

# Stat 101L: Lecture 1

## What is Statistics?

- ◆ Statistics is a way of reasoning about the world around us.
- ◆ Statistics helps us use data to make informed decisions.

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## Statistics in a Word

- ◆ Statistics is about ...variation.
  - The world is full of data.
  - Data exhibit variation.
  - Recognizing, displaying and quantifying variation in data can help us make sense of the world.
  - Try to explain variation.

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## Statistics in the News

- ◆ Decrease in gonorrhea rates credited to high beer taxes.
- ◆ Study links suicide, country music.
- ◆ Pro wrestling tied to dating violence.

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## Statistics in the News

- ◆ TM lessens brain's pain response.
- ◆ Caffeine reduces skin cancer risks, study shows.

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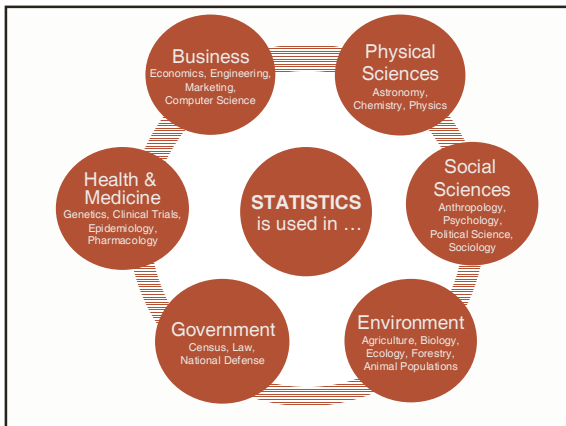
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## What will I learn in this class?

- ◆ How to summarize sample data.
- ◆ How to interpret data summaries.
- ◆ How to differentiate between observational studies and experiments.
- ◆ How to design and carry out
  - a sampling study
  - an effective experiment.
- ◆ How to make statistically valid inferences about a population.
- ◆ How to use the computer to analyze data.

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