

Role of Biostatistics

Our first course objective will be addressed throughout the semester in that you will be adding to your understanding of biostatistics in an ongoing manner during the course.

CO-1: Describe the roles biostatistics serves in the discipline of public health.

What is Biostatistics?

Learning Objectives

LO 1.1: Define statistics and biostatistics.

Biostatistics is the application of **statistics** to a variety of topics in biology. In this course, we tend to focus on biological topics in the health sciences as we learn about statistics.

In an introductory course such as ours, there is essentially no difference between “biostatistics” and “statistics” and thus you will notice that we focus on learning “statistics” in general but use as many examples from and applications to the health sciences as possible.

Note

Statistics is all about **converting data into useful information**. Statistics is therefore a process where we are:

- collecting data,
- summarizing data, and
- interpreting data.

The following video adapted from material available from [Johns Hopkins – Introduction to Biostatistics](#) provides a few examples of statistics in use.

Video

[Statistics Examples](#) (3:14)

The following reading from the online version of [Little Handbook of Statistical Practice](#) contains excellent comments about common reasons why many people feel that “statistics is hard” and how to overcome them! We will suggest returning to and reviewing this document as we cover some of the topics mentioned in the reading.

Reading

[Is Statistics Hard?](#) (≈ 1500 words)

Steps in a Research Project

Learning Objectives

LO 1.2: Identify the steps in a research project.

In practice, every **research project** or study involves the following **steps**.

1. Planning/design of study
2. Data collection
3. Data analysis
4. Presentation
5. Interpretation

The following video adapted from material available at [Johns Hopkins – Introduction to Biostatistics](#) provides an overview of the steps in a research project and the role biostatistics and biostatisticians play in each step.



[Role of Biostatistics in the Steps of a Research Project](#) (5:23)

(Optional) Outside Reading: [Role of Biostatistics in Modern Medicine](#) (≈ 1000 words)

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