

fyi - I will post these  
slides on Moodle tonight

# PY 221 – Statistics & Research Methods I

Spring 2023

Tues/Thurs 12:30 – 1:50 pm (HB 327)

Wed 12:30 – 1:50 pm (HB 301 lab)

Dr. Valenti (or feel free to call me Dr. V)

# Overview of today's class

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1. A note about note-taking
2. What is meant by "statistics"? Why do psychology majors learn statistics?
3. Brief summary of research process
4. Generating hypotheses activity
5. Student office hours
6. Low Stakes Quizzes
7. Course materials needed & recommended
8. "Homework" for tomorrow
9. Assessing your current knowledge about research methods

How should you (and shouldn't you) take notes in this class?

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- *Don't* copy word for word from the slides.
- Do ...
  - write down your answers to questions I pose
  - jot down key words, *if* that helps you stay focused
  - write down a question you want to ask me (in class or office hrs)
  - write down a ? and a concept name or so you know what you need to review again later
  - write down a possible example of a concept (and check it with me in class or office hours)
  - most of all, **actively listen** and **think about** what's being said. This is what will help you learn best in this course.



DO use pen & paper!  
(no laptops, tablets)

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On a blank piece of paper, jot down your ideas...

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1. What is "statistics"? What are some possible meanings of that word?
2. What are three reasons that **psychology majors** learn statistics?



Two types of statistics

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**descriptive statistics**  
*describe*

**inferential statistics**  
*infer / inference*

## Two types of statistics

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### Descriptive statistics

**1. *Numbers*** created to summarize data, like a mean, sum, or range

- The average PY 221 class at BSC has **18** students in it.
- According to the ASPCA, about **1.6 million** dogs & **1.6 million** cats are adopted from shelters each year.

### Inferential statistics

**2. *Techniques* and *procedures*** for drawing conclusions about a population from a sample

- E.g., In general (i.e., across all semesters), is the avg PY221 class size different from the avg PY101 class size? → we need to use *inferential stats* to answer this Q.

## 2. Why do PY majors need to learn statistics?

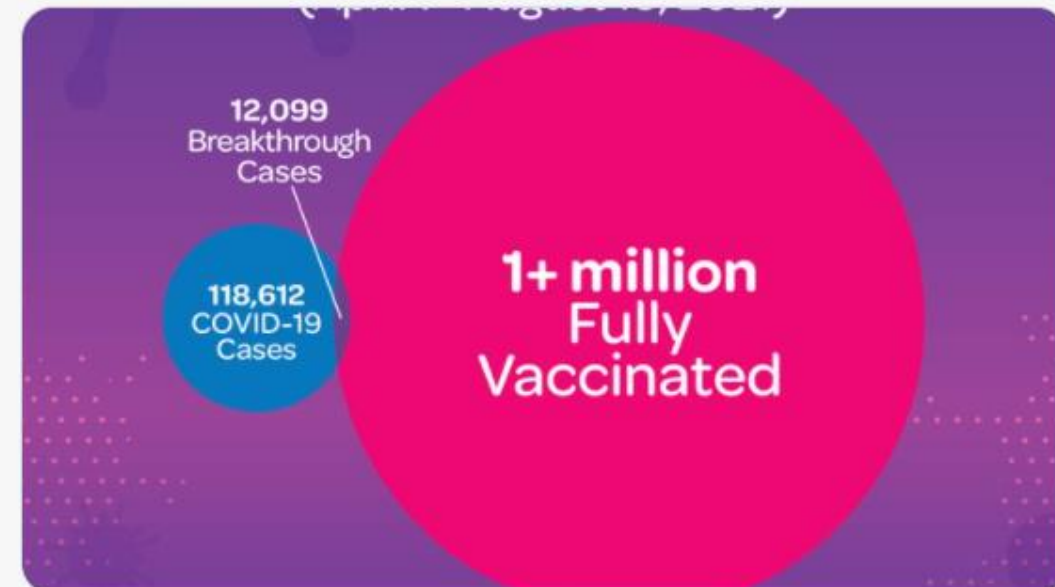
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- To analyze one's own data collected as an undergrad (grad student, professor)
- To understand published research relevant to their later careers (e.g., therapists)
- For the business & non-profit world – e.g., marketing research
- For everyday life – claims hear on tv, or read about – know what questions to ask to evaluate that research.



**Alabama Public Health** ✓ @ALPublicHealth · 19m

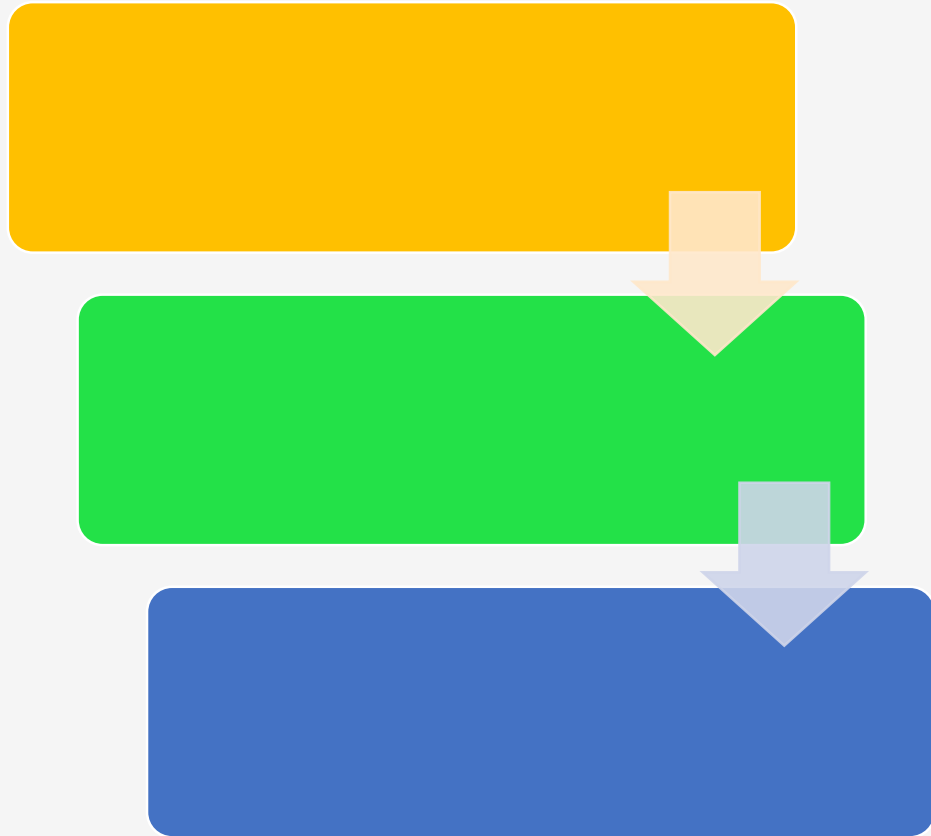
Data as of August 18, 2021 shows that 89.8% of Alabama's #COVID19 cases and 94.1% of Alabama's COVID-19 deaths were in unvaccinated Alabamians. Current data shows that fully vaccinated persons who get COVID-19 are much less likely... 1/2





# What are the steps of the research process (i.e., the scientific method)?

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Take a minute on your own to try to generate some of the steps, and put them in order. Write them down in your notes.

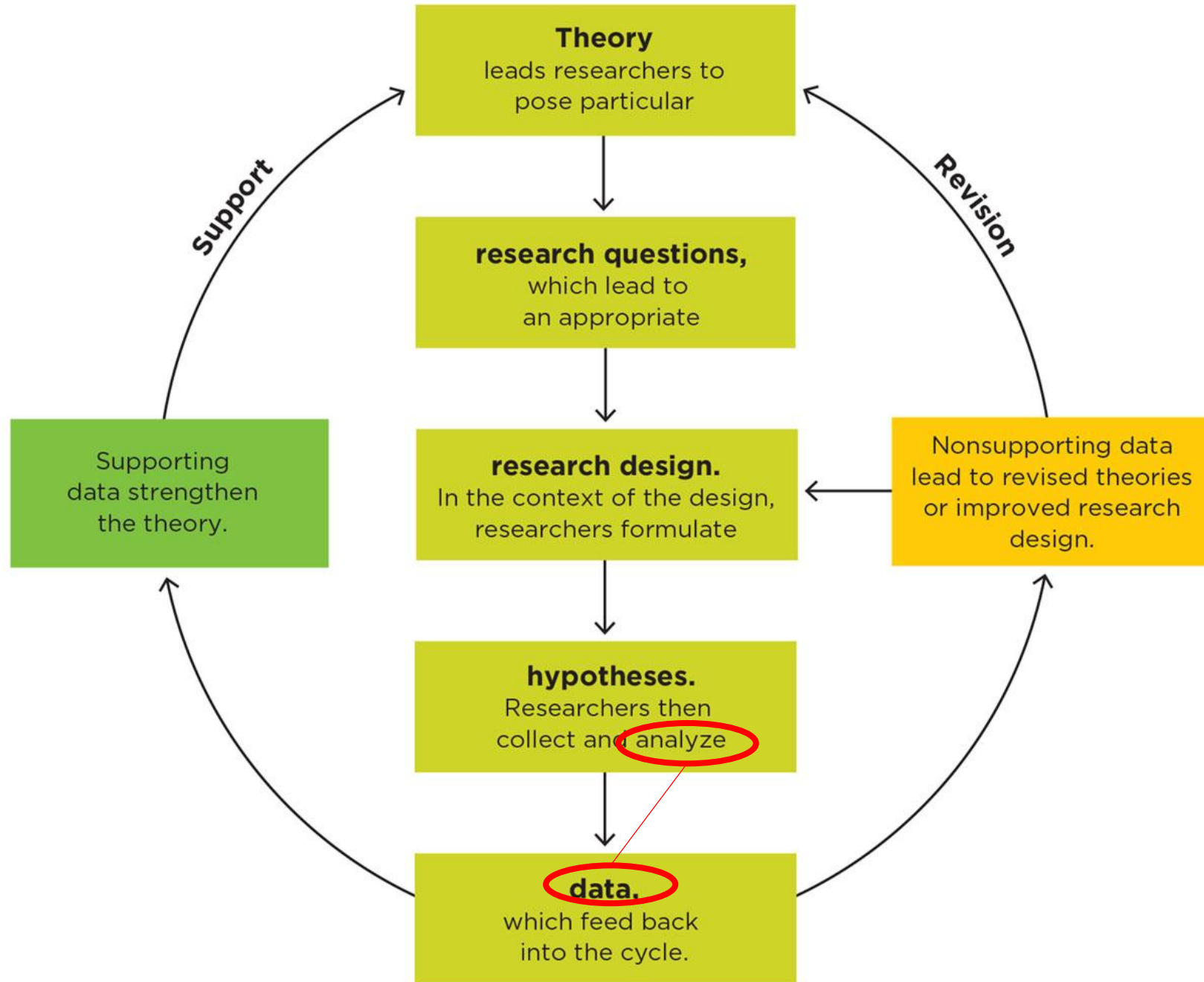
(Guesses are fine, if your memory is fuzzy!)

# The research process (in an ideal world)

- In your PY 222 (Stats & **Research Methods II**) course, you will go into depth on all of these except for...
- ***analyzing data***, which you'll learn how to do in this PY 221 (**Stats** & Research Methods I) course.

## Hypothesis

- a researcher's prediction about characteristics of their data (often, a prediction about the *relationships among variables*)



## Generate 2 hypotheses (predictions).

Ex: The longer a person has been in a romantic relationship, the younger they will be when they get married.

- It is appropriate to go to your date's room or apartment on the first date.  
(answered on a *disagree* to *agree* scale)
- Are you in a serious romantic relationship right now?
- At what age, if ever, would you want to get married?
- How many total children, if any, would you want to have?
- What is the length of the longest romantic relationship you have ever been in?
- With which gender identity do you most identify?
- How religious are you?
- What range does your current overall GPA fall into?
- How career-motivated are you?

**\*\*Today/tonight, ask 3-5 friends to take an anonymous online survey with these Qs, and we'll look at the data tomorrow.**

# Class Hypotheses

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1. As GPA goes up, career motivation goes up.
2. Those who are in a serious relationship right now (vs. not in one) will report wanting to have more children.
3. Those who are in a serious relationship right now (vs. not in one) will have a lower GPA.
4. Those who agree that it's appropriate to go to a date's room/apt on the first date will be less likely to be in a serious relationship.
5. Those who are more religious will be less likely to agree that it's appropriate to go to a date's room/apt on a first date.
6. Those who are more religious will be more likely to conform to traditional gender identities
7. Those who are more religious will report wanting to marry at a younger age.
8. Those who are more career motivated will be less likely to be in a serious relationship right now.

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# Student Office Hours

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- Tuesday 2:00 – 3:00 pm
- Wednesday 11am - Noon
- Thursday 9:30 – 10:30 am
- Please book an appointment within these timeframes thru...
- <https://gvalenti.youcanbook.me/>
- Appointments are scheduled for 10 minutes each, but if you need more time, book 2 consecutive appointments.
- We will meet in my office, right down the hall: Harbert 313
- You may also just “drop in” at these times, but students with appointments receive priority.

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## Low Stakes Quizzes (this info is spelled out in syllabus, too)

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- Starting Thursday, assume you have a quiz every T, W, & Th (some exceptions)
- Complete on Moodle anytime between 8 am and class start time (i.e., 12:30)
- 3 multiple choice questions on recent material, timed @ 10 minutes
- Must answer at least 2 Qs correctly to be considered a “successful” quiz
- Complete 5 successful quizzes per block\* to earn full credit for the Low Stakes Quizzes portion of your grade (\*there are 3 *blocks*, each of which end w/an exam)
- No make-ups, no partial credit (but remember, you’re not penalized for a poor or missed quiz unless you don’t complete 5 successfully by the end of the block)
- Quizzes are open-note and open-book (**see syllabus for what this means**)

(See syllabus for how these quizzes can result in extra credit on the exams 😊)



## Sample “Low Stakes Quiz” Question

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All of the following statements contain **descriptive** statistics, **EXCEPT** for:

- a. In a landmark study by Bertrand & Mullainathan (2004), job applicants with black-sounding names (e.g., Jamal) were 50% less likely to get called for an interview than applicants with white-sounding names (e.g., Brad), even though the resumes were otherwise identical.
- b. A researcher runs a t-test to statistically determine whether there is a significant difference in the exam scores of freshmen and upper-classmen taking PY 101.
- c. In 2010 and 2011, NYC police department officers stopped pedestrians 1.3 million times.
- d. When Starbucks closed every store for four hours on 5/29/18 to provide implicit bias training for their employees, the company lost about \$12 million dollars in revenue.

# Course Materials Needed and Recommended

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- **TEXTBOOK:** An Introduction to Psychological Statistics
  - Foster, G. C., Lane, D., Scott, D., Hebl, M., Guerra, R., Osherson, D., & Zimmer, H. (2018). "An Introduction to Psychological Statistics." *Open Educational Resources Collection*, 4.  
<https://irl.umsl.edu/oer/4>
  - *A bit delayed, but will arrive at the bookstore Thursday or Friday.*
- **CALCULATOR:** any calculator except the one on your smartphone
- **MOODLE:** quizzes & exams are on Moodle, as well as tons of resources
- *Recommended* - JAMOVl: available in Harbert 301 lab & some library computers, also available for free download
  - <https://www.jamovi.org/download.html>
- *Optional* – USB flash drive, for saving files during lab classes

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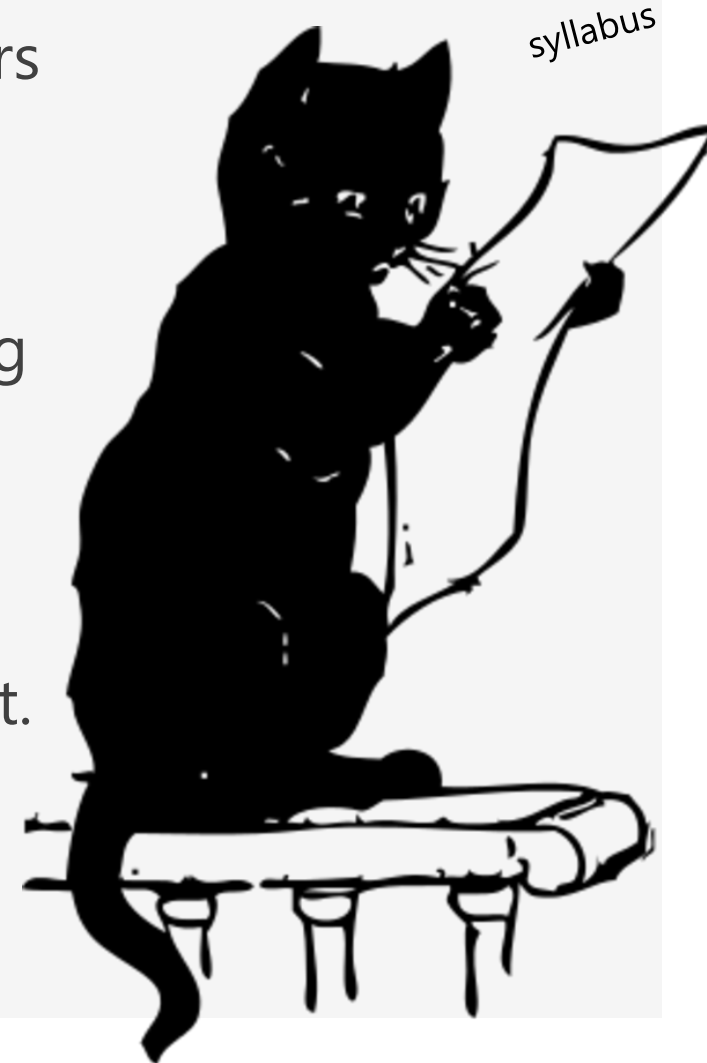
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"Homework" for Tomorrow (give yourself 2 hours for these tasks)

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**1. Please read the entire syllabus.**

2. Look at your schedule for the semester and identify 4 hours per week to devote to this course, outside of class time.
3. Jot down Qs you have @ syllabus or anything from today. I will answer those at the beginning of tomorrow's class.
4. Ask a few friends to complete the quick survey by scanning the QR code/ clicking link on p. 12 of syllabus. Survey is anonymous & they may skip Qs they prefer not to answer.
5. Explore our Moodle site, and record a quick intro video.
6. Textbook – link to PDF is in syllabus. Read Chapter 1, and note p. 12 of syllabus where I suggest sections to leave out.
7. Obtain all the other required resources (and possibly some or all of the recommended and optional resources).



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