

fyi - I will post these  
slides on Moodle tonight

# PY 221 – Statistics & Research Methods I

Spring 2022

Tues/Thurs 12:30 – 1:50 pm (HB 329)

Wed 2:00 – 3:20 pm (either HB 301 lab or HB 102)

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. COVID-19 policies (including attendance policy)
3. What is meant by "statistics"? Why do psychology majors learn statistics?
4. Brief summary of research process
5. Generating hypotheses activity
6. Student office hours
7. Low Stakes Quizzes
8. Course materials needed & recommended
9. "Homework" for tomorrow
10. Time-permitting – 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.
- *Instead,*
  - 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 slide # 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)

## COVID-19-related policies for Spring 2022

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- Masks or face-coverings must be worn at all times over your nose and mouth
- Eating and drinking in class or lab is not permitted (I'm sorry!)
- Please be mindful of everyone's personal space when we do group work, or when you approach another student or your professor
- There is no attendance policy this semester.  
Please do not come to class if you are not feeling well, or if you know you've been exposed to someone who has tested positive for COVID-19, or (obviously) if you've been asked to quarantine/isolate.
  - Moodle will contain nearly everything I show in class, as well as many additional resources.
  - Make friends with your classmates & touch base with them if/when you'll be absent.



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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 by aggregating 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 organizing, summarizing, and interpreting information

- **what we'll be learning in this course** (and you'll practice again in future courses in the PY major)
  - E.g., 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?

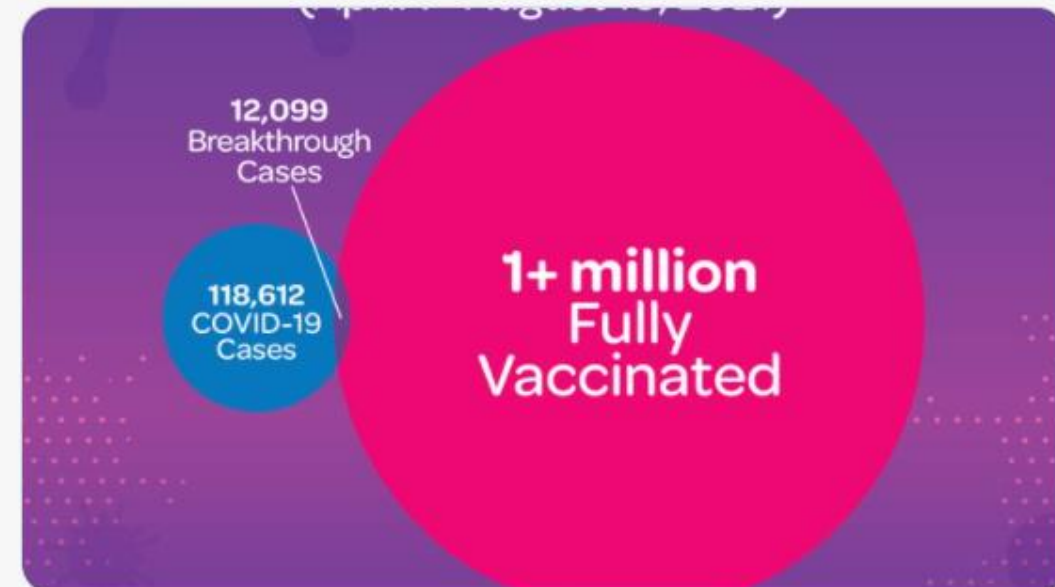
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- To analyze one's own data collected as an undergrad (grad student, professor)
- To understand published research relevant to their later careers (e.g., therapists)
- For the business & non-profit world – e.g., marketing research
- For everyday life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



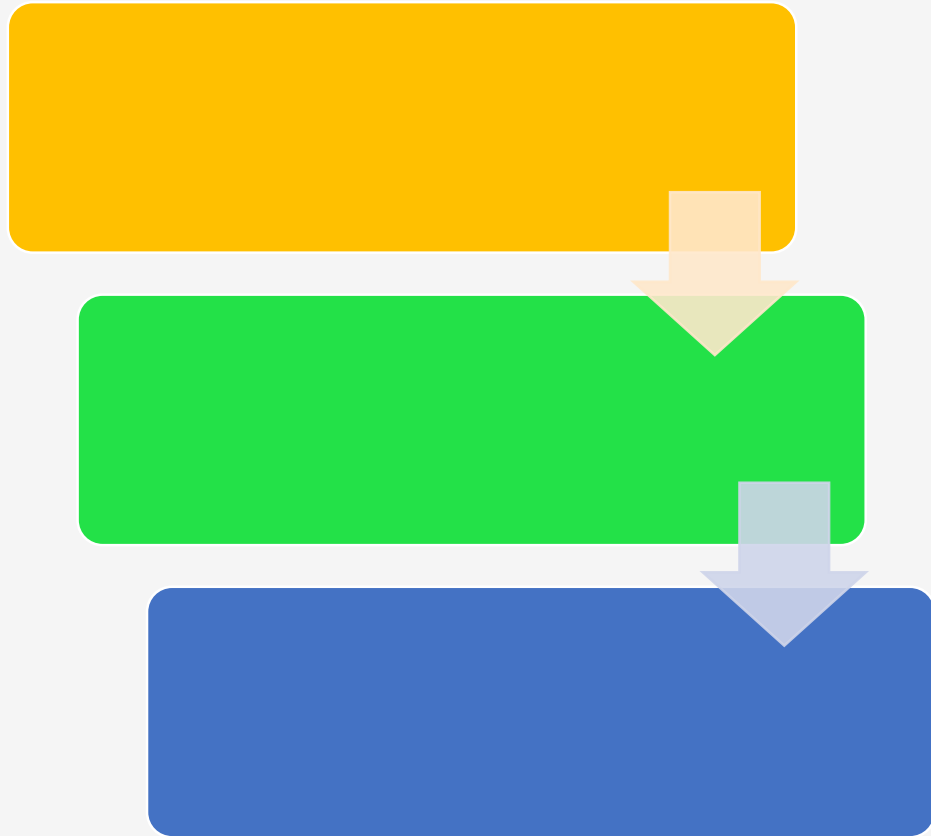
**Alabama Public Health** ✓ @ALPublicHealth · 19m

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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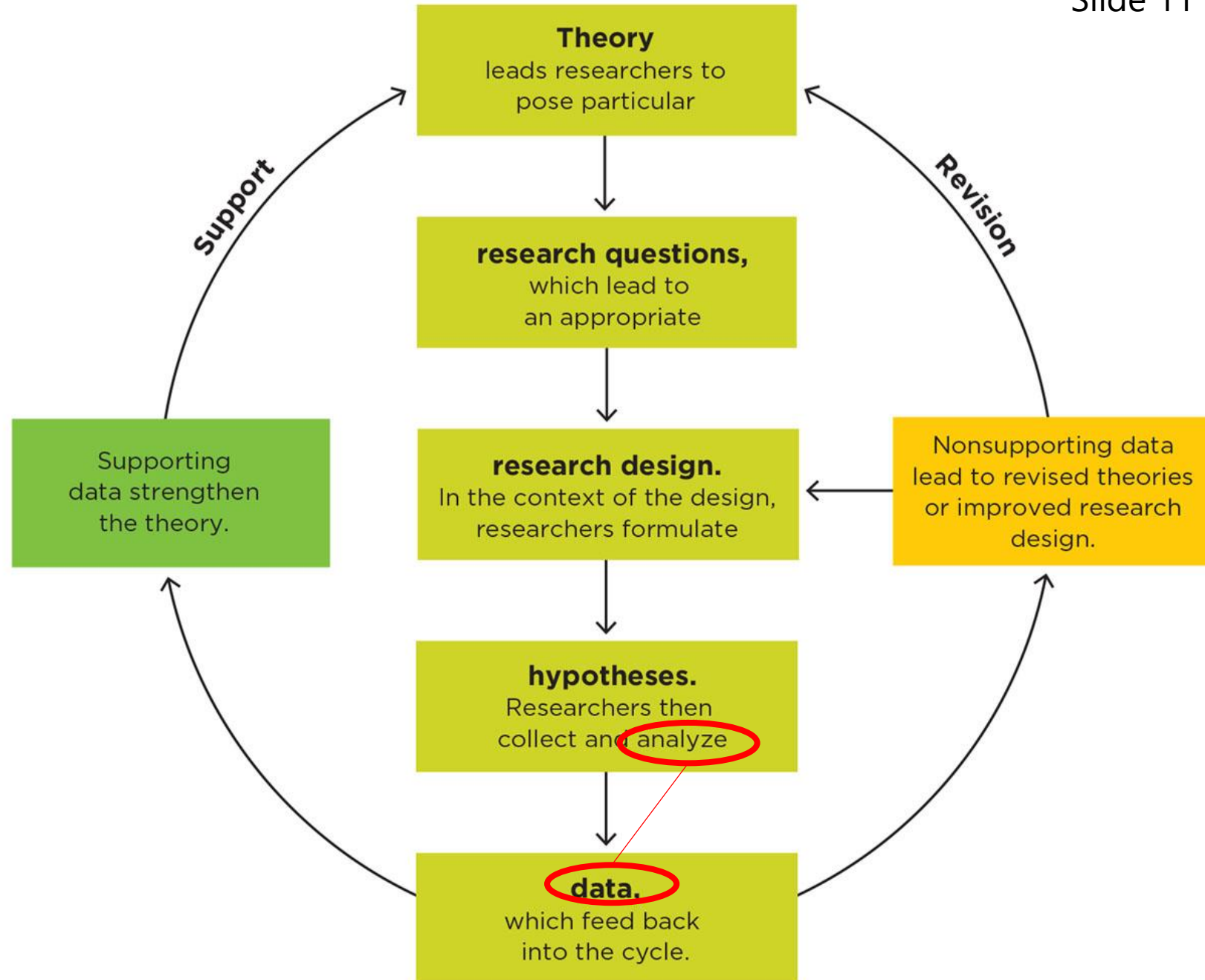


Take a minute on your own to try to generate some of the steps, and put them in order. Write them down in your notes.

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



## Generate 2 hypotheses (predictions).

Ex: College students who have been in longer romantic relationships will want to get married at a younger age.

- 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?

Tonight, you'll take an online survey with these questions, and we'll look at the data tomorrow.

# Class Hypotheses

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- Higher GPA associated with greater career motivation
- The younger that people want to get married, the more kids they're likely to want
- The less appropriate students believe it is to go into room on 1<sup>st</sup> date, the more likely they are to be in a serious relationship.
- Higher religiosity is associated with more disagreement with the appropriateness of going into room on 1<sup>st</sup> date
- More career-motivated students will want to get married at an older age
- Higher religiosity is associated with wanting to have more children

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# Student Office Hours

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- Monday 2:00 – 3:00 pm
- Wednesday 3:30 – 4:30 pm
- Thursday 8:00 – 9:30 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.
- Two ways to meet: (1) in-person in HB 313 or (2) virtually on *Teams* (if sick)
  - Both ways require appointments thru website linked to above
    - For option (2), sign into *Microsoft Teams* and call me at your scheduled appointment time. Having your camera on will allow for easier communication.

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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 pm on T/R or 2:00 pm on Wed)
  - 3 multiple choice questions on recent material, timed @ 6 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 final exam 😊)

## Sample “Low Stakes Quiz” Question

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All of the following 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 compare the average exam scores of freshmen and upper-classmen taking PY 101, to see if there is a difference.
- 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>
- **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 & library labs, also available for free download
  - <https://www.jamovi.org/download.html>
- *Optional* – USB flash drive, for saving files during lab classes
- *Optional* – MICROSOFT TEAMS, **if** you prefer virtual office hours meetings

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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. Jot down Qs you have @ syllabus or anything from today. I will answer those at the beginning of tomorrow's class.
3. Complete the quick survey by scanning the QR code/ clicking link on p. 12 of syllabus. Survey is anonymous & you may skip Qs you'd prefer not to answer.
4. Explore our Moodle site, and record a quick intro video.
5. Textbook – link to PDF is in syllabus. Read Chapter 1, but note p. 12 of syllabus where I suggest sections to leave out.
  - You'll be able to pick up a spiral bound textbook in week 3.
6. Obtain all the other required resources (and possibly some or all of the recommended and optional resources).



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