



# Empirical Research Methods

INTA 6003

## Instructor Info



David Muchlinski



M 12:00-2:00



Habersham 147



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## Course Info



Prereq: None



Wednesday



6:30p-9:15p



Habersham G 17

## TA Info



Jonathan Darsey (JD)



Th 12:00-3:00 OBA



Habersham 312

## Overview

This course is designed to introduce you to understanding empirical research in international affairs. In this seminar you will learn how to correctly consume and understand empirical research designs and how to conduct simple statistical tests and produce basic data visualizations. Topics to be covered include:

- Philosophy of Science
- The fundamentals of research design
- Basics of data visualization
- Introduction to the R programming language

This seminar meets weekly for 2.75 hours. While discussion is welcome, class size constraints and presentation of the material may necessitate lectures and Socratic methodologies. You must come to class having read all material assigned for that week ready to discuss in detail what you have gleaned from the reading. Discussion is expected to be critical and in depth. You are expected to go beyond the mere superficial *what* of the reading to a critical analysis of *why, how, under what conditions, and so what*.

In addition, because this is a graduate seminar where discussion is necessary to facilitate learning, I will not provide virtual attendance options, nor will seminars be recorded or made available online. If students need to miss a seminar due to sickness or other reasons, they are encouraged to obtain notes from a classmate, or visit the professor or TA during office hours to ask any questions.

## Material

### Required Texts

Ashworth, S., Berry, C. R., & de Mesquita, E. B. (2021). *Theory and Credibility: Integrating Theoretical and Empirical Social Science*. Princeton University Press.

Chalmers, A. F. (2013). *What is this Thing Called Science?*. 4th Edition. Hackett Publishing.

King, G., Keohane, R. O., & Verba, S. (1994/2021). *Designing Social Inquiry: Scientific Inference in Qualitative Research (New Edition)*. Princeton University Press.

Imai, K. & Williams, Nora Webb. (2022). *Quantitative Social Science: An Introduction in Tidyverse*. Princeton University Press.

Healy, K. (2018). *Data Visualization: a Practical Introduction*. Princeton University Press.

Goertz, G. (2020). *Social Science Concepts and Measurement: New and Completely Revised Edition*. Princeton University Press.

### Recommended Reference Texts

Wickham, H., & Grolemund, G. (2016). *R for Data Science: Import, Tidy, Transform, Visualize, and Model Data*. O'Reilly Media, Inc. Available online at <https://r4ds.had.co.nz/>

Xie, Y., Allaire, J. J., & Grolemund, G. (2018). *R Markdown: The Definitive Guide*. CRC Press. Available online at <https://bookdown.org/yihui/rmarkdown/>

Fox, J., & Weisberg, S. (2018). *An R Companion to Applied Regression*, 3rd Edition. Sage Publications.

# FAQs

## ? What Does Research Design Mean?

! Research design is absolutely fundamental for establishing basic knowledge. Opportunities for meaningful employment in this field will come from honing a set of *skills*. These skills include effective written and oral communication, but also analysis. What evidence can you provide to support your argument?

## ? Why Should I Care about Methodology?

! Understanding how to design a rigorous research study is a key skill to master not only for those looking for academic careers, but for those looking to engage with government, private, and non-profit work as well. The ability to understand measurement, control over variables, probability, sampling, randomization, and other research fundamentals will assist you in thinking critically through what can be dense and esoteric topics.

## ? I Have No Programming Experience?

! It is normal for many first-year graduate students to be surprised at the gulf between what is taught at the undergraduate level and what is expected at the graduate level. This course will introduce you to some basic programming skills, and fortunately, the ecosystem surrounding quantitative social science has rapidly expanded in the last decade, and many excellent reference books are easily available for no cost. Sites like Stack Overflow or Stack Exchange are also invaluable for beginners looking to understand how to improve their skills.

## Grading Scheme

5%	Discussion Positions
20%	Homework
25%	Midterm Exam
25%	Policy Memo Rough Draft
25%	Policy Memo

Grades will follow the standard scale: A = 100-90; B = 89-80; C = 79-70, D = 69-60, F = < 50.

## Learning Objectives

- Students will be able to apply basic statistical skills to include quantitative and qualitative methodologies in academic and professional contexts within the field of international affairs.
- Students will be able to demonstrate knowledge of principal contemporary global challenges in the field of international security
- Students will be able to apply research skills to address problems in the field of international affairs.

## Midterm Exam

Students will complete a take home midterm to be distributed by the professor. Exams will primarily test student's critical thinking skills. Students will have two weeks to complete their exam. More detailed instructions will be released with the exam.

## Homework

There will be 3 homework assignments during the semester. These homework assignments will assess student's abilities in the R programming environment. More detailed instructions will follow each individual assignment. Students have two weeks to complete each assignment. All assignments should be completed individually. A "rough draft" of each assignment is due one week from the assigned date. The professor or TA will grade and comment on the rough draft before returning to the student for revision and final submission. Grades for the homework assignments will be weighted 0.33 for the rough draft and 0.67 for the final. Students are expected to incorporate all feedback in the final draft to receive maximum credit. All homework must be submitted in R Markdown .html format or students will be given a grade of zero.

## Policy Memo

Students will be given a selection of literature and asked based on the empirical conclusions contained to provide a policy memo to their superiors at the State Department, World Bank, or Intelligence Community. These memos should be a succinct recommendation to their superiors to take a particular course of action based on their knowledge of the empirical research in a given subfield. Students will be given a simulated scenario prompt and will respond to the prompt with critical, in depth, original analysis for that scenario. These memos are not meant to be book reports or summaries of the given reading, but must show evidence of original critical analysis connecting the diverse themes, hypotheses, and methodologies across their required readings to provide a well reasoned policy action to the given prompt. Students will have the opportunity to present a rough draft of this Policy Memo earlier in the semester, receive feedback from the professor, and make associated changes based on feedback before final submission.

## Discussion Positions

Students will submit via Canvas, and present at the beginning of a scheduled seminar, a critical reflection on that seminar's reading. Discussion assignments will be provided at the beginning of Week 2. These discussion positions should discuss the merits and/or faults including a discussion of research design, implementation, methodology, and conclusions, of each week's reading to demonstrate a thorough understanding of the material. Each position should be no longer than 3 pages, standard formatting rules apply. These discussion positions will provide an introduction to each week's seminar discussion.

## Make-up Policy and Late Work

Make-up assignments and exams will not be permitted unless in case of legitimate medical or other concerns which should be discussed privately with the professor to determine legitimacy. If an extension is granted, work must be submitted by that time. If a student submits late work without notifying the professor of any change in circumstances, such work will not be accepted and receive a score of zero.

## Diversity and Inclusivity Statement

The Institute does not discriminate against individuals on the basis of race, color, religion, sex, national origin, age, disability, sexual orientation, gender identity, or veteran status in the administration of admissions policies, educational policies, employment policies, or any other Institute governed programs and activities. The Institute's equal opportunity and non-discrimination policy applies to every member of the Institute community. The Institute's affirmative action program, Title IX program, and related policies are developed in compliance with applicable law. Pursuant to Title IX, the Institute does not discriminate on the basis of sex in its education programs and activities. As such, the Institute does not tolerate any kind of gender-based discrimination or harassment, which includes sexual violence, sexual harassment, and gender-based harassment. Inquiries concerning the Institute's application of or compliance with Title IX may be directed to the Title IX Coordinator, Burns Newsome, burnsnewsome@gatech.edu, 404-385-5151. Additionally, inquiries concerning the application of applicable federal laws, statutes, and regulations (such as Title VI, Title IX, and Section 504) may be directed to the U.S. Department of Education's Office of Civil Rights at [www2.ed.gov/ocr](http://www2.ed.gov/ocr).

## Accommodations for Students with Disabilities

Reasonable accommodations will be made for students with verifiable disabilities. In order to take advantage of available accommodations, students must register with the Office of Disability Services at Suite 123, Smithgall Student Services Building, 353 Ferst Drive, 404-894-2563 (Voice); 404-894-1664 (TDD). For more information on Georgia Tech's policy on working with students with disabilities, please see review the Office of Disability Service's web page at <https://policies.ncsu.edu/regulation/reg-02-20-01/>. The Office of Disability Services collaborates with students, faculty, and staff to create a campus environment that is usable, equitable, sustainable and inclusive of all members of the Georgia Tech community. Disability as an aspect of diversity that is integral to society and Georgia Tech. If students encounter academic, physical, technological, or other barriers on campus, the Disability Services team is available to collaboratively find creative solutions and implement reasonable accommodations.

## Academic Integrity

Academic dishonesty in the form of cheating or plagiarism will not be tolerated. In brief, plagiarism is defined, for the purposes of this class, as: copying, borrowing, or appropriating another entity's work and presenting it as your own in any submitted assignment, deliberately or by accident. Acts of plagiarism will be reported in accordance with the Honor Code. In order to avoid being charged with plagiarism, if you use the words, ideas, phrasing, charts, graphs, or data of another person or from published material, then you must either: 1) use quotation marks around the words and cite the source, or 2) paraphrase or summarize acceptably using your own words and cite the source. The plagiarism policy is not restricted to books, but also applies to video and audio content, websites, blogs, wiki's, AI generated content like Chat-GPT, and podcasts. Plagiarism includes putting your name on a group project to which you have minimally contributed. For information on Georgia Tech's Academic Honor Code, please visit <http://www.catalog.gatech.edu/policies/honor-code/> or <http://www.catalog.gatech.edu/rules/18/>. Any student suspected of cheating or plagiarizing on a assignment will be reported to the Office of Student Integrity, who will investigate the incident and identify the appropriate penalty for violations. The student will also receive a grade of zero on the assignment at the professor's discretion.

### MODULE 1: Philosophy of Science

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Aug 23 Introduction

#### REQUIRED READING

Almond, G. A., & Genco, S. J. (1977). Clouds, Clocks, and the Study of Politics. *World Politics*, 29(4), 489-522.

Ashworth, Berry, and Bueno de Mesquita (Ashworth et al.) Chs. 1-2

Chalmers. Chs. 1-3

King, Keohane, and Verba (KKV) Ch. 1

Lebow, R. N. (2011). Philosophy and International Relations. *International Affairs*, 87(5), 1219-1228.

Imai and Williams Ch. 1 (skim – work through in Lab)

Healy Ch. 2 (skim – work through in Lab)

[R Lab #1: Basic Commands, Libraries, Directories, and other Fundamentals](#)

#### RECOMMENDED READING

Bernstein, S., Lebow, R. N., Stein, J. G., & Weber, S. (2000). God gave Physics the Easy Problems: Adapting Social Science to an Unpredictable World. *European Journal of International Relations*, 6(1), 43-76.

Gerring, J. (2008). The Mechanismic Worldview: Thinking Inside the Box. *British Journal of Political Science*, 161-179.

Mahoney, J. (2001, September). Beyond Correlational Analysis: Recent Innovations in Theory and Method. *Sociological Forum* (pp. 575-593). Eastern Sociological Society.

Mayo, Deborah and Spanos, Aris. (2010). Error and Inference: Recent Exchanges on Experimental Reasoning, Reliability, and the Objectivity and Rationality of Science. Ch. 1-2

Ostrom, E. (1998). A Behavioral Approach to the Rational Choice Theory of Collective Action: Presidential Address, American Political Science Association, 1997. *American Political Science Review*, 1-22.

Snyder, R. (2001). Scaling down: The Subnational Comparative Method. *Studies in Comparative International Development*, 36(1), 93-110.

Schwartz, M. A. (2008). The Importance of Stupidity in Scientific Research. *Journal of Cell Science*, 121(11), 1771-1771.

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Aug 30 Understanding Reasoning

#### REQUIRED READING

Blagden, D. (2016). Induction and Deduction in International Relations: Squaring the Circle between Theory and Evidence. *International Studies Review*, 18(2), 195-213.

Chalmers Chs. 4-7

KKV Ch. 2

Mahoney, J., & Rueschemeyer, D. (2003). Comparative Historical Analysis in the Social Sciences. Ch. 1 [Canvas](#)

Shapiro, I. (2002). Problems, Methods, and Theories in the Study of Politics, or What's Wrong with Political Science and What to do about it. *Political Theory*, 30(4), 596-619.

[R Lab #2: Introduction to Datasets and Codebooks](#)

[Homework # 1 Assigned](#)

### RECOMMENDED READING

Frankfurt, H. G. (2009). On Bullshit. Princeton University Press.

Pennycook, G., Cheyne, J. A., Barr, N., Koehler, D. J., & Fugelsang, J. A. (2015). On the Reception and Detection of Pseudo-Profound Bullshit. *Judgment and Decision Making*, 10(6), 549-563.

Sagan, C. (2007). The Fine Art of Baloney Detection. *Paranormal Claims: A Critical Analysis*, Ch 1.

Pennycook, G., Fugelsang, J. A., & Koehler, D. J. (2015). Everyday Consequences of Analytic Thinking. *Current Directions in Psychological Science*, 24(6), 425-432.

Tetlock, P. E. (2017). Expert Political Judgment: How Good is It? How can we Know?. Princeton University Press.

Tetlock, P. E., & Gardner, D. (2016). Superforecasting: The Art and Science of Prediction. Random House.

Sokal, A. D. (1996). A Physicist Experiments with Cultural Studies. *Lingua Franca*, 6(4), 62-64.

Harris, S. R. (2013). How to Critique Journal Articles in the Social Sciences. SAGE Publications.

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Sept 6      Scientific Advancement

### REQUIRED READING

Chalmers Ch. 8-10

Elman, C., & Elman, M. F. (2002). How not to be Lakatos Intolerant: Appraising Progress in IR Research. *International Studies Quarterly*, 46(2), 231-262.

KKV Ch. 3

Shmueli, G. (2010). To Explain or to Predict?. *Statistical Science*, 25(3), 289-310.

Waltz, K. N. (1997). Evaluating Theories. *American Political Science Review*, 91(4), 913-917.

### RECOMMENDED READING

Whetten, D. A. (1989). What Constitutes a Theoretical Contribution?. *Academy of Management Review*, 14(4), 490-495.

Freedman, D. A. (2008). On Types of Scientific Inquiry: The Role of Qualitative Reasoning. *The Oxford Handbook of Political Methodology*, 300-318.

Dunning, T. (2010). Design-based Inference: Beyond the Pitfalls of Regression Analysis?. *Rethinking Social Inquiry: Diverse Tools, Shared Standards*, 273-311.

Mahoney, J., & Goertz, G. (2006). A tale of two cultures: Contrasting quantitative and qualitative research. *Political Analysis*, 14(3), 227-249.

Sutton, R. I., & Staw, B. M. (1995). What Theory is Not. *Administrative Science Quarterly*, 371-384.

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Sept 13      Experimentation

### REQUIRED READING

Ashworth et al. Ch. 3-4

Chalmers Chs. 11-13

Dinas, E., Matakos, K., Xefteris, D., & Hangartner, D. (2019). Waking up the Golden Dawn: Does Exposure to the Refugee Crisis Increase Support for Extreme-Right Parties?. *Political Analysis*, 27(2), 244-254.

Fearon, J. D. (1991). Counterfactuals and Hypothesis Testing in Political Science. *World Politics*, 43(2), 169-195.

KKV Ch. 4

Uscinski, J. E., Enders, A. M., Seelig, M. I., Klofstad, C. A., Funchion, J. R., Everett, C., ... & Murthi, M. N. (2021). American Politics in Two Dimensions: Partisan and Ideological Identities versus Anti-Establishment Orientations. *American Journal of Political Science*, 65(4), 877-895.

### Homework #2 Assigned

### ADDITIONAL READING

Marsh, D., & Furlong, P. (2002). A skin not a sweater: ontology and epistemology in political science. *Theory and methods in political science*, 2, 17-41.

Arendt, H. (1981). *The Life of the Mind*. Houghton Mifflin Harcourt. Chapter I: Appearance. Available at <https://antilogicalism.files.wordpress.com/2017/07/life-of-the-mind.pdf>

Jackson, P. T. (2016). The Conduct of Inquiry in International Relations: Philosophy of Science and its Implications for the Study of World Politics. Routledge. Ch. 1-2 [Canvas](#)

Ward, M. D. (2016). Can we Predict Politics? Toward what End?. *Journal of Global Security Studies*, 1(1), 80-91.

Levy, J. S. (1997). Prospect Theory, Rational Choice, and International Relations. *International Studies Quarterly*, 41(1), 87-112.

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Sept 20      Explanation

### REQUIRED READING

Almond, G. A. (1988). Separate Tables: Schools and Sects in Political Science. *PS: Political Science & Politics*, 21(4), 828-842.

Chalmers Chs. 14-15

Niou, E. M., & Ordeshook, P. C. (1999). Return of the Luddites. *International Security*, 24(2), 84-96.

Tilly, C. (2001). Mechanisms in Political Processes. *Annual Review of Political Science*, 4(1), 21-41.

Walt, S. M. (1999). Rigor or Rigor Mortis?: Rational Choice and Security Studies. *International Security*, 23(4), 5-48.

Lake, D. A. (2011). Why "isms" are evil: Theory, Epistemology, and Academic Sects as Impediments to Understanding and Progress. *International Studies Quarterly*, 55(2), 465-480.

### ADDITIONAL READING

Mayntz, R. (2004). Mechanisms in the Analysis of Social Macro-Phenomena. *Philosophy of the Social Sciences*, 34(2), 237-259.

Lake, D. A. (2013). Theory is Dead, Long Live Theory: The End of the Great Debates and the Rise of Eclecticism in International Relations. *European Journal of International Relations*, 19(3), 567-587.

Lichbach, M. I., & Zuckerman, A. S. (2009). Comparative Politics: Rationality, Culture, and Structure. Cambridge University Press. Chs. 1-6

Clarke, K. A., & Primo, D. M. (2012). A Model Discipline: Political Science and the Logic of Representations. Oxford University Press.

Reus-Smit, C. (2013). Beyond Metatheory?. *European Journal of International Relations*, 19(3), 589-608.

Maliniak, D., Oakes, A., Peterson, S., & Tierney, M. J. (2011). International relations in the US academy. *International Studies Quarterly*, 55(2), 437-464.

Ward, M. D., Greenhill, B. D., & Bakke, K. M. (2010). The Perils of Policy by p-Value: Predicting Civil Conflicts. *Journal of Peace Research*, 47(4), 363-375.

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## MODULE 2: Discovery

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Sept 27      Research Design: Randomization

### REQUIRED READING

Ashworth et al. Ch. 10

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

Keele, L. (2015). The Statistics of Causal Inference: A View from Political Methodology. *Political Analysis*, 23(3), 313-335.

King, Keohane, and Verba Ch. 4

Pearl, J. (2003). Statistics and Causal Inference: A Review. *Test*, 12(2), 281-345.

### ADDITIONAL READING

Nau, H. R. (2011). No Alternative to "isms". *International Studies Quarterly*, 55(2), 487-491.

Jackson, P. T. (2016). The Conduct of Inquiry in International Relations: Philosophy of Science and its Implications for the Study of World Politics. Routledge. Ch. 3

Healy, K. (2017). Fuck Nuance. *Sociological Theory*, 35(2), 118-127.

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Oct 4          Research Design: Observational Studies

### REQUIRED READING

Ashworth et al. Ch. 6

Gartzke, E. (1999). War is in the Error Term. *International Organization*, 53(3), 567-587.

King, Keohane, and Verba Ch. 5

Przeworski, A., & Limongi, F. (1997). Modernization: Theories and Facts. *World Politics*, 49(2), 155-183.

### Midterm Exam Assigned

### ADDITIONAL READING

Gill, J. (2006). Essential Mathematics for Political and Social Research. Cambridge: Cambridge University Press. Ch. 7 Probability Theory and Ch. 8 Random Variables

Matthews, R. (2000). Storks Deliver Babies ( $p= 0.008$ ). *Teaching Statistics*, 22(2), 36-38.

Cohen, J. (1994). The Earth is Round ( $p<. 05$ ). *American Psychologist*, 49(12), 997.

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Oct 11        Research Design: Case Studies

Travel for Conference, no Seminar

### REQUIRED READING



Ashworth et al. Ch. 7

King, Keohane, and Verba Ch. 6

Muchlinski, D. (2021). Swords and Plowshares: Property Rights, Collective Action, and Nonstate Governance in the Jewish Community of Palestine 1920-1948. *American Political Science Review*, 115(4), 1373-1387.

Snyder, R. (2001). Scaling Down: The Subnational Comparative Method. *Studies in Comparative International Development*, 36(1), 93-110.

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Oct 18      Research Design: Survey Research

**REQUIRED READING**

Ashworth et al. Ch. 8

Brady, H. E. (2000). Contributions of Survey Research to Political Science. *PS: Political Science & Politics*, 33(1), 47-58.

Hangartner, D., Dinas, E., Marbach, M., Matakos, K., & Xefteris, D. (2019). Does Exposure to the Refugee Crisis make Natives more Hostile?. *American Political Science Review*, 113(2), 442-455.

Kalmoe, N. P., & Mason, L. (2022). *Radical American Partisanship: Mapping Violent Hostility, Its Causes, and the Consequences for Democracy*. University of Chicago Press. Chs. 4-6  
**Canvas**

Lyall, J., Blair, G., & Imai, K. (2013). Explaining Support for Combatants during Wartime: A Survey Experiment in Afghanistan. *American Political Science Review*, 107(4), 679-705.

**Policy Memo Rough Drafts Assigned**

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Oct 25      Research Design: Qualitative Methods

**REQUIRED READING**

Ashworth et al. Ch. 9

Collier, D. (2011). Understanding Process Tracing. *PS: Political Science & Politics*, 44(4), 823-830.

Leech, B. L. (2002). Asking Questions: Techniques for Semistructured Interviews. *PS: Political Science & Politics*, 35(4), 665-668.

Mahoney, J. (2010). After KKV: The New Methodology of Qualitative Research. *World Politics*, 62(1), 120-147.

Mahoney, J., & Goertz, G. (2006). A Tale of Two Cultures: Contrasting Quantitative and Qualitative Research. *Political Analysis*, 14(3), 227-249.

**ADDITIONAL READING**

Tu, Y. K., Gunnell, D., & Gilthorpe, M. S. (2008). Simpson's Paradox, Lord's Paradox, and Suppression Effects are the Same Phenomenon - the Reversal Paradox. *Emerging Themes in Epidemiology*, 5(1), 1-9.

Dunning, T. (2008). Improving Causal Inference: Strengths and Limitations of Natural Experiments. *Political Research Quarterly*, 61(2), 282-293.

Copas, J. B., & Li, H. G. (1997). Inference for Non-random Samples. *Journal of the Royal Statistical Society: Series B (Statistical Methodology)*, 59(1), 55-95.

King, G. (2014). Restructuring the Social Sciences: Reflections from Harvard's Institute for Quantitative Social Science. *PS: Political Science & Politics*, 47(1), 165-172.

Titunik, R. (2015). Can Big Data Solve the Fundamental Problem of Causal Inference?. *PS: Political Science & Politics*, 48(1), 75-79.

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## MODULE 3: Programming with R

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Nov 1 Intro to Object-Orientated Programming

### REQUIRED READING

Imai and Williams Ch. 2

Goertz Chs. 1-2

Healy Ch. 1-2

[R Lab #3: Object Orientated Programming](#)

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Nov 8 Database Management Skills

### REQUIRED READING

Imai and Williams Ch. 3-4

Goertz Ch. 3

### ADDITIONAL READING

Breiman, L. (2001). Statistical Modeling: The Two Cultures (with comments and a rejoinder by the author). *Statistical Science*, 16(3), 199-231.

[R Lab # 4: Database Management in Tidyverse](#)

**Homework #3 Assigned**

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Nov 15 Intro to Probability

### REQUIRED READING

Imai and Williams Ch. 5

TBD

Goertz Ch. 4

[R Lab 5: Bi-variate Statistical Tests](#)

**Policy Memo Rough Drafts Due**

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Nov 22 Regression and Visualization

Thanksgiving Break

### REQUIRED READING

Imai and Williams Chs. 6-7

Healy Chs 3-4

Goertz Ch. 5-6

[R Lab: # 6: ggPlot\(\) #1](#)

[Policy Memo Final Draft Assigned](#)

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Nov 29      Regression and Visualization II

Goertz Chs. 7-8

Healy Ch. 5-6

[R Lab #7: ggPlot\(\) #2](#)

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Week 16      FINAL EXAM

To be submitted to Canvas, time TBD.

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