Geographic Impacts of Global Change: Mapping the Stories
BIO 128 / EARTHSYS 129
Spring Quarter 2015, Stanford University

Course Instructors

Name	Office	Office Hours	Contact
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Interview Coordinator

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All of us are happy to meet with you – please email us individually to set up an appointment.

Lectures
Tuesdays & Thursdays, 3:15-5:05pm, Green Earth Sciences 134

Course Description
Forces of global change (e.g., climate disruption, biodiversity loss, disease) impart wide-ranging political, socioeconomic, and ecological impacts, creating an urgent need for science communication. Students will collect data for a region of the US using sources ranging from academic journals to popular media and create an interactive Story Map that merges the scientific and human dimensions of global change. Students will interview stakeholders as part of a community-engaged learning experience and present the Map to national policy-makers. Our 2014 Map is being used by the CA Office of Planning & Research.

This is a 4-unit course, open to students of all majors and levels, including undergraduate and co-terminal masters. Previous GIS experience is not required.

"There was great satisfaction knowing that the work I was doing for this class directly supported a larger project whose impacts would last well beyond the quarter ends and reach all corners of California. It was really unlike any other class I have taken at Stanford." - 2014 Bio 128 student

Community Engagement
This is a community engaged learning course. What that means is that this class is not just about a grade, but rather about the learning you're experiencing, and the interaction with and benefit to the community partner – in this case, the Department of Homeland Security and the executive branch of our national government. You can expect to learn and use not only scientific content but also principles and practices of effective community and/or stakeholder engagement.

In all on and off campus interactions for this course, you are expected to abide by the Stanford Fundamental Standard, which is available online here: http://studentaffairs.stanford.edu/communitystandards/integrity/fundamental-standard.

Briefly, "Students at Stanford are expected to show both within and without the University such respect for order, morality, personal honor and the rights of others as is demanded of good citizens. Failure to do this will be sufficient cause for removal from the University."

At the end of this course, students will present two StoryMaps about global change in the United States to our community partner in the executive branch of government:
1) A StoryMap featuring popular media articles against a backdrop of scientific data for each of global change's 5 key problems
2) A StoryMap displaying audio interviews of food producers across the United States

Peer-to-Peer Learning
This course encourages interactive, collaborative learning. *Your peers are your toughest and best teachers.* In your future endeavors, you will depend upon the standards, fairness, eloquence, skills, creativity, imagination, and cooperation of your peers--and you will contribute in this same manner if the interactions in this class are to succeed. We encourage social and collaborative reading, discussion, debate, and learning in and outside the classroom, which we will try to facilitate through the social affordances offered by *Lacuna Stories*.

Course Objectives
Topical Understanding
Students will understand global change through the lens of a place (the US) by being able to:
- Identify specific examples of global change's five key problems
- Recognize how these 5 key problems interact synergistically
- Connect how environmental and ecological forces interact with political, demographic, and economic factors to impact diverse stakeholders
- Learn how to translate scientific data for broad audiences

Applied Skills
- Strengthen interpersonal communication abilities and interview skills
- Identify ways that GIS and other STEM technologies can be applied to science communication
- Learn effective media search strategies and data management skills

Humanistic Learning
- Consider how race, gender, culture, education level, citizenship, and socioeconomic status can shape the impacts global change exerts on an individual and on communities
- Respect different backgrounds, political perspectives, and types of knowledge
- Reflect on your role as a STEM student in making scientific data accessible to policy-makers and the general public

Service Learning
- Professionally engage with non-scientists to explore and appreciate diverse perspectives

- Produce a communication product according to the specifications desired by our community partner
- Learn how service-learning can be integrated into STEM disciplines

Course Materials
Lacuna Stories – Required Readings
All required readings are available on a digital annotation and learning platform, *Lacuna Stories,* and due as indicated on the *Course Readings Schedule* (a separate document). There are no textbooks for the course.

The URL is http://mappingglobalchange.lacunastories.com.

If you have any questions about the platform, including logging in or general use, please contact our Lacuna Stories coordinator directly: Brian Johnsrud, johnsrud@stanford.edu/.

Technology
- *iPads* will be provided to each individual student through the *iPads for Learning* program. iPads will be pre-loaded with all relevant software for data collection, photography, and in-person interviews.

- *Audio equipment* will be provided for in-person interviews through the *Stanford Storytelling Project*. Please contact Laura Cussen regarding audio questions.

- *Data entry sheets* uploadable to ArcGIS in Excel format will be provided for standardized data entry. Each student will be responsible for updating his/her/their own shareable Google Doc each week.

Course Requirements
Students will be assigned a region of the United States. Students will be responsible for collecting data and becoming an "expert" on this region for the duration of the course.

10%	Attendance & participation
15%	Interviews
10%	Article quotas
20%	Mid-Quarter presentation
30%	Final presentation
15%	Reflections

Class Attendance & Participation (10%)
Learning happens in class. Your attendance is crucial to your learning and that of your peers. Please come fully prepared to discuss readings, data search strategies, interview experiences, etc. Please let an instructor know ahead of time if you need to miss a class.

Field Trip
Attending the field trip is mandatory. This field trip involves exploring terrestrial and marine food production systems in California, although this is subject to change due to community

partner schedules. You will bring your iPads and audio equipment. The same field trip will be offered on four different dates to accommodate student schedules. A reflection is due 1 week after the date of the field trip (see Reflections).

Interviews (15%)
There are 3 required interviews as part of this course:
1) Farmers Market (written)
2) Stanford "Expert" (written)
3) National Food Producer (audio)

More detailed instructions for each interview assignment will be provided in class.

Articles & Data Entry (10%)
Students are required to meet **weekly article deadlines each Sunday** (see schedule), to reach a total of 230 articles for their region at the end of the quarter (May 31). Students are required to use standardized data entry forms. Attendance at in-class group data entry sessions is **mandatory**.

Students may miss two (2) article quotas without penalty, *provided they make up the missed articles for the following Sunday quota*.

Mid-Quarter & Final Presentations
Students are required to deliver 5-10 minute powerpoint presentations summarizing the data of their regions and reflecting on the problems faced by the communities of their regions. Students must fill out evaluations for their peers and a self-evaluation after each presentation. Additional details and self-evaluation prompts will be provided in class.

Mid-Quarter Presentation: Tuesday, May 5 (20%)
Final Presentation: Tuesday, June 2 (30%)

Reflections (15%)
The role of reflection is to have you link your experiences outside the classroom (i.e., on field trips and assignments like the farmer's market and interviews with experts and food producers) with what we discuss in the readings and in the classroom. To that end, we will hand out a few structured reflection prompts over the course of the quarter. Your responses to these prompts don't have to be very lengthy—250-500 words is plenty to express how you're linking the course content to all these other activities.

We will provide you with a structured prompt for each reflection assignment. You will submit your reflections via *Lacuna Stories*, using the "Responses" option in "Create→Write a Response". Please see the *Course Reflection Schedule* (a separate document) for more details and deadlines.

Schedule
All assignments/deadlines/lectures are subject to revision during the quarter based on the instructors' discretion. All article deadlines are **Sundays**. There is no final exam for this course;

instead, we will use our final exam slot, *Tuesday, June 9, 12:15-3:15pm* for our StoryMap Product Review.

Week	Lectures	Assignment Deadlines	Articles	Field Trip
1 3/31-4/5	**TU** Course welcome & introduction to the science of global change **TH** Stakeholder role-play activity & discussion of non-traditional data sources	**TU** None **TH** None	5 (5)	
2 4/6-4/12	**TU** Search strategies & data entry tutorial; StoryMap development plan **TH** Science communication: panel discussion	**TU** None **TH** None	15 (20)	
3 4/13-4/19	**TU** Science communication: consensus statement; Region assignments **TH** Group data entry session	**TU** Farmers Market **TH** None	30 (50)	
4 4/20-4/26	**TU** Science of global change pt II; science in decision-making **TH** Discuss expert interview draft questions; Group data entry session	**TU** None **TH** Expert draft questions	30 (80)	Option 1
5 4/27-5/3	**TU** Group data entry session **TH** Discuss food interview draft questions; Group data entry session	**TU** None **TH** Food producer draft questions	30 (110)	Option 2
6 5/4-5/10	**TU** Mid-Quarter presentations **TH** Group data entry session	**TU** Mid-Quarter presentation **TH** None	30 (140)	
7 5/11-5/17	**TU** Group data entry session **TH** Group data entry session	**TU** Expert interview **TH** None	30 (170)	
8 5/18-5/24	**TU** Audio editing tutorial & work time **TH** Interview presentations; Group data entry session	**TU** Food producer interview **TH** None	30 (200)	Option 3
9 5/25-5/31	**TU** State/national legislation activity **TH** Final group data entry session	**TU** Expert & food producer reflection **TH** None	30 **Final:** (230)	Option 4
10 6/1-6/7	**TU** Final presentations; final survey **TH** No class	**TU** Final presentation **TH** None	None	
Finals Week	**TU 6/9, 12:15-3:15pm, Final Exam Period** StoryMap Product Review			

University Policies

<u>Stanford University Honor Code</u>

Students are responsible for understanding and abiding by the University's Honor Code, which is available here: http://studentaffairs.stanford.edu/communitystandards/integrity/honorcode.
Any violation, even unintentional, is a serious offense. If you have questions about the Honor Code, please speak with one of the course instructors.

The Honor Code:
1. The Honor Code is an undertaking of the students, individually and collectively:
   a. that they will not give or receive aid in examinations; that they will not give or receive unpermitted aid in class work, in the preparation of reports, or in any other work that is to be used by the instructor as the basis of grading;
   b. that they will do their share and take an active part in seeing to it that others as well as themselves uphold the spirit and letter of the Honor Code.
2. The faculty on its part manifests its confidence in the honor of its students by refraining from proctoring examinations and from taking unusual and unreasonable precautions to prevent the forms of dishonesty mentioned above. The faculty will also avoid, as far as practicable, academic procedures that create temptations to violate the Honor Code.
3. While the faculty alone has the right and obligation to set academic requirements, the students and faculty will work together to establish optimal conditions for honorable academic work.

Students with Documented Disabilities

Students who may need an academic accommodation based on the impact of a disability must initiate the request with the Office of Accessible Education (OAE). Professional staff will evaluate the request with required documentation, recommend reasonable accommodations, and prepare an Accommodation Letter for faculty dated in the current quarter in which the request is being made. Students should contact the OAE as soon as possible since timely notice is needed to coordinate accommodations. The OAE is located at 563 Salvatierra Walk (phone: 723-1066, URL: http://oae.stanford.edu).