

Department of Economics  
Environmental Studies Program  
University of Colorado at Boulder

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Office: Economics

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ECON 8545  
ENVIRONMENTAL ECONOMICS II  
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MW 9:00-10:15, ECON 5

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Overview:

This course is an applied course in environmental economics with an emphasis on energy markets and energy consuming technologies. The focus is on empirical studies of environmental regulation, measurement of damages from pollution, producer and consumer behavior. The goal is to provide students interested in these topics, the tools necessary to begin conducting their own research.

Office Hours and Contact Information:

Professor: Jonathan Hughes  
Office location: Economics 102  
Office hours: Mondays and Wednesdays from 10:30am to 12:00pm (or by appointment)  
Phone: (303) 735-0220  
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Class web site: <https://canvas.colorado.edu/>

Background Texts:

There is no required textbook for this course. Course readings can generally be downloaded from JSTOR, NBER, etc. or for other working papers, from the web sites listed in the course schedule. Please contact me if you have difficulty downloading the required readings. In addition to these readings, graduate texts in environmental economics, industrial organization and applied microeconometrics will provide useful background to the topics covered in the course. Excellent examples include:

Kennedy, *A Guide to Econometrics*.  
Angrist and Pischke, *Mostly Harmless Econometrics*.  
Cameron and Trivedi, *Microeconometrics: Methods and Applications*.  
Baumol and Oates, *The Theory of Environmental Policy*.  
Freeman, *The Measurement of Environmental and Resource Values*.  
Tirole, *The Theory of Industrial Organization*.

Course Requirements and Grading:

Reading/class participation	15%
Referee reports	15%
Midterm exam	20%
Final exam	20%
Research paper/proposal	30%



Schedule of topics:

\* Denote required readings for which you are to turn in an executive summary

## I. Introduction

\* Angrist and Jorn-Steffen Pischke, "The Credibility Revolution in Empirical Economics: How Better Research Design is Taking the Con out of Econometrics," *Journal of Economic Perspectives*, Spring 2010

Angrist and Krueger, "Empirical Strategies in Labor Economics"

\* Nevo and Whinston, "Taking the Dogma Out of Econometrics: Structural Modeling and Credible Inference," *Journal of Economic Perspectives*, Spring 2010

Reiss and Wolak, "Structural Econometric Modeling: Rationales and Examples from IO"

\* List, "Why Economists Should Conduct Field Experiments and 14 Tips for Pulling One Off," *Journal of Economic Perspectives*, Summer 2011

Muralidharan and Niehaus, "Experimentation at Scale," *Journal of Economic Perspectives*, Fall 2017

## II. Environmental Regulation and Effects

### A. Transportation

\* Auffhammer and Kellogg, "Clearing the Air? The Effects of Gasoline Content Regulation on Air Quality," *American Economic Review* 101, October 2011.

Brown, Hastings, Mansur and Villas Boas (2008), "Reformulating competition? Gasoline content regulation and wholesale gasoline prices," *Journal of Environmental Economics and Management*, 55: 1-19.

\* Davis (2008). "The Effect of Driving Restrictions on Air Quality in Mexico City," *Journal of Political Economy* 116(1): 38-81.

Hausman, Catherine, and David S. Rapson. "Regression discontinuity in time: Considerations for empirical applications." *Annual Review of Resource Economics* (2017).

\* Busse and Keohane (2007), "Market Effects of Environmental Regulation: Coal, Railroads, and the 1990 Clean Air Act," *RAND Journal of Economics* 38(4): 1159-1179

Brown, Hastings, Mansur and Villas-Boas (2008), "Reformulating Competition? Gasoline Content Regulation and Wholesale Gasoline Prices," *Journal of Environmental Economics and Management* 55: 1-19.

Hughes, "The Higher Price of Cleaner Fuels: Market Power in the Rail Transport of Fuel Ethanol," *Journal of Environmental Economics and Management* 62(1), 2011.

\* Roberts and Schlenker, "Identifying Supply and Demand Elasticities for Agricultural Commodities: Implications for the U.S. Ethanol Mandate." *American Economic Review* 100(12): 2265-95.

## B. Electricity and Manufacturing

\* Greenstone (2002), "The Impacts of Environmental Regulations on Industrial Activity: Evidence from the 1970 and 1977 Clean Air Act Amendments and the Census of Manufacturing." *Journal of Political Economy* 110: 1175-1219.

Bushnell, Chong and Mansur, "Profiting from Regulation: Evidence from the European Carbon Market." *American Economic Journal: Economic Policy* 5(4) November 2013, Pages 78-100.

\* Fowlie (2010), "Emissions Trading, Electricity Restructuring, and Investment in Pollution Abatement." *American Economic Review*, June 2010, 837-869.



\* Holland and Mansur (2008), "Is Real-Time Pricing Green? The Environmental Impacts of Electricity Demand Variance." *Review of Economics and Statistics* 90(3): 550-561.

Cullen, Joseph. "Measuring the environmental benefits of wind-generated electricity." *American Economic Journal: Economic Policy* 5, no. 4 (2013): 107-33.

Holland, Stephen P., Erin T. Mansur, Nicholas Z. Muller, and Andrew J. Yates. "Are there environmental benefits from driving electric vehicles? The importance of local factors." *American Economic Review* 106, no. 12 (2016): 3700-3729.

Fell, Harrison, and Daniel T. Kaffine. "The fall of coal: Joint impacts of fuel prices and renewables on generation and emissions." *American Economic Journal: Economic Policy* 2 (2018): 90-116.

\*Allcott, "Rethinking Real-Time Electricity Pricing." *Resource and Energy Economics*, Volume 33, Issue 4, November 2011, Pages 820-842  
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#### IV. Estimating Damages

##### A. Air Pollution

\* Chay and Greenstone (2005). "Does Air Quality Matter? Evidence from the Housing Market." *Journal of Political Economy*, 113(2): 376-424.

\* Davis (2010). "The Effect of Power Plants on Local Housing Values and Rents." *Review of Economics and Statistics*, November 2011, Vol. 93, No. 4, Pages 1391-1402

\* Currie and Neidell (2005), "Air Pollution and Infant Health: What Can We Learn From California's Recent Experience?" *Quarterly Journal of Economics*, 120(3): 1003-1030.

Knittel, Christopher R., Douglas L. Miller, and Nicholas J. Sanders. "Caution, drivers! Child health present: Traffic, pollution, and infant health." *Review of Economics and Statistics*, 98(2) (2016): 350-366.

Currie and Walker. "Traffic Congestion and Infant Health: Evidence from E-Z Pass" *American Economic Journal: Applied Economics*, 3(1): 65-90.

##### B. Climate Change

\* Deschenes and Greenstone (2007), "The Economic Impacts of Climate Change: Evidence from Agricultural Output and Random Fluctuations in Weather." *American Economic Review* Vol. 97, No. 1 (Mar., 2007), pp. 354-385

\* Fisher, Hanemann, Roberts and Schlenker. "The Economic Impacts of Climate Change: Evidence from Agricultural Output and Random Fluctuations in Weather: Comment" 2012. *American Economic Review*, 102(7): 3749-3760

\* Albouy, Graf, Kellogg and Wolff, "Aversion to Extreme Temperatures, Climate Change, and Quality of Life." <http://www-personal.umich.edu/~kellogg/NBERw18925.pdf>

Deschenes, Olivier and Michael Greenstone (2008), "Climate Change, Mortality and Adaptation: Evidence from Annual Fluctuations in Weather in the United States." *American Economic Journal: Applied Economics*, 3(4): 152-85.

Zivin, Joshua Graff and Matthew Neidell (2010), "Temperature and the Allocation of Time: Implications for Climate Change." *Journal of Labor Economics* Vol. 32, No. 1 (January 2014) pp. 1-26

#### V. Discussion of final projects