

# Let's Go Online!

And Data Visualization

March 12, 2020

# ORIE 3120 in-person instruction ends this week

- It's a tough time and there's a lot to parse
- Don't worry: you'll still learn practical tools for OR, DS, and ML!
- A small help: 3 extra slip days for hw to use as needed
- Structural changes to the course
  - Please let me know how they're working for you; it's a grand experiment!
  - I'd welcome comments on Zoom chat after class, on Piazza, or during my office hours

# Time Zone Poll

- Please fill out this time zone questionnaire TODAY
- It's ok to update it if/when your plans change
- This will help us offer office hours and recitations that work for you
- And help you find teammates who will be awake at the same time :)

<https://forms.gle/yH7oYkUiJkNrJs1f8>

# Lectures

- All lectures will be held by Zoom at standard class time, 10:10am ET
- Lectures will also be recorded and available online after class
  - But please “come to class” if you can!
  - I’d love to see your faces and hear your ideas
- Get ready to Zoom!
  - Please have a working camera and microphone
  - Join the session with camera on and microphone muted
  - In-class polling
  - Breakout rooms for student discussion
  - Tell me what you’re thinking! Zoom chat and/or turn microphone on to ask a question
- We may semi-flip: post more readings/videos to make lectures more interactive

# Office hours

- Office hours will continue as Zoom office hours
- We'll follow the schedule on the course calendar
- We'll shift some of the times to accommodate student time zones
- An office hour on the calendar is a promise to you
  - We will not shift or cancel an office hour with <24 hrs notice except under dire circumstances
  - We will announce on Piazza if any office hour is shifted or canceled with <24 hours notice

# Recitation

- Recitations will continue at their current times
  - Except for students outside of continental US, who we'll accommodate
- You'll be assigned a section TA
  - You'll meet in a Zoom room with TA + 20ish other students
  - You'll work together in Zoom breakout rooms
  - The TA will “wander” from room to room, or you can come back to the main room to ask questions
  - Let us know how it works; we'll innovate
- As always, you can complete recitation on your own if you prefer
  - Global due date/time: Fridays at 11:59pm EDT

# Homework

- Homeworks can be done in groups of up to 3 people
- Still due at 2:30pm EDT Wednesdays
- Turn in one assignment for your group on Gradescope
- Use the Piazza search-for-teammates to find groups for each assignment
  - Or decide before you leave campus
  - Or look for other students in your same time zone

# Exams -> Projects!

- No more exams!
- Instead, we'll do a data analysis project
  - We'll suggest datasets / questions
  - Or you can choose your own (with permission)
- Teams of 2-3 students (or 1 or 4 by special permission)
- Decide teams by Friday March 20
  - State team members on a google form (that we'll share soon)
- Two major milestones
  - Data visualization, due 4/7/2020 (replaces Prelim 2)
  - Data analysis, due 5/9/2020 (replaces Final Exam)
  - Format: report (html or pdf). Generate with eg Tableau or Jupyter Notebook or LaTeX or Word
- Peer graded
  - TAs will provide oversight to ensure fairness



# Recitation on Friday

- Install Tableau
- Get set up with Google Colab for Python assignments
  - <https://www.geeksforgeeks.org/how-to-use-google-colab/> (until viz)
  - <https://www.youtube.com/watch?v=inN8seMm7UI>
  - Also ok to use Anaconda

# Questions? Comments? Concerns?

- Please let me know what you think
- We are very open to your ideas!
- Feedback welcome
  - Now
  - On Zoom chat after class
  - On Piazza (anonymous private posts are ok)
  - During OH
- My F OH are outside (on Eng Quad at tables in front of Thurston) or on Zoom

# Data Visualization with Tableau

- Watch [Video: getting started with Tableau](#)
- We'll do a few now: coronavirus datasets
  - World <https://www.kaggle.com/imdevskp/corona-virus-report/data>
  - Korea <https://www.kaggle.com/kimjihoo/coronavirusdataset>

# Best Guess Epidemiology

- $R_0 = 2.5$ ; Doubling time 7-10 days
  - Community attack rate = 30-40%
  - Cases requiring hospitalization = 5%
  - Cases requiring ICU care = 1-2%
  - Cases requiring ventilatory support = 1%
  - CFR = 0.5%
- Community epi wave 2 months
- US: 96 million cases
- US: 4.8 million admissions
- US: 1.9 million ICU
- US: 1 PPV
- US: 480,000 deaths

**• PREPARE FOR DISEASE BURDEN ROUGHLY 10X SEVERE FLU SEASON**

# Meanwhile, in Italy

Today, Italy has 10,149 cases of the coronavirus. There are now simply too many patients for each one of them to receive adequate care. Doctors and nurses are [unable to tend to everybody](#). They lack [machines](#) to ventilate all those gasping for air.

Now the Italian College of Anesthesia, Analgesia, Resuscitation and Intensive Care (SIAARTI) has [published guidelines](#) for the criteria that doctors and nurses should follow in these extraordinary circumstances. The document begins by likening the moral choices facing Italian doctors to the forms of wartime triage that are required in the field of “catastrophe medicine.” Instead of providing intensive care to all patients who need it, its authors suggest, it may become necessary to follow “the most widely shared criteria regarding distributive justice and the appropriate allocation of limited health resources.”

[\[https://www.theatlantic.com/ideas/archive/2020/03/who-gets-hospital-bed/607807/\]](https://www.theatlantic.com/ideas/archive/2020/03/who-gets-hospital-bed/607807/)

Some Italian hospitals are simply turning away patients >65 or with preexisting conditions

# Meanwhile, in Boston

As of today in MA, clinicians have to seek approval from MDPH to test for COVID-19 (SARS-CoV-2). In an outpatient setting, patients can only be tested if they have fever and lower respiratory symptoms and have either traveled to an at-risk country or come in close contact with a LAB-PROVEN positive case. Many patients at high risk are not being tested.

Getting the tests approved is becoming increasingly difficult. A week ago I was able to get someone on the phone from MDPH within 15 minutes or so. This past weekend it was several hours. Yesterday and today the MDPH phone line has been busy. The only way I got through yesterday was by calling a back line I found on the website. That back line was busy today. I can extrapolate that any physician in MA seeking testing right now is getting a busy signal.

MDPH does not have the capacity to handle this. I can only speculate about the response of other states with less robust public health infrastructure.

The person I spoke with yesterday was non-committal and vague about involvement of private labs. They suggested it may begin to ramp up next week. As of now testing is done at the MDPH lab in Jamaica Plain. On Saturday they quoted a 24-48 hour turnaround time. That increased to 48-72 hours on Sunday. Yesterday they were unwilling to speculate on a turnaround time.

[David Dildine, physician working in an outpatient urgent care setting in the suburbs of Boston, Massachusetts, via Facebook]

# My recommendations

- Go home now
  - Dorms are bad for respiratory infection <https://www.nature.com/articles/s41370-019-0196-4>
- But stay away from your parents
  - Median incubation time: 5 days
  - 95% incubate within 12 days
  - Asymptomatic transmission is possible <https://jamanetwork.com/journals/jama/fullarticle/2762028>
- Help your parents / family
  - Help them stay home
  - You should be the one to do necessary shopping etc
  - Wash / shower / launder clothes etc when you come home