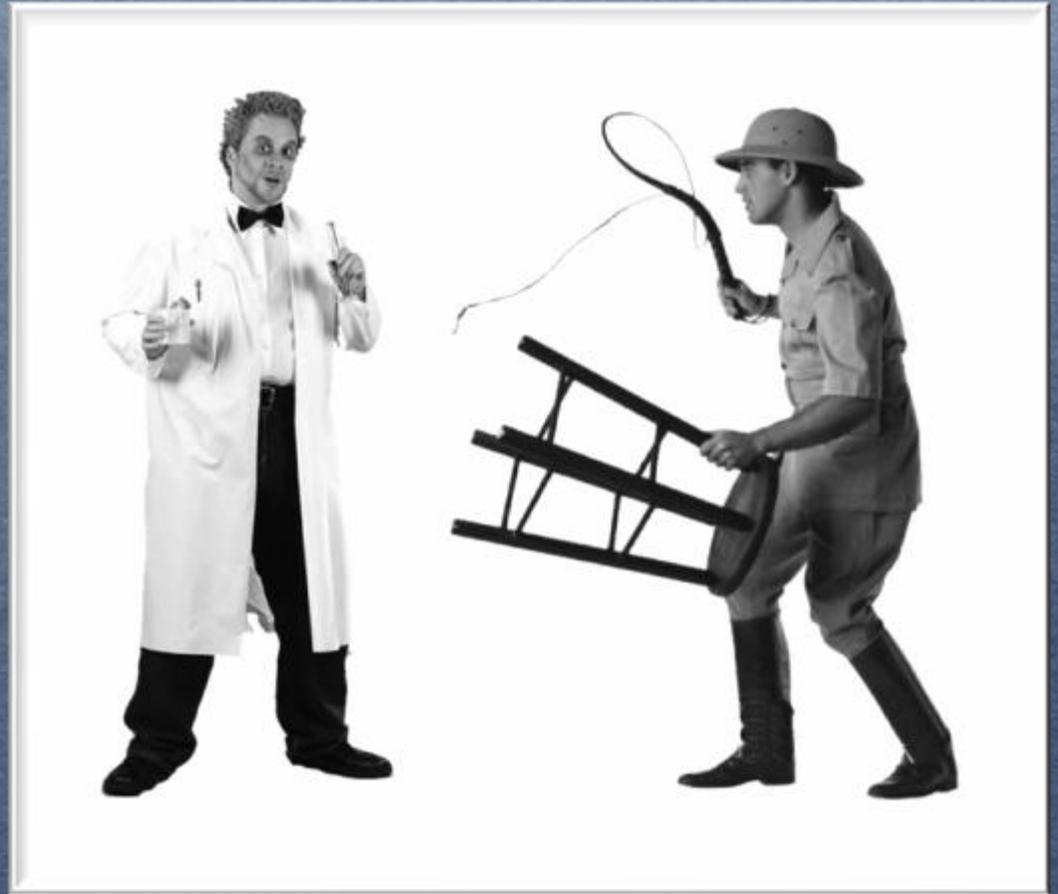


# Crisis Information tips

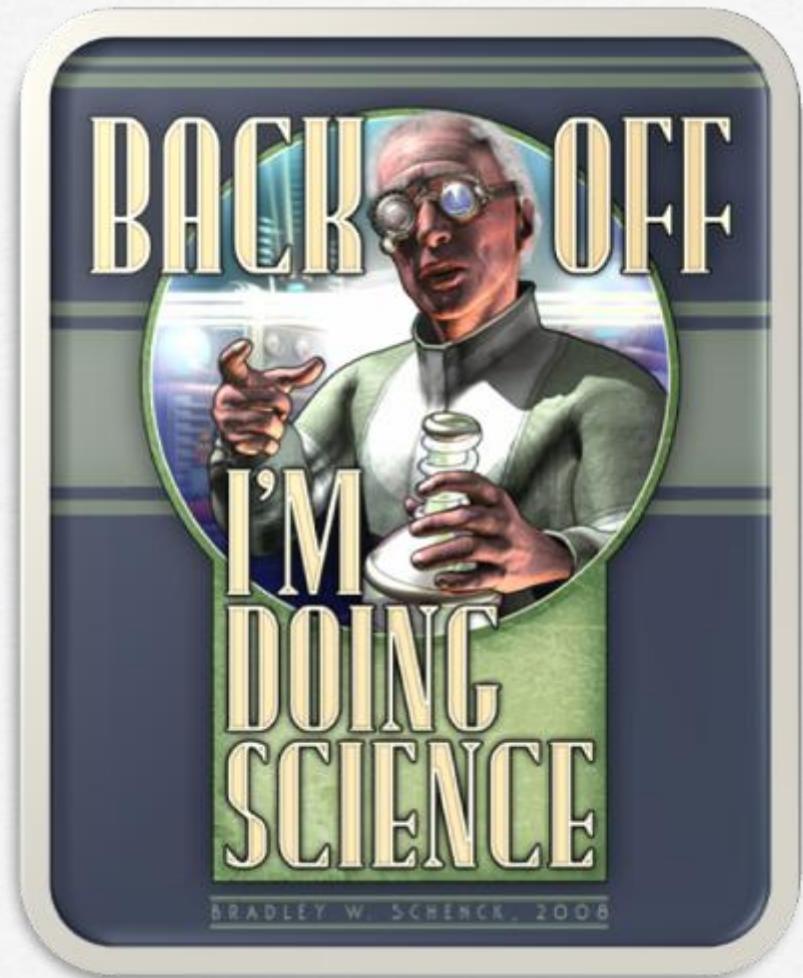
- Avoid jargon
- Be positive yet realistic
- Clear, concise
- Be first with information
- Bad news is o-k
- Make technical details clear - simple comparisons
- Never lie



# How to train your scientist



"You mean, I have  
to dumb this down  
for Ma and Pa  
Kettle?"



# The Scientist Communicator

- Want to talk?
- Approved?
- Right person for the subject?
- Articulate?
- Available?



# Preparing for Communicating

- Work with communication staff
- Know what the issue/story is about, who is doing it, any possible pitfalls
- Understand interview basics
- Work to frame the information and tell a story

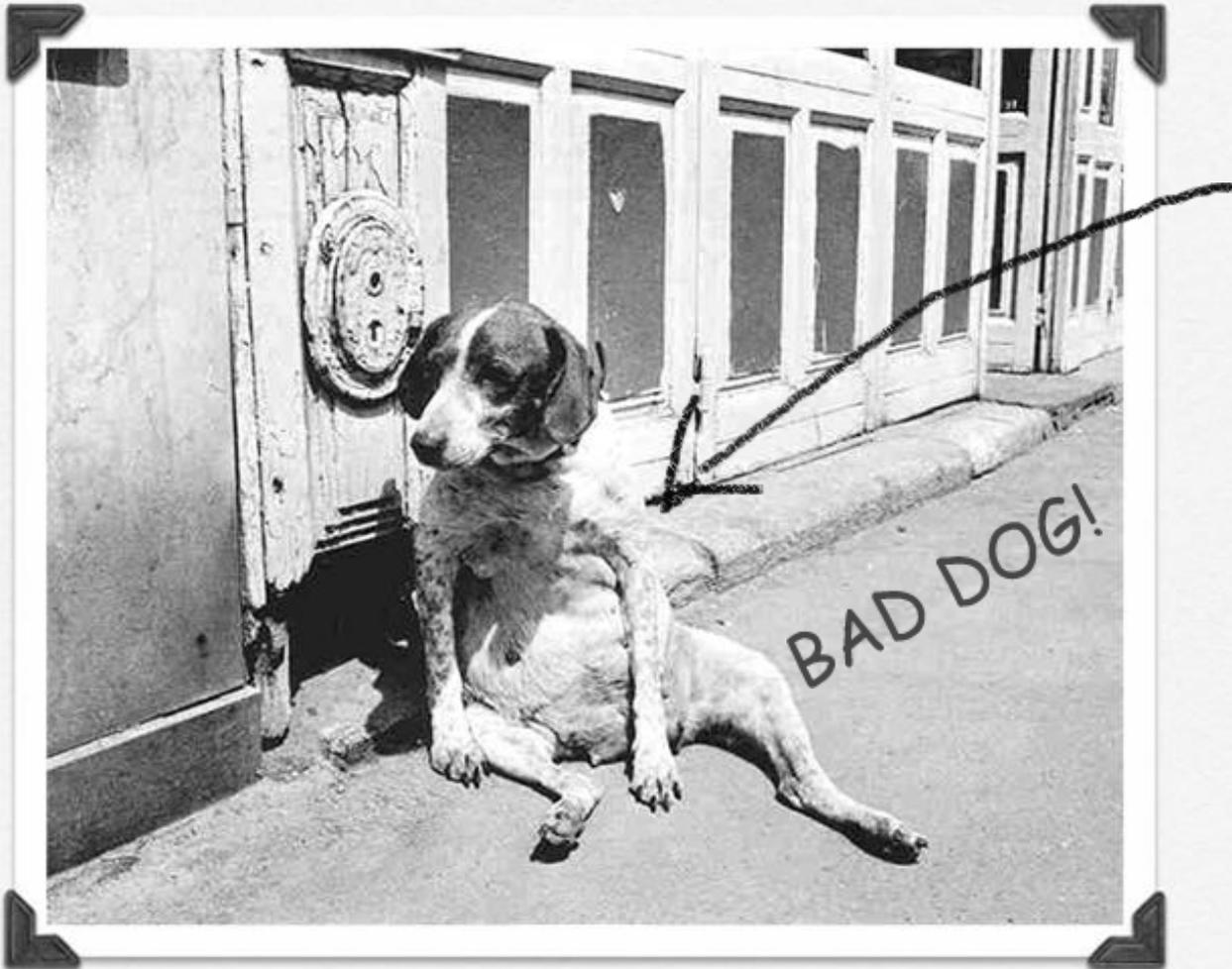


# What not to wear...

Between 70 and 90 percent of communication is non-verbal. How we appear can affect how we are perceived by the public



# Body Language:



Don't slouch

- Posture
- Hands
- Feet
- Eyes

# What to say when you can't say anything

There are circumstances where information must be withheld

- Tell them why you can't talk about it
- Explain process
- Get back to what you can talk about



# Benefits

- More exposure for your agency
- Reach more people
  - New research connections
  - New funding sources
  - You may inspire future scientists!
- Enhance public image
- Improve sponsor relations



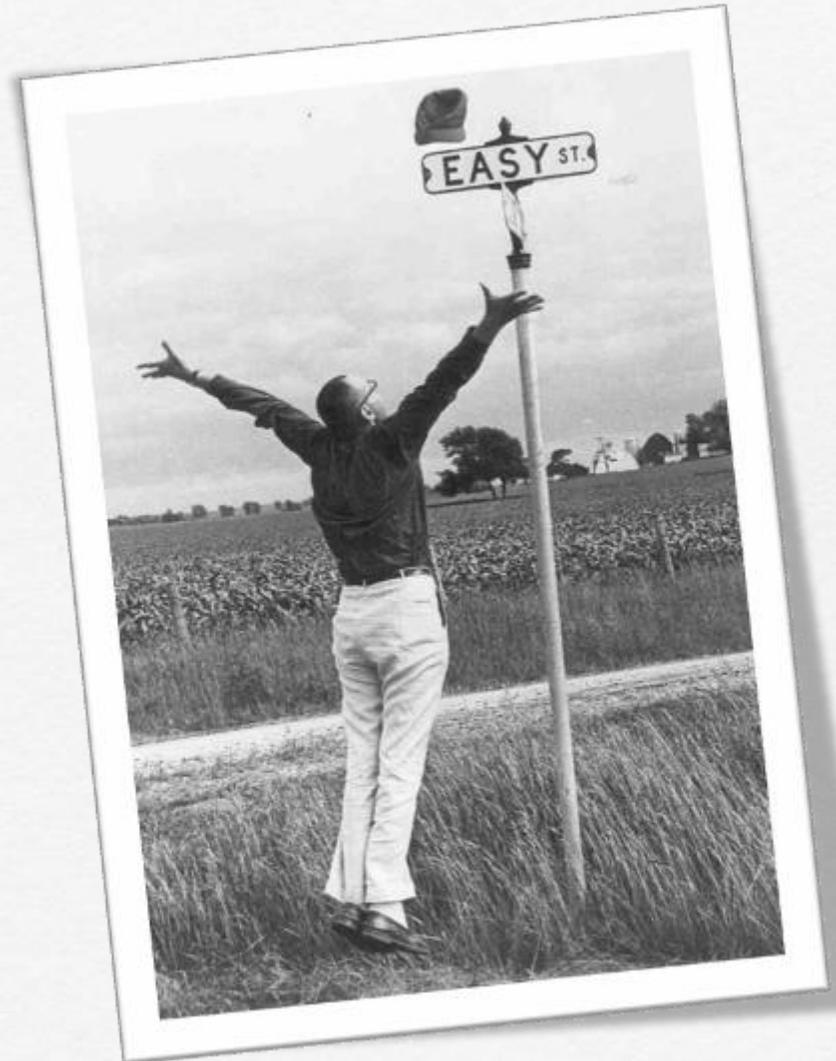
# If you want to speak up...

- Let your communication office know
- Know your organization's policy
- Hone your information and presentation
- Seek out opportunities
- Practice

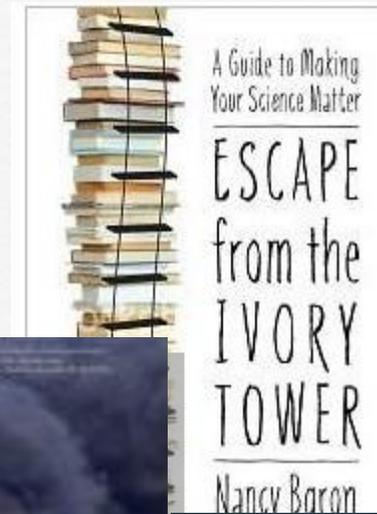
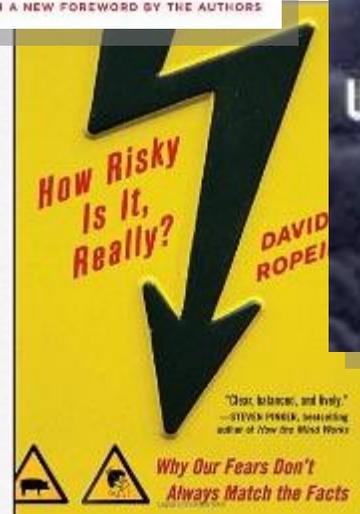
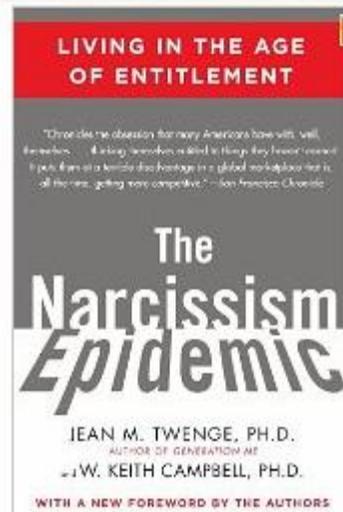
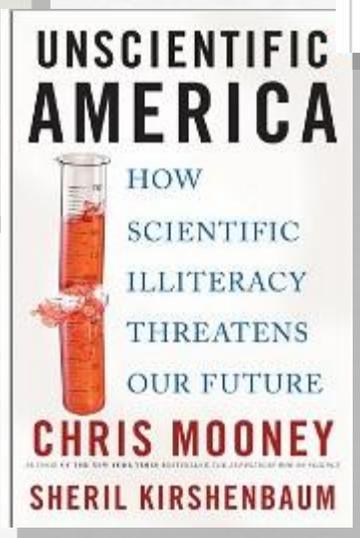
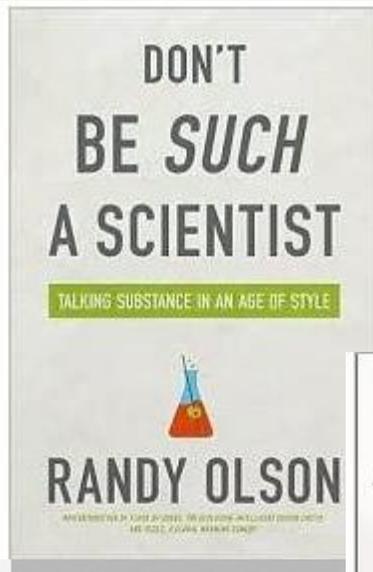


# Bottom Line-

- People like and trust scientists
- Scientists need to work on understanding people
- Science and the News Media are very different cultures
- Understand how to communicate science effectively both day to day and during a crisis
- Be a communicator - if you don't tell the story someone else will



# For a bit more information...



QUESTIONS?

