**DEPARTMENT:** Biostatistics and Bioinformatics

**COURSE NUMBER:** BIOS 777 **SECTION NUMBER:** 1

**CREDIT HOURS:** 2 **SEMESTER:** Fall 2018

**COURSE TITLE:** How to Teach Biostatistics

**CLASS HOURS AND LOCATION:** Mon 12:00-12:50, GCR L45

**INSTRUCTOR NAME:** Lance A. Waller, Ph.D.

**INSTRUCTOR CONTACT INFORMATION**

EMAIL: lwaller@emory.edu

PHONE: 404 727 1057

SCHOOL ADDRESS OR MAILBOX LOCATION: GCR 320

**OFFICE HOURS** Tuesdays 9-10, or by appointment

**Teaching Assistant(s):** None

## COURSE DESCRIPTION

This class prepares the student for teaching introductory level courses in biostatistics. Topics discussed include: syllabus development, lecturing, evaluating students' performance, tests and exams, cheating, the roles of the teaching assistant, teacher-student relationships, principles of adult education, and the effective use of instructional technology. In addition, each student is required to prepare and deliver a short lecture (20 minutes) to the other students and the instructor. This is followed by a discussion of strengths and weaknesses of the presentation.

## MPH/MSPH FOUNDATIONAL COMPETENCIES:

- $B_{MPH}5$: Explain fundamental concepts of probability and inference used in statistical methodology.
- $B_{MPH}6$: Communicate the results of statistical analyses to a broad audience.

## CONCENTRATION COMPETENCIES:

- $B_{PhD}5$: Teach statistical theory or methodology at multiple levels.

**COURSE LEARNING OBJECTIVES:**

- Recognize teaching and learning styles.
- Define multiple levels of statistical instruction and recognize how these will influence student motivation, teaching goals, and frameworks for statistical instruction.

**EVALUATION**

Student evaluation is based on:

- Class attendance 25%
- Class participation 25%
- Homework 25%
- Lecture presentation 25%

**COURSE STRUCTURE**

The course involves weekly meetings, overview lectures by the course instructor, guest lectures by teaching award-winning instructors of statistics/biostatistics at the following levels: undergraduate students, masters-level non-majors, masters-level majors, doctoral-level nonmajors, and doctoral-level majors. Students are expected to attend every class, engage with presenters, and incorporate concepts into a structured 10-minute mini-lecture on a statistical topic. For the mini-lecture, students will be required to identify their audience, provide a non-technical motivation for the topic, technical details appropriate for their identified audience, and an example involving observed or simulated data. The course instructor and classmates will then engage in five minutes of questions and answers at the level appropriate for the audience defined. A brief verbal assessment followed by written notes will be provided to each student by the course instructor.

| **Competency** | **Assessment** |
|---|---|
| • $B_{MPH}5$: Explain fundamental concepts of probability and inference used in statistical methodology. | Mini-lecture presentation and subsequent question and answer period.<br><br>Verbal and written feedback by instructor. |
| • $B_{MPH}6$: Communicate the results of statistical analyses to a broad audience. | In-class discussion.<br><br>Mini-lecture presentation and subsequent question and answer period.<br><br>Verbal and written feedback by instructor. |
| • $B_{PhD}5$: Teach statistical theory or methodology at multiple levels. | Homework solutions.<br><br>Mini-lecture presentation and subsequent question and answer period.<br><br>Verbal and written feedback by instructor. |

## COURSE POLICIES

Students are expected to attend each class meeting, or make appropriate arrangements with the course instructor.

Homework solutions will be turned in by the beginning of class on the due date.

As the instructor of this course I endeavor to provide an inclusive learning environment. However, if you experience barriers to learning in this course, do not hesitate to discuss them with me and the Office for Equity and Inclusion, 404-727-9877.

## RSPH POLICIES

### Accessibility and Accommodations

Accessibility Services works with students who have disabilities to provide reasonable accommodations. In order to receive consideration for reasonable accommodations, you must contact the Office of Accessibility Services (OAS). It is the responsibility of the student to register with OAS. Please note that accommodations are not retroactive and that disability accommodations are not provided until an accommodation letter has been processed.

Students who registered with OAS and have a letter outlining their academic accommodations are strongly encouraged to coordinate a meeting time with me to discuss a protocol to implement the accommodations as needed throughout the semester. This meeting should occur as early in the semester as possible.

Contact Accessibility Services for more information at (404) 727-9877 or accessibility@emory.edu. Additional information is available at the OAS website at http://equityandinclusion.emory.edu/access/students/index.html

### Honor Code

**You are bound by Emory University's Student Honor and Conduct Code.** RSPH requires that all material submitted by a student fulfilling his or her academic course of study must be the original work of the student. Violations of academic honor include any action by a student indicating dishonesty or a lack of integrity in academic ethics. *Academic dishonesty refers to cheating, plagiarizing, assisting other students without authorization, lying, tampering, or stealing in performing any academic work, and will not be tolerated under any circumstances.*

The RSPH Honor Code states: "Plagiarism is the act of presenting as one's own work the expression, words, or ideas of another person whether published or unpublished (including the work of another student). A writer's work should be regarded as his/her own property." (http://www.sph.emory.edu/cms/current_students/enrollment_services/honor_code.html)

## COURSE CALENDAR

Provide a list of each session of the semester and include topics, due dates for assignments, and other main elements. It can be helpful to include a note stating that topics and dates may change as the semester progresses.

**COURSE OUTLINE**

**How to Teach Biostatistics**
**BIOS 777**
**Fall Semester, 2018**

| Date | Topics |
|---|---|
| Sept. 10 | Introduction and Overview (L. Waller) |
| Sept. 17 | Panel Instruction (L. Waller) |
| | Thinking statistically, ethics, inclusion, and responsibility (L. Waller) |

Guest lectures from the BIOS "Teaching Hall of Fame:

| | |
|---|---|
| Sept. 24 | Paul Weiss (Audience: Masters-level non-majors) |
| Oct. 1 | Bree Ettinger (Audience: Undergraduates) |
| Oct. 8 | **Fall Break** |
| Oct. 15 | Lance Waller: Ethics, Equity, and Inclusion |
| Oct. 22 | Steve Pittard (Audience: Masters-level majors, topic: computing) |
| Oct. 29 | Bob Lyles (Audience: Masters and doctoral-level non-majors) |
| Nov. 5 | Renee' Moore (Audience: Masters-level non-majors) |
| Nov. 12 | Azhar Nizam (Audience: Masters-level non-majors) |
| Nov. 19 | No class |
| Nov. 26 | **Student Microteaching** |
| Dec. 3 | John Hanfelt (Audience: Masters and doctoral-level majors) |
| Dec. 10 | **Student Microteaching** |