GVPT 201
Scope and Methods for Political Science Research S23

October 7, 2023

1 Logistics

Professor: Dr. Jóhanna K Birnir
Course materials: ELMS and bookstore

Meetings

- **M-days and W-days 1-1:50pm ESJ 0215**
- **M-days and W-days 2-2:50pm ESJ 1224**
- **Lectures are BLENDED.**
  You can attend in person, by zoom, or view lectures asynchronously. If you elect to attend via zoom you will not be able to ask questions during lecture because of technological limitations.
- **Lecture Zoom link ELMS**
  Passcode: GVPT201F23
  Lecture recordings are automatically uploaded to Panopto on ELMS for asynchronous viewing.

Professor's Office hrs:
Mondays 3:30-4:30 IN PERSON ONLY.
In person office hrs: Chincoteague 3117B, CODING QUESTIONS IN PERSON ONLY
W-days 3:30-4:30 ZOOM ONLY. NO CODING QUESTIONS
Zoom Link to online office hrs on ELMS

Passcode: GVPT201F23

Professor e-mail: Class Communication THROUGH ELMS ONLY

Teaching Staff:

Graduate Teaching Assistant
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Sections led by Teaching staff and office hrs
Friday sections. Various times and locations see Testudo
Office hrs: see section syllabi

1.1 Class Format: Blended learning.

- In response to student demand we are offering a blended learning experience in GVPT201F23. This blended format consists of the following formats:
  - Lectures: Students can attend lectures in person, attend synchronously online (Zoom) or view lectures asynchronously as they are automatically uploaded to PANOPTO (ELMS).
    Real time Zoom link see ELMS
    Passcode: GVPT201F23
  - Section: Class discussion sections can also be attended in person and online (Zoom) every Friday and will also be recorded and uploaded

to PANOPTO (ELMS). In person or online attendance is mandatory and participation is graded. If attending by ZOOM students are required to keep their cameras on for the duration of class so that TAs can gauge participation.
Real time Zoom link: See section syllabus

  - NOTE ON RECORDINGS: Both lectures and sections are recorded. When attending section via zoom students are required to keep their cameras ON for the duration of the section. If students do not want to be recorded they can attend lectures and section in person.

- Additional class resources include lecture video supplements on discrete portions of the class, workbook videos for every chapter and textbook quizzes for self-testing. All are available on ELMS. See the study resources section for more information.

- While the course is blended it is **NOT SELF-PACED**. Students are given a schedule for which materials they need to complete each week. It is imperative that students **FOLLOW THE SCHEDULE AND DO NOT FALL BEHIND**. Assignment dates and scheduled test dates are hard deadlines and dates.

2 About the course:

We are inundated with questionable information about politics every day. This course teaches you how to think scientifically about politics. You will learn to recognize the hallmarks of quality data so that you can efficiently shift through information to distinguish facts from fiction. This course will also provide an introduction to research design and the use of quantitative methods in political science. You will learn how to state questions and theories (educated guesses at an answer) about politics and then formulate and test the implications of your theories (testable hypotheses) in a rigorous manner. A central element to this is statistics. This course will combine teaching the principles of applied statistics as used in political science with hands-on data collection and analysis—that is, it will involve both theory and practice.

The class has three principal aims. The first is preparation for other political science classes. The second and larger purpose is preparation for life. In virtually every domain of professional life, the ability to evaluate causal arguments and use statistics to analyze data is essential. The research methods you learn in this course will help you understand the world (political and otherwise), and become a more informed participant in political debate and discussion. The third is to have fun. Seriously. Data analysis is fun.

2.0.1 The survey

The centerpiece of this class will be a survey project. Students will work with the teaching staff (and each other) to design the survey and distribute it to as many people as possible. We will then analyze it as a class in the second part of the semester. Finally, students will choose questions from the survey that they have a particular interest in to focus on in their final paper. This survey will not only give students "hands on" experience in the art of crafting a survey instrument, but will also allow them to explore public opinion in "real time" on issues of their choosing. The survey will unfold over several phases, which the syllabus describes in more detail below.

2.0.2 The Books:

Textbook: Philip H. Pollock III. and Barry C. Edwards. 2020. The Essentials of Political Analysis Sixth Edition. Washington D.C. Sage and CQ Press. **(Required)**.
https://us.sagepub.com/en-us/nam/the-essentials-of-political-analysis/book256992

Workbook: Philip H. Pollock III. and Barry C. Edwards. 2023. An R Companion to Political Analysis. Third Edition. Washington D.C. Sage and CQ Press. **(Required)**.
https://us.sagepub.com/en-us/nam/an-r-companion-to-political-analysis/book259266

Students CANNOT use earlier versions of the textbook or workbook as the content changes between versions of the book (especially the workbook) and students CANNOT complete the homework without the correct version of the workbook.

Students can buy the books in the bookstore or online using the links provided. Used copies are fine, just make sure you have the correct editions. E-copies of the books are also fine.

2.0.3 Statistical software Resources:

You will be using the statistical software R in this course. R is FREE and works with any operating system. There are instructions on how to download R and the associated data files/packages for the homeworks in the workbook. Download at:

https://www.r-project.org/

You also need to download R-Studio. You can get the free version (R-Studio

Desktop). It's the first option on this page.

https://www.rstudio.com/products/rstudio/download/

We have several resources to assist you in learning the software.

- We have recorded video lectures covering the material in each chapter in the R workbook. These videos are available in the workbook folder on PANOPTO (ELMS).
- The professor will devote a portion of lecture time to R and the survey. Therefore, every week you can ask questions about R in class.
- In Friday sections the TA's will cover the R homework due the following Monday and help you work on the survey. Therefore, every week you can ask questions about R and the survey in section.

However, your TA and I are not tech support. While we can provide assistance with how to use R, we cannot help you figure out why R may have a problem on your machine. We don't anticipate any problems, but if you can't get it to install correctly (or some similar problem), that needs to be directed to University tech support.

3 Requirements and Grading:

Final grades are determined by workbook homework assignments, two midterms, a survey (3 parts), participation in section, and participation in 3 lab experiments. Note that the exams, and the final survey write-up are designated as Major Scheduled Grading Events. If you know you are going to miss class Exam day or have a conflict on the day that the Final paper is due and would like your absence to be excused, you are required to contact your TA regarding your absence BEFORE the end of the schedule adjustment period THIS YEAR SEPTEMBER 11 and send documentation to support your excused absence no later than the day you return. Similarly, if you are going to miss submission on the day that homework is due you need to make arrangements with your TA BEFORE that day. The absence policy (one sick absence without a health center note) does not apply to days where we have scheduled homework, midterms or the final.

Note that if you have to reschedule one of the midterms because of an excused absence **EMAIL YOUR TA AND ME AS SOON AS POSSIBLE.** Note that the makeup exam will not be the same exam that other students received and may contain elements from any material that has been covered in the class since the original test date.

The weight of each graded component is as follows:

Total points 780 (100%)

1: Workbook Homework: 195 pts. (25%)
TO GET ANY HW POINTS YOU MUST:
1) SHOW YOUR WORK BY ATTACHING A HW SCRIPT-FILE FOR EVERY HW
2) TURN IN ALL OF THE HW

2: Midterm 1: 97 pts. (12.5%)

3: Midterm 2: 98 pts. (12.5%)

4: Survey: 273 pts total (35%)

   a: Pilot Design: 24 pts (3%),

   b: Pilot Analysis: 32 pts (4%),

   c: Verification of Survey Distribution 16 pts (2%)

   d: Survey Analysis Practice 1: 38 pts (5%)

   e: Survey Analysis Practice 2: 46 pts (6%)

   f: Final Survey write up: 117 pts. (15%)

5: Section Participation: 78 pts. (10%)

6: Experimental Lab (2-3 experiments): 39 pts (5%; see page 8 of syllabus)

YOU HAVE TO COMPLETE EVERY ASSIGNMENT TO PASS THE CLASS. YOU CANNOT SKIP AN ASSIGNMENT FOR A PASSING GRADE

Homework (25 percent): 2) The homework assignments are in the workbook An R Companion to Political Analysis. The topics of the workbook assignments correspond to the topics covered in the textbook and lecture but allow for some lag so that students have time to master the material. The due date of each homework assignment from the workbook in noted in the syllabus.

Each workbook chapter ends with an assignment. To complete the homework students use a dataset provided with the book. Students must read the appropriate chapter and complete the assignment using the statistical package R. Students are then expected to enter their answers in an assignment quiz on ELMS, by the deadline indicated in the syllabus. The online "quiz" where you will submit the homework just has the blanks for you to enter your answers. It doesn't have the full questions written out. In addition to completing the quiz students are required to show their work by attaching their HW R scriptfile

to each HW. HW without scriptfiles will not be graded for points and will be automatically assigned a 0.

Students will have multiple opportunities to get help from the teaching staff in completing these assignments. Typically the the professor will devote some class time (week a and/or b) to explaining how the HW relates to the substantive material, teaching assistants will then cover the HW in a Friday section (week a), both the professor and the teaching assistants are available in office hrs (early week b) to answer any remaining questions and the HW is then due Thursday (week b).

Late homework will be docked 5% off the top if it is turned in after the assigned time on the day it is due, and and additional 5% for each additional day it is late. After each session students should save their work because the workbook assignments build cumulative skills. **NOTE THAT YOU MUST TURN IN EVERY HW TO RECEIVE ANY POINTS FOR HW. WHEN THE TEACHING STAFF TALLIES YOUR FINAL SCORE AT THE END OF THE CLASS.**

Note that the homework chapters are not equal in length. Do not wait until the last minute to complete the homework – the exercises are involved and take time. Because of variance in length the homeworks have unequal weight.

Midterms 1 (12.5%) and 2 (12.5%): 3-4) Midterms are based on material covered in the books, lecture and sections. Lectures sometimes do not overlap directly with the readings and many key concepts and cases will be discussed in lectures only. Exams will draw on materials from readings and from materials presented in lectures and section. Strictly speaking the midterms are not cumulative (i.e. the first midterm emphasizes material covered from the beginning of the class up to the first midterm and the second midterm covers material covered after the first midterm but before the second). However, the nature of the material is cumulative. Therefore, there may be some overlap between the two tests. Material from the BS lectures is included on the midterm.

Class Survey (35%) 6) As noted above, the survey serves as the centerpiece of the course. By working through all the steps required to design a survey instrument, students will gain a detailed understanding of how political scientists approach questions related to public opinion. There are several parts to the survey design and analysis:

Survey: 35% (273 pts total)

- Pilot Design: 24 pts (3%)
- Pilot Analysis: 32 pts (4%)
- Verification of Survey Distribution 16 pts (2%)

- Survey Analysis Practice 1: 38 pts (5%)
- Survey Analysis Practice 2: 46 pts (6%)
- Final Survey write up: 117 pts. (15%)

Part 1: Pilot design: During lecture and discussion sections, students will work with me and the TA's to design a battery of questions. Students will workshop these questions with each other and individually submit questions they would like to see on the survey. The Professor will choose the finals set of questions and program the survey. Once this is complete, the Professor will distribute this draft as the "pilot" survey.

Part 2: Pilot analysis: After the pilot survey has been in the field for about a week, the Professor will release the data to the students. Students will have to complete a very basic analysis of the pilot data. In addition to the respondents' answers to the questions, students are asked to consider the instrument itself. Did they find any questions confusing? Offensive? Needlessly complicated? Etc. Based on this feedback, the teaching staff will edit the survey instrument.

Part 3: Distribution: Once the final question wording has been determined, students will be responsible for distributing the survey to as wide a range of people as possible via social networking sites, such as Facebook and Twitter, and other means of communication. You can also post it on websites like Reddit and distribute via email. Students will have to provide proof of distribution in the form of a screenshot. The survey will be in the field for approximately two weeks. Students are expected to promote and distribute the survey during this time.

Parts 4-6: The final survey write up will be three memos (two "practice" that will take the form of "quizzes" online, and one final one, which will be submitted as a paper) on the data gathered via the class survey. We will provide more detailed guidelines closer to the due dates. The memos are not weighted equally; the last one is weighted most heavily. Grades will be based on consistency of the analytical argument, demonstration of cumulative mastery of the material from the course, and clarity of writing. The detailed rubric for the paper is available on ELMS.

Students will submit their final paper to their TA via ELMS and will receive an acknowledgement of receipt from their TA. If the student does not receive such receipt within 48 hrs the paper has not been received and the student needs to contact the TA again.

In the weeks prior to submission the teaching staff will be available for students who have questions about the research paper, but we will not review complete drafts. Students are expected to keep the papers within assigned length. Grades

will be based on consistency of the analytical argument, demonstration of cumulative mastery of the material from the course, and clarity of writing.

Section Participation (10 percent): 7) Section: Students are expected to have completed all of the assigned readings and homework for each section and be prepared to discuss them. Attendance (in person or via zoom with the camera on) is mandatory and teaching assistants record participation in section. Section grades will be based on a demonstrated ability to discuss topics covered in lectures and section.

Experimental Lab . 2-3 lab surveys: 39 pts (5%) 8) To support students in gaining first-hand knowledge of experimental research in political science, our course will give participation credit to students who take part in studies conducted by GVPT faculty and graduate students. Each study will take about 20-30 minutes to complete. If you prefer not to serve as a participant, you may elect to satisfy the requirement by completing an alternate assignment (HW 13). However, you must notify the Research Administrator (Jordan James Anthony Spencer jspeck13@umd.edu) before the last day of schedule adjustment for the semester if you wish to register for the alternate assignment.

Students who are under 18 years of age must obtain parental permission to participate in research. If you are under 18, please contact Jordan James Anthony Spencer jspeck13@umd.edu and he will provide you with instructions on how to participate in the research studies.

If you choose to participate in research, you will sign-up for two to three research studies. Throughout the semester you will be sent two to three separate emails with instructions regarding how to sign up for and complete these studies.

You will have to either participate in both research studies or complete the alternate assignment. Alternate assignments cannot be used to make up for a study at the end of the semester.

3.1 Grading scale

NOTE: Students must complete every assignment in a category (for example all HW and all survey assignments) to receive a grade for that category. Students cannot elect to complete only select assignments.

If the student completes all assignments grades will be assigned according to the following scale:

- 97–100% of possible points = A+
- 93–96% = A

- 90–92% = A-,
- 87–89% = B+ ,
- 83–86% = B ,
- 80–82% = B-,
- 77–79% = C+ ,
- 73–76% = C,
- 70–72% = C-,
- 67–69% = D+,
- 65–66% = D,
- 60-62% = D-
- below 60 = F

4 Study Resources

Textbook videos In addition to the lectures being recorded and made available to students after each class we have created short videos to help students study the discrete concepts that are covered in the textbook. These concept videos are all uploaded and available on PANOPTO (ELMS) for students at the outset of class.

Textbook quizzes The textbook The Essentials of Political Analysis, is divided into chapters by statistical topic. In person lectures roughly follow the topical outline of the book as indicated on the syllabus and students are expected to read before coming to lecture.

Each textbook chapter ends with a series of questions about the textbook materials. After finishing each chapter students can test their understanding of the material by answering the textbook quiz questions on ELMS. The quizzes are intended for self study only and are not graded for the class.

Workbook videos The workbook "An R Companion to Political Analysis" is divided into chapters that correspond to the topics covered in the textbook. Students work through these chapters before completing the HW at the end of each chapter. To help students complete the work in each chapter we have created short videos that take the student through the script in each chapter. Students can watch the videos as they are working their way through the material in each chapter. We also make the script files for each workbook chapter

available to students though we strongly encourage you to try your hand at making your own and only using the professor's script files as support. (Of course the HW script you have to create on your own.)

The chapters themselves also contain QR codes that students can follow to videos covering workbook topics in greater depth and from a variety of sources.

5 Other pertinent information and policies

ELMS – we are paperless!!!!! Important communication regarding the class is conducted via ELMS. This includes posting of the syllabus, announcements, and grades. Unless instructed otherwise, students will also turn in all individual assignments (homework, various components of the final project, and final project write-up) via ELMS. Students are required to be proficient users of ELMS and to ensure that their emails are registered with ELMS, are up to date and checked regularly.

Important Note about Class Communication

The first avenue of communication for this course is with your designated teaching assistant. All issues, problems, questions, concerns should first be addressed with them, unless the issue is of a sensitive nature. Please provide documentation, including paperwork for student disability services, and notice of absence to your TA. If issues cannot be resolved, or questions cannot be answered by the TA, then contact me. Please allow TA's and/or the professor a least 24 hours to respond to emails (48 to 72 hours on weekends).

Extra credit and incompletes.

Graded assignments in the class provide students with ample opportunity to demonstrate mastery of the materials. The assigned material is appropriate in scope for completion within a single semester. Therefore, **no incompletes** will be given – no exceptions. There is 1 opportunity for earning extra credit (10 points). This is the scholarship in practice - in person event - listed on the schedule for November 29th. Students who attend the event have the opportunity to write a 1 page reflection of the event for extra credit. This is the only opportunity for earrning extra credit in the class.

Grade Challenges Any challenges to a grade must be submitted in writing no sooner than one week after the assignment has been graded. All challenges must be submitted to the section TA first.

5.1 Code of Conduct

It is assumed that all students are familiar with and adhere to the code of academic integrity. See http://www.studenthonorcouncil.umd.edu/index.html

For University policies including: Attendance, Absences, or Missed Assignments: Academic integrity Accessibility Code of conduct Grade complaints

See: http://www.ugst.umd.edu/courserelatedpolicies.html

Read this prior to Schedule Adjustment date.

5.1.1 Statement on Diversity and Inclusivity

The Government and Politics department deeply values the voices and perspectives of all people. We are committed to having a diverse department that recognizes and appreciates the differences in race, ethnicity, culture, gender, sexual orientation, religion, age, abilities, class, nationality, and other factors. Our department prioritizes diversity and seeks to foster a diverse community reflected in its faculty, staff, and students.

In this class, students are invited to share their thoughts and a diversity of opinions is welcome. Respectful communication is expected, even when expressing differing perspectives. Supporting one's statement with research findings is encouraged. In accordance with free speech statues, speech that contains threats of violence is prohibited.

Reporting Racism and Other Forms of Hate and Bias If you experience racism or other forms of bias in this class or any GVPT course, we encourage you to do at least one of the following:

- Report the experience to the instructor or teaching assistant
- Report the experience to Patrick Wolfarth, the GVPT Director of Undergraduate Studies at patrickw@umd.edu
- Report the experience to the GVPT Diversity, Equity, and Inclusion committee, led by Professor Antoine Banks at abanks12@umd.edu

Please also report all incidents of hate and bias to the Office of Diversity and Inclusion at https://diversity.umd.edu/bias/

6 Schedule (DUE DATES IN RED – ALL SUBMISSIONS ON ELMS)

NOTE There are two columns that have due dates listed. HOMEWORK IS ALWAYS DUE ON THURSDAYS WHEREAS SURVEY MATERIALS ARE DUE You need to look in both the "survey" and "homework" columns in the table below.

Date	Day	Topic	Homework DUE Dates	Survey DUE Dates
Week 1				
8/28/23	M	Welcome, syllabus and R	ELMS registration	
8/30/23	W	NO CLASS	Prof Birnir presenting research at the Annual Conference of the American Political Science Association	
9/1/23	F	Welcome, Workbook and Survey Introduction.	Install R, R-Studio,	Pilot questions begin
Week 2				
9/4/23	M	Textbook: Introduction and Chapter 1. Workbook. Chapter 1		Work on pilot questions
9/6/23	W	Pilot questions, Textbook: Chapter 1.		Work on pilot questions
9/8/23	F	Workbook: Chapter 1		Pilot design questions due
Week 3				Pilot prepared by teaching staff
9/11/23	M	Textbook: Chapter 2. Workbook: Chapter 2		Watch pilot video.
9/13/23	W	Textbook: Chapter 2. Workbook: Chapter 3		Complete the pilot survey.
9/14/23	Th		Workbook: Ch1 HW due.	
9/15/23	F	Workbook: Chapters 2 and 3		Complete the pilot survey.
Week 4				
9/18/23	M	Textbook: Chapter 3. Workbook: Chapter 4		Complete the pilot survey.
9/20/23	W	Textbook: Chapter 3. Workbook: Chapter 5		Complete the pilot survey.
9/21/23	Th		Workbook: Ch2 and 3 HW due.	
9/22/23	F	Workbook: Chapters 4 and 5		Pilot survey answers due (QUALTRICS survey)
Week 5				Pilot data released by teaching staff
9/25/23	M	Textbook: Chapter 4. Pilot analysis		Pilot analysis
9/27/21	W	Textbook: Chapter 4, Workbook: Chapter 6.		Pilot analysis
9/28/23	Th		Workbook: Ch4 and 5 HW due.	
9/29/23	F	Workbook Ch6 and Pilot analysis		
Week 6				Final survey coded by Teaching Staff
10/2/23	M	Textbook: Chapter 5.		Survey in field
10/4/23	W	Textbook: Chapter 5. Workbook: Chapter 7		Survey in field
10/5/23	Th		Workbook: Ch6 HW due.	
10/6/23	F	Workbook Ch7		Pilot analysis due ; Verification of survey distribution due
Week 7				
10/9/23	M	Review		Survey in field
10/11/23	W	MIDTERM 1		Survey in field
10/12/23	Th		Workbook: Ch 7 HW due	Survey in field
10/13/23	F	NO SECTION, grading		Survey in field

Date	Day	Class meeting topic	Homework DUE Dates	Survey DUE Dates
Week 8				Survey closes, data released by the Teaching Staff.
10/16/23	M	Textbook: Chapter 6.		Watch the survey video.
10/18/23	W	Textbook: Chapter 6. Workbook: Chapter 8		Survey practice 1
10/20/23	F	Workbook: Chapter 8.		Survey practice 1
Week 9				
10/23/23	M	No Class. Professor Birnir lecturing at Yale.		
10/25/23	W	Textbook: Chapter 6. Wrapping up.		Survey practice 1
10/26/23	Th		Workbook: Chapter 8 HW due.	
10/27/23	F	Survey practice orientation		
Week 10				
10/30/23	M	Textbook: Chapter 7. Workbook: Chapter 9		Survey practice 1
11/1/2	W	Textbook: Chapter 7. Workbook: Chapter 10. Skip ANOVA.		Survey practice 1
11/3/23	F	Workbook: Chapters 9 and 10. Skip ANOVA.		
Week 11				
11/6/23	M	Textbook: Chapter 8. Workbook: Chapter 11		Survey practice 1
11/8/23	W	Textbook: Chapter 8. Workbook: Chapter 12		Survey practice 1
11/9/23	Th		Workbook: Chapters 9 and 10 HW due.	
11/10/23	F	Workbook: Chapters 11 and 12 and survey practice 1		Survey practice 1
Week 12				
11/13/23	M	Textbook: Chapter 9. Workbook: Chapter 14		Survey practice 1
11/15/23	W	Textbook: Chapter 9. Workbook: Chapter 14		Survey practice 1
11/16/23	Th		Workbook: Chapters 11 and 12 HW due.	
11/17/23	F	Workbook: Chapter 14 and Survey Practice 2		Survey practice 1 due
Week 13				
11/20/23	M	Textbook: Chapter 10		Survey practice 2
11/22/23	W	No class: Thanksgiving		
11/23/23	Th	Thanksgiving		
11/24/23	F	No section: Thanksgiving		

Date	Day	Class meeting topic	Homework DUE Dates	Survey DUE Dates
Week 14				
11/27/23	M	No class Professor Birnir giving a lecture at Michigan University		Survey practice 2
11/29/23	W	Scholarship in practice. In person event. Extra credit see syllabus.	Benjamin Banneker Room 2212 at the Stamp Student Union starting at 1pm and ending at 2:15pm.	Survey analysis
11/30/23	Th		Workbook: Chapter 14 HW due.	
12/1/23	F	Final survey writeup		
Week 15				
12/4/23	M	Conclusions		Survey analysis
12/6/23	W	Midterm Review		
12/8/23	F	Review		Survey practice 2 due
Week 16				
12/11/21	M	Midterm	MIDTERM 2	Survey analysis
12/15/21	F	Final survey analysis writeup due	Final survey write-up due Submit by 5 pm. EST. Get confirmation from TA within 48hrs.	Final survey write-up due, all 3 lab survey participation verifications due

7 Additional (optional) materials

In an effort to further increase your numerical literacy and prepare you for a world that is allegedly teeming with "fake news", I include in some of my lectures material from the following sources and I encourage you to explore these further:

University of Washington professors Carl T. Bergstrom and Jevin West. http://callingbull.org/

Carl T. Bergstrom and Jevin D. West. 2020 (released Aug 4) Calling Bullshit: The Art of Skepticism in a Data-Driven World (Recommended).

Other fascinating readings that I encourage you to explore about how data is (mis) used include:

University of Chicago professor Steven D Levitt and journalist Stephen J. Dubner. http://freakonomics.com/

Smith, Gary. 2014. Standard deviations: Flawed assumptions, tortured data and other ways to lie with statistics. Overlook, Duckworth: New York, London.

Charles Wheelan. 2013. Naked Statistics. Stripping the dread from the data. WW Norton. New York and London.

Some good examples also come from reputable fact-checkers including The Annenberg Public Policy Center of the University of Pennsylvania: https://www.factcheck.org/

Poynter Institute for Media Studies https://www.politifact.com/

Mini lectures on a variety of the topics we cover from Professor Lindsay Mayka https://www.youtube.com/channel/UCfM0pXzkZCt5enG4fcV0oDw/videos

Let me know when you find other great relevant resources.