Day 1, Session 1: Overview

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EPI/BIOST Bootcamp 2017

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Welcome!

- Welcome to the EPI/BIOST Bootcamp!
- For today:
  - Our backgrounds
  - Introduction to course content for EPI 511 and BIOST 508, 511
  - Overview of this course
  - Some skills and resources for success in graduate school
  - Math Skills I

Our backgrounds: Jessica

- Fifth year PhD student, Epidemiology
- Research interests: Infectious diseases and zoonoses, Genetic epidemiology and advanced methods
- Dissertation cohort: CFAR Network of Integrated Clinical Sites (CNICS)

Our backgrounds: Brian

- Fourth year PhD student, Biostatistics
- Past TA for R in BIOST 511, 512, 517, 518, 571, 311
- Research interests: High-dimensional statistics and inference
- RA: HIV prevention clinical trials

Intro to course content: BIOST 511 (from Jim Hughes, PhD)

- Objective: provide students with an understanding of basic concepts and methods of statistical inference in the health sciences
- Some major topics:
  - Data description, exploratory data analysis
  - Basic issues in study design
  - Probability concepts and models
  - Statistical inference - estimation and hypothesis testing
  - Categorical data analysis
  - Introduction to regression analysis

Intro to course content: BIOST 511

- Only pre-requisite is basic algebra
- However, R will be used to teach some of the concepts and analyze data
- Depending on the instructor, will cover logs/exponents in data analysis

Intro to course content: BIOST 508 (from Jim Hughes, PhD)

- Pre-requisites: basic algebra, EPI 511 or 512
- Similar to BIOST 511 in spirit, but
  - assumes you will not go on to BIOST 512 (includes multiple regression, ANOVA) or BIOST 513 (includes logistic regression, classification)
  - slightly less in-depth treatment than 508, but covers a few more topics (e.g., sample size calculation)
  - assumes EPI 511 or 512 content (e.g., skips some study design issues)

Intro to course content: EPI 511/512

- Objective: provide students with an understanding of basic epidemiologic concepts and methods in the health sciences
- Some major topics:
  - Defining and calculating major measures of disease frequency
  - Describe major sources of bias in epidemiologic research (e.g. confounding or selection bias), and ways to evaluate and reduce bias
  - Interpret results of an epidemiologic study
  - Evaluate integrity and comparability of data

Intro to course content: EPI 511/512

- Describe major epidemiologic research study designs
- Define and calculate measures of association, and modifications of association

Overview of the bootcamp

- Today: overview, Math Skills I
  - Order of Operations
  - Fractions, Percentages, and Decimals
  - Algebra and cross-tabulation
- Monday, 25 September (2–5:30pm): Math Skills II
  - Graphs
  - Logarithms and exponents
  - Word problems

Overview of the bootcamp

- Tuesday, 26 September (8–10:30am): R!
  - Live demo: installing R and RStudio
  - R basics
  - Live demo: the RStudio environment
  - Accessing help files

Skills for success: class preparation

- Do readings (lecture notes, textbook) before coming to class
- Start homework early
- Go to class, and participate if possible!

Skills for success: study groups

- Start early
- Try to form study groups with people of mixed backgrounds and programs
- Keep tabs on how members of the group are performing
- Be careful not to plagiarize

Skills for success: office hours

- Not just for homework help!
- Bring corrected tests and homework to review
- Go over concepts in the reading

Skills for success: bolstering basic skills

- We're providing a refresher, but you may need outside help
- Seek tutoring (early!)
- Use online resources (e.g. Khan Academy)

Skills for success: quarters move fast!

- Don't put off homework/reading/studying
- The first midterm tends to be a wake-up call, but the pace picks up after it — no time to catch up
- Second quarter assumes mastery of the first quarter's material
- Seek out disability accommodation early (http://depts.washington.edu/uwdrs/)

Skills for success: language and wording

- Epi, particularly, is very language-heavy
- Pay attention to how specific words are used
- If you are not fluent in English, consider setting up additional help early

Skills for success: tips on coming recently from undergrad

- If coming from semester school: quarters are much faster!
- Imposter syndrome — remember that the UW chose you!
- Balancing an RA/TA with coursework will likely be an adjustment
- UW's approach may be different from that of your undergrad

Skills for success: tips if you've been out of school for a while

- Schedule yourself more time at first than you might expect you need to complete work
- The field may have advanced since you were in school
- UW's approach may be different than where you worked or earned your Master's/undergraduate degree

Homework for the weekend

- Visit the GitHub page for this bootcamp (http://bit.ly/SPHbootcamp)
  - Download the slides and other materials using the green "Clone or Download" button (choose download)
  - Updated material may be posted to the site; re-download if necessary
- Try to bring a laptop for Tuesday's R session