
GLOBAL WARMING? IS IT REAL? WHAT IS FUELING THE DEBATE? -- (12 CREDITS)

Spring, 2002

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This quarter we will examine in depth one of the hotly debated, global-level environmental problems of our time: global warming. We will delve into environmental chemistry, psychology and a little public policy to address three fundamental questions:

- What is Global Warming?
- What should we do about it?
- How do we make sense of, and how are we influenced by the information about global warming?

Primer on Global Warming, chemistry:

To begin our investigation, we will explore theories addressing the following questions:

- What do we need to know about global warming?
- What is a green house gas?
- What determines whether a gas is a green house gas?
- How much are green house gas concentrations changing?
- Why are they changing?
- What are our personal contributions to greenhouse gas emissions?
- Are human activities responsible for changes in green house concentrations?

Primer on the Psychology of Influence and of Judgment & Decision Making

We will also examine the debate itself from a psychological perspective, looking specifically at how bias, tools of persuasion and logical errors in judgment and decision making influence us both as investigators and as consumers of research.

As part of this work, we will look closely at the types of images and information about global warming that are presented in the public domain, such as advertisements, newspaper or magazine articles. We will apply what we are learning and reading about

the tools of persuasion and errors in thinking to come up with some theories about the psychological factors that make global warming such a contested issue.

Learning Goals:

- Working collaboratively
- Communicating clearly through writing and speaking
- Critical and integrative thinking as demonstrated through written work and discussions.
- Topics in introductory chemistry including unit conversions, VSEPR theory and Lewis structures, an introductory understanding of the electromagnetic spectrum, balancing equations, and stoichiometry.
- Topics in introductory psychology including judgment and decision making, influence, and methods of persuasion.

Readings:

Intergovernmental Panel on Climate Change (IPCC), *Climate Change 2001: The Scientific Basis, Summary for policy makers*. <http://www.ipcc.ch>

Excerpts from Lomborg, B. (2001) *The Skeptical Environmentalist*, Cambridge University Press, ISBN # 0-521-01068-3.

[* You don't need to purchase the whole book. We have ordered a reprint of the chapter on Global Warming which will be on sale at the book store.]

Plous, S. (1993) *The Psychology of Judgment and Decision Making*, McGraw Hill, ISBN # 0-07-050477-6.

Cialdini, R.B. (2001) *Influence: Science and Practice*, Allyn & Bacon; ISBN: 0321011473

Coraghessan Boyle, T. (2001). *A Friend of the Earth*, Penguin USA (Paper); ISBN: 0141002050

Hawken, P. Lovins, A. & Lovins, L.H. (1999) *Natural Capitalism*, Back Bay Books; ISBN: 0316353000

Steingraber, S. (1998). *Living Downstream*, Vintage books, ISBN# 0-375-70099-4

Global Warming: Spring 2002 – Tentative weekly schedule

(*Note this syllabus only acts as guide for our thinking. It is subject to change based on the classes needs, uncontrollable & unpredictable events).

	Monday Lab1- 1047	Tuesday Lab1- 1047	Wednesday	HW & Notes TBA
Week one (4/1) What's the issue?	<p>Introduction to the quarter & each other</p> <p>Introduction to Global Warming</p> <p>What do you know? How much of an issue is it?</p> <p>Sierra Club movie</p> <p>articles on pro/con</p> <p>1-3 Introduction to the Art of Persuasion Analyze the articles in terms of what the persuasive tools & elements are</p> <p>HW Read for tomorrow: IPCC Summary on Scientific Basis http://www.ipcc.ch/pub/spm22-01.pdf</p>	<p>9-12:30 Workshop on IPCC Summary for Policy Makers: Scientific Basis (http://www.ipcc.ch/pub/spm22-01.pdf)</p> <p>P.M.— Seminar Prep Meetings with independent project advisor</p>	<p>10-12 seminar • IPCC Summary for policy makers: Scientific Basis</p> <ul style="list-style-type: none"> • pro & con articles on Global Warming & the Kyoto Protocol <p>HW due:</p> <ul style="list-style-type: none"> • Read and bring 2 articles on Global Warming & the Kyoto Protocol – one pro & one con • hand in exploratory writing that addresses current reading. 	<p>Because we are still designing the homework assignments that accompany the psychology and chemistry workshops, much of the homework will be announced and given out over the course of the quarter. This column is here for you to make notes on what the homework is and when it is due.</p>

<p>Week two (4/8) What do we need to know?</p>	<p>10-12 Workshop on <i>The Skeptical Environmentalist</i>, "Global Warming" 1-3 Psychology: Peer teaching of chapters 2-4, <i>Influence</i> (link to class activity) HW due: • Read <i>The Skeptical Environmentalist</i>, "Global Warming" • Read chapters 1, 8 & assigned chapter for peer teaching on <i>Influence</i></p>	<p>9-12:30 Introduction to ad campaign project Workshop: What do we need to know to decide what to do about global warming? Choose research topics What is a greenhouse gas anyway? P.M.— Seminar Prep Meetings with independent project advisor</p>	<p>10-12 seminar • Chapter from <i>The Skeptical Environmentalist</i>, "Global Warming" <i>Climate Policy -- from Rio to Kyoto: A Political Issue for 2000 and Beyond</i> by S. Fred Singer. (http://www.hoover.stanford.edu/publications/epp/102/102a.html)</p>	
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• **HW due:** hand in exploratory writing that addresses current reading & integrated thesis paper **10-12 • • • 11**

<p>Week three (4/15) What is a greenhouse gas?</p>	<p>10-12 Workshop: What determines whether a gas is a greenhouse gas? How are the atoms in greenhouse gas molecules connected? 1-3 Psychology: Peer teaching of chapters 5-7, <i>Influence</i></p>	<p>9-12:30 Field trip to TBA P.M.— Seminar Prep Meetings with independent project advisor</p>	<p>10-12 seminar <i>Influence: Science and Practice</i> by Cialdini HW due: hand in exploratory writing that addresses current reading.</p>	
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<p>Week four (4/22) Why are greenhouse gas concentrations changing?</p>	<p>10-12 Workshop: What are the shapes of greenhouse gases? What determines whether a gas absorbs infrared radiation 1-3 Psychology: Context effects & introduction to bias</p>	<p>9-12:30 Workshop: Why are the greenhouse gases concentrations changing?: balancing the relevant equations P.M.— Seminar Prep Meetings with independent project advisor</p>	<p>10-12 seminar <i>A Friend of the Earth</i> by Coraghessan Boyle HW due: hand in exploratory writing that addresses current reading & integrated thesis paper</p>	
<p>Week five (4/29) How do we make sense of it all?</p>	<p>10-12 Student presentations 1-3 Mid quarter meetings with faculty HW due: 2 page summary and bibliography</p>	<p>9-12:30 Student presentations HW due: 2 page summary and bibliography P.M.— Seminar Prep Meetings with independent project advisor</p>	<p>10-12 seminar Integration seminar: How do we make sense of all these conflicting interpretations? HW due: hand in exploratory writing on question of what we should do about global warming?</p>	<p>** optional Thursday Friday overnight field trip to pick up trash on beach in Olympia National Park **</p>
<p>Week six (5/6) How responsible are we?</p>	<p>Psychology: Heuristics & bias 1-3 Preparation for global warming informational campaign. A campaign that makes public come to the same conclusion that you came to based on your research. HW due: independent project draft due</p>	<p>9-12:30 Workshop: Take a breath lab: Do you emit more CO₂ by breathing or driving? HW due: draft of thesis paper on global warming P.M.— Seminar Prep – peer review of thesis paper Meetings with independent project advisor</p>	<p>Project day!!! HW due: Thesis Paper in response to the question “What should we do about global warming?”</p>	<p>10-12</p>

<p><u>Week seven (5/13)</u> What should we do about Global Warming?</p>	<p>10-12 Psychology: Heuristics & bias, cont. 1-3 Chris on Academic plan: Why is it important? What have other students done- a retrospective?</p>	<p>9-12:30 Global Warming: informational campaign. P.M.— Seminar Prep – peer review of thesis paper Meetings with independent project advisor</p>	<p>10-12 seminar <i>Natural Capitalism</i> by Hawken, Lovins & Lovins HW due: hand in exploratory writing that addresses current reading.</p>	
<p><u>Week eight (5/20)</u> Alternative energies</p>	<p>10-12 TBA 1-3 Psychology: Common Traps and solutions HW due.: independent project due <ul style="list-style-type: none"> • Bring draft of self-evaluation to the writing tutor this week. </p>	<p>9-12:30 Climate Solutions on alternative energies P.M.— Seminar Prep – peer review of thesis paper Meetings with independent project advisor (practice run of individual project presentations)</p>	<p>10-12 seminar <i>Living Downstream</i> by Steingraber HW due: hand in visual exploration of themes</p>	
<p><u>Week nine (5/27)</u> Integration</p>	<p>MEMORIAL DAY</p>	<p>9-12:30 Individual Project Symposium</p>	<p>10-12 Final integration seminar HW due.: hand in portfolio with – draft of self-evaluation • final writing on integrative themes from program & a preliminary academic plan</p>	
<p><u>Week ten (6/3)</u></p>	<p>FIELD TRIP **Plan on Monday through Thursday field trip to allow for travel time.**</p>			
<p>EVALUATION WEEK (June 10-14)</p>				

ASSIGNMENTS

Seminar Paper Assignment: (Click here)

This quarter to help you develop both your critical thinking and your writing skills we will continue to ask you to write thesis driven seminar papers. However, we want to challenge you to do some exploration of the ideas you encounter in the workshops, readings and lectures before you land on a thesis that you want to argue. To support you with this exploration, we have modified the weekly seminar paper assignment as follows:

Weekly exploratory writing

Each week you will produce a piece of exploratory writing. This writing can be similar to the first quarter's seminar paper where you identify interesting themes and questions that emerged in your reading of the texts. Please, remember to reference quotes and ideas. Use the format of (author, page #). For example, "Thereby the market system becomes an immense force for the accumulation of capital, mainly in the form of machinery and equipment (Heilbroner, 31)." *Note: this is not APA format, but it including the page number will enable your readers to turn directly to the source.*

Bi-weekly thesis based writing

In weeks 2, 4, & 6 you will write a 2 page thesis-based essay. You should use your exploratory writing to identify a thesis to pursue. Like last quarter, these are essays that should meet the following criteria:

Work with writing tutors

Each student is expected to meet weekly with the writing tutor. It will be your responsibility to come prepared to each week's session:

In the first week of the two-week writing cycle, being prepared will mean something different for each person. Some people will share their exploratory writing as a way to identify different possible theses. Other people will have quickly landed on a thesis and will want to work on exploring possible evidence for supporting their thesis.

In the second week of the two-week writing cycle, i.e. the week your thesis paper is due, you will bring a typed draft of your paper to the writing center to review. Again, you will all be working on different issues in your writing. It will be important to the productiveness of these sessions that you are clear about what you want or need to work on.

The final draft of the thesis paper which you will hand in after seminar on Wednesdays should include the two drafts of exploratory writing you conducted, and the draft of the thesis paper you worked on with the writing tutor. **We will not accept papers that do not include these drafts.**

NOTE: For those of you who are new to the program and to thesis based writing, we will expect you to work closely with the writing center to develop your understanding of this form of essay.

Global Warming Campaign, Presentation , and Paper

Guiding Question: What should we do about global warming?

What do we need to know about global warming?

As a class we will brainstorm topics that would help us address the above question. Then you will break into pairs and research one of those topics with the goal of sharing your findings with the class. NOTE: Do a thorough job with your research because your colleagues will be relying on the information you present to help inform their decision on what to do about global warming.

Oral presentations of research findings in Week 5

- Your group will give an informative and well-practiced presentation.
- The presentation should rely on the oral presentation strategies that you learned about last quarter.
- Your group will bring a list of relevant facts on your topic that would be most useful to your colleagues for their paper.
- Your group will also bring an extensive annotated bibliography of the relevant sources. (Be sure to cite your sources using APA citation format!)

Thesis paper for Week 6

- For this 4-5 page paper you will reach an informed decision on what we should do about global warming. This decision will require studying the information presented in class as well as doing supplemental research.
- Be sure to cite a wide variety of resources to help support your decision and to include a bibliography in APA format.
- You will use the seminar preparation discussions on Tuesday afternoon of week 5 & 6 to first explore ideas together, share exploratory writing and then conduct a peer review of the thesis paper.
- You will hand in the exploratory writing in response to this question on Wednesday, May 1st and the final draft of the thesis paper that emerges out of your exploration on Wednesday, May 8th.

Campaign on Global Warming

The culminating project on global warming will be the creation of a campaign that urges the public to come to the same conclusion that you came to based on your research. One of the purposes of this project is to integrate the science of global warming with the psychology of influence. You can work either individually or in pairs. The key thing is to apply what you have learned in the last 6 weeks to your campaign piece.

The campaigns will go public on Tuesday May 14th. You will all analyze each others' campaigns for (i) how you were personally impacted by your colleagues work, (ii) the scientific evidence used; and (iii) the psychological tools of influence employed.

Things to consider:

- What is the message you want to communicate?

- Who do you want your audience to be?
- What is the medium that you will be working with?
- What scientific data will you apply?
- What tools of influence will you employ?

Here are some possible scenarios:

- a letter to your senator
- a letter to the editor of the Olympian (or your home newspaper)
- an advertisement for the Cooper Point Journal
- an oral segment for KAOS, the local radio station
- a song for a camp group/school/pop culture
- a power-point presentation for a school
- a commercial for television (video)

End-of-Quarter Reflective Portfolio

Your job in the reflective portfolio is do the following four things:

A. Compile all of the work you did this quarter (this will not be a hard task if you have been keeping it in one central location all quarter). This work should include:

- Global warming workshops such as the two on IPCC & Skeptical environmentalist;
- Chemistry Worksheets/workbook
- Exploratory papers, thesis papers and drafts with any comments on those papers by faculty or writing tutors;
- Notes from presentations;
- Global warming campaign feedback (including your evaluation of your own work!)
- Any other materials that you believe will help us understand your work and development over the quarter.

B. Decide on an effective way to organize your portfolio so that it communicates your learning. (Include a table of contents to help communicate the structure of your portfolio.) You could organize it chronologically, by ideas, by subject area. You decide. Feel invited to be creative. Above all remember that the portfolio is what you are using to communicate the story of your learning. A randomly amassed collection of papers tells a story but perhaps not the one that, if you gave your self the time, you would choose to tell. Think about the types of tools that might help you tell this story (e.g. section headings; etc.).

C. Go through all of the work you have done this quarter and select

- three pieces of work that most clearly demonstrate your growth as a learner this quarter.
- One (or two) pieces of from the beginning of your year at Evergreen

that helps demonstrate what your growth as a learner has been about *this year*. (If this is your first quarter at Evergreen, you don't have to add this piece).

Write two pages about these four selections that discuss why they are important and what they show about your growth as a learner over the course of the quarter and the year. You may use anything from reflections, workshop notes, seminar papers, excerpts from your project, or drafts of your papers as the material you discuss. These pieces need not be your "best" or most polished work, but should illustrate *critical pieces of learning or turning points in your understanding*. Your essay can point to intellectual development, to new ways of thinking, to new ways of organizing your experience, or to new questions you have, among other things.

The four selections you make to illustrate your learning and the essay on those pieces should be clearly marked and put together in the first part of your portfolio for the quarter.

D. In addition to these pieces, please include:

1. Draft of self evaluation;
2. A copy of your academic plan -- This document should include:
 - A description of your learning goals -- (What do you hope to accomplish while at college? What skills and strengths do you want to develop? What kinds of experiences do you want to have? Who do you want to be when "you grow up"?)
 - Your plans for next year? (What program or courses are you planning on doing?)
 - Your plans for the types of programs you planning on doing in the following years?
 - A reflection on how your plans for programs help you to accomplish your learning goals?

All of these items should be placed in a 3-ring binder, with the sections of your portfolio clearly marked. Write your name and phone number clearly on the cover.
