

**TOPICS IN APPLIED ECONOMETRICS**  
**University of Houston**  
**Economics 6394**

**Professor Adriana Kugler**

**Spring 2008**  
**Tuesdays 10:00 a.m.-1:00 p.m.**  
**212 McElhinney Hall**

This course exposes students to some of the most frequently used econometric techniques in applied microeconomic research. The course teaches the econometric theory behind these techniques; requires reading of empirical research papers applying these techniques, and requires implementation of the econometric methods using actual data sets.

**Course Requirements:**

3 Problem Sets (60%)  
Final Exam (30%)  
Participation (10%)

Problem sets: the data exercises will require the use of Stata (see attached information sheet on the Grad plan to acquire Stata at a reduced rate). Students are encouraged to work together on problem sets, but each student must write up his or her own problem set.

In-Class Exam: there will be a closed book exam on the last week of classes. The exam will be held the last week of classes on Thursday, April 24<sup>th</sup>.

Participation: will be assessed based on attendance as well as the quality of classroom comments.

**Prerequisites:**

Students must have completed ECON 7331 (Econometrics I).

**Office Hours:**

Day and time: Wednesdays 3:00-5:00 p.m. or by appointment.  
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## **Readings:**

There is no required textbook for this course. A recommended textbook is:

Wooldridge, Jeffrey. *Econometric Analysis of Cross Section and Panel Data*. Cambridge, MA: MIT Press, 2002.

We will be using parts of the unpublished manuscript:

Angrist, Joshua and Jorn-Steffen Pischke. *Mostly Harmless Econometrics: An Empiricists's Companion*. Forthcoming Princeton University Press.

## **Syllabus**

### **I. Introduction and Review**

#### **A. Number Crunching**

Ayres, Ian. *Super Crunchers*. Bantam Books: New York, 2007. Chapters 1 and 2.

#### **B. The Experimental Ideal**

Angrist, Joshua and Jorn-Steffen Pischke. *Mostly Harmless Econometrics*, Chapter 2, Sections 2.1 and 2.2.

Angrist, Joshua and Alan Krueger. 1999. "Empirical Strategies in Labor Economics," in Orley Ashenfelter and David Card, eds., *Handbook of Labor Economics*, Vol.3. Amsterdam: Elsevier Science.

#### **C. Regression Analysis**

Angrist, Joshua and Jorn-Steffen Pischke. *Mostly Harmless Econometrics*, Chapter 3, Sections 3.1, 3.2 and 3.4.

### **II. Program Evaluation and Causal Inference**

#### **A. Randomized Experiments**

Angrist, Joshua and Jorn-Steffen Pischke. *Mostly Harmless Econometrics*, Chapter 2, Section 2.3.

Angrist, Joshua, Eric Bettinger, Eric Bloom Elizabeth King and Michael Kremer. 2002. "Vouchers for Private Schooling in Colombia: Evidence from a Randomized Natural Experiment" *American Economic Review*, 92(5): 1535-58.

Attanasio, Orazio, Adriana Kugler and Costas Meghir. 2007. "Effects of Youth Training in Developing Countries: Evidence from a Randomized Training Program in Colombia," Mimeo.

Krueger, Alan. 1999. "Experimental Estimates of Educational Production Functions," *Quarterly Journal of Economics*, 114(2): 497.

Meyer, Bruce. 1996. "What Have We Learned from the Illinois Reemployment Bonus Experiment?" *Journal of Labor Economics*, 14(1):26-51.

Miguel, Edward and Michael Kremer. 2004. "Worms: Identifying Impacts on Education and Health in the Presence of Treatment Externalities," *Econometrica*, 72(1): 159-217.

Sacerdote, Bruce. 2001. "Peer Effects with Random Assignment: Results for Dartmouth Roommates," *Quarterly Journal of Economics*, 116(2): 681-704.

## **B. Controlling for Confounding Factors**

### **B.1. Controlling for Observables and Matching**

Angrist, Joshua and Jorn-Steffen Pischke. *Mostly Harmless Econometrics*, Chapter 3, Section 3.3.

Angrist, Joshua 1998. "Estimating the Labor Market Impact of Voluntary Military Service Using Social Security Data on Military Applicants," *Econometrica*, 66(2): 249-288.

Card, David and Daniel Sullivan. 1988. "Measuring the Effects of Subsidized Training Programs on Movements in and out of Unemployment," *Econometrica*, 56(3): 497-451.

Dehejia, Rajeev and Sadek Wahba. 1999. "Propensity Score\_Matching Methods for Non-experimental Causal Studies," *Review of Economics and Statistics*, 84(1): 151-161.

Heckman, James, Hidechiko Ichimura and Petra Todd. 1997. "Matching as an Econometric Evaluation Estimator: Evidence from Evaluating a Job Training Programme," *Review of Economic Studies*, 64(4): 605-654.

Lalonde, Robert. 1986. "Evaluating the Econometric Evaluations of Training Programs Using Experimental Data," *American Economic Review*, 76(4): 604-620.

Rosenbaum, Paul and Donald Rubin. 1983. "Reducing Bias in Observational Studies Using Subclassification on the Propensity Score," *Journal of the American Statistical Association*, 79(487): 516-525.

Smith, Jeffrey and Petra Todd. 2001. "Reconciling Conflicting Evidence on the Performance of Propensity Score Matching Methods," *American Economic Review*, 91(2): 112-118.

## **B.2. Controlling for Unobservables and Fixed Effects**

Angrist, Joshua and Jorn-Steffen Pischke. *Mostly Harmless Econometrics*, Chapter 3, Sections 5.1 and 5.3.

Rothstein, Jesse. 2007. "Do Value-Added Models Add Value? Tracking, Fixed Effects, and Causal Inference," Mimeo.

Wooldridge, Jeffrey. *Econometric Analysis of Cross Section and Panel Data*. Cambridge, MA: MIT Press, 2002, Chapter 10.

## **C. Differences-in-Differences**

Angrist, Joshua and Jorn-Steffen Pischke. *Mostly Harmless Econometrics*, Chapter 5, Section 5.2.

Angrist, Joshua and Alan Krueger. 2001. "Instrumental Variables and the Search for Identification: from Supply and Demand to Natural Experiments," *Journal of Economic Perspectives*, 13(2): 69-85.

Angrist, Joshua and Adriana Kugler. 2008. "Rural Windfall or Resource Curse? Coca, Income and Civil Conflict in Colombia," forthcoming in *Review of Economics and Statistics*, 90(2).

Duflo, Esther. 2001. "Schooling and Labor Market Consequences of School Construction in Indonesia: Evidence from an Unusual Policy Experiment," *American Economic Review*, 91(4): 795-813.

Kugler, Adriana and Giovanni Pica. 2008. "Effects of Employment Protection on Worker and Job Flows: Evidence from the 1990 Italian Reform," *Labour Economics*, 15(1): 78-95.

"Wage-Shifting Effects of Severance Payments Savings Accounts in Colombia," *Journal of Public Economics*, February 2005, 89(2-3): 487-500.

Meyer, Bruce. 1995. "Natural and Quasi-Experiments in Economics," *Journal of Business and Economic Statistics*, 13(2): 151-161.

Meyer, Bruce, Kip Viscusi and David Durbin. 1995. "Worker's Compensation and Injury Duration: Evidence from a Natural Experiment," *American Economic Review*, 85(3): 322-340.

Rosenzweig, Mark and Kenneth Wolpin. 2000. "Natural 'Natural Experiments' in Economics," *Journal of Economic Literature*, 38(4): 827-874.

#### **D. Instrumental Variables**

Angrist, Joshua and Jorn-Steffen Pischke. *Mostly Harmless Econometrics*, Chapter 6.

Angrist, Joshua, Guido Imbens, and Donald Rubin. 1996. "Identification of Causal Effects Using Instrumental Variables," *Journal of the American Statistical Association*, 91: 444-455.

Angrist, Joshua and Alan Krueger. 1991. "Does Compulsory Schooling Affect Schooling and Earnings?" *Quarterly Journal of Economics*, 106(4): 979-1014.

Angrist, Joshua and Adriana Kugler. 2003. "Protective or Counter-Productive? Labor Market Institutions and the Effect of Immigration on EU Natives," *Economic Journal*, 113(488): F302-F331.

Butcher, Kristin and Ann Case. 1994. "The Effects of Sibling Sex Composition on Women's Education and Earnings," *Quarterly Journal of Economics*, 109(3): 531-564.

Heckman, James. "Instrumental Variables: A Study of Implicit Behavioral Assumptions Used in Making Program Evaluations," *Journal of Human Resources*, 32(3): 441-462.

#### **E. Regression Discontinuity Designs**

Angrist, Joshua and Jorn-Steffen Pischke. *Mostly Harmless Econometrics*, Chapter 6.

Angrist, Joshua and Victor Lavy. 1999. "Using Maimonides' Rule to Estimate the Effect of Class Size on Scholastic Achievement," *Quarterly Journal of Economics*, 114(2): 533-575.

Hahn, Jinyoung, Petra Todd and Wilbert van der Klaauw. 2001. "Identification and Estimation of Treatment Effects with a Regression-Discontinuity Design," *Econometrica*, 69(1): 201-209.

Kugler, Adriana and Robert Sauer. 2005. "Doctors without Borders? Relicensing Requirements and Negative Selection in the Market for Physicians," *Journal of Labor Economics*, 23(3): 437-466.