Richard Evans 2016-2017 electives for cross-listing

**Economic Policy Analysis with Overlapping Generations Models (Fall term 2016, time TBD)**

This course will study economic policy questions ideally addressed by the overlapping generations (OG) dynamic general equilibrium framework. OG models represent a rich class of macroeconomic general equilibrium model that is extremely useful for answering questions in which inequality, demographics, and individual heterogeneity are important. OG models are used extensively by the Joint Committee on Taxation, Congressional Budget Office, and Department of the Treasury. This course will train students how to set up and solve OG models. The standard nonlinear global solution method for these models--time path iteration--is a fixed point method that is similar to but significantly different from value function iteration and policy function iteration. This course will take students through progressively richer versions of the model, which will include endogenous labor supply, nontrivial demographics, bequests, stochastic income, multiple industries, non-balanced government budget constraint, and household tax structure.

We will be focusing on computational strategies, modularity of code, sensitivity and robustness to assumptions, and policy questions that can be answered with this framework. Students can use whatever programming language they want, but I will be most helpful to them in using Python and MATLAB. We will also study results and uses from recent papers including the following:

De Nardi, Mariacristina, “Quantitative Models of Wealth Inequality: A Survey,” National Bureau of Economic Research, NBER Working Paper 21106 (April 2015).

DeBacker, Jason, Richard W. Evans, Evan Magnusson, Kerk L. Phillips, Shanthi Ramnath, and Isaac Swift, “The Distributional Effects of Redistributional Tax Policy,” under review at *Quantitative Economics* (August 2016).

DeBacker, Jason, Richard W. Evans, and Kerk L. Phillips, “Integrating Microsimulation Tax Functions into a DGE Macroeconomic Model: A Canonical Example,” mimeo (August 2016).

Nishiyama, Shinichi, “Fiscal Policy Effects in a Heterogeneous-agent OLG economy with an Aging Population,” *Journal of Economic Dynamics & Control*, 61:19, pp. 114-132 (December 2015).

Nishiyama, Shinichi and Kent Smetters, “Does Social Security Privatization Produce Efficiency Gains?,” *Quarterly Journal of Economics*, 122:4, pp. 1677-1719 (November 2007).

Peterman, William, “Reconciling Micro and Macro Estimates of the Frisch Labor Supply Elasticity,” *Economic Inquiry*, 54:1, pp. 100-120 (January 2016).

Weil, Philippe, “Overlapping Generations: The First Jubilee,” *Journal of Economic Perspectives*, 22(4), 115-134 (Fall 2008).

Prerequisites include advanced undergraduate or first-year graduate microeconomic theory, linear algebra, multivariable calculus, proficiency in scientific computing (examples will be in Python).

**Structural Estimation (Winter, T/Th 12:00-1:20)**

Structural estimation refers to the estimation of model parameters by taking a theoretical model directly to the data. (This is in contrast to reduced form estimation, which often entails estimating a linear model that is either explicitly or implicitly a simplified, linear version of a related theoretical model). This class will survey a range of structural models, then teach students estimation approaches including the generalized method of moments approach and maximum likelihood estimation. We will then examine the strengths and weaknesses of both approaches in a series of examples from the fields of economics, political science, and sociology. We will also learn the simulated method of moments approach.