

**Public Policy 712/Education 712**  
Causal Inference in Education Policy Research I:  
Early Childhood through High School  
Fall 2017 M/W: 10-11:30 pm  
Weill Hall 1110

Professor Susan Dynarski  
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Professor Christina Weiland  
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Anna Shapiro  
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Weill Hall 5116

Office hours

Dynarski: Vary by week, to allow for differing schedules. Sign up: <http://goo.gl/XczlB>  
Weiland: 12-1:30 Mondays (email for a slot)  
Shapiro 11:45-1:15 Wednesdays (email for a slot)

**Overview and objectives**

This course examines several key policy areas in the realm of early learning and K-12 education. The two primary goals of the course are (1) to familiarize students with the arguments and evidence relating to important policies and/or interventions and (2) to provide students with the analytic framework and skills necessary to evaluate education (or other public) policies in general. Specific policy topics include early learning experiences, parental involvement in early childhood learning, preschool, school choice, research partnerships, and high schools. Specific methodological techniques include randomized-control trials (RCT), regression discontinuity analysis (RD), descriptive research, and natural experiments.

**Prerequisites**

Knowledge of introductory statistics (e.g., Stats 250, PP 529, SOE 793, or equivalent) and regression analysis (e.g., Stats 413, PP 639, SOE 794 or 795, or equivalent) are required for this course.

## Course Requirements and Grading

### *Data Analysis Exercises (2)* 30%

You will replicate and extend analyses that use the quantitative methods of the course. You will work singly or with one classmate; if you work with a classmate you will submit a single product.

### *Take-Home Final Exam OR Research Project* 40%

A take-home exam is due on the day of the scheduled final (Monday, Dec 18 at 10 AM) and provided 72 hours earlier. Doctoral students can (and IES fellows are required to) instead complete a research product that will be defined in consultation with faculty. Drafts of this research product will be due on specified dates.

### *Reading Questions* 20%

We will post questions about some of the readings, which you will complete before class.

### *Class Participation* 10%

We expect active questioning in class. To further widespread participation we will randomly call on students. The randomness is intended not to intimidate but to keep participation evenly distributed.

## Readings

You are expected to complete the assigned reading before class. There will typically be one or two articles assigned for each class.

You must read these closely in order to understand what is going on. Read actively: circle what is unclear, highlight what you find most interesting, peruse the bibliography for useful sources, read the footnotes and tables especially closely. It is very useful to write a summary of the paper for your own files.

## Course Material

One required book is available for [free download](#) from the UM Library:

Murnane, R., & Willett, J. (2010). *Methods matter: improving causal inference in educational and social science research*. New York, NY: Oxford University Press, USA.

There is no course packet. All articles are available online or on the CANVAS site. Assignments will be listed under the relevant lecture at least a week in advance. We provide links and/or PDFs

but you are ultimately responsible for obtaining the readings. If a link is broken or a file corrupted, find the article yourself.

### **Laptop Policy/Taking Notes**

To keep us focused on the class and on each other, we will keep laptops and other devices put away. Please bring copies of the relevant papers to class.

We will distribute handouts of our lecture material for you to take notes on. If you want to store all class material on your laptop, transcribing your handwritten notes after lecture is a great way to nail the material. We will post PDFs of the handouts after lecture to facilitate this process.

### **Software**

We will program in Stata, a software program used widely by researchers and policy analysts.

You can get a Stata license for just this semester. Order through the Stata website (<http://www.stata.com/order/new/edu/gradplans/us-pickup/>) and then pick up at Computer Showcase. You will need Intercooled Stata to use the large datasets we will work with.

### Assignment Schedule

| <b>Masters Students</b>       | <b>Doctoral Student Option</b>    | <b>Due</b> |
|-------------------------------|-----------------------------------|------------|
|                               | Research product proposal: ½ page | 9/18       |
|                               | Meet to discuss proposal          | 10/2       |
|                               | Revised proposal (1 p)            | 10/4       |
| Problem set #1 (posted 9/27)  |                                   | 10/11      |
|                               | Progress Memo                     | 11/6       |
| Problem set #2 (posted 10/25) |                                   | 11/8       |
| Take-home final               | Research Product                  | 12/18      |

## **Academic Expectations & Resources**

Members of the Ford School community represent a rich variety of backgrounds and perspectives. We are committed to providing an atmosphere for learning that respects diversity.

While working together to build this community we ask all members to:

- share their unique experiences, values and beliefs
- be open to the views of others
- honor the uniqueness of their colleagues
- appreciate the opportunity that we have to learn from each other in this community
- value one another's opinions and communicate in a respectful manner
- keep confidential discussions that the community has of a personal (or professional) nature
- use this opportunity together to discuss ways in which we can create an inclusive environment in Ford classes and across the UM community

## **Accommodations for Students with Disabilities**

If you believe you need an accommodation for a disability, please let your instructor know at your earliest convenience. Some aspects of courses may be modified to facilitate your participation and progress. As soon as you make your instructor aware of your needs, they can work with the Services for Students with Disabilities (SSD) office to help determine appropriate academic accommodations. Any information you provide will be treated as private and confidential.

## **Student Mental Health and Well-Being Resources**

The University of Michigan is committed to advancing the mental health and wellbeing of its students. We acknowledge that a variety of issues, such as strained relationships, increased anxiety, alcohol/drug problems, and depression, directly impacts students' academic performance. If you or someone you know is feeling overwhelmed, depressed, and/or in need of support, services are available. For help, contact [Counseling and Psychological Services](#) (CAPS) and/or [University Health Service](#) (UHS). For a listing of other mental health resources available on and off campus, visit: <http://umich.edu/~mhealth/>

**Please review additional information and policies regarding academic expectations, academic integrity, and resources at the Ford School of Public Policy at this link:**

**<http://fordschool.umich.edu/academics/expectations>**

We expect students to be familiar with all of the expectations and resources described therein.

## READING LIST

### Introduction

#### **Wednesday, September 6: Overview**

Murnane, R., & Willett, J. (2010). *Methods matter: improving causal inference in educational and social science research*. New York, NY: Oxford University Press, USA. Chapters 1-2.

Institute of Education Sciences Request for Applications. Read p. 8-11 (Section C: Applying to a Research Goal): [http://ies.ed.gov/funding/pdf/2014\\_84305A.pdf](http://ies.ed.gov/funding/pdf/2014_84305A.pdf)

Angrist, J. (2004). "American education research changes tack." *Oxford Review of Economic Policy*, 20, 198-212 (stop after p. 203)

#### *Optional:*

Cook, T.D. (2002). "Randomized experiments in educational policy research: A critical examination of the reasons the education evaluation community has offered for not doing them." *Educational Evaluation and Policy Analysis*, 24, 175-199.

#### **Monday, September 11: Research partnerships (Carrie Conaway, MA DOE, guest speaker)**

Conaway, C. (2017). "The Massachusetts Charter School Research Partnership," in Owen, J. and A. Larson, eds., *Researcher-Policymaker Partnerships: Strategies for Launching and Sustaining Successful Collaborations*. Routledge.

Cohodes, S. and S. Dynarski (2016). "[Massachusetts charter cap holds back disadvantaged students](#)." *Evidence Speaks*, Brookings Institution.

Murnane & Willett, Chapter 3

## **Module 1: Early Childhood and Randomized Trials**

### **Wednesday, September 13: Early childhood policy context**

Ellwood, David (1988). Chapter 2: Values and the helping conundrum. *In Poor Support: Poverty in the American Family* (pp 14-44).

Waldfogel, J. (1998). Infants and Toddlers (p. 36-45) and Preschool-Aged Children (p. 83-85). Chapter excerpts from *What Children Need*, Cambridge, MA: Harvard University Press, 2010.

### **Monday, September 18: Introduction to randomized controlled trials**

Murnane & Willett, Chapter 4

Duflo, E., Glennerster, R., & Kremer, M. (2006). [Using randomization in development economics research: A toolkit](#). Section 3.3, “Alternative Methods of Randomization,” pp. 24-28.

### **Wednesday, September 20: Imperfect compliance**

Murnane & Willett, Chapter 5

Gennetian, L., Morris, P., Bos, J., & Bloom, H. (2005). Using instrumental variables analysis to learn more from social policy experiments. In H. Bloom (Ed.) *Learning More from Social Experiments: Evolving Analytic Approaches* (pp. 75-88). New York: Russell Sage.

### **Monday, September 25: Fixed vs. random effects (part 1) and Preschool policy context (part 2)**

Murnane & Willett, Chapter 7, pp. 107-120 & 128-134.

Duncan, G., & Magnuson, K. (2013). Investing in preschool programs. *Journal of Economic Perspectives*, 27(2), 109-132.

*Optional:*

Chaudry, A., & Datta, A.R. (2017). [The current landscape for public pre-kindergarten programs](#). Washington DC and Durham NC: Brookings Institute and Duke Center for Child and Family Policy.

**Wednesday, September 27: How do we improve preschool quality?**

Yoshikawa, H., Leyva, D., Snow, C. E., Treviño, E., Barata, M., Weiland, C., ... & Arbour, M. C. (2015). Experimental impacts of a teacher professional development program in Chile on preschool classroom quality and child outcomes. *Developmental Psychology*, 51(3), 309.

**Monday, October 2: What about parenting interventions in early childhood?**

York, B. N., & Loeb, S. (2014). "One step at a time: The effects of an early literacy text messaging program for parents of preschoolers." National Bureau of Economic Research working paper 20659.

Dynarski, S. (2015). "[Helping the Poor in Education: The Power of a Simple Nudge](#)." *New York Times*, January 17, 2105, p. BU6.

Watch the Vroom! video (<https://www.youtube.com/watch?v=trm38G2e5NE>) and then download the Vroom! app here to your smart phone: <http://www.joinvroom.org/>. Enter a profile for your child (real or imagined – pick the child age (0-5) of your choice). For four days, check the app daily for a tip for interacting with your child. If you have a young child and like the tip, try it out.

Come to class prepared to discuss at least one of these tips – Did it sound like fun? What skill was it trying to build? (No smart phone? Complete the activity using examples of activities here: <http://www.joinvroom.org/tools-and-activities>)

**Wednesday, October 4: Fidelity of implementation**

Hulleman, C. S., Rimm-Kaufman, & Abry, T. (2013). Innovative methodologies to explore implementation: Whole-part-whole – construct validity, measurement, and analytical issues for intervention fidelity assessment in education research. In T. Halle, A. Metz, & I. Martinez-Beck (Eds.), *Applying Implementation Science in Early Childhood Programs and Systems*, Baltimore, MD: Brookes Publishing, pp. 65-93.

Domitrovich, C. E., Gest, S. D., Jones, D., Gill, S., & DeRousie, R. M. S. (2010). Implementation quality: Lessons learned in the context of the Head Start REDI trial. *Early Childhood Research Quarterly*, 25(3), 284-298.



## **Module 2: Descriptive Analysis in Research Partnerships**

### **Monday, October 9**

Loeb, S., Dynarski, S., McFarland, D., Morris, P., Reardon, S., & Reber, S. (2017). [Descriptive analysis in education: A guide for researchers](#). (NCEE 2017–4023). Washington, DC: U.S. Department of Education, Institute of Education Sciences, National Center for Education Evaluation and Regional Assistance.

Engel, M., Claessens, A., & Finch, M. A. (2013). “Teaching students what they already know? The (mis) alignment between mathematics instructional content and student knowledge in kindergarten.” *Educational Evaluation and Policy Analysis*, 35(2), 157-178.

### **Wednesday, October 11**

Dynarski, S., K. Frank, B. Jacob and B. Schneider (2012). “[The Michigan Context - High School Attainment and College Enrollment Across the State](#).” Michigan Consortium for Education Research brief.

Micheltmore, K. and S. Dynarski (2017). “The Gap Within the Gap: Using Longitudinal Data to Understand Income Differences in Educational Outcomes.” *AERA Open*. Vol 3, Issue 1 (February).

Dynarski, S. (2016). “[Why American Schools Are Even More Unequal Than We Thought](#).” *New York Times*, August 12, 2016, p. BU6.

### **Monday, October 16: Fall break**

## **Module 3: Natural Experiments and School Finance Reform**

### **Wednesday, October 18: Introduction to Natural Experiments**

Guest speaker: Seth Gershenson, Vanderbilt

Murnane & Willett, Chapter 8.

Gershenson, S. and Hayes, M. (2017). “Police Shootings, Civic Unrest and Student Achievement: Evidence from Ferguson.” *Journal of Economic Geography*.

**Monday, October 23: Panel data and natural experiments**

Angrist, J and J. Pischke (2015). *Mastering 'Metrics: The Path from Cause to Effect*. Chapter 5.

**Wednesday, October 25: Effects of School Finance Reforms**

Lafortune, J., J. Rothstein and D. Schanzenbach (2016). "School Finance Reform and the Distribution of Student Achievement." NBER Working Paper.

**Module 4: School Choice and Lotteries as Identification****Monday, October 30: Overview**

Fuller, B., Elmore, R.F., & Orfield, G. (1996). Policy-making in the dark: Illuminating the school choice debate. *Who Chooses? Who Loses? Culture, Institutions and the Unequal Effects of School Choice*, pp. 1-21. New York, NY: Teachers College Press.

Moskowitz, E. (2017). Test scores don't lie: Charter schools are transformative. *Wall Street Journal*, August 23, 2017.

**Wednesday, November 1: Charter Lotteries**

Abdulkadiroğlu, A., Angrist, J., Dynarski, S., Kane, T., and Pathak, P. (2011). "Accountability and Flexibility in Public Schools: Evidence from Boston's Charters And Pilots." *The Quarterly Journal of Economics*, Volume 126, Issue 2, Pages 699–748.

**Monday, November 6: Vouchers**

Abdulkadiroğlu, A., Pathak, P., and Walters, C. (forthcoming). "Free to Choose: Can School Choice Reduce Student Achievement?" *American Economic Journal: Applied Economics*.

**Wednesday, November 8: District Choice**

Deming D., Hastings J., Kane T., and Staiger D. (2014). "School Choice, School Quality and Postsecondary Attainment." *American Economic Review* 104 (3), pp 991-1013.

**Monday, November 13: Small High Schools of Choice**

Guest speaker: Rebecca Unterman, MDRC

Bloom, H. S., & Unterman, R. (2014). "Can small high schools of choice improve educational prospects for disadvantaged students?" *Journal of Policy Analysis and Management*, 33(2), 290-319.

**Wednesday, November 15: Catch-Up and Wrap-Up**

**Module 5: High Schools and Regression Discontinuity**

**Monday, November 20: Trends in High School Graduation**

Murnane, R. (2013). "U.S High School Graduation Rates: Patterns and Explanations." *Journal of Economic Literature*, Vol. 51, No. 2 (June), pp. 370-422.

**Wednesday, November 22: No class (Thanksgiving)**

**Monday, November 27: Regression Discontinuity**

Murnane, & Willett, Chapter 9.

**Wednesday, November 29: High Stakes Graduation Tests**

Papay, J. P., Murnane, R. J., & Willett, J. B. (2010). "The consequences of high school exit examinations for low-performing urban students: Evidence from Massachusetts." *Educational Evaluation and Policy Analysis*, 32(1), 5-23.

**Monday, December 4: TBA**

**Wednesday, December 6: TBA**

**Monday, December 11: Catch-Up and Wrap-Up**