CRP 3850/5850 Special Topics: Urban Adaptation to Climate Change

Cornell University Department of City and Regional Planning
Spring 2018

Class: Mondays and Wednesdays, 2:55 – 4:10pm, Sibley Hall 208
Instructor: Linda Shi, Assistant Professor
Office: Sibley 213
Email: lindashi@cornell.edu
Office Hours: Thurs 3:00-5:20, or by appointment
Sign up on: http://tinyurl.com/shilinda-office

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Course Description

Cities worldwide are increasingly aware of and alarmed by the impacts and implications of unavoidable climate change. Everywhere you look – in news coverage of acute and drawn out disasters, in city plans and programs, and in international events and networks, people are talking about the impacts of climate change on cities and the need for climate adaptation. In recent years, the idea of “resilience” has seemingly overtaken “sustainability” as the new hot topic. Why is resilience suddenly so popular? What does it even mean? How can cities better prepare for climate change given public attitudes and fiscal and institutional constraints? Are adaptation activities making cities more resilient, and if so, in what ways? If there are gaps between what we hope adaptation can achieve and what is actually happening on the ground, what kinds of policy reforms are needed and are there any models that show progressive paths forward?

This year, the class will focus primarily on climate adaptation in coastal regions, with emphasis on the United States, but some exploration of these topics in an international context. First, it introduces you to core concepts, terminology, and policy analysis related to climate adaptation and resilience. These include the fundamentals of climate science, the types of impacts they have on cities, the methods of assessing urban vulnerability to climate change, the ways in which cities are trying to adapt, and how these efforts differ from or relate to climate mitigation, disaster risk reduction, and sustainability. Second, the course asks you to critically examine how adaptation and resilience planning preserves the function of existing infrastructural, political economic, and socio-economic systems. Such efforts, in the context of deeply unequal, unjust, and unsustainable development, can widen disparities and exacerbate environmental impacts. Third, the course challenges you to identify and articulate adaptation strategies that you think have promise in producing transformative change.

Intended Learning Outcomes

The course draws on lectures by the instructor and invited guests, discussions, student presentations, in-class exercises, and an end-of-semester mini-conference. By the end of the course, students will be able to:

- Explain basic concepts of risk, hazard, vulnerability, frameworks for resilience and climate adaptations, and physical, social, financial, and institutional strategies for urban climate adaptation
- Apply these concepts to evaluate existing vulnerability assessments and adaptation plans for their impacts on environmental well-being, social and environmental justice, and social equity
- Articulate and design strategies that promote transformative adaptation that try to redress underlying drivers of vulnerability to climate change

Syllabus - 1
This course will strengthen students’ oral communication skills through presentations and debates, and written skills through instructor and peer feedback on a final paper. Students will also develop personal values and ethics in adaptation planning by critically examining whether the rhetoric of resilience and adaptation enhance the well-being of the most disadvantaged, and how the role they envision for themselves in advocating for a more just outcome.

Assignments

Students are asked to select a “case study city” at the start of the semester and to do the various assignments as applied to that city in order to gain some depth of knowledge about a place. Undergraduate and master’s students turn in the same assignments. However, the expected learning outcomes for undergraduates emphasize conceptualization, summary, and assessment, while those for master’s students emphasize assessment, synthesize, and design. In addition, master’s students are expected to help lead in-class discussions as well as group assignments.

- **Participation (15% of grade).** 5% of the participation grade is based on attendance. Up to 2 unexplained or excused absences are permitted, after which each unexplained or unexcused absence results in a 1% deduction of the overall grade. 10% is based on in-class contributions showing students have done the reading and are thoughtfully engaging with course content. In-class quizzes will serve as a record of attendance and hold students accountable for readings.

- **Preparation for 3 In-Class Exercises (30% of grade).** Students prepare for and participate in three in-class exercises: a world café on vulnerability assessments, one of two debates (either a debate on whether a selected city’s actions are evidence of a resilience dividend or disaster capitalism, or a debate on whether adaptation is local / extra local), and a policy design charrette to imagine governance pathways for selected cities. Students are expected to prepare for the exercises as indicated by exercise briefs to be handed ahead of time.

- **Case Study Presentation (20% of grade).** Pairs of students select a class between weeks 5 to 12 (excluding in-class exercises or guest speakers) and present a 10-minute case study on that topic. The case study may or may not be in one of their case study cities. These cases provide a concrete example to ground our discussions of the readings. Up to two pairs may present in each class. Grades for this assignment will be given by fellow students, with oversight by the instructor.

- **Final Paper or Project (45% of grade).** Students can write an individual paper or do a group project. Individual papers entail a 2,000-word essay that synthetically reviews literature on past or proposed strategies and initiatives; compares strategies across sites (within country, or across countries); critically evaluates an adaptation plan, policy, or strategy; proposes a research project to be conducted over the summer; or presents a policy memo on a contemporary policy dilemma. Final projects can be done in groups of up to a three people and can tackle similar issues but take the form of a short movie, podcast, or blog. A project can also be a mini-adaptation plan that identifies a promising strategy, assesses its potential for the selected city, and modifies it to suit local needs. Projects are held to similar standards as the paper in intellectual rigor, engagement with the literature, and critical thinking, but require more creativity and time devoted to crafting the output, commensurate with the increase in number of group members.
  - **Topic Selection (5%).** Write a 500-word summary of your proposed final paper topic. Indicate the motivation for the topic, analytical perspective (if appropriate), the reason for selecting a particular case study (if appropriate), sources of data, strategies for analysis, and final product format.
  - **Draft Paper / Project Presentation (10% of grade).** Students make a 5-minute presentation of their draft work to share to the class and receive feedback from their peers. Evaluations of presentations will be done by students of their peers.
  - **Final Paper / Project (30% of grade).**
Grading
Grading rubrics will be provided for all major exercises and assignments. Grading for 30% of the course will be done by students’ assessments of each other’s presentations, with instructor oversight. Late submissions will be docked half a letter grade per day. Students who sincerely engage with the materials and ideas of the course, respond to feedback, and work hard to improve over the course of the semester will do well in this course.

Readings
All readings will be available on the password protected Blackboard course website, as well as through course reserve.

Respect as Central Ground Rule for Class
Students can expect the instructor to respect them by providing engaging readings, lectures, and exercises; fostering their individual growth and learning through timely feedback on assignments and office hours conversations; and encouraging participation and diverse perspectives. The instructor expects students to respect the class by arriving on time, prepared for and ready to participate. Students are expected to respect each other’s varying levels of experience, skills, and knowledge, and diversity of backgrounds and viewpoints in how they listen, discuss, and collaborate. Students may not use electronic devices in class unless otherwise indicated.

Written Work
The Knight Institute for Writing provides seminars and other assistance with writing, including a walk-in service in the evenings on four locations across campus. See bit.ly/2h6nsgQ

Academic Accommodation
If you have a disability-related need for reasonable academic adjustments in this course, please provide us with an accommodation letter from Student Disability Services (sds.cornell.edu). You are expected to give two weeks’ notice of the need for accommodations.

Academic Misconduct
Please remember that plagiarism is a serious offence that can result in expulsion from the University. Never 1) turn in an assignment that you did not write yourself, 2) turn in an assignment for this class that you previously turned in for another class. Cornell’s Code of Academic Integrity and Acknowledging the Work of Others is found in the Policy Notebook for the Cornell Community at bit.ly/2u2ITAJ. The instructor reserves the right to use Turnitin to check for plagiarism.
## OVERVIEW OF SEMESTER

<table>
<thead>
<tr>
<th>Week</th>
<th>Date</th>
<th>Lecture Topic</th>
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<tbody>
<tr>
<td>0</td>
<td>W Jan 24</td>
<td>Introduction to Climate Change and Its Impacts on Cities</td>
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<td></td>
<td><strong>1. Core Concepts of Causes and Responses to Vulnerability to Climate Change</strong></td>
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<td>1</td>
<td>M Jan 29</td>
<td>Types of Vulnerability to Climate Change</td>
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<td>W Jan 31</td>
<td>Underlying Drivers of Vulnerability to Climate Change</td>
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<td>Due: Debate, Individual Focus, and Case Study Presentation Selections</td>
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<td>2</td>
<td>M Feb 5</td>
<td>Regional Interdependence, Global Teleconnections, and Threat Multipliers</td>
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<td>W Feb 7</td>
<td><strong>In-class World Café: Learning from Vulnerability Assessments</strong></td>
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<td>M Feb 12</td>
<td>Socio-Ecological Resilience as a Framework of Action</td>
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<td>W Feb 14</td>
<td>Transformative Adaptation as an Alternative Framework</td>
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<td>4</td>
<td>M Feb 19</td>
<td>February break, no class</td>
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<td>W Feb 21</td>
<td><strong>In-class Debate A: New Orleans: Disaster Capitalism or Resilience Dividend?</strong></td>
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<td>F Feb 23</td>
<td>**Colloquium Lecture: David Lessinger: From Recovery to Resilience: Planning in Post-Katrina New Orleans</td>
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<td><strong>2. Design and Policy Strategies for Climate Adaptation</strong></td>
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<td>5</td>
<td>M Feb 26</td>
<td>Adaptation Planning Processes and Barriers to Making Cities Adapt</td>
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<td>W Feb 28</td>
<td>Evaluating Outcomes When Cities Do Adapt</td>
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<td>F Mar 2</td>
<td><strong>Colloquium Lecture: Mike Armstrong, Principal of CityScale</strong></td>
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<td>6</td>
<td>M Mar 5</td>
<td>Ecosystem-Based Adaptation</td>
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<td>W Mar 7</td>
<td>Community-Based, Community-Led Adaptation</td>
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<td>M Mar 12</td>
<td>Codes against the Apocalypse: Zoning and Land Use Reforms</td>
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<td>W Mar 14</td>
<td>Design and Build Your Way Out</td>
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<td>F Mar 16</td>
<td><strong>Colloquium Lecture: Robert Lane, Regional Plan Association</strong></td>
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<td>8</td>
<td>M Mar 19</td>
<td>Retreat, Relocate, Resettle</td>
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<td>W Mar 21</td>
<td>Financing Adaptation: Who and How to Pay</td>
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<td>9</td>
<td>M Mar 26</td>
<td><strong>In-class Debate B: Miami Beach: Is Adaptation Policy Local or &quot;Extra Local&quot;?</strong></td>
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<td>W Mar 28</td>
<td>Fairness and Justice in Climate Adaptation</td>
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<td>10</td>
<td>M Apr 2</td>
<td>Spring break, no class</td>
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<td>W Apr 4</td>
<td>Spring break, no class</td>
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<td><strong>3. Imagining Radical Alternatives and Structural Reforms</strong></td>
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<td>11</td>
<td>M Apr 9</td>
<td>Guest: Aditi Mehta, MIT: Mobilizing Youth through Digital Media</td>
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<td>W Apr 11</td>
<td>Regional Adaptation and Governance Reform</td>
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<td>12</td>
<td>M Apr 16</td>
<td>Reorienting Growth, Redrawing Boundaries, and Reforming Local Finance</td>
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<td>W Apr 18</td>
<td>Redesigning Responsible Property Rights and Laws</td>
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<td>13</td>
<td>M Apr 23</td>
<td>Realigning Political Coalitions and Reflexive Democracy</td>
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<td>W Apr 25</td>
<td><strong>In-class Charrette: Policy Pathways towards Just and Adapted Futures</strong></td>
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<td>14</td>
<td>M Apr 30</td>
<td><strong>Bill Solecki, Hunter College</strong></td>
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<td>W May 2</td>
<td>Presentation of Draft Papers/Projects</td>
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<td>Due: All Presentations before class</td>
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<tr>
<td>15</td>
<td>M May 7</td>
<td>Presentation of Draft Papers/Projects</td>
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<td>W May 9</td>
<td>Prospects for Transformative Adaptation: Synthesis and Review</td>
</tr>
<tr>
<td>16</td>
<td>M May 14</td>
<td>Due: Final Paper / Project</td>
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Reading List
Readings are subject to change. Follow directions on Blackboard, which will always have the most up to date reading assignments

January 24 – Wednesday – Introduction to Climate Change and Its Impacts on Cities

Watch climate scientist Jim Hansen explain climate science in a TED Talk (2012, 16 minutes). Available online at: 
https://www.ted.com/talks/james_hansen_why_i_must_speak_out_about_climate_change

Watch the director of the Georgetown Climate Center present examples of adaptation around the world. Available online at: https://www.ted.com/talks/vicki_arroyo_let_s_prepare_for_our_new_climate


Additional of interest


Review scientific responses to skeptics’ arguments that climate change is fake https://www.skepticalscience.com/argument.php

Core Concepts of Causes and Responses to Climate Vulnerability

M Jan 29 – Types of Vulnerability to Climate Change


Also of Interest


W Jan 31 – Drivers of Vulnerability to Climate Change
Due: Individual and Pair Case Study Selections

Watch SOLA: Louisiana Water Stories (watch at least up to minute 22:30). Available online at: https://www.snagfilms.com/films/title/sola_lousiana_water_stories


Also of Interest


M Feb 5 – Regional Interdependence, Global Teleconnections, and Threat Multipliers


Also of Interest


W Feb 7 – In-class World Café: Learning from Vulnerability Assessments, no readings
Preparation: Review of a Vulnerability Assessment

M Feb 12 – Socio-ecological Resilience as a Framework for Action


Choose one of the following:


Additional of Interest


W Feb 14 – Transformative Adaptation as an Alternative Framework


M Feb 19 – February Break, no class

W Feb 21 – In-class Debate A: New Orleans: Disaster Capitalism or Resilience Dividend

Read one of the following and prepare for debate:


On Course Reserve


**F Feb 23 – Extra Lecture: David Lessinger: From Recovery to Resilience: Planning in Post-Katrina New Orleans**

*CRP Colloquium, 12:15pm in Milstein Auditorium*

### Design and Policy Strategies for Climate Adaptation

**M Feb 26 – Adaptation Planning Processes and Barriers to Making Cities Adapt**


Choose one of the following:


*Additional of interest*


**W Feb 28 – Evaluating Outcomes When Cities Do Adapt**


Choose one:


Additional of Interest


**M Mar 5 – Ecosystem-Based Adaptation**

**Due: Final paper / project topics**


Choose one of the following:


Additional of Interest


**W Mar 7 – Community-Based / Community-Led Adaptation**


Choose one of the following:


Additional of interest


**M Mar 12 – Codes against the Apocalypse: Building, Zoning, and Land Use Changes**


**W Mar 14 – Develop, Design, and Build Your Way Out**


Browse one of the following design competitions:

- Bay Area: http://www.resilientbayarea.org
- Boston: http://www.bostonlivingwithwater.org

Additional of Interest

Watch David Waggoner, President of Waggoner and Ball Architects, in a TED Talk on Living with Water. Available online at: https://www.youtube.com/watch?v=EyywQ04e7dc


F Mar 16 – Special Required Lecture – Rob Lane, Senior Fellow, Regional Plan Association **

CRP Colloquium, 12:15pm, Millstein Auditorium

M Mar 19 – Retreat, Relocate, Resettle


Additional TBD

W Mar 21 – Financing Adaptation: Who and How to Pay


Additional of Interest


M Mar 26 – In-Class Debate B: Is Adaptation Policy Local or “Extra Local”?

Readings of interest, select 2-3 as interested; Others TBD


W Mar 28 – Fairness and Justice in Climate Adaptation


M Apr 2 / W Apr 4 – Spring Break, no class

Imagining Radical Alternatives and Structural Reforms

M Apr 9 – Guest: Aditi Mehta, MIT: Mobilizing Youth Engagement through Digital Media

Readings TBD

W Apr 11 – Regional Governance Reform


Additional of Interest


M Apr 16 – Revolutionizing Municipal Finance


Regional Plan Association. “Executive Summary” (pp. 5–14) and Actions (pp. 60–87) of the 4th Regional Plan. New York: RPA. Available online at: http://library.rpa.org/pdf/RPA-The-Fourth-Regional-Plan.pdf

Returning to Fiscal Powers?


W Apr 18 – Redesigning Responsible Property Rights


M Apr 23 – Realigning Political Coalitions and Reflexive Democracy

TBD

W Apr 25 – In-class Charrette: Policy Pathways towards Just and Adapted Futures

M Apr 30 / W May 2 – Presentations of Draft Final Projects and Papers, no readings

M May 7 – Prospects for Transformative Adaptation

Syllabus - 13

Others TBD

**W May 9 – Synthesis and Review, no readings**

**M May 14 – Final Papers and Projects Due**