



# CLIMATE CHANGE AND DISASTER MANAGEMENT

PH 172  
Spring 2019

## Lead Instructor:

Miryha Gould Runnerstrom, Ph.D. (UC Irvine)  
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## Co-Instructors:

Steven Parish, Ph.D. (UC San Diego)  
Nancy Suski, M.S. (Lawrence Livermore National Laboratory)

## Guest Speakers:

Michael Wehner, Ph.D. (Lawrence Berkeley National Laboratory)  
Angela Wells (Montana Department of Natural Resources and Conservation)  
Vincanne Adams, Ph.D. (UC San Francisco)  
Rick Lavine, M.D. (Psychiatrist and Documentary Filmmaker)  
Robert Greene (Resident of the Lower Ninth Ward in New Orleans, LA)  
Daniel Parker, Ph.D. (UC Irvine)  
Federico Castillo, Ph.D. (UC Berkeley)  
Mojgan Sami, Ph.D. (UC Irvine)

## Office Hours:

Dr. Runnerstrom will hold regular weekly office hours via Canvas Conferences (Wednesdays from 2 to 3 p.m. and by appointment). Dr. Runnerstrom is also available for in person office hours by appointment at <https://calendly.com/runnerstrom/office-hours/>. If you don't see anything that fits with your schedule, let me know and we can try to find another time. I look forward to meeting with you.

## Course Assistants:

Javier Garcia-Rivas - [jgarciar@uci.edu](mailto:jgarciar@uci.edu) (TA)  
Nik Warren – [nrwarren@uci.edu](mailto:nrwarren@uci.edu) (TA)  
Matt DeLeon - [mrdeleo1@uci.edu](mailto:mrdeleo1@uci.edu) (Reader)  
Jasneet Goraya – [jgoraya@uci.edu](mailto:jgoraya@uci.edu) (Reader)

## Overview:

Climate change produces extreme weather events, threatens food and water supplies, shifts disease vectors, and forces migration. This interdisciplinary course examines the social, economic, environmental and health impacts of anthropogenic climate change through engaged learning that integrates practice and theory. Topics covered include the evidence basis for anthropogenic climate change; disaster management; extreme weather events; heat and

wildfires; hurricanes; infectious diseases and climate change; flooding, drought and migration from a socioeconomic perspective; environmental policy; and urban resilience.

### Learning Objectives:

By successfully completing this course, students will be able to:

- Explain how climate change is linked to global public health emergencies
- Describe the factors that give rise to disaster vulnerabilities
- Analyze if the current policies and agreements in place to mitigate climate change and build capacity for global health preparedness and response are sufficient, and what are the factors limiting their effectiveness
- Discuss the disparate health impacts that vulnerable populations experience.
- Describe how city resilience is related to sustainability and global climate change.

### Requirements:

Requirements for this course include:

- Assigned readings
- Lecture videos
- Supplemental (not optional) videos
- Quizzes
- Interactive online lessons
- Individual assignments, which will include:
  - Individual discussion forums
  - Individual assignments
- Team assignments, which will include:
  - Video conference team meetings (discussion sections) - *This is a group-intensive course and attendance at all 6 video team meetings is required to pass the class and earn points on the team assignments. Plan your schedule accordingly. If you cannot commit to attending all 6 video team meetings, please do not stay in this class. If you stay in this class and fail to attend your chosen team discussion, you will be removed from your group and will receive an F in the course.*
  - Team discussion forums
  - Team assignments

### Academic Integrity:

We take academic integrity extremely seriously. The learning environment at the University of California, Irvine is based on honesty and integrity. Sustaining this environment requires that all participants recognize the importance of maintaining the highest ethical standards.

It is critical that all individual student assignments be the sole work of each individual student and that team assignments be a collaborative effort with equal contributions from all team members. The quizzes you take in this course are to be taken by you and you alone, without

assistance from another person, though you may use the information from course materials and the text book to assist you. Using the help of another person or resources beyond those provided/used in our course constitutes academic dishonesty. In addition, posting lecture notes, presentation videos, assignments, quiz questions/answers, pages or excerpts from readings, and/or any material that you receive in this class to note-sharing websites constitutes academic dishonesty.

Material submitted in this class may be passed through turnitin.com, which will check your assignments against published works, content on the Internet, and every other paper submitted to turnitin.com. Please ensure that the work that you submit in this class is your own and that you use your own words when writing your assignments.

Anyone found to be in violation of the university policy on academic integrity will receive an F in the course. There are no exceptions to this rule, as we have zero-tolerance for all forms of academic dishonesty. We will never look the other way.

Remaining in the course assumes that you understand what academic integrity is, in all its varied forms, and pledge not to engage in any type of dishonest conduct (which includes, but is not limited to cheating, plagiarism, and dishonest conduct). You, the student, are required to know and understand the relevant policies regarding academic integrity. To this end, you are required to carefully read the information found by following the academic integrity link below. Additionally, all participants in the course are also bound by the University of California Code of Conduct. The relevant link is also below.

UC Irvine's Policy on Academic Integrity - <http://senate.uci.edu/academic-integrity/>

The University of California Code of Conduct - [http://www.ucop.edu/ethics-compliance-audit-services/ files/stmt-stds-ethics.pdf](http://www.ucop.edu/ethics-compliance-audit-services/files/stmt-stds-ethics.pdf)

### **Due Dates:**

In fairness to all students in the class, make-up quizzes will be offered in cases of *advance notice of documented emergency only*. Permission will not be granted to take the quizzes early or late. Students that do not take a quiz within the allotted window of time will not be able to make up the quiz. Plan your schedule accordingly.

Assignments are due at the specified date and time (see Canvas for details). Late assignments will not be accepted for points.

### **Recommended Course Prerequisite:**

Introduction to Global Health (PH170 – available online UC-wide)

**Grading Policy:**

Points for final grades are distributed as follows:

Week	Assignment	Points Possible
<b>Week 2</b>	Syllabus Quiz	10
	Week 2: Disaster in Franklin County Reflection Assignment	20
<b>Week 3</b>	Week 3 Reading and Lecture Quiz	10
	Week 3: Emergency Management Team Discussion Forum	20
<b>Week 4</b>	Week 4 Reading and Lecture Quiz	10
	Week 4: Pack Your Gear Assignment	20
<b>Week 5</b>	Week 5 Reading and Lecture Quiz	10
	Week 5: Vulnerable Populations Assignment	20
	Week 5: It's Time to Evacuate!!!! Class Discussion Forum	10
	Week 5: Peer Review of Class Discussion Forum	5
<b>Week 6</b>	Week 6 Reading and Lecture Quiz	10
	Week 6: Katrina Recovery Fair Assignment	50
<b>Week 7</b>	Week 7 Reading and Lecture Quiz	10
	Week 7: Harvey Mosquito Surveillance Assignment	30
<b>Week 8</b>	Week 8 Reading and Lecture Quiz	10
	Week 8: Assessment Team Discussion Forum	10
<b>Week 9</b>	Week 9 Reading and Lecture Quiz	10
	Week 9: Global Covenant Cities Class Discussion Forum	10
	Week 9: Peer Review of Class Discussion Forum	5
<b>Week 10</b>	Week 10 Reading and Lecture Quiz	10
	Week 10: Resilience Assignment	30
<b>Total Points Possible</b>		<b>320</b>

Grades are based on the following percentages:

A+ ≥ 100 &gt; A ≥ 94 &gt; A- ≥ 90

B+ ≥ 87 &gt; B ≥ 84 &gt; B- ≥ 80

C+ ≥ 77 &gt; C ≥ 74 &gt; C- ≥ 70

D+ ≥ 67 &gt; D ≥ 64 &gt; D- ≥ 60 &gt; F

Grades are not based on a curve and will not be rounded. Your grade will be calculated by adding the points that you *earn* on each assignment.

Your grade will be based on the quality of your answers, as well as on the quality and strength of your writing. We strongly recommend that you use a style manual that provides you with tips on good writing and that you proofread your work before submission.

Quizzes will cover material from the lecture videos, supplemental videos, and assigned readings. The week 3 quiz will cover material from weeks 2 and 3. All other quizzes will cover materials assigned that same week (e.g, week 4 quiz will cover week 4 materials). Quizzes will be available for 24 hours, and you will have 15 minutes to complete the quiz once you begin. Each quiz can be taken twice, and only your highest score will be counted. Quiz answers will be available via Canvas after the quiz window closes.

**\*\*Please check your grades frequently. The deadline for discussing all grading issues is Friday of Week 10.\*\***

#### **Incompletes:**

Incomplete grades will be assigned only in documented emergencies.

#### **Getting Help and Keeping in Touch:**

Even though this is an online course, it's not a "do it yourself" endeavor. Remember, Dr. Runnerstrom and TAs are here to help. We want you to be connected to your Lead Instructor and the TAs, however, it is your responsibility to seek help when you need it. Use the following methods to get in touch and/or ask questions:

- Questions concerning class materials should be posted on the class discussion forum called "Post Your Questions and Comments Here," so that all students can benefit from reading the answer. Discussion postings are archived and will be available throughout the course.
  - Please refrain from emailing Dr. Runnerstrom or the TAs with questions about the readings or video lessons. These questions should be posted to the discussion forum. We will do our best to respond quickly to questions.
- When we have a need for communication that is private, whether personal, interpersonal, or professional, we will use individual email or Canvas messaging.

Important class announcements will be made via Canvas. Please ensure that you have read each of these announcements and adjust your Canvas settings so that you receive notifications when announcements are posted.

## **Online Communication:**

### Basic considerations

In an online classroom, we communicate primarily through writing. Although expressing ourselves through writing has many advantages, it also has disadvantages. Of central concern is the possibility for misunderstandings or conveying a tone that you do not intend to convey. This happens because we lack the benefit of having access to one another's body language, facial expressions, tone, and non-verbal gestures. As a result, we need to be aware of the real possibility of unintentional miscommunication.

### Specifics for this class

We require that all communication be done in a respectful, courteous, and professional manner. When in doubt, always err in this direction: aim for being slightly more courteous than you may think you need to be. Nobody will object to an extra "please" or "thank you." Always take a few minutes to read what you have written before posting a comment or sending an email – pause and think – could what you have written be construed as impolite or snappy? When in doubt, re-think your words and tone, and re-calibrate your message. We may not always agree, but disagreeing while simultaneously showing respect and courtesy toward someone is a skill that will serve you well throughout your life and in many contexts. Always make criticism constructive and not personal. If you disagree with someone, they should not feel personally attacked. Keep the ideas separate from the person. We will always keep these principles in mind when communicating with you – please do the same toward us, the TAs, and your fellow students.

## **Internet Connectivity and Technology:**

Please ensure that you have a stable Internet connection when you are taking the quizzes. Whenever possible, use a wired connection instead of a wireless connection. Connectivity issues that arise during a quiz may prevent you from completing the quiz or may cause scoring errors.

Team meetings will occur synchronously through video conferencing during the scheduled class discussion time. You will need to ensure that you have a working web camera, headphones or speakers, and a microphone prior to the beginning of the class.

Please download multiple web browsers (e.g., Firefox, Google Chrome, Safari) before the beginning of the course. This will help to ensure that you are able to navigate around technology problems that may be browser-specific.

## **Readings:**

A detailed list of readings for each week is available in the weekly modules via Canvas.

### Why bother to do the readings?

The assigned readings *complement* the class lecture and supplemental videos. In other words:

## Lecture Videos + Supplemental Videos + Assigned Readings = Complete Picture

When reading for this class, we recommend that you think about how the concepts that you are reading about apply to this class as a whole, to the assignments, and to other real-world situations.

### How to read for this class?

Reading the required texts isn't meant to be an exercise in memorization. Instead, please focus your reading efforts on understanding the key concepts and applying these concepts to scenarios in the real world and to the assignments. If you are unfamiliar with this active type of reading, you can take a look at the helpful tips here: <http://www.cornellcollege.edu/academic-support-and-advising/study-tips/reading-textbooks.shtml>

### **There is one *required* book for the class:**

[Field Notes From a Catastrophe](#) (revised and updated edition from 2015) by Elizabeth Kolbert

<b>Class Schedule Outline:</b>
<b>Week 1: Introduction to Climate Change and Disaster Management</b> <ul style="list-style-type: none"><li>• Review the Week 1 Canvas module for specific Week 1 requirements</li></ul>
<b>Week 2: The Evidence Basis for Anthropogenic Climate Change</b> <ul style="list-style-type: none"><li>• Guest speaker: Dr. Michael Wehner of Lawrence Berkeley National Laboratory</li></ul>
<b>Week 3: Disaster Management</b> <ul style="list-style-type: none"><li>• Co-Instructor Nancy Suski, MS, of Lawrence Livermore National Laboratory</li></ul>
<b>Week 4: Extreme Weather in a Changing Climate</b> <ul style="list-style-type: none"><li>• Guest speaker: Dr. Michael Wehner of Lawrence Berkeley National Laboratory</li></ul>
<b>Week 5: Vulnerable Populations (Heat and Fire)</b> <ul style="list-style-type: none"><li>• Co-Instructor Dr. Steven Parish of UC San Diego</li></ul>
<b>Week 6: Hurricane Katrina</b> <ul style="list-style-type: none"><li>• Guest speakers: Dr. Vincanne Adams of UC San Francisco, Dr. Rick Lavine a psychiatrist and documentary filmmaker, and Robert Greene a resident of the Lower Ninth Ward in New Orleans, Louisiana.</li></ul>
<b>Week 7: Climate Change and Infectious Disease Epidemiology</b> <ul style="list-style-type: none"><li>• Guest speaker: Dr. Daniel Parker of UC Irvine</li></ul>

**Week 8: The Socioeconomics of Migration, Flooding, and Drought**

- Guest speaker: Federico Castillo of UC Berkeley

**Week 9: Climate Change Policies**

- Lead Instructor Dr. Miryha Runnerstrom of UC Irvine

**Week 10: City Resilience in the Face of a Changing Climate**

- Lead Instructor Dr. Miryha Runnerstrom of UC Irvine