**Syllabus: Essex Summer School, 10-21 August 2009**

**Empirical Models of Context Conditionality, (Inter)Dependence, and Endogeneity**

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**Course Content:** Specification, estimation, interpretation, & presentation of models of context-conditional effects, of temporal, spatial, and spatiotemporal dynamics, and of systems of endogenous variables.

**Course Objectives:** Students will have an opportunity to learn how to specify, estimate, interpret, and present empirical models that reflect the sometimes complex (1) interactions and context-conditionality; (2) temporal, spatial, and spatiotemporal dynamics and interdependence; and (3) joint endogeneity of modern theories of domestic, comparative, and international political and social science. Formal empirical-methodologically, this will entail instruction in models of linear and nonlinear interactions, multilevel models, time-serial and spatial-econometric models, and systems-of-equations models.

**Course Prerequisites:** Students should have a solid background in basic econometrics, meaning a full and firm grasp of the Classical Linear Regression Model and estimators for it (e.g., Ordinary Least-Squares), and at least a solid introduction to the Generalized Linear Regression Model and estimators for it (e.g., Feasible Generalized Least-Squares).

**Representative Background Reading:** Gujarati, *Basic Econometrics*, parts I & II (CLRM and GLRM), e.g., esp. chs. 7-8 (multiple regression) & 11-12 (heteroscedasticity & autocorrelation in error variance-covariance).

Course Structure and Readings:

1a. Introduction: The Centrality of Model Specification to Empirical Analysis
   Readings:

   Background Readings:
   Hanushek & Jackson, Chs. 1-6, pp. 1-178.

1b. Review: Classical & Generalized Linear-Regression Models.
   Readings:

2a. Review: Maximum Likelihood & Nonlinear/Qualitative/Limited Dependent-Variable Models
2b. The Centrality of Model Specification to Empirical Analysis: Reprise
   Readings:
   King, Chs. 1-5, pp. 3-132.

   Background Readings:
   Hanushek & Jackson, Ch.7, pp. 179-216.

3. Linear-Interaction Models
   Readings:
   Kam & Franzese, Chs. 1-4, pp. 1-102.

4. Nonlinear Interaction Models
   Readings:
   Kam & Franzese, Chs. 5.2, pp. 111-123.

   Additional Readings:

5. Multilevel Interaction Models
   Readings:


6. Temporally Dynamic Models

*Readings:*


7. Spatially and Spatiotemporally Dynamic Models I

*Readings:*


8. Spatially and Spatiotemporally Dynamic Models II

*Readings:*


9. Systems of Endogenous Equations

*Background Readings:*

Hanushek & Jackson, Chs.8-9, pp. 217-281.

*Readings: *

Additional Readings:
Chapters in Oxford Handbook of Political Methodology on Causation by H. Brady, on Neyman-Rubin & Matching by J. Sekhon, on Experimentation by Morton & Williams, on Field & Natural Experiments by Gerber & Green. We may also discuss FIML, LIML, and Bayesian options.

10. Nonlinear Endogenous Systems

Readings: