

BioSci 197: Campus as a Living Lab
Winter Quarter 2017

| | | | |
|----------------------|---------------------------|----------------------|-----------------------------|
| <i>Instructor:</i> | Dr. Jessica Debats | <i>Instructor:</i> | Matt Garrambone |
| <i>Office:</i> | 473 Steinhaus Hall | <i>Office:</i> | 426 Steinhaus Hall |
| <i>Office hours:</i> | M 2:00-2:50 pm or by appt | <i>Office hours:</i> | M 10:00-10:50 am or by appt |
| <i>E-mail:</i> | jdebats@uci.edu | <i>E-mail:</i> | mgarramb@uci.edu |
| <i>Phone:</i> | 949-824-3347 | <i>Phone:</i> | 707-328-1781 |

Course information

Schedule: Mondays, 9:00-9:50 am

Room: 267 Steinhaus Hall

Course websites: Google Drive for syllabus, admin documents, weekly assignment checklists, and project information; Piazza for reflective writings and class discussions.

Course description

Fall quarter's CLL course introduced campus operations and responses to sustainability challenges, as well as a suite of tools that can be applied to sustainability problem-solving in practical work situations. This quarter, we will build on that foundation to analyze how our local sustainability work at UCI relates to broader sustainability challenges, such as environmental justice and climate justice. Throughout the quarter, we will illustrate these challenges using real-world case studies. This will provide the background for spring quarter, when we will explore potential sustainability solutions using a variety of local examples.

Learning objectives

CLL's mission is to provide opportunities to learn about sustainability via applied research and hands-on training and experience with UCI's physical operations and systems. This year-long internship and course sequence will increase your proficiency in:

- Applying academic research to sustainability related challenges, especially on the UCI campus.
- Applying critical thinking, strategy, and management skills to specific sustainability challenges associated with UCI campus systems and operations.
- Navigating the "green job" market, including refining your own career goals.
- Conducting outreach and community engagement.

Required readings and reflections

Required readings are posted on the course website. For those weeks that have a required reading, you are required to submit a reflection to Piazza by the start of class. Each post should be 150 words minimum and pose a question provoked by the readings, as well as

a thoughtful answer to your question. For example, your reflection might critique the readings based on your own field observations and personal experience. Or you might pose a new research question that you feel the readings left unanswered. The purpose of these reflections is to prepare you to discuss the readings in class, as students will be called on to provide their reactions and/or critiques of the authors' ideas.

During Week 2, you are required to submit a list of goals for your internship project to Piazza by Monday, January 16.

On March 6th, come prepared to give a five-minute in-class presentation on the status of your internship project and how it can be framed using the concepts covered in class. Visuals such as photos, maps, etc. are encouraged (and can be projected as PowerPoint slides).

Class attendance and participation

We will take attendance every class period. If you miss a class, you can make up any missed work within 24 hours with no penalty. Whenever possible, you must provide advance notice of absences by emailing the instructors.

Units and scheduling

You are required to work three to four hours per week for each unit you take. Make sure you register for only the units to which you can commit. You must inform your instructor of the number and type of units you plan to take by the end of Week 1 each quarter.

Use the *Intern Hours Availability* form (available on our Google Drive) to provide us with the days and hours you can work. Please set aside four-hour morning or afternoon time blocks, and make sure you can work the entire time. (For example, do not schedule yourself to come in at 9:00 am if you get out of class at 9:00 am.) We will use this information to create a schedule that works for you and your project lead. We expect you to finalize your schedule no later than the end of Week 2 each quarter.

You are expected to make up any hours missed. Please notify your instructor and project lead before your scheduled work time if you will be absent. We will work with you to schedule times to make up missed hours.

You may be able to reschedule your hours occasionally, but only if you make arrangements with your project lead ahead of time, and you make up the hours either ahead of time or within seven days.

Fill out your activity log, located on the Google Drive, by Friday at 5:00 pm each week. This not only allows us to keep track of your hours, but it also helps us keep track of what work has been completed.

Intern expectations

The CLL internship program is a professional experience that introduces interns to sustainability research, outreach, and thinking. Please treat your internship as you would a job. Arrive on time and limit cellphone use. Remember that you are a representative of UCI and CLL's partners. Also remember that data collected in this program will be used for decision-making and that material communicated to the public and to students forms an important part of their education. Therefore, a focus on accuracy is essential.

Wear appropriate clothes. For office work, khakis, dark colored pants, and jeans in good condition are generally acceptable; thin pants (i.e. leggings or yoga pants) may not be. If you are unsure about your attire, ask your supervisor.

When working in the garden, wear long sturdy pants, such as jeans, khakis, or hiking pants. Shorts and thin pants are not acceptable. You must wear closed-toed shoes with thick rubber soles when working outdoors. Remember that if you work in an outdoor environment, you should wear clothing that can get dirty and potentially damaged.

Follow all safety rules. When carrying supplies, take multiple trips rather than overload yourself, and lift with your legs, not your back. Immediately report broken equipment/supplies and safety hazards to a staff member. If working outdoors, bring a long-sleeve layer, hat, and sunglasses for sun protection, and a water bottle. Wear sunscreen, even if it's cloudy.

Grading criteria

Grades will be determined based the rubric below. We will schedule individual quarterly meetings to discuss your internship experiences and to provide you with feedback. Interns must receive a grade of A or B to continue in CLL.

| Grade | Participation | Learning Objectives | Professionalism | Work Habits |
|-------------------|---|--|--|---|
| A | <ul style="list-style-type: none"> Participates in all activities Completes ALL required hours (3-4 hours per week per unit) following a prearranged schedule Attends all scheduled meetings | <ul style="list-style-type: none"> Always reads required and relevant literature and has a good understanding of the material Always completes reading reflections and homework Independently applies skills and procedures to new situations, showing transfer of knowledge | <ul style="list-style-type: none"> Always makes arrangements ahead of time if he/she will miss or be late to scheduled hours Always follows the expectations for communications, dress, teaching, and research as outlined in the <i>CLL Interns Roles and Responsibilities</i> document Always prepared with appropriate materials Always has a positive attitude about the task(s) | <ul style="list-style-type: none"> Always works diligently, stays on task, and pays attention to detail. Her or his work is reliable and consistently of high quality Always follows safety procedures Logs all hours by Friday 5 pm each week. |
| B | <ul style="list-style-type: none"> Participates in all training activities Completes ALL required hours (3-4 hours per week per unit) following a prearranged schedule Attends most scheduled meetings | <ul style="list-style-type: none"> Reads some, but not all, of the required and relevant literature and understands some of the material Completes most of the reading reflections and homework Understands skills and procedures and applies them to new situations with supervision | <ul style="list-style-type: none"> Occasionally misses or is late without making prior arrangements with supervisor Usually follows the expectations for communications, dress, teaching, and research as outlined in the <i>CLL Interns Roles and Responsibilities</i> Usually prepared with appropriate materials Usually has a positive attitude about the task(s) | <ul style="list-style-type: none"> Works diligently, stays on task, and pays attention to detail. Work is sometimes sloppy or unreliable and has to be redone Usually follows safety procedures Usually logs all hours by Friday 5 pm each week. |
| C or lower | <ul style="list-style-type: none"> Misses some of the training activities Does not complete all required hours (3-4 hours per week per unit) following a prearranged weekly schedule Misses most of the scheduled meetings | <ul style="list-style-type: none"> Does not read required literature and demonstrates a poor understanding of the material Does not complete the majority of the reading reflections No evidence is shown that new skills have been learned | <ul style="list-style-type: none"> Frequently misses (>4 times/quarter) or is late without making prior arrangements with supervisor Occasionally does not follow the expectations for communications, dress, teaching, and research as outlined in the <i>CEB Interns Roles and Responsibilities</i> document Sometimes is unprepared with materials Sometimes has a negative attitude about the task(s) | <ul style="list-style-type: none"> Often strays off task (i.e., takes excessive breaks, spends time making personal phone calls/e-mails/visits). Work is of low quality and often not reliable. Sometimes does not follow safety procedures Does not log hours within 48 hours |
| INC | <ul style="list-style-type: none"> Intern does not complete ALL required hours (3-4 hours per week per unit). Arrangements have been made with Dr. Huxman and the student's supervisor to receive an incomplete in lieu of a non-passing grade. | | | |

Course schedule

WEEK 1 (January 9): What are we working to sustain?

Sustainability has been cited as a goal by everyone from Al Gore to Exxon. But what does “sustainability” actually mean when put into practice? Is the goal simply to maintain our current economic, political, and social systems, or are deeper changes needed? In this class, we will discuss the pros and cons of different understandings of sustainability and how to apply them to real-world examples.

WEEK 2 (January 16): NO CLASS

Required assignment:

Although we do not have class this week, you are required to write a short description of three goals specific to your internship project that you plan to accomplish in the first half of winter quarter, which you will post to Piazza by Monday, January 16.

WEEK 3 (January 23): Can suburbia be sustainable?

Compared with compact urban areas, suburban “sprawl” consumes more land and its residents drive more miles by private vehicle. Consequently, suburban development is one of the major drivers of greenhouse gas emissions in the U.S. In this session, we examine how the built environment shapes our carbon footprint, the history of suburban development in the U.S., and potential strategies for making suburbia sustainable.

Required reading:

Ewing, R., Bartholomew, K., Winkelman, S., Walters, J., & Chen, D. (2008). Executive summary. In *Growing Cooler: The Evidence on Urban Development and Climate Change* (pp. 11-22). Washington, DC: Urban Land Institute.

Required assignment:

Submit your reading reflection to Piazza by the start of class. Your post should be at least 150 words and pose a question provoked by the readings, as well as a thoughtful answer to your question.

WEEK 4 (January 30): What does environmental justice look like? (Part 1)

Due to long-standing socio-economic inequalities, low-income and minority communities suffer disproportionately from pollution and other environmental impacts. Historically, predominantly white officials have used zoning to concentrate noxious land uses and environmental burdens in poor and minority communities, a phenomenon termed

“environmental racism.” In addition, neighborhoods with higher environmental quality also tend to be more expensive, making it difficult for low-income families to move out of polluted neighborhoods. In this class, we will look at EJScreen, a new online tool for identifying the communities affected by pollution, and discuss strategies for promoting greater environmental justice.

Required reading:

Alston, D. (1991, October). *Moving Beyond the Barriers*. Washington, DC.

Required assignment:

Submit your reading reflection to Piazza by the start of class. Your post should be at least 150 words and pose a question provoked by the readings, as well as a thoughtful answer to your question.

WEEK 5 (February 6): What does environmental justice look like? (Part 2)

In addition to having disproportionately more pollution, low-income minority communities also tend to lack parks, trees, and other forms of “green infrastructure.” However, attempting to “green” disadvantaged communities can have unintended consequences, such as raising rents and displacing vulnerable residents through gentrification. In this class, we will discuss potential strategies for distributing green infrastructure more equitably.

WEEK 6 (February 13): What does climate justice look like?

Climate justice is an emerging subfield of environmental justice that addresses the distribution of climate impacts. In this class, we will examine case studies of how climate impacts in the U.S., such as extreme weather and flooding, disproportionately impact low-income people of color. In addition, we will examine how climate change impacts developed versus developing countries.

WEEK 7 (February 20): NO CLASS

WEEK 8 (February 27): Climate adaptation

Even if carbon emissions were suddenly halted, enough climate change is “locked in” that cities will need to adapt to its impacts, such as sea level rise and more frequent and severe extreme weather. While scientists can give us some idea of what local-scale impacts are probable, adaptation also involves political decisions on what risks are acceptable, who should pay and who should be protected, and who gets a voice in making these choices. In class, we will examine the pros and cons of some proposed strategies to adapt New York City to climate change in the wake of Hurricane Sandy.

Required reading:

Barnett, J., & O'Neill, S. (2010). Maladaptation. *Global Environmental Change*, 20(2), 211–213.

Required assignment:

Submit your reading reflection to Piazza by the start of class. Your post should be at least 150 words and pose a question provoked by the readings, as well as a thoughtful answer to your question.

WEEK 9 (March 6): Final presentations

Required assignment:

This week, each student will be called on to give a 5-minute update (with photos, maps, and other visuals encouraged) to the class on the status of his/her internship project and how it can be framed with the concepts covered this quarter. If you are using PowerPoint slides, upload them to the course website by the start of class so that they can be ready for you to project.

WEEK 10 (March 13): Where do we go from here?

For our final class session, we will preview spring quarter's exploration of case studies of potential sustainability solutions, and how they connect with this quarter's themes.