

DEPARTMENT OF ECONOMICS  
UNIVERSITY OF MISSOURI-COLUMBIA

**Economics 9446**  
**Advanced Empirical Methods**

Fall 2009 - T/Th: 11 – 12:15

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Office hours: Thursday, 3:45 – 5, Professional Bldg #327

**Prerequisites:** 8451, 8472, concurrent enrollment in 8473 or 9473 strongly recommended.

**OBJECTIVES:**

This course is the first graduate course in the quantitative microeconomic policy analysis field. The objective of this course is to provide a comprehensive toolkit for the evaluation of key economic policy questions in the areas of labor, public economics, social welfare and health. The course will cover the most current and relevant empirical techniques in these fields. Although the focus of the course is in the areas described above, the toolkit will be useful for research in all areas of applied microeconomics.

The course will begin with a detailed discussion of some of the main problems affecting empirical work in economics, such as omitted variable bias, selectivity bias, endogeneity, and measurement error. We will then cover the empirical techniques designed to overcome these issues.

In the second semester of the field, continuing students will take Topics in Microeconomic Policy Analysis, which will be taught modularly by the applied-economics faculty and will focus on current topics in fields including labor economics, public economics, the economics of education, and health economics.

<b>Grading:</b>	Class Presentations:	20 percent
	Assignments:	20 percent
	Final Exam:	20 percent
	Research Paper & Presentation:	40 percent

**Class Presentations:** Students will be required to present selected assigned readings to the class.

**Exams:** The final exam will be given during the final exam week at the same time as the class meeting, unless other arrangements are made.

**Papers:** The paper assignment will be discussed during the first week of class. Papers are to be submitted in printed form.

**Academic Honesty:** It is assumed that students have read the Department of Economics "Statement on Academic Honesty." Guidance provided in this document is of particular value in the preparation of the research paper. Copies of this four page statement are available in the Department office.

**Special Needs:** If you have special needs as addressed by the Americans With Disabilities Act, please notify the instructor immediately. Reasonable efforts will be made to accommodate your needs. Course material is available in alternative formats if requested. For questions regarding Americans With Disabilities Act accommodations, contact the MU Access Office, A048 Brady Commons.

**References:**

Handbook of Labor Economics, (Elsevier). vol 3A, edited by O. Ashenfelter and D. Card, 1999. *HLE* below.

Jeffrey M. Wooldridge, *Econometric Analysis of Cross Section and Panel Data*, (2002). *JW* below.

## **Topics and Reading List (Rough Guide)**

### **Introduction to the Central Problems of Omitted Variable Bias, Self-Selection, Endogeneity and Measurement Error**

Angrist and Krueger, "Empirical Strategies in Labor Economics"  
*HLE*, Vol 3A, Chapter 23

J. Heckman, et al., "The Economics and Econometrics of Active Labor Market Programs,"  
*HLE*, vol 3A, chapter 31

### **Selection and Matching Techniques**

*JW*, Chapter 18

Robert J. Willis and Sherwin Rosen (1979), "Education and Self Selection," *Journal of Political Economy*

Borjas, George J. (1987), "Self-Selection and the Earnings of Immigrants," *American Economic Review*.

Rosenbaum, Paul and Donald Rubin (1983), "The Central Role of the Propensity Score in Observational Studies for Causal Effects", *Biometrika* 70:1, 41-55.

P. Mueser, K Troske and A. Gorislavsky, "Using State Administrative Data to Measure Program Performance," *Review of Economic and Statistics*, 2007.

Dehejia, Rajeev H. and Sadek Wahba (1999), "Causal Effects in Nonexperimental Studies: Reevaluating the Evaluation of Training Programs", *Journal of the American Statistical Association*.

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

### **Fixed Effects Estimation, Value-Added (Panel Data)**

*JW, Chapter 10*

Ashenfelter, Orley and Alan Krueger (1994), "Estimates of the Economic Return to Schooling from a New Sample of Twins," *American Economic Review*. (Note: This paper uses both instrumental variables and fixed effects. IV methods will be covered in detail later in the course.)

Blau, David M (1999), "The Effect of Income on Child Development," *The Review of Economics and Statistics*.

Aaronson, Daniel, Lisa Barrow and William Sander (2007), "Teachers and Student Achievement in the Chicago Public High Schools," *Journal of Labor Economics*.

Kane, Thomas J., Jonah E. Rockoff and Douglas O. Staiger (2008), "What Does Certification Tell us About Teacher Effectiveness? Evidence from New York City," *Economics of Education Review*.

Rothstein, Jesse (forthcoming), "Teacher Quality in Educational Production: Tracking, Decay and Student Achievement," *Quarterly Journal of Economics*.

### **Natural Experiments and Difference-in-Difference Estimation**

Meyer, Bruce D. (1995), "Natural and Quasi-Experiments in Economics", *Journal of Business and Economic Statistics*.

Card, David (1990), "The Impact of the Mariel Boatlift on the Miami Labor Market", *Industrial and Labor Relations Review*, 43:245-257.

Card, David and Alan B. Krueger (1994), "Minimum Wages and Employment - A Case Study of the Fast Food Industry in New Jersey and Pennsylvania", *American Economic Review*, (84:4),

September.

Neumark, David and William Wascher (2000), "Minimum Wages and Employment: A Case Study of the Fast-Food Industry in New Jersey and Pennsylvania: Comment", *American Economic Review* (90:5)

Bertrand, M., E. Duflo, and S. Mullainathan (2004), "How Much Should We Trust Differences-in-Differences?" *Quarterly Journal of Economics*.

### **Regression Discontinuity**

Imbens, Guido and Thomas Lemieux (2007), "Regression Discontinuity Designs: A Guide to Practice," *Journal of Econometrics*

Angrist, Joshua D. and Victor Lavy (1999), "Using Maimonides Rule to Estimate the Effect of Class Size on Scholastic Achievement," *Quarterly Journal of Economics*

DiNardo, John and David Lee (2004), "Economic Impacts of Unionization on Private Sector Employers: 1984-2001," *Quarterly Journal of Economics*

Lee, David S. and Justin McCrary (2005), "Crime, Punishment and Myopia," NBER Working Paper #11491.

### **Instrumental Variables**

*JW*, Chapter 5.

Murray, Michael P. (2006), Avoiding Invalid Instruments and Coping with Weak Instruments, *Journal of Economic Perspectives*

Imbens, Guido, and Jeffrey Wooldridge "Weak Instruments and Many Instruments"  
Lecture 13 *What's New in Econometrics? NBER, Summer 2007.*  
[http://www.nber.org/~confer/2007/si2007/WNE/lect\\_13\\_weakmany\\_iv.pdf](http://www.nber.org/~confer/2007/si2007/WNE/lect_13_weakmany_iv.pdf)

Levitt, Steven D. (1997), Using Electoral Cycles in Policy Hiring to Estimate the Effect of Police on Crime, *American Economic Review*

Angrist, Joshua, "Lifetime Earnings and the Vietnam Draft Lottery: Evidence from Social Security Administrative Records," *American Economic Review*, 1990.

Kling, Jeffrey R., "Interpreting Instrumental Variable Estimates of the Returns to Schooling," *Journal of Business and Economic Statistics*, 2001.

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

### **Causal Inference and Experiments**

LaLonde, Robert J. (1986) "Evaluating the Econometric Evaluations of Training Programs with Experimental Data," *American Economic Review*.

Cullen, Julie Berry, Brian A. Jacob, and Steven D. Levitt, (2006), "The effect of school choice on participants: evidence from randomized lotteries," *Econometrica*.

Agodini, Roberto, Barbara Harris, Sally Atkins-Burnett, Sheila Heaviside, Timothy Novak, Robert Murphy and Audrey Pendleton (2009), *Achievement Effects of Four Early Elementary School Math Curricula*, Mathematica Policy Research, Inc.

Heckman, James J. and Jeffrey A. Smith (1995), "Assessing the Case for Social Experiments," *Journal of Economic Perspectives*.