CTSC 5600  
Statistics in Clinical Research

Faculty: Felicity Enders, Ph.D.  
Credits: 2  
Quarters: Winter & Summer  
Prerequisites: None

Overview  
This online course introduces basic statistical methods used in a variety of clinical study designs through a series of seven modules. Course materials use published or ongoing clinical research studies and emphasize statistical reasoning and concepts. General concepts covered are exploratory data analysis, descriptive statistics, estimation, and inference. Statistical techniques covered are those for comparing counts/proportions, for comparing means, and for comparing diagnostic tests. Coverage of each statistical technique includes identifying which research questions it can address, verifying that assumptions are adequately met, and identifying limitations of the conclusions.

Objectives
- The ability to interpret the results of a variety of basic statistical techniques, including both exploratory and inferential methods  
- The ability to recognize, define, and differentiate fundamental concepts of statistics, such as variability, distribution, association, causation, sampling, experimentation, confidence, and significance  
- To determine appropriate statistical methods for different types of data and study designs  
- To develop a critical perspective with which to assess and defend statistical arguments such as those in scholarly publications

Evaluation
For each of the seven modules, students will be required to complete a set of practice questions and a homework assignment. For module 7, there will be a required quiz. Students will be awarded points for preparatory quizzes for each of the two exams, a midterm and a cumulative final.

Students will be expected to spend approximately four to six hours of time on this 2-credit course per week.

Additional online modules related to this topic are available on the Continuous Professional Development website.

For specific dates and times this course is provided, please see the quarterly detailed course schedule.