

**OPIM 904 / BEPP 904**  
**EXPERIMENTAL ECONOMICS**  
**University of Pennsylvania**  
**The Wharton School**  
**Wednesdays, 3-6pm, Spring 2015, JMHH G86**

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**Course Description.** This course will help prepare you to run your own economics laboratory and field experiments. Experimental methods have been widely adopted by economists to develop new insights, and some economic theories and hypotheses are uniquely well-suited for testing with experimental tools and data. Achieving high internal and external validity requires careful experimental design. Substantive areas of application in the course will include market equilibrium, asset bubbles, learning in games, public good provision, and labor market relationships. Additional topics may include biases in individual decision-making; field experiments in development economics; and happiness, neuroeconomics, and behavioral/experimental welfare economics. Economists' typical interests in strategic and market-based interactions raise particular methodological challenges and opportunities.

**Requirements.** The best way to develop facility in conducting one's own experimental work is to practice. All of the course requirements are designed toward that end. In addition to active participation in class, you will be expected to:

- (i) Lead the class discussion of a paper (20% of total course grade)
- (ii) Replicate the data analysis for a paper (30%)
- (iii) Prepare a detailed proposal for a new experiment, and workshop that proposal on one of the last few days of the course (50%)

More information about each of these requirements will be provided in due course.

There are no formal prerequisites, though I will assume that everyone is familiar with microeconomics and statistics at approximately the first-year graduate level.

**Materials.** In general this course will rely on journal articles, as indicated below. There will be no assigned textbook for this course, but some of the readings will be drawn from *The Handbook of Experimental Economics*, Edited by John H. Kagel & Alvin E. Roth. 1997. ISBN: 9780691058979

A large number of other textbooks covering experimental economics have emerged in recent years and may be of use.

## **Topics and Reading List**

### **Principles of experimental design for economics**

- Roth, Alvin (2002). "[The Economist as Engineer: Game Theory, Experimentation, and Computation as Tools for Design Economics](#)," *Econometrica*, 70(4), 1341–1378.
- Kagel, John., and Alvin Roth (eds., 1995). *Handbook of Experimental Economics*. Princeton, NJ: Princeton University Press. 3-23, 66-86.
- Simmons, Joseph, Leif Nelson, and Uri Simonsohn (2011). "[False-Positive Psychology: Undisclosed Flexibility in Data Collection and Analysis Allows Presenting Anything as Significant](#)," *Psychological Science*, 22(11), 1359-1366.
- Camerer, Colin, and Robin Hogarth (1999). "[The Effects of Financial Incentives in Economics Experiments: A Review and Capital-Labor-Production Framework](#)," *Journal of Risk and Uncertainty*, 19, 7-42.
- Ariely, Dan, Uri Gneezy, George Loewenstein and Nina Mazar (2009). "[Large Stakes and Big Mistakes](#)," *Review of Economic Studies*, 76(2), 451-469.
- Loewenstein, George (1999). "[Experimental economics from the vantage-point of behavioural economics](#)," *Economic Journal*, 109, 25-34.
- Falk, Armin, and James Heckman (2009). "[Lab Experiments Are a Major Source of Knowledge in the Social Sciences](#)," *Science* 326(5952), 535-538.

### **Market equilibrium experiments**

- Smith, Vernon (1962). "[An Experimental Study of Competitive Market Behavior](#)," *Journal of Political Economy*, 70(2), 111–137.
- Chamberlin, Edward (1948). "[An Experimental Imperfect Market](#)," *Journal of Political Economy*, 56(2), 95–108.
- Camerer, Colin, and Daniel Lovo (1999). "[Overconfidence and Excess Entry: An Experimental Approach](#)," *American Economic Review*, 89, 306-18.
- Plott, Charles, and Shyam Sunder (1988). "[Rational expectations and the aggregation of diverse information in laboratory security markets](#)," *Econometrica*, 56, 1085-1118.

### **Learning, cognitive hierarchy models**

- Ho, Teck-Hua, Colin Camerer, and Keith Weigelt (1998). "[Iterated dominance and iterated best response in experimental" p-beauty contests](#)," *American Economic Review*, 947-969.
- Bosch-Domenech, Antoni, et al. (2002). "[One, two, \(three\), infinity,...: Newspaper and lab beauty-contest experiments](#)," *American Economic Review*, 1687-1701.
- Gill, David, and Victoria Prowse (2014). "[Cognitive Ability, Character Skills, and Learning to Play Equilibrium: A Level-k Analysis](#)," Working paper.
- Bogaçhan Çelen and Shachar Kariv (2004). "[Distinguishing Informational Cascades from Herd Behavior in the Laboratory](#)," *American Economic Review*, 94(3), pp. 484-497.

### **Recovering preferences**

- Choi, Syngjoo, Ray Fisman, Douglas Gale, and Shachar Kariv (2007). "[Revealing Preferences Graphically: An Old Method Gets a New Tool Kit](#)," *American Economic Review, Papers & Proceedings*, May, 97(2), pp.153-158.

- Andreoni, James and John Miller (2002). "[Giving According to GARP: An Experimental Test of the Consistency of Preferences for Altruism](#)." *Econometrica*, 70(2), March, pp. 737-753.
- Fisman, Ray, Shachar Kariv, and Daniel Markovits (2007). "[Individual Preferences for Giving](#)." *American Economic Review*, May, 97(5), pp. 1858-1876.
- Ariely, Dan, George Loewenstein and Drazen Prelec (2003). "[Coherent Arbitrariness: Stable Demand Curves without Stable Preferences](#)," *Quarterly Journal of Economics*, 118(1), 73-105.
- Hsee, Christopher (1996). "[The Evaluability Hypothesis: An Explanation for Preference Reversals between Joint and Separate Evaluations of Alternatives](#)," *Organizational Behavior and Human Decision Processes*, 67(3), pp.247-257

### **Cooperation and public goods**

- Ledyard, John (1995). "[Public Goods: A Survey of Experimental Research](#)." In *Handbook of Experimental Economics*. Eds. Alvin Roth and John Kagel, 111-194. Princeton: Princeton University Press.
- Dawes, Robyn and Richard Thaler (1988). "[Anomalies: Cooperation](#)," *Journal of Economic Perspectives*, 2 (Summer), 187-197.
- Dal Bó, Pedro (2005). "[Cooperation under the Shadow of the Future: Experimental Evidence from Infinitely Repeated Games](#)," *American Economic Review*, 95(5), 1591-1604.
- Fehr, Ernst and Simon Gächter (2000). "[Cooperation and Punishment in Public Goods Experiments](#)," *American Economic Review*, 90(4), 980-994.
- Fehr, Ernst and Simon Gächter (2002). "[Altruistic punishment in humans](#)," *Nature* 415,10, 137-140.
- Axelrod, Robert (2006). [The Evolution of Cooperation](#) (Revised ed.), Perseus Books Group, ISBN 0-465-00564-0.
- Axelrod, Robert and William Hamilton (1981). "[The Evolution of Cooperation](#)", *Science* 211: 1390–96.
- Kessler, Judd (2013). "[Announcements of Support and Public Good Provision](#)."

### **Labor markets**

[Full cites and links to come]

- Reciprocity, gift exchange, market norms vs social norms (Fehr)
- Intertemporal substitutability (Fehr and Goette)
- Online labor markets (John Horton; Iwan Barankay)
- Gender differences (Niederle and Vesterlund; Katie Coffman)

### **Structural estimation with experiments**

- Gary Charness and Matthew Rabin (2002). "[Understanding Social Preferences with Simple Tests](#)," *The Quarterly Journal of Economics* 117(3): 817-869.
- Andreoni, James and Charles Sprenger (2012). "[Estimating Time Preferences from Convex Budgets](#)," *American Economic Review*, 102(7), 3333-3356.
- Andersen, Steffen, Glenn Harrison, Morten Lau and Elisabet Rutström (2008). "[Eliciting Risk and Time Preferences](#)," *Econometrica*, 76(3), 583-618.
- Mahajan, Aprajit, and Alessandro Tarozi (2011). "[Time Inconsistency, Expectations and Technology Adoption: The case of Insecticide Treated Nets](#)," Working paper.

### **Intertemporal choice**

- Frederick, Shane, George Loewenstein, and Ted O'Donoghue (2002). "[Time Discounting and Time Preference: A Critical Review](#)." Journal of Economic Literature, 351-401.
- Augenblick, Ned, Muriel Niederle, and Charlie Sprenger (2014). "[Working Over Time: Dynamic Inconsistency in Real Effort Tasks](#)." Working paper.
- Ariely, Dan, and Klaus Wertenbroch (2002). "[Procrastination, Deadlines, and Performance: Self-Control by Precommitment](#)," Psychological Science, 13(3), 219-224.
- Kaur, Supreet, Michael Kremer, and Sendhil Mullainathan (2014). "[Self-Control at Work](#)."
- Ashraf, Nava, Dean Karlan, and Wesley Yin (2006). "[Tying Odysseus to the Mast: Evidence from a Commitment Savings Product in the Philippines](#)." Quarterly Journal of Economics, 121(2).
- Schilbach, Frank (2015). "[Alcohol and Self-Control: A Field Experiment in India](#)." Working paper.
- Royer, Heather, Mark Stehr, and Justin Sydnor (2014). "[Incentives and Commitments for Exercise: Evidence from a Field Experiment with Workers at a Fortune 500 Company](#)." Forthcoming, American Economic Journal: Applied Economics.
- Gine, Xavier, Jessica Goldberg, Dan Silverman, and Dean Yang, (2014). "[Revising Commitments: Field Evidence on the Adjustment of Prior Choices](#)," Working paper.
- Ausubel, Lawrence (1999). "[Adverse Selection in the Credit Card Market](#)," Working paper.
- Zauberman, Gal, Kyu Kim, Selin Malkoc, and James Bettman (2009). "[Discounting Time and Time Discounting: Subjective Time Perception and Intertemporal Preferences](#)," Journal of Marketing Research, 46 (4), 543 - 556

### **Field experiment applications**

- Imbens, Guido (2010). "[Better LATE Than Nothing: Some Comments on Deaton \(2009\) and Heckman and Urzua](#)" (2009). Journal of Economic Literature, 48(2): 399-423.
- Esther Duflo, Rachel Glennerster and Michael Kremer (2008). "[Using Randomization in Development Economics Research: A Toolkit](#)." Chapter 61 in Handbook of Development Economics, Vol. 4: 3895-3962.
- Abhijit Banerjee and Esther Duflo (2009). "[The Experimental Approach to Development Economics](#)," Annual Review of Economics, Vol. 1: 151-178.
- Heckman, James (2010). "[Building Bridges between Structural and Program Evaluation Approaches to Evaluating Policy](#)." Journal of Economic Literature, 48(2): 356-98.
- Deaton, Angus (2010). "[Instruments, Randomization, and Learning about Development](#)." Journal of Economic Literature, 48(2): 424-55.

Specific application #1: Educational production functions

Specific application #2: Microinsurance

### **Experimental welfare economics—happiness, neuroeconomics**

- Kahneman, Daniel, Peter Wakker, and Rakesh Sarin (1997). "[Back to Bentham? Explorations of Experienced Utility](#)," Quarterly Journal of Economics, 112(2), 375-405.
- Benjamin, Daniel, Ori Heffetz, Miles Kimball, and Alex Rees-Jones (2012). "[What Do You Think Would Make You Happier? What Do You Think You Would Choose?](#)" American Economic Review, 102(5), 2083-2110.

- Bernheim, Douglas and Antonio Rangel (2009). "[Beyond Revealed Preference: Choice-Theoretic Foundations for Behavioral Welfare Economics](#)," Quarterly Journal of Economics, 124(1), 51-104.
- Koszegi, Botond and Matthew Rabin (2008). "[Choices, Situations, and Happiness](#)," Journal of Public Economics, 92, 1821-1832.
- Bernheim, Douglas (2009). "[Behavioral Welfare Economics](#)," Journal of the European Economic Association, 7(2-3), 267-319.
- Camerer, Colin, George Loewenstein, and Drazen Prelec (2005). "[Neuroeconomics: How Neuroscience Can Inform Economics](#)," Journal of Economic Literature, 43(1), pp. 9-64.

**Additional topics**

Auctions, Risk preferences, Nudges vs mandates; Behavioral/experimental public economics

### **Tentative Class Meeting Schedule**

1/21—Methodology  
1/28—Market equilibrium experiments  
2/4—Cognitive hierarchies, experiments in games  
2/11—Recovering preferences  
2/18—Public goods and cooperation  
2/25—Labor Markets  
3/4— Structural estimation with experiments  
3/11—No class, spring break  
3/18— Intertemporal choice  
3/25— Field experiment methodology and applications I  
4/1— Field experiment methodology and applications II  
4/8—Happiness and behavioral/experimental welfare economics  
4/15—Additional topics  
4/22—Student presentations  
4/29—Student presentations