

Political Science 688.006
Empirical Models of Conflict
9:00 AM - 12:00 PM, Thursdays; Room: Haven Hall 5664

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Office Hours: by appointment (email me to set up a time)

Course Description: This course examines statistical issues relevant to the empirical study of war and peace. Our substantive focus will be on international and civil conflict (e.g. war initiation, war termination, alliances, use of force, tactical choices). We will consider methodological issues such as causal inference, dyadic, geographic, network or temporal interdependence, text analysis, prediction and simulation. Our focus will be on the assumptions and appropriateness of models, as well as the proper interpretation of results. The goals of the course are to give students exposure to contemporary quantitative applications in international relations, improve students' ability to critically evaluate quantitative IR work, and design empirical research projects of their own.

The course is not a methods course, and is not intended as a substitute or supplement for any part of the graduate-level methods sequence. Rather, it is an empirical world politics course with a heavy emphasis on statistical modeling and quantitative methodology.

Prerequisites: Students are expected to have a rudimentary background in statistics, up to and including linear regression. Experience with statistical computing (e.g. MATLAB, R, S-PLUS, SAS, SPSS, STATA) is also helpful. Students without this background must obtain the instructor's permission prior to enrolling in the course. We will try to cover the main topics without using complex mathematics, but will provide pointers to students who want to explore them in more technical depth.

Software: We will use the R statistical programming language for all tutorials. R is a free, cross-platform software environment for statistical computing and graphics. A background in R is helpful, but not required. Students who would like to get a head start are encouraged to download the software here (<http://cran.us.r-project.org/>), and consult the introductory tutorial (<http://cran.r-project.org/doc/manuals/R-intro.pdf>). Some students may prefer the slightly more user-friendly GUI, R Studio (<http://www.rstudio.com/>). Code and data for all tutorials will be made available through the course website. For additional background on statistical computing with R, see

- Venables, W. N. and B. D. Ripley. 2002. *Modern Applied Statistics with S*, 4th ed. Springer.
- <https://stats.stackexchange.com/questions/138/free-resources-for-learning-r>

It is also *strongly recommended*, but not required, that you submit all written work typeset in L^AT_EX. L^AT_EX is a free document markup language (like HTML or XML), which allows you to output high-quality and customizable pdf documents, with embedded mathematical notation and pretty tables/figures. To use L^AT_EX, you will need a L^AT_EX text editor (MacOS: TeXShop, Texmaker; Win: Texmaker, LyX; Linux: Kile, Latexila; Cross-platform: Sublime Text) to write a .tex file,

and a compiler (MacOS: MacTeX; Win: MiKTeX; Linux: texlive) that processes the .tex code and outputs the pdf document.

Grade Policy: Grades will be based on 2 in-class R tutorials (30%), participation in classroom discussions (20%), and a final paper (50%).

1. **R tutorials** (30%). Students are required to prepare two (2) statistical computing tutorials that implement a specific model in the R programming language, and include an application to conflict data (e.g. x-sub.org). For each tutorial, the student will (a) select a model, R package(s) and dataset, in consultation with the instructor, (b) upload the code and all supporting files to the course Canvas website on the day before our class meeting, and (c) conduct an in-class demonstration.
2. **Classroom discussion** (20%). Students are expected to read – carefully, critically and creatively – and actively discuss the weekly assigned readings. Throughout the semester, students will be assigned as discussants to particular articles.
3. **Research article** (50%). The final project will be a research paper, 15-20 pp. or about 6,000 words. This may be either original research (option 1) or a study that replicates an existing piece of scholarship (option 2). The goal of the paper is to apply some advanced method to, or develop one for, a substantive problem in conflict studies, and produce a publishable article. Co-authorship is allowed. Key dates:

- *Thursday, February 14*: choose a topic. Email the professor a proposal. For option 1 (original research article), the proposal should include (a) an empirical research question, (b) a paragraph explaining why this question is important, (c) potential data sources, and (d) proposed methods to answer the question. For option 2 (replication article), email a PDF of your chosen paper and a paragraph explaining this choice, corresponding to the guidelines in:
 - King, Gary. 2006. ‘Publication, Publication,’ *PS: Political Science and Politics* 39: 119-125.
- *Thursday, February 28 (week before break)*: research roundtable. This is your chance to update the class on your research progress, and solicit advice on any stumbling blocks you’ve encountered. We will go around the room, and will plan to spend 15-20 minutes on each project. To aid the class in this discussion, you are encouraged to make slides or other relevant materials (e.g. code, data) available to your colleagues through Canvas.
- *Thursday, March 14 (week after break)*: submit preliminary analyses for peer review. Prepare a polished outline of paper (with little text but with figures and tables showing preliminary results), and a replication archive with data and code to reproduce your tables and figures. Hand over your paper and materials to another student/group, and, in exchange, you will receive another student paper. Your task for the following week is to replicate the other students’ analysis and write a memo to the authors, pointing out ways to make the paper and the analysis better. You will be evaluated based on how helpful, not how destructive, you are.
- *Thursdays, April 11 & 18*: research fiesta! Final paper submission and class presentations (symposium-style, 15 min presentation, 15 min Q&A). Final version of paper is due the night before your presentation.

Class Schedule:

1. **Introduction, empirical analysis of conflict** Thursday, January 10
 - King, G. 2006. Publication, publication. *PS: Political Science & Politics* 39 (1): 119-125.
 - Schrodtt, P. 2013. Seven deadly sins of contemporary quantitative political analysis. *Journal of Peace Research* 51 (2): 287-300.
 - Mearsheimer J and Stephen Walt. 2013. Leaving theory behind: Why simplistic hypothesis testing is bad for International Relations. *European Journal of International Relations* 19 (3): 427-457.

2. **Panel data** Thursday, January 17
 - Beck, Nathaniel, Jonathan N. Katz and Richard Tucker. 1998. Taking Time Seriously: Time-Series-Cross-Section Analysis with a Binary Dependent Variable. *American Journal of Political Science* 42(4): 1260-1288.
 - Green, Donald P., Soo Yeon Kim, and David H. Yoon. 2001. Dirty pool. *International Organization* 55 (2): 441-468.
 - Beck, N., and Jonathan Katz. 2001. Throwing Out the Baby with the Bath Water: A Comment on Green, Kim, and Yoon. *International Organization* 55(2):487-495.
 - Carter, David and Curtis Signorino. 2010. Back to the Future: Modeling Time Dependence in Binary Data. *Political Analysis* 18 (3): 271-292.

3. **Duration models** Thursday, January 24
 - Box-Steffensmeier, Janet M., and Bradford S. Jones. 1997. Time is of the Essence: Event History Models in Political Science. *American Journal of Political Science* 41 (4): 1414-1461.
 - Box-Steffensmeier, Janet M., Dan Reiter, and Christopher Zorn. 2003. Nonproportional Hazards and Event History Analysis in International Relations. *Journal of Conflict Resolution* 47(1): 33-53.
 - Beger, Andreas, Daniel W. Hill, Nils Metternich, Shahryar Minhas and Michael D. Ward. 2017. Splitting It Up: The `spduration` Split-Population Duration Regression Package for Time-varying Covariates. *The R Journal* 9 (2): 474-486.
 - Lyall, Jason. 2010. Do democracies make inferior counterinsurgents? Reassessing democracy's impact on war outcomes and duration. *International Organization* 64 (1): 167-192.

4. **Geography & spatial dependence** Thursday, January 31
 - Beck, Nathaniel, Kristian Skrede Gleditsch, and Kyle Beardsley. 2006. Space Is More than Geography: Using Spatial Econometrics in the Study of Political Economy. *International Studies Quarterly* 50(1): 27-44.
 - Zhukov, Y. M., and Stewart, B. M. 2013. Choosing Your Neighbors: Networks of Diffusion in International Relations. *International Studies Quarterly* (57): 271-287.
 - Weidmann, N. B., and Ward, M. D. 2010. Predicting conflict in space and time. *Journal of Conflict Resolution*, 54(6): 883-901.

- Betz, T., S. Cook and F. Hollenbach. 2018. On the Use and Abuse of Spatial Instruments. *Political Analysis*, 26(4): 474-479.

5. **Network analysis** Thursday, February 7

- Hafner-Burton, E., Kahler, M. and Montgomery, A. 2009. Network analysis for international relations. *International Organization*, 63: pp. 559-92.
- Maoz, Zeev. 2009. The Effects of Strategic and Economic Interdependence on International Conflict Across Levels of Analysis. *American Journal of Political Science*, 53(1): pp. 223-240.
- Papachristos, Andrew V., David M. Hureau, and Anthony A. Braga. 2013. The Corner and the Crew: The Influence of Geography and Social Networks on Gang Violence. *American Sociological Review* 78 (3): 417-447.
- Zhukov, Y. M. 2012. Roads and the diffusion of insurgent violence: The logistics of conflict in Russia's North Caucasus. *Political Geography* 31(3): 144-156.

6. **Prediction** Thursday, February 14

- Ward, M. D., Greenhill, B. D., and Bakke, K. M. 2010. The perils of policy by p-value: Predicting civil conflicts. *Journal of Peace Research* 47(4): 363-375.
- Goldstone, Jack, et al. 2010. A Global Model for Forecasting Political Instability. *American Journal of Political Science* 54(1), 190-208.
- Ward, M. D., et al. 2013. Stepping into the Future: A new generation of conflict forecasting models. *International Studies Review* 15, no.4: 473-490.

7. **Text analysis** Thursday, February 21

- Grimmer, Justin, and Brandon M. Stewart. 2013. Text as Data: The Promise and Pitfalls of Automatic Content Analysis Methods for Political Texts. *Political Analysis*
- Rich Nielsen. 2012. Jihadi radicalization of Muslim Clerics. Working paper.
- Gill, Michael, and Arthur Spirling. 2015. Dimensions of Diplomacy: Understanding Private Information in International Relations Using the WikiLeaks Cable Disclosure. Unpublished manuscript.
- Denny, Matthew, and Arthur Spirling. 2018. Text Preprocessing For Unsupervised Learning: Why It Matters, When It Misleads, And What To Do About It. *Political Analysis* 26(2): 168-189.

8. **Research roundtable** Thursday, February 28

9. **Causal inference 1** Thursday, March 14

- Deaton, Angus. 2008. Instruments of Development: Randomization in the Tropics and the Search for the Elusive Keys to Economic Development. The Keynes Lecture, the British Academy. National Bureau of Economic Research, Working Paper 14690.
- Tingley, Dustin and Walter, B. 2011. Reputation Building in International Relations: An Experimental Approach. *International Organization* 65: 343-365.

- Glynn, Adam. 2009. Does Oil Cause Civil War Because It Causes State Weakness? Working paper.
- Avidit Acharya, Matthew Blackwell, and Maya Sen. 2016. Explaining Causal Findings Without Bias: Detecting and Assessing Direct Effects. *American Political Science Review* 110 (3): 512-529.

10. **Causal inference 2** Thursday, March 21

- Sekhon, Jasjeet S. 2009. Opiates for the Matches: Matching Methods for Causal Inference. *Annual Review of Political Science*. 12: 487-508
- Blackwell, Matthew and Anton Strezhnev. 2018. Telescope Matching: A Flexible Approach to Estimating Direct Effects. Working paper.
- Jason Lyall. 2010. Are Co-Ethnics More Effective Counter-insurgents? Evidence from the Second Chechen War. *American Political Science Review*, 104 (1): 1-20
- Kocher, Matthew, Thomas B. Pepinsky and Stathis N. Kalyvas. 2011. Aerial Bombing and Counterinsurgency in the Vietnam War. *American Journal of Political Science* 55 (2): 201-218.

11. **Causal inference 3** Thursday, March 28

- Miguel, E., Satyanath, S., and Sergenti, E. 2004. Economic shocks and civil conflict: An instrumental variables approach. *Journal of Political Economy* 112(4): 725-753.
- Miller, Nicholas, and Jeremy Ferwerda. 2014. Political Devolution and Resistance to Foreign Rule: A Natural Experiment. *American Political Science Review* 108 (3): 642-660.
- Abadie, Alberto, and Javier Gardeazabal. 2003. The Economic Costs of Conflict: A Case-Control Study for the Basque Country. *American Economic Review* 93 (1): 113-132.

12. **Simulation** Thursday, April 4

- Cederman, L. E. 2003. Modeling the size of wars: from billiard balls to sandpiles. *American Political Science Review*, 97 (1): 135-150.
- Weidmann, N. B., and Salehyan, I. 2013. Violence and ethnic segregation: A computational model applied to Baghdad. *International Studies Quarterly*.
- Weidmann, N. B. 2015. Micro-cleavages and Violence in Civil Wars: A Computational Assessment. *Conflict Management and Peace Science*. Forthcoming.

13. **Student research presentations 1** Thursday, April 11

14. **Student research presentations 2** Thursday, April 18