

**CPSP118G: Science & Global Change Colloquium**  
**SEMESTER I The Nature of Science: What We Do To Keep From Lying to Ourselves**  
Fall 2011

CCC1100 Tue, 3:30-4:50 pm

**SGC Website:** <http://www.geol.umd.edu/sgc/>

**Online Syllabus:** <http://www.geol.umd.edu/sgc/syllabi/CPSP118G1008.html>

**ELMS Blackboard Website:** <http://elms.umd.edu/> Course ID: 201008\_CPSP118G\_THOLTZ

**INSTRUCTORS:**

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**UG TEACHING ASSISTANT**

Jason Wong

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Office Hours: Centreville 1217, Wed 3-4 pm

Advising, website help (AGNR Office Hours, AGNR students or students interested in AGNR majors preferred):

Symons 0100 Wed 9-11 am, Thurs 12:30-1:30 pm

**NOTE: It is your responsibility as a student to completely read through and understand this syllabus. If you have questions about it, please contact Dr. Holtz or Dr. Merck. You will be held responsible for following all requirements of this syllabus.**

**COURSE ORGANIZATION:** One meeting per week, one Service Day (required), one Metro Scavenger Hunt (required), five weekend field trips (one required).

**REQUIRED READINGS:** This semester there are three primary required books:

- Kida, Thomas. 2006. *Don't Believe Everything You Think: The 6 Basic Mistakes We Make in Thinking*. Prometheus Books. ISBN-13 978-159102408-8
- Hazen, Robert M. & James Trefil. 2009. *Science Matters: Achieving Scientific Literacy. New Edition*. Anchor Books. ISBN-13 978-0-307-45458-4
- Crosby, Alfred W. 2006. *Children of the Sun: A History of Humanity's Unappeasable Appetite for Energy*. WW Norton. ISBN-13 978-039305935-9

Reading assignments must be done by the classtime listed.

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**COURSE OBJECTIVES AND PHILOSOPHY:** What is Science, and how is it distinguished from other aspects of human thought? Physicist Richard Feynman famously said "Science is what we do to keep from lying to ourselves": words that get to the heart of the scientific enterprise. In an age when the activities of human society and technology can greatly affect Earth's systems for decades, centuries, and even millennia to come, we must be able to evaluate the merits of ideas as they relate to the actual natural world, independent of our personal, political, or philosophical preconceptions. In this semester, students will learn the basic intellectual "tool kit" of the scientific enterprise. They will discuss how Science differs from other fields of human endeavor, with a particular emphasis on distinguishing scientific ideas from pseudoscientific thinking. Students will also discuss the influence of our understanding (and often misunderstanding) of Science upon contemporary society. We will examine real cases of Science gone bad, and the effect (good and bad) of popular portrayals of Science and scientists has on the public. We will also begin exploring the details of the origin, use, and effects of the energy resources which we use to run our world.

**LEARNING OUTCOMES:** By the end of the semester, every student should be able to:

- Accurately employ understanding of logical fallacies and critical thinking skills in evaluating truth claims.
- Effectively distinguish between scientific and non-scientific approaches to the understanding of the natural world.
- Identify the major energy resources used in modern society.
- Write webpages using html code, upload them to a University server, and maintain their personal website.

**GRADES:** Course grades are calculated by the summed total of the nine items listed below. The relative percentage of the total grade represented by each is given. Overall course grade scale is:

≥90, A; 80-89, B; 70-79, C; 60-69, D; <60, F

“+” and “-” grades are given to the top and bottom two-point range, respectively, within each grade.

Service Day and Metro Scavenger Hunt are given either full points (for completion of the assigned project) or none (for non-completion or disruptive activity). Each quiz is graded on a 5 point scale (one per correct answer). Other projects are assigned grades based on the following grade scale:

+, 100 pts; √+, 90 pts; √, 80 pts; √-, 70 pts; -, 60 pts; 0, 0 pts.

- 1) **Quizzes (20%):** Six quizzes are given throughout the semester. The lowest quiz grade is automatically dropped: this includes quizzes missed for unexcused absences. Quizzes missed due to unexcused absences cannot be made up.
- 2) **Group Projects (20%):** Five small group projects are assigned during the semester. These are generally completed during a single classtime, in small randomly assigned groups of 4-5 students. Only a single project is handed in for each group; all students in a group receive the same grade. Group projects missed due to unexcused absences cannot be made up.
- 3) **Field Trip Report (10%):** Each student is responsible for attending and reporting on one of the field trips available during this semester. This report is in the form of an online essay and annotated bibliography. Grades for the assignment are based 25% on the Style Rubric (<http://www.geol.umd.edu/pages/sgc/resources/rubric.html#Style>) and 75% on the Content Rubric (<http://www.geol.umd.edu/pages/sgc/resources/rubric.html#Content>) specific to that assignment. Field trip reports are due online the **second Tuesday** after the field trip itself.

The field trip opportunities this semester are:

- a) **Sept. 18 (Sunday), Fossil Hunting at Brownie Beach (Bayfront Park), Chesapeake Beach, MD**
  - b) **Sept. 24 (Saturday), Smithsonian Environmental Research Center, Edgewater, MD**
  - c) **Oct. 29 (Saturday), Maryland Science Center, Baltimore, MD**
  - d) **Nov. 13 (Sunday), National Air & Space Museum, Washington, DC**
  - e) **Nov. 20 (Sunday), Koshland Museum of the National Academy of Sciences, Washington, D.C.**
- 4) **Professional Academic Website (10%):** In the mid-semester we will have a short workshop teaching the basics of HTML coding and website design. You will be responsible for creating a website to be mounted on a umd.edu server; successful completion of this project is worth 10% of the total. You will be expected to maintain your website throughout your four semesters in SGC, and you will be adding new webpages to it over time. An html template for the Professional Academic Website is downloadable from the SGC website <http://www.geol.umd.edu/pages/sgc/resources/website.html>. The assignment itself can be found at <http://www.geol.umd.edu/sgc/docs/webassign.pdf>, and a guide to more detailed html can be found at <http://www.geol.umd.edu/pages/sgc/resources/htmlguide.html>.
  - 5) **Service Day (5%):** All Scholars freshmen are expected to participate in Service Day (August 29). If you missed Service Day, you **MUST** see the instructors and work out some arrangement for a make-up task or you will receive a 0 for this portion of your grade.
  - 6) **Metro Scavenger Hunt (5%):** This event, held on September 4 (Sunday), is to help orient students to the Washington, D.C. area and the Metro System, as well as help you get to know other people in the class.
  - 7) **Anatomy of a Scientific Paper Takehome (10%):** Due on October 25, each student will find an example of a recently-published scientific technical paper and “dissect” it, identifying its various subcomponents. Details about this assignment provided later in the semester.
  - 8) **Exploring Science Reaction Paper (10%):** Due online by November 29, each student will write a reaction paper taking one of the basic principles in Hazen & Trefil’s *Science Matters* which they wish to learn more about, and describe why they want to learn more about it and how they will achieve that sometime during the next four years. Details about the assignment provided later this semester.

- 9) **Carbon Footprint Takehome** (10%): Due on December 6, each student will complete an assignment in which they assess their current carbon footprint by using online tools. Details about the assignment provided later this semester.

**LATE ITEMS:** Hardcopy items must be turned in at the class meeting they are due: make sure you bring them to class with you! If they are turned in after this time but prior to the next colloquium, there will be a grade reduction of one step (i.e., a plus to a check plus, a check plus to a check, etc.; this is a 10 point drop). If it is not turned in by the next colloquium the grade will be a 0.

Online items must be uploaded by the date listed. We will typically check to see that they have been uploaded the week after they are due: if they are not present at this time, you will have a -15 point penalty off of the Style portion and be sent a warning to get it uploaded within the week. If it is not present by the second week (i.e., within 1 week of the warning email), you will get a 0 on the project.

In either case if there are important extenuating circumstances, discuss this with the faculty & TA as early as possible so that we can make allowances, if we deem it appropriate.

**EXTRA CREDIT:** SGC offers several different means of earning extra credit this semester. You earn 5 points maximum extra credit per item, up to a total of two items (i.e., 10 points total). In general, the extra credit is gained by writing a reaction paper mounted as a separate page on your website. Topics could include:

- A second field trip report (rather than a reaction paper, use the formal assignment for that field trip) beyond the one required.
- A reaction paper to a non-classroom academic presentation on campus, such as a departmental seminar, related to the program topics
- A reaction paper to one of the supplementary readings (see <http://www.geol.umd.edu/sgc/resources/readings.html>) or videos (see <http://www.geol.umd.edu/sgc/resources/climatevideos.html>), or a comparable work.
- A reaction paper to an academic presentation off campus related to the program topics
- A reaction paper to some other academic event: check with the SGC faculty to make sure it qualifies.

Reports for field trips should follow the format assigned for that trip, including the specific questions required. Reaction papers are reports that would address both a summary of the material encountered as well as your thoughts and comments on this material and how it relates to related matter you may have encountered (in colloquium, other classes, etc.) Reaction papers require you to show insight into the matters concerned, not a simple retelling of what was there nor your “feelings” about it. See the Reaction Paper template at <http://www.geol.umd.edu/sgc/resources/reactionpaper.html>.

Full extra credit will only be earned if all format issues are properly completed (sufficient length, proper html coding, no spelling or factual errors, etc.). Problems with these issues will result in a decrease in the extra credit grade received, as per field trip and other web-based reports. **All Academic extra credit assignments must be online by the end of classes (i.e., before finals).**

## CPSP118G & 218G: Science & Global Change Colloquia Colloquium Policies

**SGC Website:** <http://www.geol.umd.edu/sgc/>

**Online Policies:** <http://www.geol.umd.edu/sgc/syllabi/SGC1108policies.html>

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**CLASSROOM POLICIES:** You should bring the following to every single colloquium meeting:

- A writing implement
- A notebook (containing this syllabus)
- The text for that part of the course
- A willingness to participate constructively, both in small groups and in the class as a whole
- A readiness and ability to discuss the readings for that week

This semester we will have a number of small-group in-class projects. We expect everyone to help move tables and chairs when necessary for a particular project, and to help restore the tables and chairs to the “neutral” position when we are done. Many hands make light work!

During classtime:

- **PLEASE** be courteous to your fellow students and your faculty, and do not engage in side conversations. Even what you might think are hushed whispers in the back row can be heard all the way up front, and are disruptive to the attention of your classmates who are interested in getting a good grade in the class.
- All electronic modes of communication (mobile phones, pagers, etc.) must be turned “off” or be in silent mode
- Laptops may be used **ONLY** for taking notes and/or following along with webnotes for the class. If you are found to be using your laptop for other purposes you will be asked to shut it down. If you fail to do this, you will be considered “absent” for that day.
- No personal electronic listening devices (e.g., CD players, MP3 players, personal radios, etc.) will be allowed
- No reading of material not germane to the class activity will be allowed

Finally, please do not leave any debris behind: pick up all food/beverage containers, papers, newspapers, etc. near your seat and on your desk when you leave and dispose of them properly

**ATTENDANCE:** Given the nature of the course and program, participation in colloquium meetings is **MANDATORY**. It is up to you to make certain that your presence has been recorded for every class.

- **Recording Your Presence:** On days with quizzes and/or group projects, your presence will be taken from these items. On other days, there will be a sign-up sheet. It is *your* responsibility to make certain that you have signed the quiz, project report, or sign up sheet.
  - Students observed leaving the colloquium before 4:50 or before it is formally dismissed will be counted absent.
  - **NOTE:** We expect students to adhere to proper academic decorum during colloquia. This means focusing your attention on presentations, refraining from conversations or activities that are not relevant (e.g., reading newspapers, doing homework for other classes, etc.), and showing proper respect for student, faculty, and guest presenters. *We reserve the right to count you absent from colloquium if you fail to uphold this standard!*
- **Excused Absences:** If you have a legitimate reason for being absent, such as a family emergency, unavoidable academic conflict, or other excuse according to the University’s guidelines, we will usually excuse your absence. However you must notify us in a timely fashion. Requests for the excusing of an absence **will not be considered** after two workdays from the absence: please contact us by email! Please use the Excused Absence Report form from <http://www.geol.umd.edu/pages/sgc/docs/absence.pdf>.

- If the absence was for a colloquium for which there was no graded activity (i.e., no quiz, no group project, etc.) **AND** for which this was your first absence from colloquium this semester, you may simply complete the Excused Absence form and turn it in. If instead there were a graded activity **AND/OR** this was not your first absence from colloquium this semester, you will need to provide some form of documentation from an independent source supporting your absence. These include, but are not limited to:
  - A doctor's note, official notice of court activity, etc.: please attach a copy to your Excused Absence form
  - Barring the above, a signed statement by an independent party (for example, your RA if you were ill and the RA is willing to verify that they observed this: feel free to use the back of the Excused Absence form for this)
- **NOTE WELL:** Failure to provide the Excused Absence Form will result in the absence being unexcused, and you will face the appropriate penalties.
- **NOTE:** the next colloquium meeting is **too late** for requests for excuses.
- **Grades and Excused Absences:** Even if you miss a class from an excused absence, you are still held responsible for material during that class, included graded assignments such as quizzes and small group projects. See the faculty about arrangements for a make up. If the small group project is such that it cannot be done alone, it will not be factored into your grade **if** you have an excused absence that you informed the faculty about within two workdays from the absence.
- **Religious Observances:** The University System of Maryland policy provides that students should not be penalized because of observances of their religious beliefs, students shall be given an opportunity, whenever feasible, to make up within a reasonable time any academic assignment that is missed due to individual participation in religious observances. It is the responsibility of the student to inform the instructor of any intended absences for religious observances in advance. Notice should be provided as soon as possible **but no later than the end of the schedule adjustment period (September 13)**.
- **Unexcused Absences:** All other absences are considered unexcused absence. You may have one unexcused absence that does not directly affect your grade (except for missed quizzes or small group projects: see below). Each subsequent unexcused absence lowers your final course grade by 10 points.
  - If you miss a quiz or small group project because of an *unexcused* absence, you will **not** be allowed to make it up.
- In cases of inclement weather or other unexpected emergencies, the University may close. Please consult the University main webpage (<http://www.umd.edu>) or call 301-405-7669 (SNOW) to confirm such cancellations. Drs. Holtz & Merck will contact students via ELMS in order to inform them concerning delays of due dates for projects to be handed in or for exams: typically these will be shifted until the next available class date.

**COMMUNICATION:** Because many of our communications will be by e-mail, all students are expected to maintain e-mail accounts and arrange for access to the Internet. Although not a course requirement *per se*, students should get into the habit of checking their e-mail daily. Failure to do so may cause you to miss crucial course information. See <http://www.oit.umd.edu/wheretogo/seeTable.cfm> for a list of available computer labs on campus.

At your earliest convenience, log on to <http://www.testudo.umd.edu/apps/saddr/> and update your electronic and mailing addresses. This will help ensure that important information from College Park Scholars faculty and staff reach you in a timely and accurate manner.

**ELMS BLACKBOARD SITE:** <http://elms.umd.edu/> Course ID: 201108\_CPSP118G\_THOLTZ for the freshmen colloquium, 201108\_CPSP218G\_THOLTZ for the sophomore colloquium. The primary function for the ELMS Blackboard site will be to record your grades, although we will also use it as a secondary site for documents, handouts, etc. We will use the Comments function for graded items to convey information about projects this semester (such as Field Trip webreports): please look at these for help in understanding your grade and correcting errors.

**ACADEMIC INTEGRITY:** The University of Maryland has a nationally recognized Code of Academic Integrity, administered by the Student Honor Council. This Code sets standards for academic integrity at Maryland for all undergraduate and graduate students. As a student you are responsible for upholding these standards for this course. It is very important for you to be aware of the consequences of cheating, fabrication, facilitation, and plagiarism. For

more information on the Code of Academic Integrity or the Student Honor Council, please visit <http://www.studenthonorcouncil.umd.edu/whatis.html>

The University of Maryland is one of a small number of universities with a student-administered Honors Code and an Honors Pledge, available on the web at

<http://www.studentconduct.umd.edu/Info/Students/AcadHonorPledge.aspx>. The code prohibits students from cheating on exams, plagiarizing papers, submitting the same paper for credit in two courses without authorization, buying papers, submitting fraudulent documents, and forging signatures. The University Senate encourages instructors to ask students to write the following signed statement on each examination or assignment: "I pledge on my honor that I have not given or received any unauthorized assistance on this examination (or assignment)."

**ACADEMIC ACCOMODATIONS:** If you have a documented disability, you should contact Disability Support Services 0126 Shoemaker Hall. Each semester students with documented disabilities should apply to DSS for accommodation request forms which you can provide to your professors as proof of your eligibility for accommodations. The rules for eligibility and the types of accommodations a student may request can be reviewed on the DSS web site at [http://www.counseling.umd.edu/DSS/receiving\\_serv.html](http://www.counseling.umd.edu/DSS/receiving_serv.html).

**COURSE EVALUATIONS:** CourseEvalUM will be open for students to complete their evaluations for Fall 2011 courses between Tuesday, November 29, and Wednesday, December 14. Students can go directly to the website ([www.courseevalum.umd.edu](http://www.courseevalum.umd.edu)) to complete their evaluations, beginning November 29. You will be alerted about these dates and provided more information closer to that time, and students will be alerted via their official University e-mail account.

Students who complete evaluations for all of their courses in the previous semester (excluding summer), can access the posted results via Testudo's CourseEvalUM Reporting link for any course on campus that has at least a 70% response rate. You can find more information, including periodic updates, at the IRPA course evaluation website: [https://www.irpa.umd.edu/Assessment/CourseEval/fac\\_faq.shtml](https://www.irpa.umd.edu/Assessment/CourseEval/fac_faq.shtml)

The expectation is that all students will complete these. This is YOUR chance to anonymously evaluate this class: please use this opportunity!

**CPSP118G: Science & Global Change Colloquium**  
**SEMESTER I The Nature of Science: What We Do To Keep From Lying To Ourselves**  
Fall 2011  
CCC1100 Tue, 3:30-4:50 pm  
**SGC Website:** <http://www.geol.umd.edu/sgc/>  
**Online Schedule:** <http://www.geol.umd.edu/sgc/syllabi/CPSP118G1108sched.html>  
**ELMS Blackboard Website:** <http://elms.umd.edu/> Course ID: 201108\_CPSP118G\_THOLTZ

**SCHEDULE OF LECTURES AND EVENTS**

- 8/29/11 (Mon.) **SERVICE DAY**
- 9/4/11 (Sun.) **Metro Scavenger Hunt**
- 9/6/11 Introduction and Logistics of Class  
What is Science?
- 9/13/11 Scientific Method 101: Observations & Hypotheses  
Reading: Kida Introduction and Chaps. 1-3
- 9/18/11 (Sun.) **Field Trip I: Fossil Hunting at Bayfront Park, Brownie Beach, Chesapeake Beach, MD**
- 9/20/11 **Quiz 1**  
Scientific Method 201: "Just a Theory"  
Reading: Kida Chaps. 4-6
- 9/24/11 (Sat.) **Field Trip II: Smithsonian Environmental Research Center, Edgewater, MD**
- 9/27/11 A Look at Logical Fallacies **GROUP PROJECT**  
Reading: Kida Chaps. 7-9
- 10/4/11 **Quiz 2**  
Using Kida's Principles **GROUP PROJECT**  
Reading: Kida Chaps. 10-12, Epilogue
- 10/11/11 Anatomy of a Scientific Paper  
Reading: Hazen & Trefil Introduction Chaps. 1-3
- 10/18/11 Workshop: Website Design 101  
Surviving Your First Semester  
Reading: Hazen & Trefil Chaps. 4-6
- 10/25/11 Modern Plesiosaurs, Ancient Astronauts, and Hollow-Earth Antarctic Space Nazis: the Lure and Lore and Pseudoscience  
**Anatomy of a Scientific Paper project due**  
Reading: Hazen & Trefil Chaps. 7-9
- 10/29/11 (Sat.) **Field Trip III: Maryland Science Center, Baltimore, MD**
- 11/1/11 **Quiz 3**  
Workshop: Website Design 201  
A Look Ahead at College Life & Its Opportunities  
**Academic Website due**  
Reading: Hazen & Trefil Chaps. 10-12

- 11/8/11 Good, Bad & Pseudoscience **GROUP PROJECT**  
Reading: Hazen & Trefil Chaps. 13-14
- 11/13/11 (Sun.) **Field Trip IV: National Air & Space Museum, Washington, DC**
- 11/15/11 **Quiz 4**  
Guest Speaker: Sustainability at the University of Maryland  
Reading: Hazen & Trefil Chaps. 15-17
- 11/20/11 (Sun.) **Field Trip V: Koshland Museum of the National Academy of Sciences, Washington, DC**
- 11/23/11 The Cycles of Nature  
Reading: Hazen & Trefil Chaps. 18-19, Epilogue
- 11/29/11 **Quiz 5**  
Energy Resources **GROUP PROJECT [please bring a calculator]**  
**Exploring Science Reaction Paper due online**  
Reading: Crosby Part I (Chaps. 1-3)  
Online Course Evaluations available
- 12/6/11 What's My Footprint? **GROUP PROJECT**  
Reading: Crosby Part II (Chaps. 4-6)  
**Carbon Footprint Takehome due**
- 12/13/11 **Quiz 6**  
Limits to Growth  
Reading: Crosby Part III (Chaps. 7-9)
- 12/14/11 (Wed.) Online Course Evaluations ends: please complete your evaluations before this date