

## **Climate Change, Public Health and Policy**

**SPRING 2016**

Course Outline

**10:775:202**

Instructor: Frank A. Felder  
Civics Square Building, Room 249  
[ffelder@rci.rutgers.edu](mailto:ffelder@rci.rutgers.edu)  
Office Tel. 848 932 2750

For more information on the instructor go to <http://bloustein.rutgers.edu/felder/>

Date/Times/Location: Spring, 2016, Tuesday and Thursdays, 2:40-4:10, College Ave. (Building: TBD)

### Perquisites

One entry level course in public policy, public health, environmental issues, or climate change or permission from the instructor.

Examples of such entry level courses include the following: Introduction to Planning, Policy, and Health (10:762:101) or Energy and Climate Change (01:556:143) or Transforming the Global Environment (01:450:102) or Earth Systems (01:450:101) or Economics, People and the Environment (11:373:101).

### Course Description

Our changing climate is one of the greatest threats to public health and societies in general. Broad scientific agreement finds that the world's climate is changing, which will likely include more variable weather, heat waves, flooding, droughts, more intense storms, sea level rise, and air pollution. Climate change is both a global issue but with regional implications that will vary across populations and geographies. This course investigates the intersection of climate change, public health and public policies in order to understand the problem, its severity, and be able to fashion and analyze integrated public health and policy responses.

### Course Outline

Week 1: Introduction to Climate Change, Public Health and Policy

- Intersection of climate change, public health and public policies
- Key elements of climate change and its impacts

- Formulating public health and climate change mitigation and adaptation strategies

#### Week 2: The Science of Climate Change

- Science of climate change
- Greenhouse gases: what are they and where do they come from
- The evidence for climate change, the arguments against and responses to them

#### Week 3: The Science of Climate Change (con't)

- Impacts of climate change on extreme weather, precipitation, sea levels
- Issues in modeling climate change and making projections
- Uncertainty in climate change modeling

#### Week 4: Overview of the Impacts of Climate Change on Public Health

- Population migration and security in response to changing climate
- Water, agricultural and food impacts
- Disease and other health effects

#### Week 5: Impacts of Climate Change on Food

- Fundamentals of ecology and food systems
- Regional impacts of climate change on agricultural and fisheries
- Populations responses to changes in food supplies

#### Week 6: Impacts of Climate Change on Air Pollution

- Fundamentals of air pollution and its effect on public health
- Sources of air pollution
- Co-benefits of reducing greenhouse gases on air pollution

#### Week 7: Impacts of Climate Change on Population Migration and Security

- Fundamentals of national security
- Methodologies for projecting population movements in response to climate change
- Responses by nation states to these populations movements

#### Week 8: Impacts of Climate Change on Severe Weather

- Types of severe weather events and their causes
- How climate change contributes to severe weather

- Policy responses to severe weather

#### Week 9: Impact of Climate Change on Diseases

- Epidemiology fundamentals
- How climate and weather affect disease propagation
- Analyzing and responding to changing disease patterns due to climate change

#### Week 10: Impact of Climate Change on Poverty

- Causes of poverty
- Role of climate change in poverty
- Policy responses to poverty in the context of climate change

#### Week 11: The Economics of Climate Change

- Understanding how economists think about environmental issues
- Tragedy of the commons
- Putting a price on greenhouse gases

#### Week 12: Public Health Policies in Response to Climate Change

- Fundamentals of public health interventions
- Types of public health interventions
- Evaluating public health responses to climate change

#### Week 13: Broader Policies in Response to Climate Change

- Public opinion on climate change
- Mitigation and adaptation policies
- International agreements and negotiations

#### Week 14: Course Wrap-up and Final Conclusions

- Review of major findings and conclusions
- Importance of interdisciplinary approach to studying climate change and its implications
- Future directions for study and professional development

#### Readings

Required Text: Martin Bunzl, *Uncertainty and the Philosophy of Climate Change*, Routledge, 2015. Hereafter referred to as Bunzl.

Readings will consist of leading governmental and institutional reports, academic papers, and reports from worldwide experts. They will be multidisciplinary and cover both substantive and methodological topics. Optional background readings and primers on key subjects, such as the science of climate change, epidemiology, environmental economics, energy sources and uses will also be provided.

A few examples of readings:

- IPCC, Fifth Assessment Report (AR5), Climate Change 2014 Synthesis Report Summary for Policymakers, [https://www.ipcc.ch/pdf/assessment-report/ar5/syr/AR5\\_SYR\\_FINAL\\_SPM.pdf](https://www.ipcc.ch/pdf/assessment-report/ar5/syr/AR5_SYR_FINAL_SPM.pdf)
- Pew Research Center, *climate Change Seen as Top Global Threat: Americans, Europeans, Middle Easterners Focus on ISIS as Greatest Danger*, July 14, 2015
- Energy Information Agency, Annual Energy Outlook 2015
- World Bank, Climate Change and Poverty – An Analytical Framework, Nov. 2014, [http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2014/11/26/000158349\\_20141126134353/Rendered/PDF/WPS7126.pdf](http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2014/11/26/000158349_20141126134353/Rendered/PDF/WPS7126.pdf)
- US EPA, US Clean Power Plan Proposed Rule, June 2, 2014, <http://www2.epa.gov/carbon-pollution-standards/clean-power-plan-proposed-rule>

### Student Assessment

Students will be assessed with a combination of tests, a cumulative final, short reflection papers, and class participation.