fyi - I will post these slides on Moodle tonight

PY 221 - Statistics & Research Methods I

Spring 2024

Tues/Thurs 12:30 – 1:50 pm (HB 327)

Wed 12:30 – 1:50 pm (HB 301 lab or HB 228)

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

Overview of today's class

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 Reviews
7. Course materials needed & recommended
8. P^3R
9. "Homework" for tomorrow
10. Assessing your current knowledge about research methods

I will post all slides the evening after class, so . . .
how should you (and shouldn't you) take notes in this class?

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

- *Don't* copy word for word from the slides.
  - My pace won't allow for this.
- *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
  - most of all, ***actively listen*** and ***think about*** what's being said. This is what will help you learn best in this course.

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

1. What is "statistics"? What are some possible meanings of that word?

2. What are three reasons that **psychology majors** or **those with careers in psychology** learn statistics?

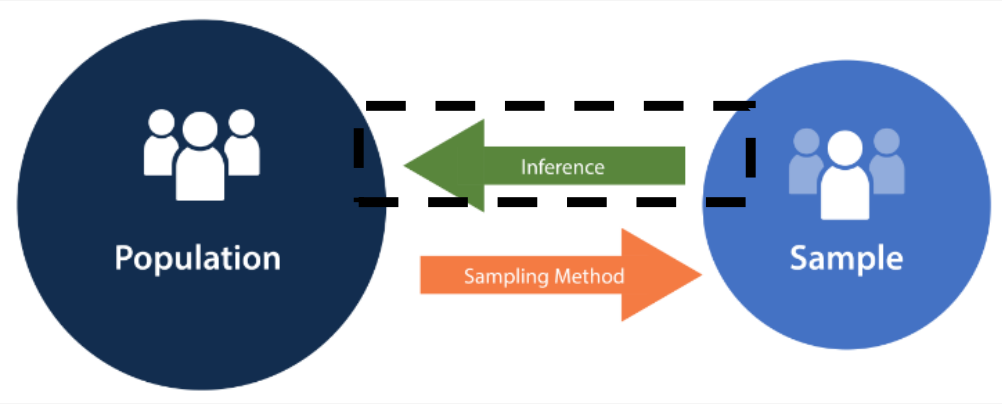
Two types of statistics

descriptive statistics

describe

inferential statistics

infer / inference



Remember I will post this slide on Moodle later. Please do not copy everything. Actively listen and think :)

Two types of statistics

Descriptive statistics

1. ***Numbers*** created to summarize data, like a mean, sum, or standard deviation
   - 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 statistics* to answer this Q.

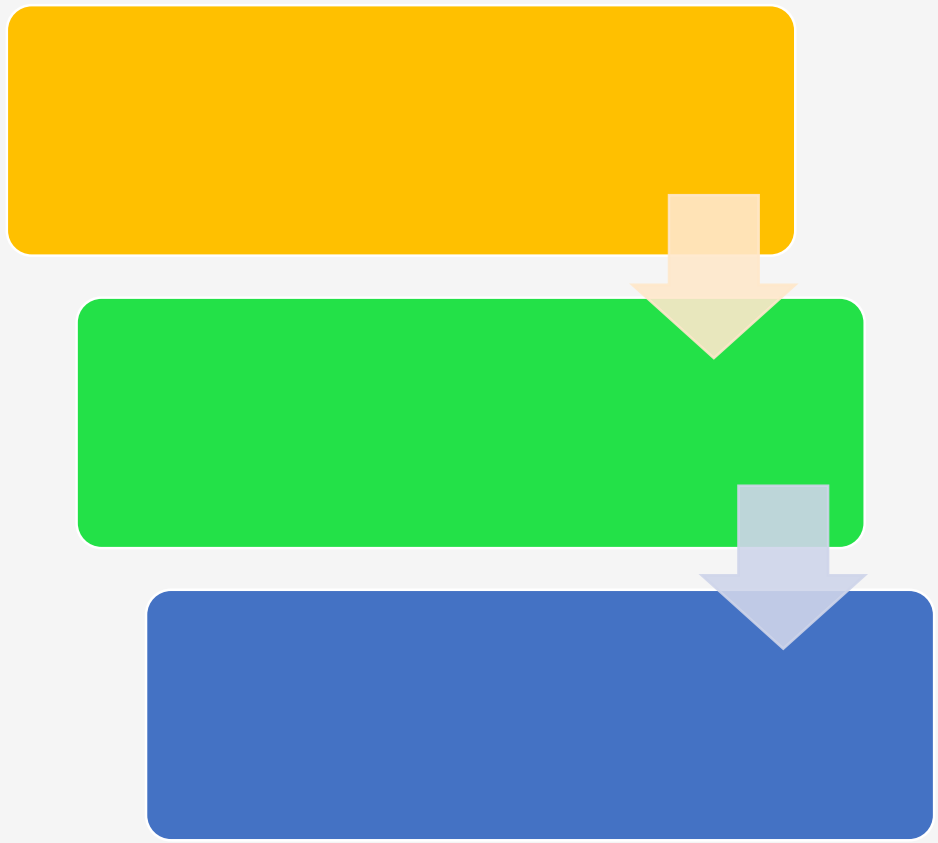
2. Why do PY majors need to learn statistics?

- To analyze one's own data collected as an undergrad (or 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.

"The national **average** U.S. household income in 2022 was $105,555. The **median** U.S. income in 2022 was $74.580."

https://www.fool.com/the-ascent/research/average-us-income/

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



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.

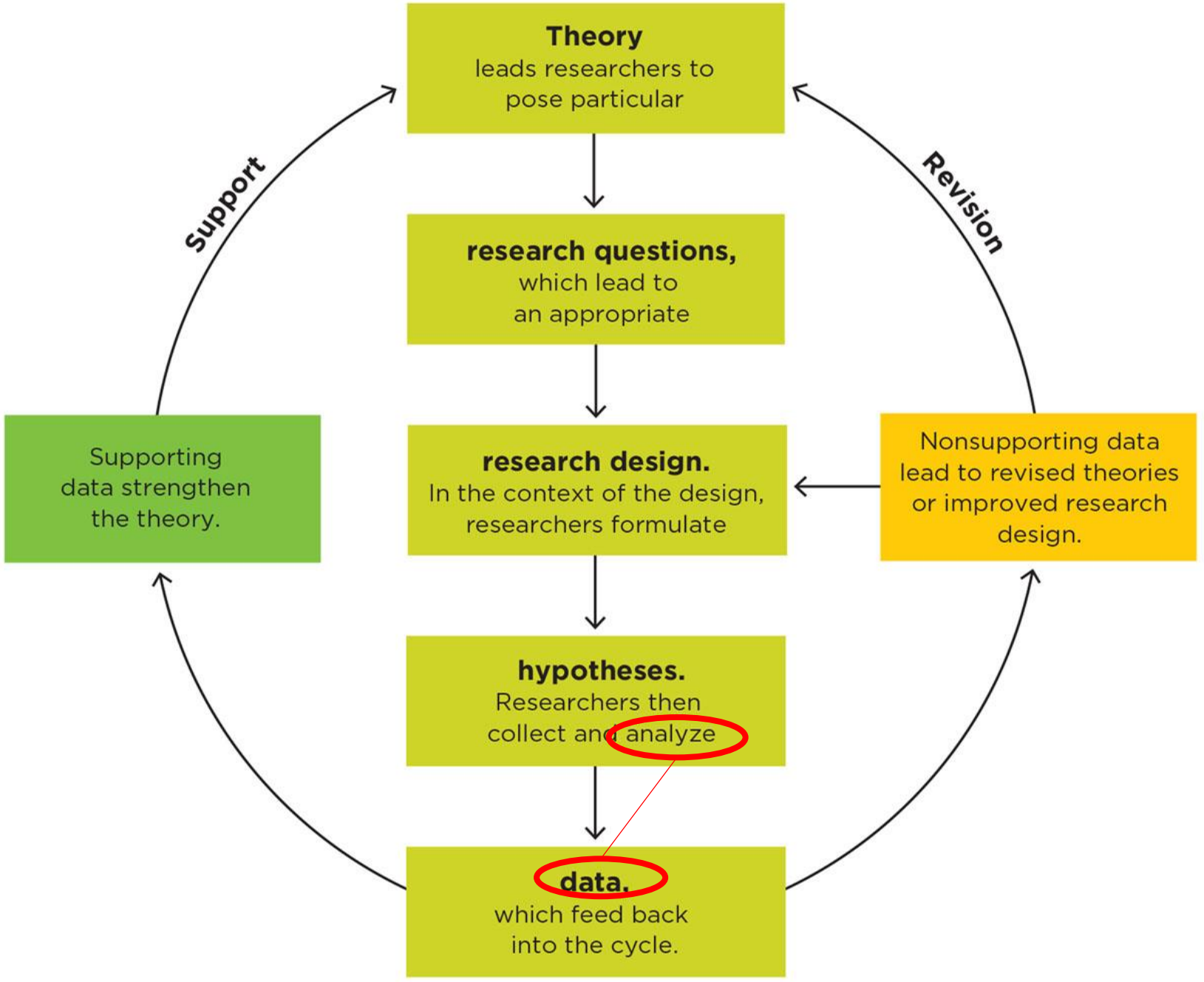
(Guesses are fine, if your memory is fuzzy!)

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: I predict that the longer a person has been in a romantic relationship, the younger the age at which they predict they'll 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?

Class Hypotheses

1. As religiosity increases, the age at which a person wants to get married decreases.
2. Higher career motivation is associated with a desire for fewer children.
3. Higher career motivation is associated with a higher age at which people want to get married.
4. People with higher GPAs also tend to have higher career motivation.
5. People who are more religious will agree less with the idea that it's appropriate to go to your date's room/apartment on the first date.

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****Tonight**, ask 3-5 friends to take an anonymous online survey with those Qs, and we'll look at the data tomorrow.

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Student Office Hours

- Office hours are TBD. I will update Moodle page and syllabus on Moodle. In the meantime, email me for appt.
- Once office hours are set, please book appointments 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: Harbert 313
- You may also just "drop in" at these times, but students with appointments receive priority.

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Low Stakes Reviews (LSR) - this info is spelled out in syllabus, too!

- Starting this Thurs., assume you have a LSR every T, W, & Th (some exceptions)
- Complete on Moodle anytime between 8 pm and class start time (i.e., 12:30)
- 3 multiple choice questions on recent material, untimed
- Must answer at least 2 Qs correctly to be considered a "successful" LSR
- You can have two tries at each LSR, and the higher grade will count
- Complete 6 successful LSRs per block* to earn full credit for the LSR portion of your grade (*there are 3 *blocks*, each of which end with an exam)
- No make-ups, no partial credit, but remember, you're not penalized for a poor or a missed LSR unless you don't complete 6 successfully by the end of the block
- LSRs are open-note and open-book (**see syllabus for what this means**)

(See syllabus for how these reviews can result in extra credit on the exams ☺)

Sample "Low Stakes Review" Question

Q1. 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 on a sample of freshman and seniors taking PY 101 to statistically determine whether there is a significant difference in the exam scores of all freshmen and seniors 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.

Answer: B

Course Materials Needed and Recommended

- **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
- **MICROSOFT WORD**: lab assignments must be submitted as a Word doc, not a PDF and not a .pages file.
- **MOODLE**: low stakes reviews & exams are on Moodle, as well as tons of resources
- *Recommended* - JAMOVI: available in Harbert 301 lab & some library computers, also available for free download
  - https://www.jamovi.org/download.html
- *Recommended* – USB flash drive for saving files during lab classes

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P^3R: Preparation, Participation, Practice, & Reflection

What is this?

A way for you to get rewarded for all of the effort you put in that does not typically get "graded" but that will surely benefit you, such as . . .

Reading the textbook

Reviewing the PPT slides between classes

Attending office hours

Reviewing the practice lab we completed in class

Completing self-graded homeworks

Being an active participant in group work

Meeting with a peer-tutor

…as just a few examples

Reflecting on …
how you plan to prepare for upcoming assignments
what you learned from Dr. V's feedback on an assignment
how an exam went for you and what you might do differently next time
…as just a few examples.

P^3R: Preparation, Participation, Practice, & Reflection

What is this?

A way for you to get rewarded for all of the effort you put in that does not typically get "graded" but that will surely benefit you.

Logistics

Weekly, on Moodle, complete that week's P^3R survey to record your 3 Ps, and to answer my reflection question.

If you have ideas for preparation, participation, or practice items to add, or reflection questions you'd want to answer, please let me know!

Week 1 P3R Survey

Print Blank

Filling this out once per week will ensure you earn credit for your Ps & R!

The survey opens each Saturday and closes class time on Tuesdays.

1 Which of the following preparation, participation, and practice activities did you work on this week?

- ☐ I read part or all of a chapter from our textbook.
- ☐ I reviewed some of the PowerPoint slides.
- ☐ I worked on a self-graded homework assignment.
- ☐ Outside of class, I worked on a handout/worksheet given out in class.
- ☐ Outside of class, I reviewed my answers to a "practice lab" activity.
- ☐ I watched a statistics video Dr. V posted in the Misc Resources section of Moodle.
- ☐ During class, I was engaged during a small group activity.
- ☐ During class, I paired up with a classmate to discuss answers.
- ☐ During class, I answered a question from or asked a question to Dr. Valenti.
- ☐ I attended student office hours to ask Dr. Valenti some questions.
- ☐ I met with an ARC psychology tutor to discuss course content or a lab assignment.
- ☐ I looked over the questions and answers to a "low stakes review," on a day other than the day the review was due.

2 Review the syllabus and consider what you learned in class during the first week about what you should do to maximize your learning in PY 221. What weekly habits should you develop? Also look at your weekly schedule and find at least three blocks of time (e.g., 90 minutes or more) outside of class time that you can devote to preparation and practice for this course. What can you do to ensure that you actually devote those blocks of time to this course?

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

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. Tonight, ask some friends to complete a quick survey by scanning the QR code/clicking link on p. 13 of syllabus. Survey is anonymous & they may skip Qs.
5. Explore our Moodle site.
6. Textbook – link to PDF is in syllabus. Read Chapter 1, and note p. 13 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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