

# First-Year Seminar

## Ouija Boards to Big Data: Possibility, Probability, and Prediction

Dickinson College, Fall 2019  
Monday, Wednesday, Friday 12:30-1:20, Denny Hall 212

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### Course Description and Learning Goals

The First-Year Seminar (FYS) introduces you to Dickinson College as a “community of inquiry” by developing habits of mind essential to learning. Across the entire college, the goals of the FYS program are to help students better:

- Critically analyze information and ideas
- Examine issues from multiple perspectives
- Discuss, debate, and defend ideas, including one’s own views, with clarity and reason
- Develop discernment, facility, and ethical responsibility in using information
- Create clear academic writing

For our FYS, we will examine how scholars, journalists, and others use data and mathematical principles to examine complex phenomena. First, we will specifically examine instances in which mathematical principles have influenced the outcome of judicial trials. Second, we will think critically about “big data”, including what it is and when it is (and is not) useful in making predictions in various realms. Finally, we will engage in data analysis of our own using data from surveys that recent Dickinson graduates have completed just before their graduations. We will write research papers and then present our findings during the last week of class.

### Course Materials

- Schneps, Leila, and Coralie Colmez. 2013. *Math on Trial: How Numbers Get Used and Abused in the Courtroom*. New York: Basic Books.
- Silver, Nate. 2012. *The Signal and the Noise: Why So Many Predictions Fail – but Some Don’t*. New York: The Penguin Press.

Additional readings are available on Moodle or online as specified in the syllabus.

### What is Required of You? (What *all* professors expect from Dickinson students)

You should complete all readings and writing assignments **in advance** of the class in which they will be discussed. Every professor has a slightly different way of writing a syllabus, so it is important that you ask questions and understand what is expected of you as quickly as possible. You don’t want to miss a deadline or be unprepared for class simply because you didn’t understand the syllabus.

In order for you to be successful in this class and in many others at Dickinson, you will want to do the following: (taken from the book Peer Instruction for Astronomy, by Paul J. Green, page 29)

- **READ.** Come to class prepared to discuss the material.
- **RISK.** Be open with your opinions and your questions. Listen to and encourage everyone's ideas so they can take risks too.
- **RELAX.** Don't take criticism of your own ideas personally. Change your mind when the evidence shows that you should.
- **RESPECT.** Act toward your peers as you would have them act towards you. Be civil. Be charitable.
- **REASON.** Play the skeptic, but be critical of reasoning, ideas, and data -- not of people.
- **RESTATE.** Try to paraphrase another's explanation in a way that makes sense. Focus on coming to the best possible answer.

### Grading Overview

Your grade will be based on four papers, attendance and participation, a reading journal, a writer's questionnaire, and several information literacy assignments. Each component is discussed further below but the relative weight of each piece is as follows:

Attendance and Participation	15%	
Writers Questionnaire; Reading Journal; Information Literacy Assignments	25%	
Essay #1: Response Paper: <u>Math on Trial</u>	15%	Draft – September 18 Final – September 25
Essay #2: Response Paper: <u>The Signal and the Noise</u>	15%	Draft – October 16 Final – October 23
Essay #3: Research Proposal Narrative	10%	Final – November 15
Essay #4: Research Paper, including presentation	20%	Draft – November 22 Final – December 6

Final letter grades will be assigned in the following way:

A = 93-100	B- = 80-82	D = 60-69
A- = 90-92	C+ = 77-79	F = 0-59
B+ = 87-89	C = 73-76	
B = 83-86	C- = 70-72	

### *Attendance and Participation*

The success of this course depends upon your regular contributions to class discussions. Since this a seminar-style class, we will spend the majority of class in conversation with one another about course readings and the writing process. Course attendance is not optional. That said, I know things sometimes come up and, as such, you may have **three** absences throughout the course without penalty. Missing class beyond that will result in a reduction of your attendance and participation grade. Just showing up for class, however, is not enough to guarantee a high participation grade. Your participation grade will be based on the degree to which you do the following:

- Come to class having done the day's reading
- Prompt discussion and/or respond to comments made by your peers
- Enter the conversation without dominating or silencing others

- Offer more than just personal opinion or anecdote, meaning that you root your comments in the text we are discussing.
- Work collaboratively with colleagues to achieve learning goals when you are placed in small groups
- Are present and engaged in every class, meaning that you take care of your needs before you come to class. Regularly excusing yourself in the middle of class to take a phone call, use the restroom, or fill a water bottle is distracting to others and will result in a decrease in your participation grade.

I recognize that some students are hesitant to speak in front of class. If this is the case, please come talk with me during office hours early in the semester. In addition, if extenuating circumstances arise that interfere with your ability to attend and/or participate in this class or others, please come see me as soon as possible. Dickinson has many resources available to you that might help you navigate a difficult time or difficult situation. As both your professor and your adviser, I am in a great position to help point you toward those resources. Don't hesitate to ask!

### *Writer's Questionnaire*

This assignment will be completed during the first week of class and will serve as a way for me to begin to get to know you as a writer and a scholar.

### *Reference Librarians and Information Literacy*

The library employs reference librarians, who are trained professionals able to help library users find information. Whether it is for this course or any other during your time at Dickinson, you can ask a reference librarian to help you. They can help you find information (books, articles and more), choose the most relevant databases, improve your research strategy, critically evaluate information, and cite sources properly. Ian Boucher is the liaison librarian for our course, and there are reference librarians who can work with every major at the college. You can always make appointments with individual reference librarians, but you can also drop in during their reference shift, which is indicated by a red flag hanging outside their door. (If you have your back to the Writing Center, reference librarians' offices will be directly in front of you through the stacks.)

We will have four library sessions throughout the semester led by Ian where we will learn both general information about the library as well as how to look for relevant information for papers you write specifically for this course. Overall, information literacy encourages you to consider the following questions as you undertake any type of research project:

- Am I mindful that researching is a creative, intellectual, and iterative process?
- Who makes up my community of inquiry?
- Do I understand the rich array of paths I can take while exploring this question? What are all the ways I might want to address this question?
- Am I aware that the content I need may be found in a variety of formats?
- Am I familiar with the core sources used within the discourse of this discipline?
- Throughout the research process, am I thinking critically and reflectively?

(list created by Carleton College)

### *Papers and the Writing Process*

Each paper will go through the invention, drafting, feedback, and revising process. The ultimate success of the paper will be affected by the quality of the first draft, the thoughtfulness with which you undertake the revision process, as well as the polished final draft. All papers must be typed and

meet standard formatting practices: double-spaced; reasonable font size (approximately 12); reasonable margins (approximately 1 inch all around); pages numbered; stapled; title and author's name on the first page. I prefer you use the Chicago, Author-Date citation style, but my top priority is that the citations are consistent!

**Writing is a process and not an end product.** As such, students will meet with me at least once during the semester to discuss writing. You will also be required to visit the Writing Center at least once over the course of the term.

### *The Writing Center at Dickinson*

Writers of all levels and abilities need feedback in order to develop their ideas and grow as writers. Dickinson's trained writing tutors can help you generate ideas, begin drafting, revise a rough draft, figure out your professor's preferred documentation style, understand and respond to professor feedback, edit your writing – among other things. You can schedule an appointment online at this link: <https://dickinson.mywconline.com/>. For more information about hours and policies, visit the web: <http://www.dickinson.edu/academics/resources/writing-program/content/Writing-Center/>

### **Evaluation Policies for Writing Assignments**

In each paper assignment, we will talk about specific goals and things to focus on in that particular assignment. In general, however, I will evaluate your writing by considering how well you have achieved the following goals (developed by the Writing Program at Dickinson):

1. The author crafts an introduction that identifies a question, frames the question, and states a thesis.
2. The author organizes the writing, demonstrates a progression of ideas, and maintains a consistent focus or thread.
3. The author contextualizes the question and supports it with evidence.
4. The author sustains analytical inquiry throughout the assignment.
5. The author effectively incorporates relevant outside information.
6. The author engages the intended audience with a consistent, distinctive voice appropriate to the task.
7. The author adheres to appropriate standards for language use.
8. The author conforms to appropriate formats for citation of source material.

### Academic Integrity

From Dickinson College's Community Standards... "Respect for ideas — our own and others' — is a hallmark of academic integrity. We show respect by acknowledging when we have used another's words or ideas in our work. We expect others to acknowledge when they use our ideas or words in their work. Students are expected to do their own work on quizzes, papers, examinations, class assignments, etc. Normally, a paper may be submitted in fulfillment of an assignment in only one course. Exceptions require permission from the instructors. Collaboration must be noted in writing and requires the consent of all instructors."

([http://www.dickinson.edu/info/20273/dean\\_of\\_students/867/community\\_standards/2](http://www.dickinson.edu/info/20273/dean_of_students/867/community_standards/2))

With respect to this course, I expect you to do your own work. We will discuss and workshop papers in class, and you may certainly talk with classmates about your paper ideas outside of class; however, you must write all papers on your own. Additionally, you will be expected to cite any and all sources you use in researching and writing your papers. We will talk extensively about citation,

but if you ever have any questions about what constitutes cheating or plagiarism, please feel free to ask.

### Accommodations

Dickinson values diverse types of learners and is committed to ensuring that each student is afforded equitable access to participate in all learning experiences. If you have (or think you may have) a learning difference or a disability – including a mental health, medical, or physical impairment – that would hinder your access to learning or demonstrating knowledge in this class, please contact Access and Disability Services (ADS). They will confidentially explain the accommodation request process and the type of documentation that Dean and Director Marni Jones will need to determine your eligibility for reasonable accommodations. To learn more about available supports, go to [www.dickinson.edu/access](http://www.dickinson.edu/access), email [access@dickinson.edu](mailto:access@dickinson.edu), call (717) 245-1734, or go to ADS in Old West (lower level), Room 005.

I am fully committed to work with all students needing accommodations in my courses. If you've already been granted accommodations at Dickinson, please let me know as soon as possible so that we can meet to review your Accommodation Letter and complete your Blue Forms. If you will need test proctoring from ADS, remember that you will need to provide them with at least one week's notice.

### Technology in the Classroom

A study conducted by psychologists Pam Mueller and Daniel Oppenheimer shows that students who take notes on a computer do less well answering conceptual questions than do students who take notes by hand (<http://www.vox.com/2014/6/4/5776804/note-taking-by-hand-versus-laptop>). Furthermore, since thoughtful listening and responding will be instrumental to the success of our course, I prefer that students not rely on laptops or tablets for note-taking purposes. However, if you feel strongly that the use of electronics is important to your success in the course, I encourage you to talk with me personally.

With respect to audio recording, Pennsylvania is a “two-party consent” state, meaning that it is a crime to “intercept or record a telephone call or conversation **unless all parties to the conversation consent**” (<http://www.dmlp.org/legal-guide/pennsylvania/pennsylvania-recording-law>). Practically, what this means is that you should not be using any device to record class lectures or discussions. If a student with an accommodation from ODS is permitted to record class, all members of the class will be informed; students with ODS accommodations agree to strict guidelines with respect to how they use the recording.

### Outline of the Course

August 29 –

- Welcome to Dickinson! Introduction to the course

August 31

- Lennie Irvin. From Writing Spaces. “What Is ‘Academic’ Writing?” (Available on Moodle)
- Schneps and Colmez, Introduction and Chapter 1, pages ix-22
- Journal = After reading the Irvin chapter, what do you think you will need to do differently at Dickinson than you did in high school (or in other classes) when it comes to reading, researching, and writing?

September 2

- **Writers Questionnaire Due**
- Schneps and Colmez, Chapter 2, pages 23-38
- Mike Bunn. From Writing Spaces. “How to Read Like a Writer” (Available on Moodle)

September 4

- Schneps and Colmez, Chapters 3 and 4, pages 39-86
- Journal = In a couple sentences, answer the question, “What does it mean to read like a writer?” Then, answer the two questions Bunn poses suggest you think about before reading about Math on Trial. 1) What is the author’s intended purpose for this piece of writing? 2) Who is the intended audience?

September 6

- Schneps and Colmez, Chapters 5 and 7, pages 87-105 and 121-145
- Journal = Record three key sentences from today’s reading including page numbers. Write at least one sentence about why you included each passage.

September 9

- **Academic Integrity Tutorial Due**
- Schneps and Colmez, Chapters 9 and 10, pages 167-219
- Discussion of Paper #1

September 11

- Schneps and Colmez, Chapter 8, pages 147-166
- Steven Krause. From Writing Spaces. “On the Other Hand: The Role of Antithetical Writing in First Year Composition Courses” (Available on Moodle)
- Journal = Brainstorm potential topics for Paper #1

September 13

- Schneps and Colmez, Chapter 6 and Conclusion, pages 107-120 and 221-225
- Journal = Going back to the sentences you wrote in your journal on September 6, write a couple more sentences for each one, answering the question of “Why is this important?” or “So what?” or “What are the implications of this sentence?”

September 16

- Richard Straub. “Responding – Really Responding – to Other Students’ Writing” (Available on Moodle)

September 18

- **Peer Review, Paper #1 - Bring Hard Copy of Paper to Class!**

September 20

- Silver, Introduction and Chapter 1, pages 1-46
- Journal = Given the feedback you got on Wednesday, write one paragraph describing what you learned and what you plan to change about your paper between now and when it is due on Wednesday.

September 23

- Silver, Chapters 2 and 3, pages 47-107
- “Making Common Topics More Analytical” From Writing Analytically. (Available on Moodle)
- **Journal Check – Bring your Reading Journal to Class!**

September 25

- **Paper #1 Due – Bring Initial Draft, Peer Review Sheets, and Final Draft to Class!**
- **Library Session – Go to Library Classroom #1 (basement level)**

September 27

- Silver, Chapter 4, pages 108-141
- Journal = Summarize Chapter 4 of the Silver book in one paragraph, thinking carefully about what you include and what you do not include. In other words, you do not need to include a sentence about every single subsection. (Refer to the “Summary” section of the Writing Analytically reading from 9/23 for guidance)

September 30

- Silver, Chapters 5 and 6, pages 157-203
- Rebecca Jones. From Writing Spaces. “Finding the Good Argument OR Why Bother With Logic?” (Available on Moodle)

October 2

- **Library Session – Go to Library Classroom #2 (basement level)**
- **Bring Journal to Library Session**
- Journal = Choose one of the chapters of Silver we have read so far. Using Toulmin’s language on page 169 of Jones’s article, dissect what Silver is doing in the Chapter you choose. That is, in your own words, where in the chapter you choose, is Silver’s 1) Claim; 2) Data; 3) Warrant; 4) Backing; 5) Rebuttal; and 6) Qualifiers?

October 4

- Silver, Chapter 7, pages 204-231
- Catherine Savini. From Writing Spaces. “Looking for Trouble: Finding Your Way into a Writing Assignment” (Available on Moodle)

October 7

- Silver, Chapter 8, pages 232-261
- “A Brief Glossary of Common Logical Fallacies” From Writing Analytically. (Available on Moodle)
- Journal = Translate into your own words the feedback you received on your first essay. What higher order concerns to you need to work on? What lower-level concerns (like grammar) do you need to work on? What might you like to do differently on your second paper, especially with respect to your writing process?

October 9

- Stuart Greene. “Argument as Conversation: The Role of Inquiry in Writing a Researched Argument” (Available on Moodle)
- Discussion of Paper #2

October 11

- Silver, Chapters 9 and 10, pages 262-328
- Journal = Find an example of a logical fallacy and explain why it is what you say it is. You might look in newspaper op-ed, blogs, etc. Then, write a few sentences about what the author could have done to make their argument stronger. (Refer back to the reading from Writing Analytically on 10/7 for guidance.)

October 14

- Silver, Chapters 11 and 12, pages 329-411

October 16

- **Peer Review, Paper #2 - Bring Hard Copy of Paper to Class!**
- **Journal Check – Bring your Reading Journal to Class!**

October 18

- Silver, Chapter 13 and Conclusion, pages 412-454

October 21

- **No Class – Fall Pause**

October 23

- **Paper #2 Due – Bring Initial Draft, Peer Review Sheets, and Final Draft to Class!**
- Readings on potential final paper topics (Available on Moodle)

October 25

- Readings on potential final paper topics (Available on Moodle)
- Discussion of Papers #3 and #4

October 28

- Readings on potential final paper topics (Available on Moodle)

October 30

- Readings on potential final paper topics (Available on Moodle)

November 1

- “Beginning the Research Process” from Political Science Research Methods (Available on Moodle)
- Journal = What are three possible research topics you are interested in examining based on the articles you read and what VP Bretz talked about in our class session with her?

November 4

- Kyle Stedman. From Writing Spaces. “Annoying Ways People Use Sources” (Available on Moodle)

Tuesday, November 5

- **Election Day – Vote if you are eligible to do so. Local Elections Matter!**

November 6

- “Making a Thesis Evolve” From Writing Analytically (Available on Moodle)
- **Library Session – Go to Library Classroom #1 (basement level)**

November 8

- **Finish Information Literacy Work from Library Session (upload to Moodle)**
- Journal = Reflect on the library session from Wednesday. What was the most useful piece of information you learned? What do you think you will need to do to make your research process successful?
- **No Class – Professor Niebler at Conference**

November 11

- Sandra Giles. From Writing Spaces. “Reflective Writing and the Revision Process: What Were You Thinking?” (Available on Moodle)

November 13

- “Using Sources Analytically: The Conversation Model” From Writing Analytically (Available on Moodle)

November 15

- **Paper #3 Due – Bring Hard Copy to Class!**
- **Library Session – Go to Library Classroom #1 (basement level)**

November 18

- Journal = Choose a passage from one of the sources you are planning to use in your final paper and make it speak (Strategy #1 in Writing Analytically reading from 11/13). Then, choose another passage from one of your sources and use it to raise a question (Strategy #4 in Writing Analytically reading from 11/13)

November 20

- Journal = Choose two sources you are planning to use in your final paper and place them in conversation with one another (Strategy #5 in Writing Analytically reading from 11/13)

November 22

- **Peer Review, Paper #4 - Bring Hard Copy of Paper to Class!**

November 25

- Selection of Readings on Presentations (Available on Moodle)
- **Journal Check – Bring your Reading Journal to Class!**

November 27

- **No Class – Thanksgiving Break**

November 29

- **No Class – Thanksgiving Break**

December 2

- Presentations of Research Projects

December 4

- Presentations of Research Projects

December 6

- Presentations of Research Projects
- **(by 11:59 p.m.) Final Paper Due (upload to Moodle; include revision reflection)**