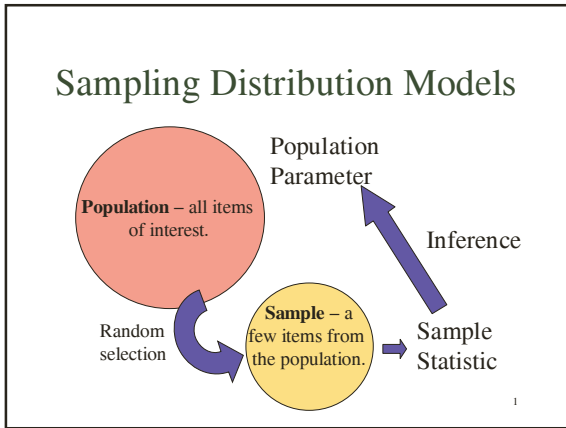


# Stat 101L: Lecture 24



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**Example**

- \* Who? Students who took Stat 101 and filled out a questionnaire.
- \* What? Number of siblings.
- \* When? Today.
- \* Where? In class.
- \* Why? To find out what proportion of students' have no siblings.

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**Example**

- \* Population
  - Stat 101 students who filled out questionnaire
- \* Population Parameter
  - Proportion of all Stat 101 students who filled out questionnaire who have no siblings.

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# Stat 101L: Lecture 24

## Example

- \* Sample
  - 100 randomly selected students.
- \* Sample Statistic
  - The proportion of the 100 students who have exactly one sibling,  $\hat{p}$ .

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## Demonstration

- \* Sample 1     $\hat{p} =$
- \* Sample 2     $\hat{p} =$
- \* Sample 3     $\hat{p} =$

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## What have we learned?

- \* Different samples produce different sample proportions.
- \* There is variation among sample proportions.
- \* Can we model this variation?

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# Stat 101L: Lecture 24

## Simulation

- \* Population

  - Reeses Pieces

  - [www.rossmanchance.com/applets/Reeses/ReesesPieces.html](http://www.rossmanchance.com/applets/Reeses/ReesesPieces.html)
  - [statweb.calpoly.edu/chance/applets/Reeses/ReesesPieces.html](http://statweb.calpoly.edu/chance/applets/Reeses/ReesesPieces.html)

- \* Population Parameter

  - Proportion of Orange Reese's Pieces

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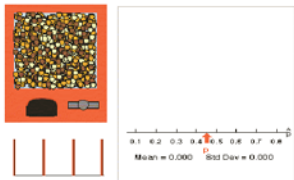
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### Reese's Pieces Samples



Current Sample: 0

sample size: 25  Exact Samples...

num samples: 1  Plot Normal Curve

p: 0.45

Animate

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## Simulation

- \* Simple random sample of size  $n=25$ .

- \* Repeat several times.

- \* Record the sample proportion of orange Reese's Pieces.

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