Geography 501
Climate Change Impacts
Three Credits
Tuesdays 3:30-6:20 pm
McClure 311

In this class, we will survey the current literature on climate change impacts to biology as well as the feedback from biology to future climate change. The readings and discussion will cover a wide range of topics. I have provided topics as a guideline; these can be updated or modified depending on student interest. Readings will be from summaries of regional/global assessments, synthesis/review journal articles, and journal papers. Students will be responsible for selecting papers to read and for leading the discussion of the papers.

I. Course Information

In addition to this syllabus, the main source of course information is the course web site, http://uiclimchangeimpactsgrad.weebly.com.

<u>Instructor</u>
Dr. Jeffrey Hicke
McClure Hall 305D
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Office Hours: Tuesdays, 11-12; Wednesdays, 2-3 pm, or by appointment

<u>Readings</u>

Links for readings will be posted on the course web site.

<u>Goals of this course</u>

The course goals are:

i) To familiarize you with interactions between climate change and biology.

ii) To illustrate the breadth, depth, and complexity of these issues.

iii) To demonstrate that the importance of climate change impacts varies spatially.

<u>Prerequisites</u>: Interest and enthusiasm for learning about climate change impacts.

<u>Class format</u>

During the first hour, we will discuss a review or synthesis of the topic. This section will be led by one student. We will use questions turned in by all students (see "Homework" below) as a guide for subsequent discussion.

In the second hour, a second student will lead a discussion of a peer-reviewed journal paper related to current events of the topic of interest, or case study on the topic, or any other related paper of interest.

In the third hour, I will lead an in-class exercise or reading.

II. Grading

Grades will be assigned based on the following:

Homework	20%
Leading class discussion	30%
Class project	40%
Active participation in class (through asking questions, offering comments)	10%
Total	100%

Homework

Homework will consist of turning in three questions before each class on each of the two readings to be discussed that day (six questions total per week). Questions should be a) about something that intrigued you about that reading (better) or b) a question that could be on a quiz or exam (less better), and will be used in class to enhance the discussion. These will be worth 1 point per question. Missed classes will be excused for good reason (and with proper documentation). Bring your questions to class (printed out).

Leading two classes

You will lead two classes of your choice: one as the primary/review lead and one as the current topics lead. We will assign topics and schedule days during the first class.

a. Leading the review class

1. Become familiar with your topic. Select a reading (I have suggested some); confirm your selection with me by two weeks before your scheduled class. I will post the reading one week before your scheduled class.
2. Lead the discussion for one hour in class. Do not lecture! Students should come to class having read the assignment. Your job is to promote discussion.
    a. Open with a 10-minute brief (!) review of the topic. You may show 3-5 PPT slides that have figures or tables only; do not include slides with your words.
    b. Open the class to discussion. Read the other students' questions. Come with questions to promote discussion.
    c. If discussion is going long, we can let it continue as appropriate.

b. Leading the current topics (or other) class

1. Become familiar with your topic. Select a reading using these guidelines:
    - peer-reviewed paper
    - current (within last 3 years)
    - reasonably broad in scope and understandable to students with different backgrounds.

    Consider papers that discuss the topic in terms of the Pacific Northwest or western US. Confirm your selection with me by two weeks before your scheduled class. I will post the reading one week before your scheduled class.

2. Lead the discussion for one hour in class. Do not lecture! Students should come to class having read the assignment. Your job is to promote discussion.
    a. Open with a 10-minute brief (!) review of the topic. You may show 3-5 PPT slides that have figures or tables only; do not include slides with your words.
    b. Open the class to discussion. Read the other students' questions. Come with questions to promote discussion.
    c. If discussion is going long, we can let it continue as appropriate.

c. Finding papers

Reviews (first paper): Reviews written for interdisciplinary journals will be valuable. Good sources include: *Science*, *Nature*, *BioScience*, *Trends in Ecology and Evolution*, *Frontiers in Ecology and the Environment*. Several reports may be helpful, including the Fourth Assessment Reports of the IPCC (all Working Groups); US National Climate Assessments (in the last version, these are known as "Synthesis and Assessment Products"; http://library.globalchange.gov/products/assessments/2004-2009-synthesis-and-assessment-products), including a recent overview (http://www.globalchange.gov/publications/reports/scientific-assessments/us-impacts); and other reports produced by NGOs, other countries, etc.

Current literature (second paper): The above journals as well as disciplinary journals are helpful. The broad scientific topics covered in climate change ecology mean that there are a large number of possible journals. In addition to above, see (among others): *Global Change Biology*, *Global Ecology and Biogeography*, *Ecology*, and *Ecological Applications*.

A useful tool for you will be the ISI Web of Science journal search. This is a powerful search engine that allows you to search by topic, keyword, journal, and author. A major advantage is the ability to look "forward" in time to see papers that cite the one you are looking at, giving you the capability of seeing the most current ideas on your topic. To get to this web site, go to the UI library (http://www.lib.uidaho.edu/), select "Articles" from the tabs across the top, then select "Web of Science".

Please spend 15-30 minutes looking for a paper before contacting me for my suggestions. Also, please read the paper (or at least skim in detail) before suggesting a paper.

Class Project

Several options exist for a class project:

1. Analyze data and provide a report. This could be your own research, or research on a topic that interests you. I have some data sets that may be useful. You will write a paper and give a presentation on your analysis.

2. Research an issue interesting to you that is related to climate change impacts. You will write a paper and give a presentation on your topic.

3. Review and compare climate change impacts at two different locations. Select one location in the United States, such as in the Pacific Northwest, your hometown, a vacation spot, etc. Select another location on the other side of the world, literally or figuratively, that has a different environment and/or culture. Make it an interesting location for you personally (e.g., someplace you've visited or would like to visit, or where you have family/friends). Compare the climate change impacts at each location. Which issues are in both locations? Which are only associated with one location? How do climate change impacts stack up against other environment or socioeconomic problems? How does the public in each

location view climate change? Use the peer-reviewed literature in your research (not the web). You will write a paper and give a presentation on your topic.

4. Give a climate change talk to students or the public. Students interested in this option should discuss it with me. You will give a practice presentation in class and report back to the class on your experience.

Papers. Papers will be 8-10 pages in length (double-spaced; figures and references extra), due Tuesday of finals week (May 7). You will be graded on content, appropriate grammar, syntax, spelling, clarity of writing, inclusion of relevant sections (introduction, location descriptions, challenges of each, conclusions, references), correct citations, quality of references. Late papers: each day you are late in turning in the paper will result in a reduction of 25% of your final paper grade. If there is a good reason for lateness, I will accept the paper with documentation.

Presentations covering your project will be roughly 20 minutes long and will occur in the final two weeks of class. You will provide feedback on the presentations of your fellow students.

Email me a brief description of your project by March 5 (2-3 paragraphs).

III. Tentative schedule (subject to change based on progress)

See additional file.

IV. Course policies

Classes and attendance

You are responsible for reading the assigned reading before class, attending class, and participating in the discussion. You are responsible for knowing the due dates for all assignments, papers, and presentations. I will be emailing the class regularly; please ensure you check your uidaho email account.

Civility

Please be respectful of others in the classroom. Use appropriate language; allow others to talk; be courteous and civil.

Academic honesty

Academic honesty is covered in the Article II of UI Student Code of Conduct (http://www.uidaho.edu/DOS/judicialaffairs/studentcodeofconduct). Cheating or plagiarism will not be tolerated. Your work must be your own. Do not copy or plagiarize the work of others. If you are caught, you will receive no credit for that work, whether it is a homework assignment or a project, and you will be referred to the Dean of Students for further disciplinary action. Depending on the seriousness of the plagiarism or cheating offense, you could be expelled from the university.

Reasonable Accommodations

Reasonable accommodations are available for students who have a documented disability. Please notify the instructor during the first week of class of any accommodation(s) needed for the course. Late notification may mean that requested accommodations might not be available. All accommodations must be approved through Disability Support Services located in the Idaho Commons Building, Room 333.

Disability Support services can be contacted at 885-7200, email at dss@uidaho.edu, and via their website at www.access.uidaho.edu or www.webs.uidaho.edu/aap.