Welcome to BSTA 550!

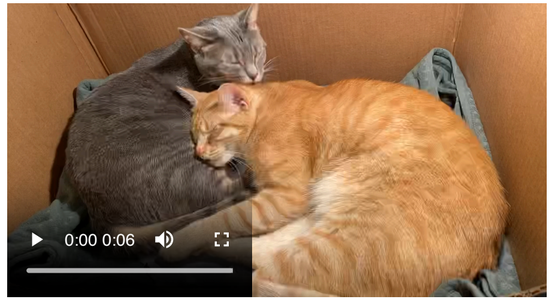
Nicky Wakim

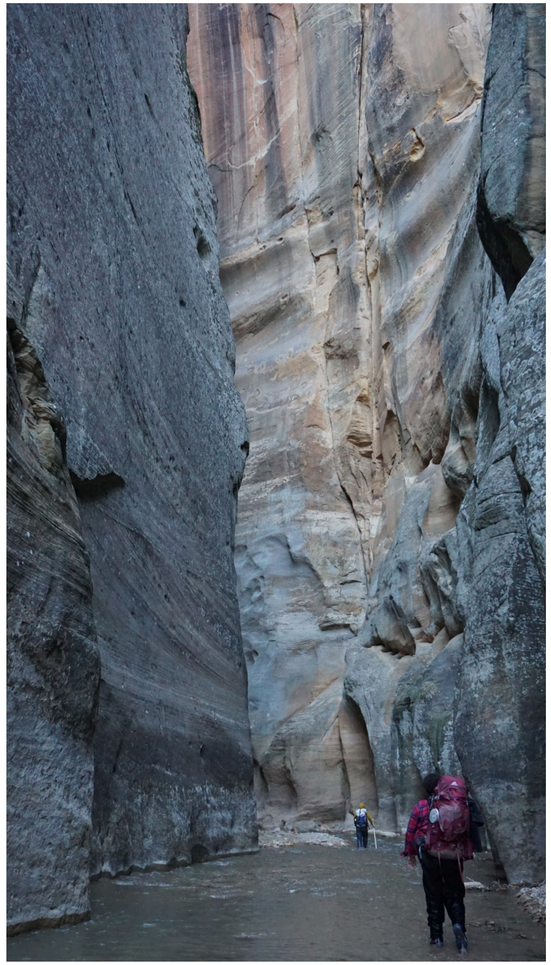
2025-09-29

Nicky Wakim (she/her)

- **Call me “Nicky,” “Dr. W,” “Professor Wakim,” or any combo!**
- Assistant Professor of Biostatistics

- Grew up in DC area (Virginia side!)
- Moved here from Michigan around 2 years ago
- Two sweet kitties
- Volleyball, pickleball, ceramics, strolling around my neighborhood
- But also sleeping, TV, and reading
- Proud plant mamma
- *A few other things about myself that I will share non-publicly*





Pride yourself in learning things, not knowing things

Some important tasks

- Star the class website: https://nwakim.github.io/BSTA_550_25F/

- Complete Homework 0 by this Thursday at 11pm!
  - Includes office hours set up, attendance prefereance, and homework due date decision
  - Think about what day of the week you would like your homeworks due

- Highly suggest that you make an appointment with a learning specialist through Student Academic Success Center!

Let's visit the website: Homepage

Introduction to Probability

SCHEDULE SYLLABUS INSTRUCTOR HOMEWORK QUIZZES

BSTA 550: Introduction to Probability

Fall 2025

Welcome to Biostatistics and Probability! This course is designed to introduce history, concepts and distributions in probability, Monte Carlo simulation techniques, and Markov chains. Students will also learn how to write R codes for various statistical computations and plots. Previous experience in R is not required. R is free software available from http://www.r-project.org.

Instructor

Dr. Nicky Wakim

Vanport 622A

wakim@ohsu.edu

Office Hours

Office Hours Link

TBD

Course details

Mondays, Wednesdays

Sept 29 - Dec 10

10:30 AM - 12 PM

In-person, VPT 620M

Contacting me

E-mail or Slack is the best way to get in contact with me. I will try to respond to all course-related e-mails within 24 hours Monday-Friday.

View the source on GitHub

Let's visit the website: Syllabus (1/2)

- Course learning objectives
- Textbook online! (different than last year)
- Resources: PennState STAT 414 site!
- R: you will get a lot of help in BSTA 511 and we will use some!
- Assessments and grade breakdowns
  - Mostly homework + quizzes
- Feedback from you to me: in the form of exit tickets, midterm feedback, and final course eval
- How to succeed in this course: resources and assignments explained
- Late work policy / Attendance policy
- ChatGPT and other AI technology
- Course expectations: a few ways that I will show you respect and commitment to you as students
  - And a few ways I expect from you!
- Communicating with me: give me 24 hours to reply M-F
  - I try really hard to keep emails from taking over my life

Let’s visit the website: Syllabus (2/2)

BSTA 550 Syllabus

MODIFIED
September 4, 2025

Key Course Info

- **If an assignment on Sakai is closed** or you are submitting late work, please email me AND the TAs your work
- **For homework, you will have TWO no-questions-asked, 3-day extensions:** one for the first assignment, and one for either the solutions or presentation. You just need to send me and the TAs a quick email saying “I am using my no-questions-asked extension for Homework __ assignment.”
- **Attendance policy:** to be determined from homework 0 responses
- The class will end on December 10, 2025. **All coursework is expected to be completed by December 12, 2025 at 11pm.**

Description

Welcome to BSTA 550! In this course, we will establish foundational knowledge in probability in which more statistics knowledge can be built! This course is designed to introduce history, concepts and distributions in probability, Monte Carlo simulation techniques, and Markov chains. Students will also learn how to write R codes for various statistical computations and plots. Previous experience in R is not required. R is free software available from http://www.r-project.org.

Course Learning Objectives

At the end of this course, students should be able to…

1. Assign probability to a chance event using concepts of probability (including fundamental axioms, properties, and counting)
2. Compute probabilities for *discrete random variables* (including random variables following Bernoulli, binomial, geometric, and Poisson distributions)
3. Compute probabilities for *continuous random variables* (including random variables following Normal, Gamma, and Beta distributions)
4. Perform statistical computations and simulations using R

Let’s visit the website: Schedule (1/2)

Let’s visit the website: Schedule (2/2)

Key Info	I will post announcements and other important class related info here. For example, if I change a due date or discuss a common mistake in homework, I will put it here.
Slides HTML	These are the basic slides that will open in your browser.
Slides PDF	These are the slides in pdf form for easy note taking. I’m not always the best at posting these before class, so make sure you know how to save your own copy of pdf slides!
Slides Notes	These are the annotated slides in pdf form. In class, I add my own notes to slides. After class, I will post them here.
Exit tix	These are links to that day’s exit ticket.
Recording	I record our classes. This will be a link to the OneDrive folder containing this recording.
Muddy Points	You will have a chance to ask questions about class in your exit tickets. If I notice a trend in confusion, I will add explanations to these “Muddy Points”

Let’s visit the website: Search

Introduction to Probability

SCHEDULE SYLLABUS INSTRUCTOR HOMEWORK QUIZZES

Schedule

MODIFIED
September 10, 2025

Week	Date	Lesson	Topic	TB	Key Info	Slides HTML	Slides PDF	Slides Notes	Exit tix	Record-ing	Muddy Points
1	09/29		Welcome								
		1	Introduction to Probability	1.1, 2.1, 2.2, 2.4							
	10/01	2	Language of Probability	2.2, 2.4							
	10/02		**HW 0 due 11pm**								
2	10/06	3	Introduction to Simulations	2.3, 2.5							
	10/08	4	Rules of Probability	2.7, 3.3-3.5							
	10/09		**HW 1 due 11pm**								
3	10/13	5	Equally Likely Outcomes	3.6							
	10/15	6	Optional class: Calculus Review								
	10/16		**HW 2 due 11 pm**								
4	10/20	7	pmfs	4.1, 4.2							
	10/22	8	pdfs	4.3							

Let’s visit the website: Homework!

Homework

MODIFIED
September 5, 2025

Homework	Assignment	Assignment due (@11pm)	Answers	Solutions	Sol’n Videos
0		10/02			
1		10/09			
2		10/16			
3		10/23			
4		10/30			
5		11/06			
6		11/13			
7		11/20			
8		12/04			
9 (optional)		12/11			

File Naming

- For HW **Assignments**, please use the following file naming: “HW01_LastName_FirstInitial”
  - For homeworks without R, this should be a pdf file
  - For homeworks with R, this may be a pdf file (with the code in the pdf) or an html file

Decision on Homework due dates

- I have some set due dates in the schedule
- Please look at your other classes, your calendar, etc
- Consider what day of the week you would like to turn in your assignments
- Question in HW 0 to cast your vote and share your opinion

Structure for this course

- Learning the basic tools to understand statistics
  - This is the first quarter that I am adding simulations
  - So I rearranged a lot of the topics!

- It is going to feel useless at times, but I swear it is not!

- This class will help you build a toolbox that allows you to analyze data while understanding the inner theory at play
- You can use probability and simulations to change your analysis as you need

What we will cover