SIOC 209 - Special Topics - Environmental Justice

Tarik Benmarhnia
Scripps Institution of Oceanography

Office: MESOM #243
Phone: 619 674 8599
Office hours: After Class and by appointment
Email: tbenmarhnia@ucsd.edu

Time: Wed 2:00pm-3:20pm
Room: Nierenberg 101

Course Short Description:

This graduate-level seminar will explore the intersections of environmental degradation, climate change and variability, and social justice with a focus on quantitative methods. The course will be organized into three parts:

- **Foundations of environmental justice studies**: We will cover the history of the environmental justice movement, how it became an academic field and how it translated into environmental policies. We will focus on the US and San Diego but will include perspectives from other regions. Topics will include air pollution, water contamination, climate change, and food systems, for example.
- **Methods for environmental justice**: We will discuss how to design an environmental justice study and cover various quantitative tools that can be used including GIS for environmental justice mapping, census data and the American Community Survey data, spatio-temporal interpolation, introduction to statistical modeling and machine learning, remote sensing, and other techniques to model environmental exposure.
- **Incorporating equity in environmental policies and community-based activities**: We will discuss how to advance the equity agenda in environmental policies at the federal, state, and local levels. We will also invite guest lecturers from state and local agencies as well as community leaders.

Evaluation will be based on class participation (readings and discussions) and a final group project.

There is no prerequisite for this course.

Class Schedule:

Week and dates	Topic
Week 1 - Jan 8	**Introduction to the course and overview of the quarter Survey for the final group project**
Week 2 – Jan 15	**History of the Environmental Justice (EJ) movement and EJ principles**
Week 3 – Jan 22	**An overview of EJ conceptual frameworks**
Week 4 – Jan 29	**Presentation of the case studies – Description of the data sources (census, ACS, etc..) and assigning groups and topics**
Week 5 – Feb 5	**Introduction to GIS for EJ mapping studies**
Week 6 – Feb 12	**Introduction to remote sensing products and Google Earth Engine for EJ studies**
Week 7 – Feb 19	**Introduction to statistical modelling and machine learning for EJ studies**
Week 8 – Feb 26	**A community -based perspective on EJ in San Diego:** Carolina Martinez, Climate Justice Director at the Environmental Health Coalition
Week 9 – Mar 5	**Integrating EJ into policy at the San Diego County:** Murtaza H. Baxamusa, Chief of Intergovernmental Affairs for Chairwoman Vargas
Week 10 – Mar 12	**Group Presentations**

Selected Readings

No textbook is required for this course
Assigned readings will be posted a few days before each class
Below is a selection of some readings that will be discussed in class

- Bullard, Robert D., and Glenn S. Johnson. "Environmentalism and public policy: Environmental justice: Grassroots activism and its impact on public policy decision making." Journal of social issues 56.3 (2000): 555-578.
- Mohai, Paul, David Pellow, and J. Timmons Roberts. "Environmental justice." Annual review of environment and resources 34.1 (2009): 405-430.
- Van Horne, Yoshira Ornelas, et al. "An applied environmental justice framework for exposure science." Journal of exposure science & environmental epidemiology 33.1 (2023): 1-11.
- Nunez, Yanelli, et al. "An environmental justice analysis of air pollution emissions in the United States from 1970 to 2010." Nature Communications 15.1 (2024): 268.
- Mohai, Paul, and Robin Saha. "Which came first, people or pollution? A review of theory and evidence from longitudinal environmental justice studies." *Environmental Research Letters* 10.12 (2015): 125011.
- Casey, Joan A., et al. "Methods in public health environmental justice research: a scoping review from 2018 to 2021." Current environmental health reports 10.3 (2023): 312-336.