ECO 7427 Applied Econometrics

Instructor: Hector H. Sandoval

hsandoval@ufl.edu

Office hours: Tu/Th 1:45-2:45pm or by appointment, MAT 325

Course Description

This course is part of the Ph.D. Econometrics and Public Economics sequences. The course is intended to be an applied econometrics class focusing on how to use econometrics to address causal questions and more generally on how to conduct empirical work. The focus of the course will be to link student's preparation in formal Econometrics to data. The first part of the course will cover a number of topics that are important in applied research. The second part will cover the theory and econometrics of social interactions and social networks with a particular emphasis in the topics of peer effects in education and scientific collaborations.

Course Outline

Part I

1. **Introduction - Recap**

2. **Identification**

3. **Causality and RCT**

4. **Randomized Social Experiments**

5. **Matching**

6. **Instrumental Variables**

7. **Panel Data**

8. **Difference-in-Differences**

9. **Regression Discontinuity**

10. **Microeconomic Policy Evaluation**

Part II

11. **Social Interactions**

12. **Social Networks**

13. **Scientific Collaborations**

Assignments & Grading

Grades will be distributed as follows: assignments 60%, final project 20%, and presentation 20%. For the assignments, you are encouraged to collaborate with other students, but you should submit your own individual work. Problem sets submitted after the deadline are **not** accepted. The final project will involve writing an empirical paper and presenting it at the end of the semester. You may work in groups of two for the final project and presentation.

Optional Textbooks

1. Angrist, J. D., & Pischke, J. S. (2014). Mastering 'Metrics: The Path from Cause to Effect. Princeton University Press.

2. Cameron, A. C., & Trivedi, P. K. (2005). Microeconometrics: Methods and Applications. Cambridge University Press.

3. Cameron, A. C., & Trivedi, P. K. (2010). Microeconometrics Using Stata (Revised Edition). Stata Press.

4. Hansen, B. (2017) Econometrics.
   Available at: https://www.ssc.wisc.edu/ bhansen/econometrics/

5. Imbens, G. W., & Rubin, D. B. (2015). Causal inference in Statistics, Social, and Biomedical Sciences. Cambridge University Press.

6. Jackson, M. O. (2010). Social and Economic Networks. Princeton University Press.

7. Manski, C. F. (2009). Identification for Prediction and Decision. Harvard University Press.

Policies

"Requirements for class attendance and make-up exams, assignments, and other work in this course are consistent with university policies that can be found at: https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx."

"Students with disabilities requesting accommodations should first register with the Disability Resource Center (352-392-8565, www.dso.ufl.edu/drc/) by providing appropriate documentation. Once registered, students will receive an accommodation letter which must be presented to the instructor when requesting accommodation. Students with disabilities should follow this procedure as early as possible in the semester."

"Students are expected to provide feedback on the quality of instruction in this course by completing online evaluations at https://evaluations.ufl.edu. Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open. Summary results of these assessments are available to students at https://evaluations.ufl.edu/results/."

Detailed Schedule & Reading List
(Required readings: ‡ = Methodology; †=Empirical/application)

[01/09]   **1. Introduction - Recap**   «3 lectures»

- ▷ Estimand, estimator, and estimate
- ▷ Conditional expectation function and least squares
- ▷ Inference

Readings:

Cameron, A. C., & Miller, D. L. (2015). A practitioner's guide to cluster-robust inference. *Journal of Human Resources*, 50(2), 317-372.

‡ Hansen (2017) Chapters 1 - 4.

Additional Readings:

Duflo, E., Dupas, P., & Kremer, M. (2011). Peer effects, teacher incentives, and the impact of tracking: Evidence from a randomized evaluation in Kenya. *The American Economic Review*, 101(5), 1739-1774.

[01/18]   **2. Identification**   «1 lecture»

- ▷ Prediction with incomplete data

Assignment 1 (due 02/01)

Readings:

‡ Manski (2009) Chapters 1 - 3.

Tamer, E. (2010). Partial identification in econometrics. *Annual Review of Economic*, 2(1), 167-195.

[01/23]   **3. Causality and RCT**   «2 lectures»

- ▷ Causality: potential outcomes and treatment effects
- ▷ Randomized Control Trials (RCT)
- ▷ SUTVA: No interference assumption

Readings:

‡ Angrist, J. D., & Pischke, J. S. (2014) Chapter 1.

‡ Deaton, A., & Cartwright, N. (2016). Understanding and misunderstanding randomized controlled trials. National Bureau of Economic Research, (No. w22595).

‡ Cox, D. R. (1992). Causality: some statistical aspects. *Journal of the Royal Statistical Society. Series A (Statistics in Society)*, 291-301.

‡ Holland, P. (1986). Statistics and Causal Inference. *Journal of the American Statistical Association*, 81(396), 945-960.

‡ Hudgens, M. G., & Halloran, M. E. (2008). Toward causal inference with interference. *Journal of the American Statistical Association*, 103(482), 832-842.

‡ Imbens, G. W., & Rubin, D. B. (2015) Chapters 1 - 3, 7.

Rosenbaum, P. R. (2007). Interference between units in randomized experiments. *Journal of the American Statistical Association*, 102(477), 191-200.

‡ Rubin, D. B. (1974). Estimating causal effects of treatments in randomized and nonrandomized studies. *Journal of Educational Psychology*, 66(5), 688.

Rubin, D. B. (2005). Causal inference using potential outcomes: Design, modeling, decisions. *Journal of the American Statistical Association*, 100(469), 322-331.

‡ Sobel, M. E. (1995). Causal inference in the social and behavioral sciences. *Handbook of statistical modeling for the social and behavioral sciences*, (pp. 1-38). Springer US.

Sobel, M. E. (2006). What do randomized studies of housing mobility demonstrate? Causal inference in the face of interference. *Journal of the American Statistical Association*, 101(476), 1398-1407.

Additional Readings:

Banerjee, A., Duflo, E., Glennerster, R., & Kinnan, C. (2015). The miracle of microfinance? Evidence from a randomized evaluation. *American Economic Journal: Applied Economics*, 7(1), 22-53.

† Chetty, R., & Saez, E. (2013). Teaching the tax code: Earnings responses to an experiment with EITC recipients. *American Economic Journal: Applied Economics*, 5(1), 1-31.

† Finkelstein, A., Taubman, S., Wright, B., Bernstein, M., Gruber, J., Newhouse, J. P., Allen H., Baicker, K. & Oregon Health Study Group. (2012). The Oregon health insurance experiment: evidence from the first year. *The Quarterly Journal of Economics*, 127(3), 1057-1106.

† Kling, J. R., Ludwig, J., & Katz, L. F. (2005). Neighborhood effects on crime for female and male youth: Evidence from a randomized housing voucher experiment. *The Quarterly Journal of Economics*, 120(1), 87-130.

[01/30]   **4. Randomized Social Experiments**   «2 lectures»

▷ The experimental approach to development economics
▷ Conditional cash transfer program: Progresa/Oportunidades

Assignment 2: Final Project (due 03/01)

Readings:

‡ Banerjee, A. V., & Duflo, E. (2009). The experimental approach to development economics. *Annual Review of Economic*, 1(1), 151-178

Deaton, A. (2010). Instruments, randomization, and learning about development. *Journal of Economic Literature*, 48(2), 424-455.

‡ Heckman, J. J. (1991). Randomization and social policy evaluation.

‡ Heckman, J. J., & Smith, J. A. (1995). Assessing the case for social experiments. *The Journal of Economic Perspectives*, 9(2), 85-110.

Imbens, G. W. (2010). Better LATE than nothing: Some comments on Deaton (2009) and Heckman and Urzua (2009). *Journal of Economic Literature*, 48(2), 399-423

Additional Readings:

† Angelucci, M., & De Giorgi, G. (2009). Indirect effects of an aid program: how do cash transfers affect ineligibles' consumption?. *The American Economic Review*, 99(1), 486-508.

Angelucci, M., De Giorgi, G., Rangel, M. A., & Rasul, I. (2010). Family networks and school enrollment: Evidence from a randomized social experiment. *Journal of Public Economics*, 94(3), 197-221.

† Bandiera, O., Burgess, R., Das, N., Gulesci, S., Rasul, I., & Sulaiman, M. (2017). Labor markets and poverty in village economies. *The Quarterly Journal of Economics*, 132(2), 811-870. 94(3), 197-221.

Behrman, J. R., Sengupta, P., & Todd, P. (2005). Progressing through PROGRESA: An impact assessment of a school subsidy experiment in rural Mexico. *Economic Development and Cultural Change*, 54(1), 237-275.

Duflo, E., Dupas, P., & Kremer, M. (2015). School governance, teacher incentives, and pupil–teacher ratios: Experimental evidence from Kenyan primary schools. *Journal of Public Economics*, 123, 92-110.

† Gertler, P. (2004). Do conditional cash transfers improve child health? Evidence from PROGRESA's control randomized experiment. *The American Economic Review, Papers and Proceedings*, 94(2), 336-341.

† Miguel, E., & Kremer, M. (2004). Worms: identifying impacts on education and health in the presence of treatment externalities. *Econometrica*, 72(1), 159-217.

† Parker, S. W., & Todd, P. E. (2017). Conditional cash transfers: The case of Progresa/Oportunidades. *Journal of Economic Literature*, 55(3), 866-915.

† Schultz, T. P. (2004). School subsidies for the poor: evaluating the Mexican Progresa poverty program. *Journal of Development Economics*, 74(1), 199-250.

Skoufias, E., Parker, S. W., Behrman, J. R., & Pessino, C. (2001). Conditional cash transfers and their impact on child work and schooling: Evidence from the progresa program in Mexico [with comments]. *Economia*, 2(1), 45-96.

[02/06]   **5. Matching**   «2 lectures»

▷ Selection on observables
▷ Propensity score matching

Assignment 3 (due 02/20)

Readings:

Caliendo, M., & Kopeinig, S. (2008). Some practical guidance for the implementation of propensity score matching. *Journal of Economic Surveys*, 22(1), 31-72.

‡ Dehejia, R. H., & Wahba, S. (2002). Propensity score-matching methods for nonexperimental causal studies. *The review of Economics and Statistics*, 84(1), 151-161.

Heckman, J. J., Ichimura, H., & Todd, P. (1998). Matching as an econometric evaluation estimator. *The Review of Economic Studies*, 65(2), 261-294.

Imbens, G. W. (2015). Matching methods in practice: Three examples. *Journal of Human Resources*, 50(2), 373-419.

‡ Imbens, G. W., & Rubin, D. B. (2015) Chapters 12 - 13.

† LaLonde, R. J. (1986). Evaluating the econometric evaluations of training programs with experimental data. *The American Economic Review*, 604-620.

† Lechner, M. (2002). Program heterogeneity and propensity score matching: An application to the evaluation of active labor market policies. *The Review of Economics and Statistics*, 84(2), 205-220.

Rosenbaum, P. R., & Rubin, D. B. (1983). The central role of the propensity score in observational studies for causal effects. *Biometrika*, 70(1), 41-55

‡ Smith, J. A., & Todd, P. E. (2005). Does matching overcome LaLonde's critique of nonexperimental estimators? *Journal of Econometrics*, 125(1), 305-353.

Additional Readings:

† Black, D. A., & Smith, J. A. (2004). How robust is the evidence on the effects of college quality? Evidence from matching. *Journal of Econometrics*, 121(1), 99-124.

† Jalan, J., & Ravallion, M. (2003). Does piped water reduce diarrhea for children in rural India?. *Journal of Econometrics*, 112(1), 153-173

Mueser, P. R., Troske, K. R., & Gorislavsky, A. (2007). Using state administrative data to measure program performance. *The Review of Economics and Statistics*, 89(4), 761-783.

[02/13] **6. Instrumental Variables** quad «2 lectures»

▷ Instrumental variables
▷ Weak instruments
▷ Local Average Treatment Effects (LATE)

Readings:

Angrist, J. D., Imbens, G. W., & Rubin, D. B. (1996). Identification of causal effects using instrumental variables. *Journal of the American statistical Association*, 91(434), 444-455.

‡ Angrist, J. D., & Pischke, J. S. (2014) Chapter 3.

Angrist, J. D., & Krueger, A. B. (2001). Instrumental Variables and the Search for Identification: From Supply and Demand to Natural Experiments. *The Journal of Economic Perspectives*, 15(4), 69-85.

Hahn, J., & Hausman, J. (2003). Weak instruments: Diagnosis and cures in empirical econometrics. *The American Economic Review*, 93(2), 118-125.

‡ Hansen (2017) Chapter 10.

‡ Heckman, J. J. (1996). Randomization as an Instrumental Variable. *The Review of Economics and Statistics*, 336-341.

‡ Imbens, G. W., & Angrist, J. D. (1994). Identification and Estimation of Local Average Treatment Effects. *Econometrica*, 62(2), 467-475.

Moffitt, R. (1991). Program evaluation with nonexperimental data. *Evaluation Review*, 15(3), 291-314.

‡ Murray, M. P. (2006). Avoiding invalid instruments and coping with weak instruments. *The Journal of Economic Perspectives*, 20(4), 111-132.

Staiger, D., & Stock, J. H. (1997). Instrumental Variables Regression with Weak Instruments. *Econometrica*, 65(3), 557-586.

‡ Stock, J. H., Wright, J. H., & Yogo, M. (2002). A survey of weak instruments and weak identification in generalized method of moments. *Journal of Business & Economic Statistics*, 20(4), 518-529.

Additional Readings:

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

† Angrist, J. D., Dynarski, S. M., Kane, T. J., Pathak, P. A., & Walters, C. R. (2010). Inputs and Impacts in Charter Schools: KIPP Lynn. *The American Economic Review, Papers and Proceedings*, 100(2), 239-243.

† Angrist, J. D., Dynarski, S. M., Kane, T. J., Pathak, P. A., & Walters, C. R. (2012). Who benefits from KIPP?. *Journal of Policy Analysis and Management*, 31(4), 837-860.

† Cawley, J., & Meyerhoefer, C. (2012). The medical care costs of obesity: an instrumental variables approach. *Journal of Health Economics*, 31(1), 219-230.

† Cutler, D. M., & Gruber, J. (1996). Does public insurance crowd out private insurance?. *The Quarterly Journal of Economics*, 111(2), 391-430.

[02/20] 7. Panel Data «1 lecture»

▷ Static panel data models
▷ Dynamic panel data models

Readings:

‡ Hansen (2017) Chapter 21.

Bond, S. R. (2002). Dynamic panel data models: a guide to micro data methods and practice. *Portuguese Economic Journal*, 1(2), 141-162.

Additional Readings:

† Almond, D., Chay, K. Y., & Lee, D. S. (2005). The costs of low birth weight.*The Quarterly Journal of Economics*, 120(3), 1031-1083.

† Bleakley, H. (2010). Malaria eradication in the Americas: A retrospective analysis of childhood exposure. *American Economic Journal: Applied Economics*, 2(2), 1-45.

[02/22] 8. Difference-in-Differences «3 lectures»

▷ Difference-in-Differences (DiD)
▷ Inference
▷ Fuzzy DiD

Assignment 4 (due 03/15)

Readings:

‡ Angrist, J. D., & Pischke, J. S. (2014) Chapter 5.

‡ Bertrand, M., Duflo, E., & Mullainathan, S. (2004). How much should we trust differences-in-differences estimates?. *The Quarterly Journal of Economics*, 119(1), 249-275.

  Conley, T. G., & Taber, C. R. (2011). Inference with "difference in differences" with a small number of policy changes. *The Review of Economics and Statistics*, 93(1), 113-125.

‡ de Chaisemartin, C., & D'Haultfœuille, X. (2017). Fuzzy Differences-in-Differences. *The Review of Economic and Studies*.

‡ Lechner, M. (2011). The estimation of causal effects by difference-in-difference methods. *Foundations and Trends in Econometrics*, 4(3), 165-224.

  Lee, M. J., & Kang, C. (2006). Identification for difference in differences with cross-section and panel data. *Economics Letters*, 92(2), 270-276.

Additional Readings:

† Adda, J., & Cornaglia, F. (2010). The effect of bans and taxes on passive smoking. *American Economic Journal: Applied Economics*, 2(1), 1-32

† Duflo, E. (2001). Schooling and labor market consequences of school construction in Indonesia: Evidence from an unusual policy experiment. *The American Economic Review*, 91(4), 795-813.

† Dynarski, S. (2004). The new merit aid. In College choices: The economics of where to go, when to go, and how to pay for it (pp. 63-100). University of Chicago Press.

† Eissa, N., & Liebman, J. B. (1996). Labor supply response to the earned income tax credit. *The Quarterly Journal of Economics*, 111(2), 605-637.

  Eissa, N., & Hoynes, H. W. (2004). Taxes and the labor market participation of married couples: the earned income tax credit. *Journal of Public Economics*, 88(9), 1931-1958.

[03/13] **9. Regression Discontinuity** «2 lectures»

  ▷ Sharp and fuzzy designs

Readings:

‡ Angrist, J. D., & Pischke, J. S. (2014) Chapter 4.

‡ Imbens, G. W., & Lemieux, T. (2008). Regression discontinuity designs: A guide to practice. *Journal of Econometrics*, 142(2), 615-635.

‡ Lee, D. S., & Lemieux, T. (2010). Regression discontinuity designs in economics. *Journal of Economic Literature*, 48(2), 281-355.

  Hahn, J., Todd, P., & Van der Klaauw, W. (2001). Identification and estimation of treatment effects with a regression discontinuity design. *Econometrica*, 69(1), 201-209.

Assignment 5 (due 03/27)

Additional Readings:

† Anderson, M., Dobkin, C., & Gross, T. (2012). The effect of health insurance coverage on the use of medical services. *American Economic Journal: Economic Policy*, 4(1), 1-27.

† Angrist, J. D., & Lavy, V. (1999). Using Maimonides' rule to estimate the effect of class size on scholastic achievement. *The Quarterly Journal of Economics*, 114(2), 533-575.

† Card, D., Dobkin, C., & Maestas, N. (2008). The impact of nearly universal insurance coverage on health care utilization: evidence from Medicare. *The American Economic Review*, 98(5), 2242-58.

† Carpenter, C., & Dobkin, C. (2009). The effect of alcohol consumption on mortality: regression discontinuity evidence from the minimum drinking age. *American Economic Journal: Applied Economics*, 1(1), 164-182

† Carpenter, C., & Dobkin, C. (2011). The minimum legal drinking age and public health. *The Journal of Economic Perspectives*, 25(2), 133-156.

Lee, D. S. (2008). Randomized experiments from non-random selection in US House elections. *Journal of Econometrics*, 142(2), 675-697.

Schanzenbach, D. W. (2009). Do school lunches contribute to childhood obesity? *Journal of Human Resources*, 44(3), 684-709.

[03/20] **10. Microeconomic Policy Evaluation** «1 lecture»

▷ Review of methods: experiments, natural experiments, discontinuity, matching, IV, and control function

Readings:

† Almond, D., Hoynes, H. W., & Schanzenbach, D. W. (2011). Inside the war on poverty: The impact of food stamps on birth outcomes. *The Review of Economics and Statistics*, 93(2), 387-403.

Bhattacharya, J., Gathmann, C., & Miller, G. (2013). The Gorbachev anti-alcohol campaign and Russia's mortality crisis. *American Economic Journal: Applied Economics*, 5(2), 232-260.

‡ Blundell, R., & Dias, M. C. (2009). Alternative approaches to evaluation in empirical microeconomics. *Journal of Human Resources*, 44(3), 565-640.

† Cattaneo, M. D., Galiani, S., Gertler, P. J., Martinez, S., & Titiunik, R. (2009). Housing, health, and happiness. *American Economic Journal: Economic Policy*, 1(1), 75-105.

† Doyle, J. J. (2005). Health insurance, treatment and outcomes. Using auto accidents as health shocks. *The Review of Economics and Statistics*, 87(2), 256-270.

Freedman, D. A. (2009). Statistical models: theory and practice. Cambridge University Press. Chapter 1.

‡ Meyer, B. D. (1995). Natural and quasi-experiments in economics. *Journal of Business & Economic Statistics*, 13(2), 151-161.

‡ Rosenzweig, M. R., & Wolpin, K. I. (2000). Natural" natural experiments" in economics. *Journal of Economic Literature*, 38(4), 827-874.

[03/22] **11. Social Interactions** «4 lectures»

▷ Social interactions, complementarity, and discrete choice

▷ Econometrics

▷ Peer effects in education and other applications

Readings:

‡ Akerlof, G. A. (1997). Social distance and social decisions.*Econometrica*, 1005-1027.

‡ Blume, L. E., Brock, W. A., Durlauf, S. N., & Jayaraman, R. (2015). Linear social interactions models. *Journal of Political Economy*, 123(2), 444-496.

Blume, L. E., Brock, W. A., Durlauf, S. N., & Ioannides, Y. M. (2010). Identification of social interactions. *Handbook of Social Economics*

‡ Bramoullé, Y., Djebbari, H., & Fortin, B. (2009). Identification of peer effects through social networks. *Journal of Econometrics*, 150(1), 41-55.

‡ Brock, W. A., & Durlauf, S. N. (2001). Discrete choice with social interactions. *The Review of Economic Studies*, 68(2), 235-260.

Brock, W. A., & Durlauf, S. N. (2002). A multinomial-choice model of neighborhood effects. *The American Economic Review, Papers and Proceedings*, 92(2), 298-303.

‡ Calvó-Armengol, A., Patacchini, E., & Zenou, Y. (2009). Peer effects and social networks in education. *The Review of Economic Studies*, 76(4), 1239-1267.

‡ Cooper, R., & John, A. (1988). Coordinating coordination failures in Keynesian models. *The Quarterly Journal of Economics*, 103(3), 441-463.

Durlauf, S. N. (2004). Neighborhood effects. *Handbook of Regional and Urban Economics*, 4, 2173-2242.

Goldsmith-Pinkham, P., & Imbens, G. W. (2013). Social networks and the identification of peer effects. *Journal of Business & Economic Statistics*, 31(3), 253-264.

Graham, B. S., & Hahn, J. (2005). Identification and estimation of the linear-in-means model of social interactions. *Economics Letters*, 88(1), 1-6.

Hirano, K., & Hahn, J. (2010). Design of randomized experiments to measure social interaction effects. *Economics Letters*, 106(1), 51-53.

‡ Manski, C. F. (1993). Identification of endogenous social effects: The reflection problem. *The Review of Economic Studies*, 60(3), 531-542.

Manski, C. (2000). Economic Analysis of Social Interactions. *The Journal of Economic Perspectives*, 14(3), 115-136.

Milgrom, P., & Roberts, J. (1990). Rationalizability, Learning, and Equilibrium in Games with Strategic Complementarities. *Econometrica*, 58(6), 1255-1277.

‡ Moffitt, R. A. (2001). Policy interventions, low-level equilibria, and social interactions. In Social dynamics, 4(45-82), 6-17.

Additional Readings:

† Angrist, J. D., & Lang, K. (2004). Does school integration generate peer effects? Evidence from Boston's Metco Program. *The American Economic Review*, 94(5), 1613-1634. Economics, 2(1), 211-228.

Bayer, P., Hjalmarsson, R., & Pozen, D. (2009). Building criminal capital behind bars: Peer effects in juvenile corrections. *The Quarterly Journal of Economics*, 124(1), 105-147.

† Carrell, S. E., Fullerton, R. L., & West, J. E. (2009). Does your cohort matter? Measuring peer effects in college achievement. *Journal of Labor Economics*, 27(3), 439-464.

Carrell, S., & Hoekstra, M. L. (2010). Externalities in the classroom: How children exposed to domestic violence affect everyone's kids. *American Economic Journal: Applied Economics*, 2(1), 211-228.

† Carrell, S. E., Sacerdote, B. I., & West, J. E. (2013). From natural variation to optimal policy? The importance of endogenous peer group formation. *Econometrica*, 81(3), 855-882.

† Conley, T. G., & Udry, C. R. (2010). Learning about a new technology: Pineapple in Ghana. *The American Economic Review*, 100(1), 35-69.

† Cipollone, P., & Rosolia, A. (2007). Social interactions in high school: Lessons from an earthquake.*The American Economic Review*, 97(3), 948-965.

Dahl, G. B., Løken, K. V., & Mogstad, M. (2014). Peer effects in program participation. *The American Economic Review*, 104(7), 2049-2074.

† De Giorgi, G., Pellizzari, M., & Redaelli, S. (2010). Identification of Social Interactions through Partially Overlapping Peer Groups. *American Economic Journal: Applied Economics*, 2(2), 241-275.

Epple, D., & Romano, R. (2011). Peer effects in education: A survey of the theory and evidence. *Handbook of Social Economics*, 1(11), 1053-1163.

† Glaeser, E. L., Sacerdote, B., & Scheinkman, J. A. (1996). Crime and social interactions. *The Quarterly Journal of Economics*, 111(2), 507-548.

† Hoxby, C. M. (2000). The effects of class size on student achievement: New evidence from population variation. *The Quarterly Journal of Economics*, 115(4), 1239-1285.

Kling, J. R., Liebman, J. B., & Katz, L. F. (2007). Experimental analysis of neighborhood effects. *Econometrica*, 75(1), 83-119.

Lalive, R., & Cattaneo, M. A. (2009). Social interactions and schooling decisions. *The Review of Economics and Statistics*, 91(3), 457-477.

Lavy, V., Paserman, M. D., & Schlosser, A. (2012). Inside the black box of ability peer effects: Evidence from variation in the proportion of low achievers in the classroom. *The Economic Journal*, 122(559), 208-237.

† Sacerdote, B. (2001). Peer effects with random assignment: Results for Dartmouth roommates. *The Quarterly journal of Economics*, 116(2), 681-704.

Sacerdote, B. (2011). Peer effects in education: How might they work, how big are they and how much do we know thus far. *Handbook of the Economics of Education*, 3(3), 249-277.

[04/05]   **12. Social Networks**   «2 lectures»

  ▷ Social and economic networks

Assignment 6 (due 04/24)

Readings:

Ballester, C., Calvó-Armengol, A., & Zenou, Y. (2006). Who's who in networks. Wanted: The key player. *Econometrica*, 74(5), 1403-1417.

† Banerjee, A., Chandrasekhar, A. G., Duflo, E., & Jackson, M. O. (2013). The diffusion of microfinance. *Science*, 341(6144), 1236498.

† Banerjee, A., Chandrasekhar, A. G., Duflo, E., & Jackson, M. O. (2017). Using gossips to spread information: theory and evidence from a randomized controlled trial. Working paper.

† Granovetter, M. S. (1973). The strength of weak ties. *American Journal of Sociology*, 78(6), 1360-1380.

‡ Jackson, M. O. (2010) Chapters 1 - 2.

Jackson, M. O. (2011). An overview of social networks and economic applications. *The Handbook of Social Economics*, 1, 511-85.

[04/12]   13. Scientific Collaborations   «2 lectures»

▷ Scientific Collaborations

Readings:

† Azoulay, P., Graff Zivin, J. S., & Wang, J. (2010). Superstar extinction. *The Quarterly Journal of Economics*, 125(2), 549-589.

Ductor, L. (2015). Does Co-authorship Lead to Higher Academic Productivity? *Oxford Bulletin of Economics and Statistics*, 77(3), 385-407.

Fafchamps, M., Leij, M. J., & Goyal, S. (2010). Matching and network effects. *Journal of the European Economic Association*, 8(1), 203-231.

† Goyal, S., Van Der Leij, M. J., & Moraga-González, J. L. (2006). Economics: An emerging small world. *Journal of Political Economy*, 114(2), 403-412.

Hollis, A. (2001). Co-authorship and the output of academic economists. *Labour Economics*, 8(4), 503-530.

Medoff, M. H. (2003). Collaboration and the quality of economics research. *Labour Economics*, 10(5), 597-608.

† Waldinger, F. (2011). Peer effects in science: Evidence from the dismissal of scientists in Nazi Germany. *The Review of Economic Studies*, 79(2), 838-861.

[04/19]   Final Presentations   «2 lectures»

▷ Student's presentations

[05/03]   Final Project

▷ Submission of final paper (email and/or mailbox)