Location: Because we need a big room this course will meet in CICC 109. Confused already?! This is the Deutz Conference room in the Copley International Conference Center. To get there from Economics head north from the department. Just past IRPS take the outdoor stairs that are on the left side of the walkway, and walk down to the complex of buildings housing, among other things, the Center for U.S. Mexican studies. CICC is the southwest building in this complex, and the Deutz Conference Room is on the north end of the building.

On Wednesday October 11, 2006 this class will tentatively meet in ECON 210 (instead of CICC 109.) We may try to find another room for that date.

Overview: This first of three graduate labor courses focuses on the empirical methods used in labor (and other applied microeconomics fields). The course is designed to prepare you to read and evaluate empirical work in the other 2 graduate labor courses, 250B and 250C. However, the toolkit presented in this course will be useful for research in all areas of applied micro.

This course is intended to be both more and less than a course in applied econometrics. It is “less” in that we will not concentrate heavily on deriving properties of estimators, but, instead, we will focus on presenting a practical guide to the key statistical advantages and disadvantages of each technique. It is “more” than a course in applied econometrics in that, for each technique, we will study empirical examples in considerable detail. In this way, the course also will provide an introduction to many different areas of labor research.

In weeks 1-3 (Betts) we will begin by summarizing some of the main problems affecting empirical work, such as omitted variable bias, selectivity bias, endogeneity, and measurement error. We will then cover techniques to control for selectivity bias including the Heckman technique and propensity score matching. We will then discuss the use of fixed effects as a means of reducing omitted variable bias in panel data. Finally we will survey natural experiments and difference in difference models as a means of identifying causal parameters. In each case we will emphasize benefits and pitfalls of each approach, and will cover real-world examples.

In weeks 4-7 (Berman) we will examine different types of biases and discuss examples in which instrumental variables convincingly allow identification. The discussion will include the ideal experimental coefficient, overidentification and small sample bias. We will also cover measurement error, miscellaneous other data issues and clustering for accurate estimation of standard errors.

In weeks 7-10 (Antonovics) we will discuss a number of recent papers that use regression discontinuity to identify causal effects and we will highlight the assumptions upon which identification relies. We will then turn to an analysis of both the strengths and weaknesses of employing social experiments to identify causal parameters. Finally, we will introduce identification using structural estimation.
Requirements for the Course

Evaluation:
1) Very Short Paper. A five page paper in which you will be required to engage a data set of your own choosing. It will be marked on the econometric method alone, with no marks deducted for even the most ludicrous economic analysis, so feel free to have fun. On the other hand, you will spend many intimate hours with this project, so you may as well construct it in a way that will make it interesting for you and your team.

*This assignment can be done in groups of up to three students.*

Please email Prof. Betts with an outline of the dataset you will use, and the question you will study, by week 2 lecture 1 (October 2).
Hand in table of means, correlations and related information, in a format to be explained in the first lecture, due by email (to Prof. Betts) week 3 lecture 2 (October 11)

5 points

Hand in rough draft of paper due by email (to Prof. Berman) week 6 lecture 1 (Oct. 30)

5 points

The paper is due week 10 lecture 1 (November 27) in class.

35 points

In the final class of the course, week 10 lecture 2 (November 29), students will give presentations of their results.

TOTAL POINTS FOR PAPER AND PRESENTATION

55 POINTS

2) Week 4: Wednesday Oct. 19, evening. Quiz on the Betts section of the course.

10 points

3) Week 7: Wednesday Nov. 9, evening. Quiz on the Berman section of the course.

10 points

4) Final exam, which will be cumulative but weighted approximately 1:1:3 across the Betts/Berman/Antonovics sections.

25 points

TOTAL POINTS FOR QUIZZES AND EXAMS

45 POINTS

TOTAL POINTS IN COURSE

100 POINTS

Students are encouraged to enroll on a letter grade basis. Students who enroll on an S/U basis must complete the empirical paper and the in-class presentation in week 10. ¹

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¹ By university policy, students who enroll on an S/U basis must obtain the equivalent of a B- in the course. For all students, 60 points will earn a grade of B- overall for the course. Thus a flawless paper and presentation plus 5 points earned on any combination of quiz 1, 2 and the final would be one way to meet the B- requirement.
**Brief Syllabus**

1. Omitted Variable Bias, Self-Selection, Endogeneity and Measurement Error: W1 L1 (Week 1 Lecture 1 i.e. Monday Sept. 25) -- All

2. Selectivity Correction and Propensity Score Matching: W1 L1 (part) to W2 L2 -- Betts

3. Fixed Effects and Omitted Variable Bias: W3 L1 – Betts


5. Causal Inference and Experiments: W4 – Berman

6. Instrumental Variable (IV) Method: W5 – Berman

7. Measurement Error and other Data Issues: W6 – Berman

8. Regression Discontinuity: W7 – Antonovics

9. Social Experiments: W8 – Antonovics

10. Structural Estimation: W9 L1 to W9 L2 or W10 L1

11. Student Presentations of Empirical Projects: W10 L2 and perhaps W10 L1-- All

**Readings**

The readings, which begin on the next page, are mostly journal articles. However, two very useful supplementary graduate texts, the first on labor economics (the only one we know of) and the second on causal inference, are or will soon be available at the bookstore:


A More Detailed Agenda
Note: In sections 1-4 a “*” indicates papers that you are expected to read carefully. (This is not a license to completely ignore the other papers though!)

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


2. Selectivity Correction and Propensity Score Matching


Case Studies:


3. Fixed Effects and Omitted Variable Bias


Case Study: The Returns to Education


* Ashenfelter, Orley and Alan Krueger (1994), "Estimates of the Economic Return to Schooling from a New Sample of Twins", American Economic Review (December). (Note: This paper uses both instrumental variables and fixed effects. IV methods will be covered in greater detail in section 9 of the course.)


See also the Angrist and Krueger paper in Section 1.

Case Study #1: The Impact of Immigrants on Local Labor Markets

Case Study #2: Minimum Wages


Case Study #3:  

**BERMAN SECTION**  
Note: This list is short but is REQUIRED READING in the sense that *you will be expected to show up in class having actually read it.*

5. **Causal Inference and Experiments**

6. **Instrumental Variable (IV) Method**

7. **Measurement Error and Misc. other Data Issues, Clustered Std. Errors**

To reiterate: The above list is short but is REQUIRED READING in the sense that *you will be expected to show up in class having actually read it.*
ANTONOVICS SECTION

8. Regression Discontinuity


9. Social Experiments


10. Structural Estimation


http://athena.sas.upenn.edu/~petra/papers/revpaper.pdf