



Climate Change: The Move to Action (AOSS 605 (480) // NRE 501.076)

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LECTURE NUMBER 9
February 8, 2007



Class News

- New experimental web site
 - <http://climateknowledge.org/class/aoss605/tiki-index.php>



Speakers subject to scheduling

- Maria Carmen Lemos (3/8)
- Andy Hoffman (3/20)
- Barry Rabe (4/3)
- Nina Mendelson
- Justin Felt (2/20)
- Meredith Fowlie
- Marie O'Neill (3/15)
- Phil Rasch (3/22)
- Sabrina McCormick (3/13)
- Henry Pollack (#/#)
- Rosina Bierbaum (3/29)
- Energy (Symposium)
- Adaptation



Ideas and Things

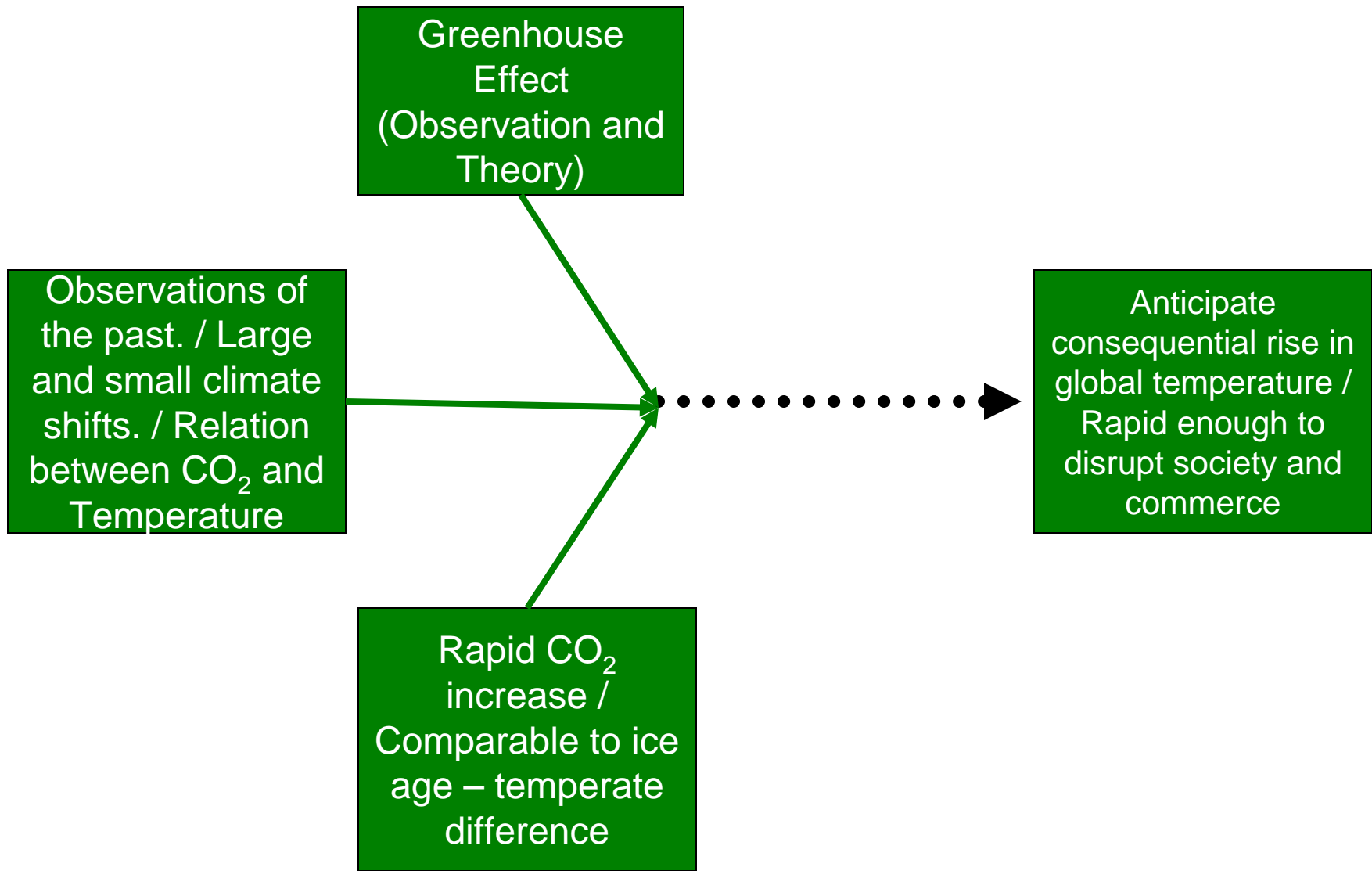
-
- **NEWS:** Anyone hear or read any news they want to discuss.



How much more science?

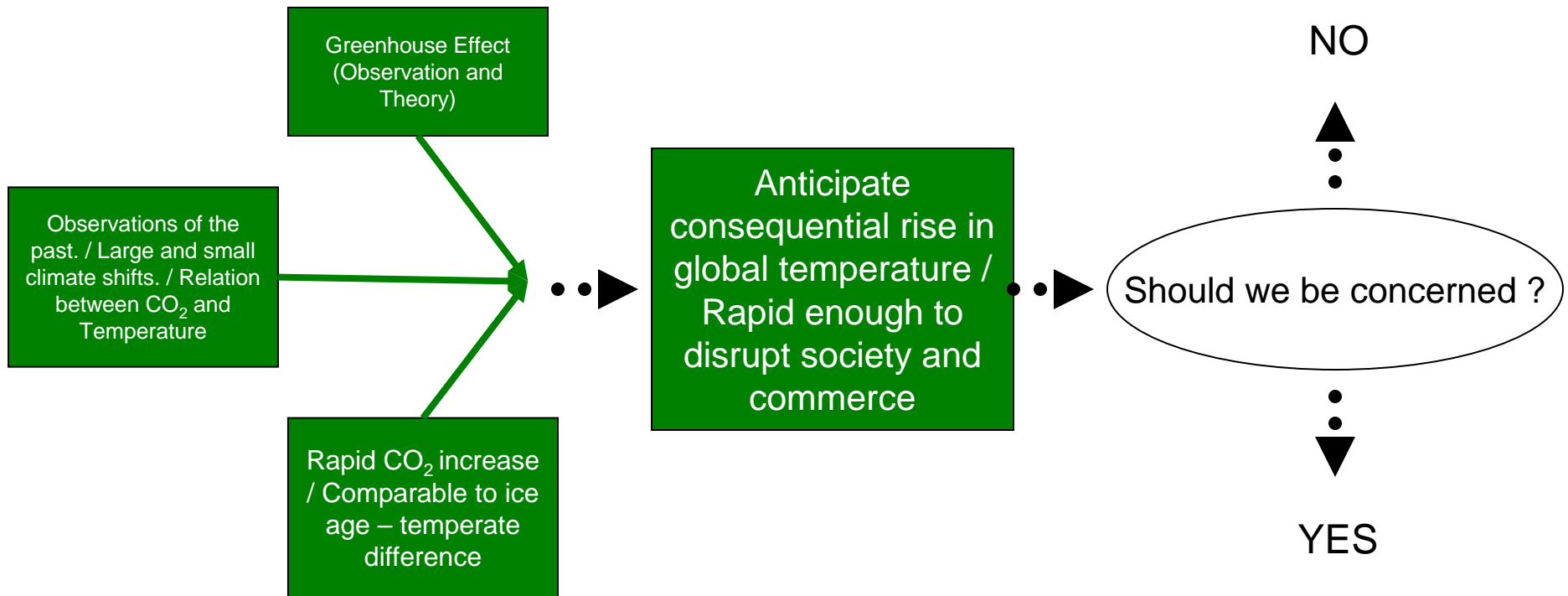


What do we know with significant certainty?



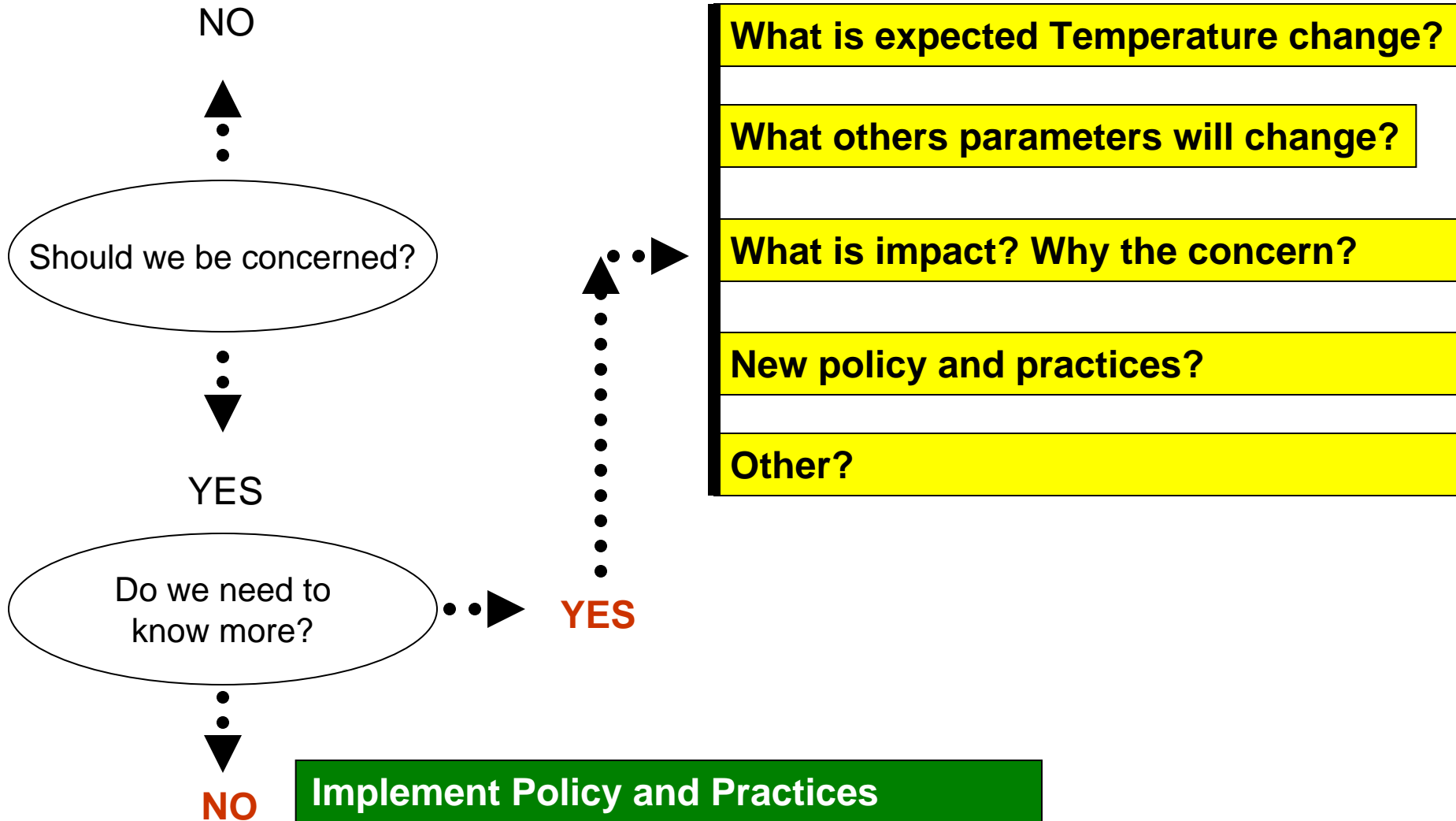


Is this simply curious or important?



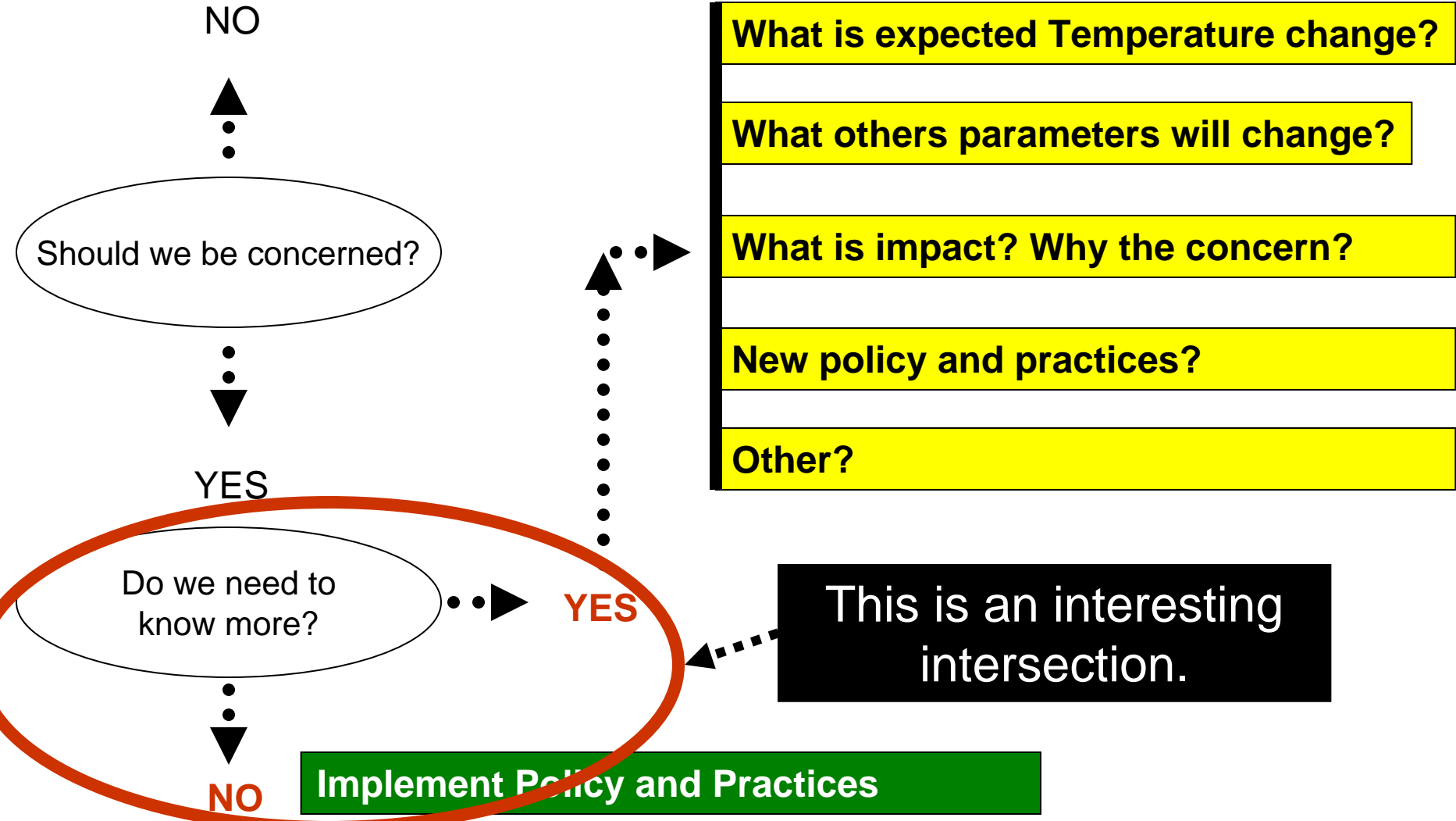


Rapid CO₂ increase /Comparable to ice age – temperate difference





Rapid CO₂ increase /Comparable to ice age – temperate difference





What more to hear about science?

Where is our knowledge lacking?



(this is but one example)

Aerosols: Particles in the atmosphere.

- Water droplets.
 - “Pure” water
 - Sulfuric acid
 - Nitric acid
 - Smog
 - ...
- Ice
- Dust
- Soot
- Salt
- Organic hazes

Other “science” we need to cover:

- Aerosols
- Sea-level rise
- Extreme weather
- Gulf-stream, The North Atlantic
- Predictions
- Climate sensitivity
- Regional information
- Data, Data quality
- Attribution



Projects



Projects: Goals and Context

- Students learn to work independently, in their field, but often thrown in teams
- How to define a tractable problem // reduce it to something you can do
- Check, How to Check
- How to separate the essence of a problem from the details
- What do we know, what do we believe, what are we attached to?
- Communication
 - Complexity, sophistication, audience, context, naivety, dumbing down
 - How to explain what you are doing. Draw a picture
- You are suddenly the “expert.”
- What do the other participants really need – not what you think they need.
- Balance, optimization



Projects

- What I really want to do ...
 - How do we move this problem beyond polarized positions on details.
 - Move it from climate-policy, climate-business, climate-public health, climate-agriculture, climate-ecosystems, climate-...(interest advocacy groups)
 - to climate-business-policy-public health - ecosystems
 - How do we bring several communities together for the development of foundational solutions.
 - Systems, systems, systems

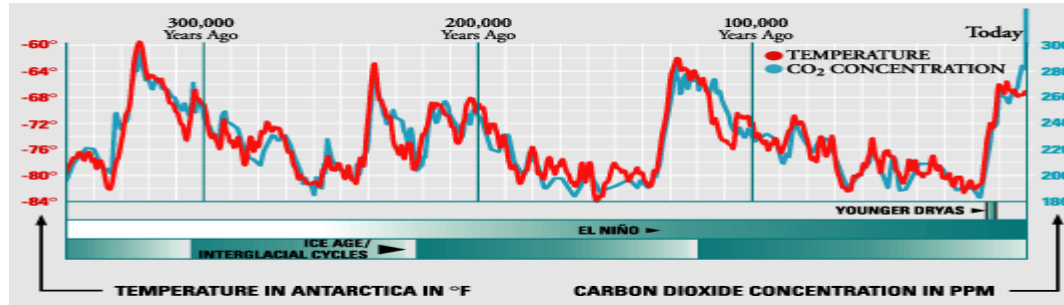


Projects

- Product?
 - Try to publish



Deconstructing how to think about projects.



1) Describe what is in the picture. What are the facts? Make an inventory of what is known. Make an inventory of what is not known.

2) Analysis: How credible is the information? What is the integrity of the reporting? How complete is the picture? Is there derived knowledge?

...

4) What to do?
Consequences?
Options?

3) Does it matter?
Impact.
Consequences.
Why?



Revisiting Project Description: (Example of process, deconstruction, ...)

Climate Change: Debating America's Policy Options
David Victor (2004)
Council on Foreign Relations, New York, NY
166 pages.



Last year's projects

- <http://aoss.engin.umich.edu/class/aoss605/>



Possible Projects

- Texas as case study. Climate science is weak, but Austin strong statement, renewable portfolio, Houston and coast, economic perspective (risk), motivators for different people, voluntary, Clean Texas, Energy policy (not climate, but competitiveness, coal?), grid, (South and West, Water Resources, sea-level rise and fossil fuel infrastructure, (heat waves, catastrophic, vector borne,



Possible Projects

-
- Geo-engineering, cost-benefit, how to bring it into the debate,
 - WTO, how do you get others involved, g8



Examples of projects might include:

- The issues and impact of mitigation versus adaptation
- The consideration of climate change in energy policy
- New Orleans: The role of policy, business interests, and science in what happened and rebuilding
- Sea-level rise: National and/or international impacts, possibility of rapid sea-level rise
- Changes in ocean circulation and rapid changes in regional climate
- Drought in the U.S. West and collapse of Pinion - Juniper forest
- Assessment of signals of climate change, early signs, and attribution
- more



Policy

- Kyoto and beyond Kyoto
 - Past to future
 - What impact has it had?
- How does scientific information get into policy?
- The next 50 years, what should we do?
- Grassroots versus state, national, international, global (Rabe book)
- Media → Role of news, public discourse
- National security → Water, energy, agriculture



Prospectus

- A short proposal that
 - Describes the project
 - Substantiates a role for science, economics, and policy
 - Limits the problem
 - What will be the focus?
 - What will be detailed in the project?
 - Work for each member of team
 - What will simply be identified and analyzed?



An idea or two for getting started

- Do an inventory, make a collection, of all of the pieces of the problem that you can think of.
- Think about how to determine which of those pieces are important, which are not.
- Think about where you have knowledge, and where you are working from intuition and belief.
- Draw a picture. The ability to draw schematic pictures of what you are trying to solve or communicate is one of the most powerful techniques for knowing that you understand what you're trying to do.