

# *Practical Advice on Doing Ethical Research in Applied Economics*

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With thanks to Jeffrey Michler(UA), April Athnos (UA),  
Travis Lybbert (UC Davis), and Sarah Janzen (UIUC)

## **Research Ethics in Applied Economics**

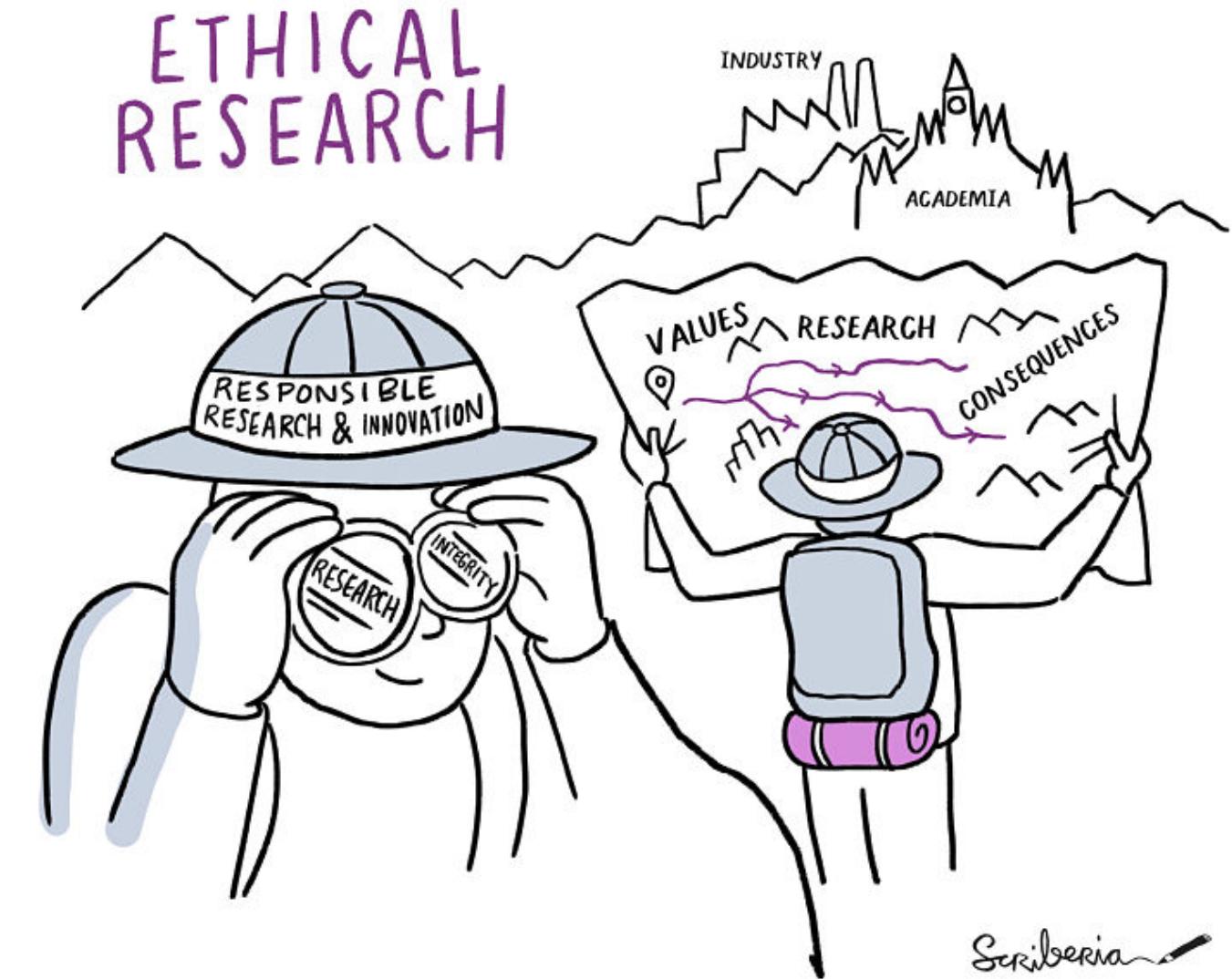
A Practical Guide

Anna Josephson and Jeffrey D. Michler



# *Research Ethics*

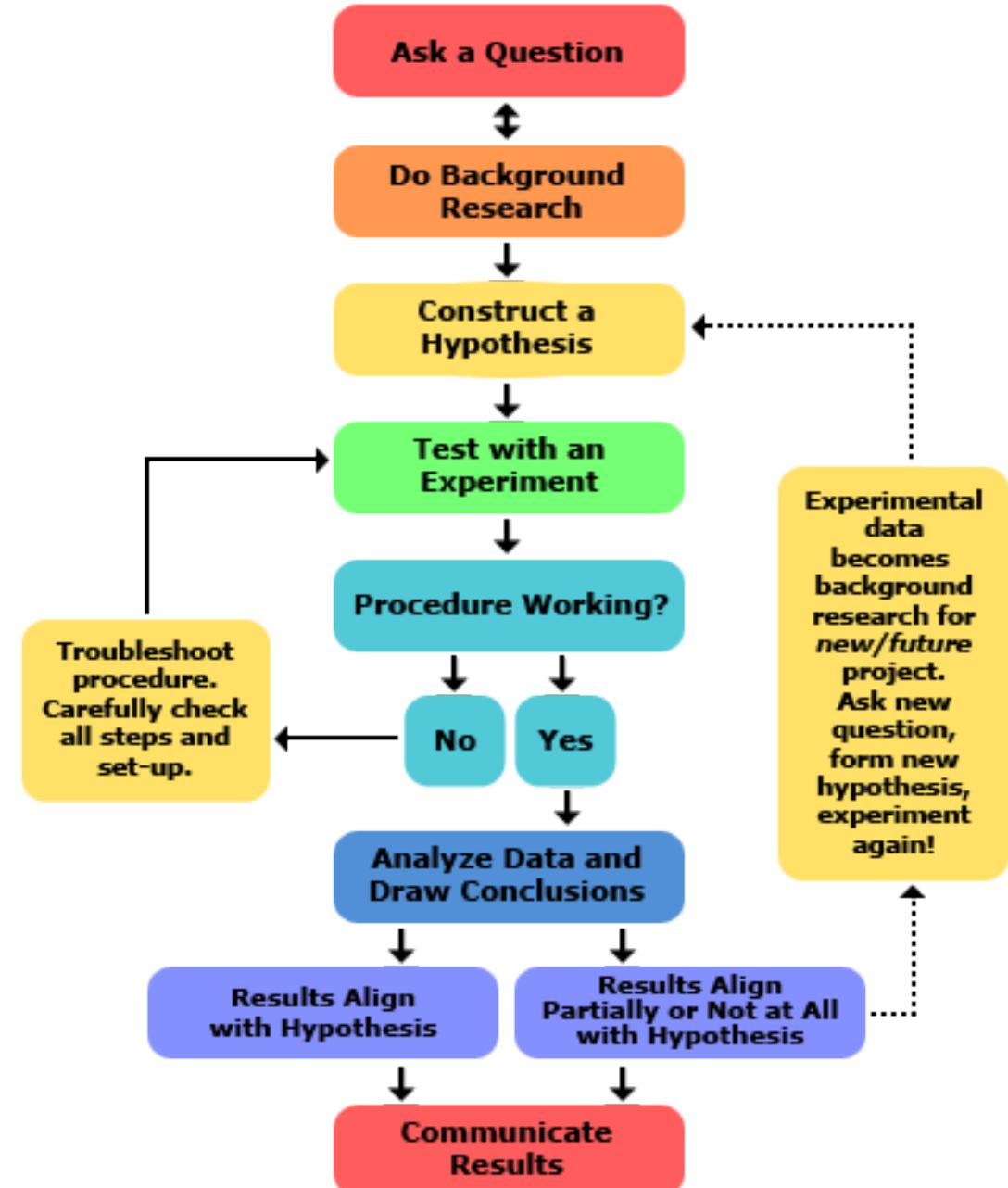
- What is research?
- What is research ethics?
- Why does it matter?



## Scientific Method

# What is research?

- Research is a process to discover new knowledge.
- National Academy of Sciences: the objective of research is to “extend human knowledge of the physical, biological, or social world beyond what is already known.”



# Social science v. “Bench science”

- “Bench science”: physics, biology, chemistry
  - Lab-based
- Social science: economics
  - Surveys
  - Experiments
  - Quantitative and qualitative data

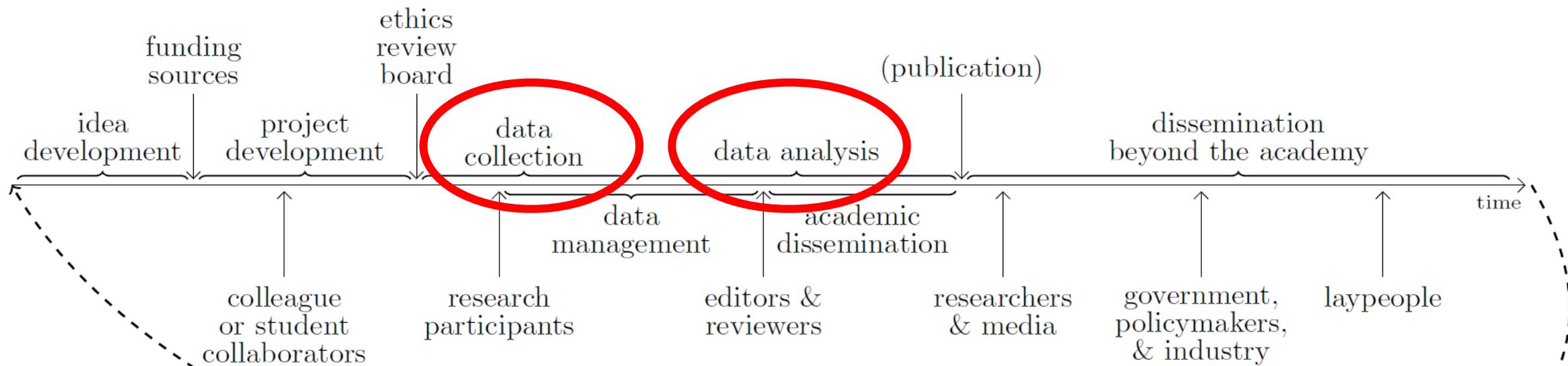
*soft science v. hard science*

1. How many teeth do banana slugs have?

27,000



# Life Cycle of Research Project



# Ethics is often not discussed in economics

But it is essential to:

- ...train new researchers in ethics
- ...discuss the details and subtleties of misconduct
- ...address how economists make day-to-day ethical decisions
- ...ensure that our work is replicable and reproduceable

# Replication Crisis

A 2016 *Nature* poll of 1,500 scientists reported that 70% of respondents had failed to reproduce at least one other scientist's experiment.

- 50% had failed to reproduce one of their own experiments.
- Less than 20% had ever been contacted by another researcher unable to reproduce their work.
- A minority had ever attempted to publish a replication, and of those 24% had been able to publish a successful replication, while 13% had published a failed replication.

In 2009, 2% of scientists admitted to falsifying studies at least once and 14% admitted to personally knowing someone who did.

# Replication Crisis in Economics

A 2016 study in the journal *Science* found that one-third of 18 experimental studies from two top economics journals (*American Economic Review* and the *Quarterly Journal of Economics*) failed to successfully replicate.

- With the original researchers' assistance, that percentage increased to about half, suggesting reporting practices and requirements are seriously deficient.

A 2017 study in the *Economic Journal* suggested that "the majority of the average effects in the empirical economics literature are exaggerated by a factor of at least 2 and at least one-third are exaggerated by a factor of 4 or more".

2. How many islands are in the Philippines?

7,461



# *Unethical Data Collection*

- Tuskegee Syphilis Experiment
- Henrietta Lacks
- Sanford Prison Experiment
- Havasupai Tribe

And the “solution”:

- Institutional Review Boards



# Tuskegee Syphilis Experiment

- Conducted between 1932 and 1972 by the U.S. Public Health Service
- Purpose was to study the natural history of untreated syphilis
- African-American men in the study were told they were receiving free health care
- *But their syphilis was left untreated*



# Henrietta Lacks



- August 1, 1920 – October 4, 1951
- African-American woman treated at Johns Hopkins Hospital for cervical cancer
- Hospital cultured cells collected during a biopsy of a tumor
- Researchers immortalized these cells, now called HeLa and used for medical research and for commercial purposes
- Lacks **never provided her consent**, her family receives no money from the commercial use of these cells

# Stanford Prison Experiment

- Social psychology experiment conducted with college students from August 14–20, 1971
- Attempted to investigate the psychological effects of perceived power
- Students randomly assigned to “guards” or “prisoners” in a mock prison
- Participants played their “roles” too well
- “Guards” ended up physically and psychologically abusing “prisoners”



# Havasupai Tribe

- In 1989 tribe approached John Martin and Therese Markow at ASU to study genetic links to diabetes
- Researchers wanted to study schizophrenia in addition to what the tribe requested
- Informed consent doc asked to “study the causes of behavioral/medical disorders”
- Researchers found no genetic link to diabetes
- But published research on inbreeding, alcoholism, and origin of tribe in Asia
- Tribe sued Arizona Board of Regents



# Institutional Review Boards (Human Research Ethics Committees)

- IRB: administrative body created to protect the rights and welfare of human research participants.
  - Belmont Report (1979) set requirements for research with human subjects
  - Define processes and procedures required to conduct research.
- Josephson and Smale (2021):
  - 1. Discrepancy between requirements and practice
  - 2. Use primarily within ‘western’ universities

## Human Subjects Protection Program

### Welcome to the University of Arizona Human Subjects Protection Program

The Human Subjects Protection Program (HSPP), as the administrative and regulatory support program to the Institutional Review Boards (IRBs), works in collaboration with the research community to maintain an ethical and compliant research program. The IRBs are the independent review committee charged with the protection of human research subjects. An IRB must review all research and related activities involving human subjects conducted at the University of Arizona or by in which the University is a responsible participant. The University of Arizona HSPP has been accredited by the Association for Accreditation of Human Research Protection Programs (AAHRPP) since 2005, strong evidence of our commitment to the protection of human research subjects.



#### REPORT MISCONDUCT

University Ethics and Compliance Hotline:

866-364-1908

#### HSPP CONTACTS

Department email:  
[VPR-IRB@email.arizona.edu](mailto:VPR-IRB@email.arizona.edu)

\*Subscribe to the [HSPP listserv](#)

Mariette Marsh✉, Director  
(520) 626-7575

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Director  
(520) 626-8630

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(520) 626-0433

# Principles and Practices

Principle	Practice
Respect for subjects	Informed consent Privacy & confidentiality
Beneficence	Risk-benefit assessment
Justice	Recruitment & selection

# Informed Consent



- Researchers explain purpose of the study and any risks and benefits associated with participation in the study
- Informed consent is obtained before research activity takes place
  - Voluntary
  - Informed of risks
  - Privacy maintained

3. What is the world's smallest mammal?

BUMBLEE BAT



# *Unethical Data Management and Analysis*

- Michael LaCour
- Dan Ariely
- Francesca Gino
- Brian Wansink

And the “solution”:

- Pre-analysis plans and replication



*“If you don't reveal some insights soon, I'm going  
to be forced to slice, dice, and drill!”*

# Michael LaCour

- Falsified data: "When Contact Changes Minds: An Experiment on Transmission of Support for Gay Equality."
  - *Science*, Media: NPR, NY Times...
- Falsified grants: \$793,000
- Falsified analysis



*Last month, the community was shaken when a major study on gay marriage in Science was retracted following questions on its funding, data, and methodology. The senior author, Donald Green, made it clear he was not privy to many details of the paper — which raised some questions for C. K. Gunsalus, director of the National Center for Professional and Research Ethics, and Drummond Rennie, a former deputy editor at JAMA. We are pleased to present their guest post, about how co-authors can carry out their responsibilities to each other and the community.*

Just about everyone understands that even careful and meticulous people can be taken in by a smart, committed liar. What's harder to understand is when a professional is fooled by lies that would have been prevented or caught by adhering to community norms and honoring one's role and



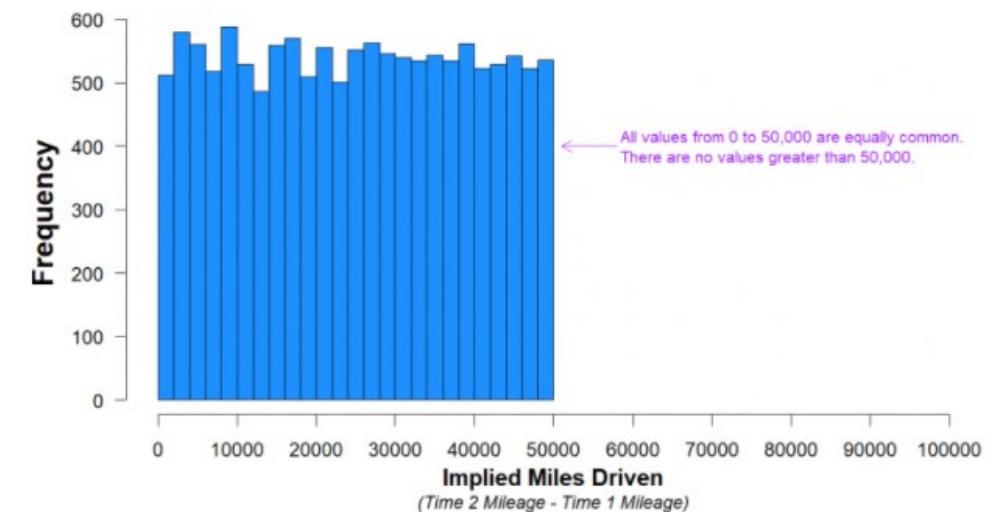
C. K. Gunsalus

# Dan Ariely ( ??? )

- August 2021 (and ongoing).
- One publication: three studies. This is about Study 3.
- 13,500 drivers were randomly sent one of two policy review forms to sign:
  - “I promise that the information I am providing is true” appeared at the *bottom* of the document and the other where the statement appear at the *top*.
- Falsified data.
- Falsified analysis ?



<https://datacolada.org/98>



# Francesca Gino (???)

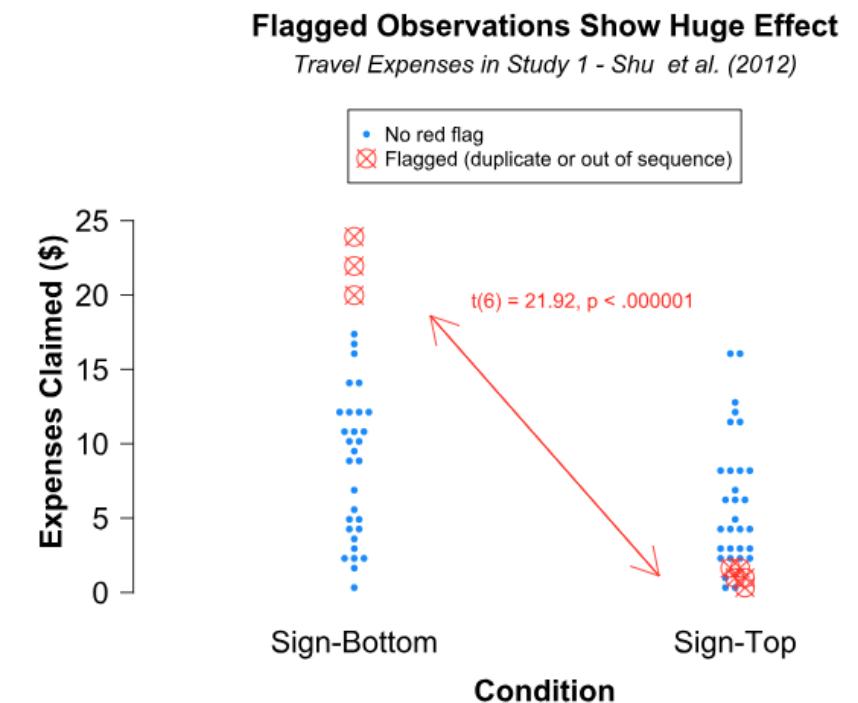
- Recent, recent: June 2023 (and ongoing).
- Collaborator on Ariley paper, with Study 1 & 2.



**TWO different people independently faked data for two different studies in a paper about dishonesty.**

- Falsified data.
- Falsified analysis?

<https://datacolada.org/109> (and 110, 111, 112)



# Brian Wansink

“Scrutiny of Wansink's work began after a 2016 blog post in which he recounted giving a data set to a graduate student and telling her there's "got to be something here we can salvage." That caught the attention of Dutch graduate student Tim van der Zee and others, who subsequently began reviewing Wansink's work and finding errors.”

-NY Times 9-20-2018

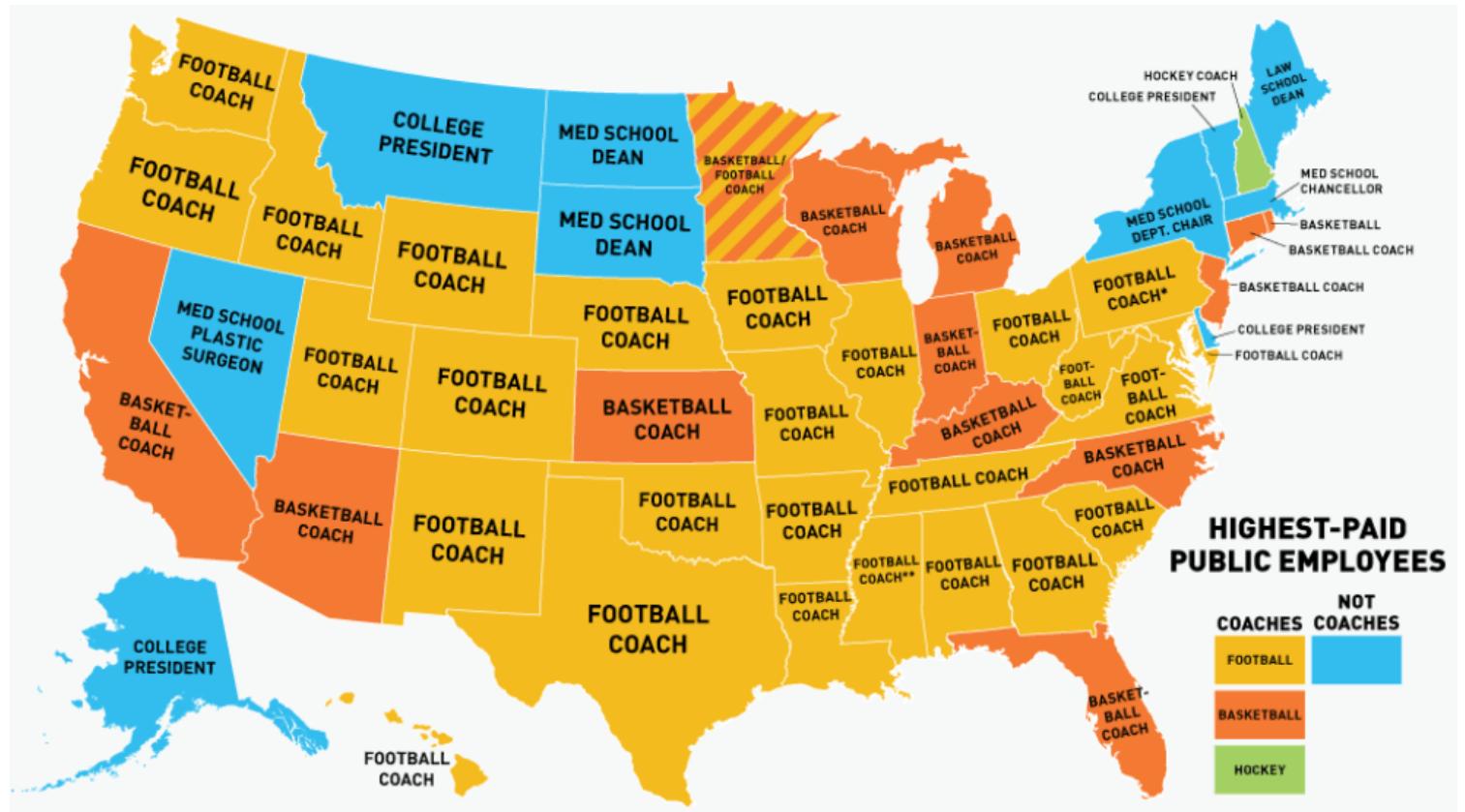


## Blog post: “The Grad Student Who Never Said ‘No’”

- “I told her to work hard [and] squeeze some blood out of this rock.”
- “She analyzed the data over and over until she began discovering solutions that held up.”

4. What is the only letter that doesn't appear in any U.S. state name?

Q



# Popularity and Publication ≠ Immunity

- Now that the dust has (mostly) settled...
  - 18 of his articles retracted with many more “corrected” (one more than once)
  - Co-author Collin Payne left New Mexico State University in Jan 2018 with email records showing “p-hacking on steroids”
  - Cornell issues findings: “Professor Wansink committed academic misconduct in his research and scholarship, including misreporting of research data, problematic statistical techniques, failure to properly document and preserve research results, and inappropriate authorship.”
  - Wansink resigns
- The Great Recession was a watershed moment of reflection in macro and finance
- Wansink’s actions and the wider ‘replication crisis’ offers a similar opportunity for professional reflection and introspection in applied microeconomics

# Data Manipulation: *p*-Hacking or HARKing

Manipulate the data or specification so that the **result you want** becomes significant.

1. *p-Hacking / fishing / data dredging / data mining / researcher degrees of freedom* – variable or sub-sample construction, specifications.
  - e.g., “*Do not despair. It looks like stickers on fruit may work (with a bit more wizardry).*”
2. *Hypothesizing After Results are Known (HARKing)* – running results to see what is significant, without a hypothesis as your guide.
  - Not guided by theory or conceptual model.

# Falsification and Fabrication

Falsification is manipulating research data with the intention of giving a false impression.

- This includes manipulating images, removing outliers or “inconvenient” results, changing, adding or omitting data points, etc.

Similar to fabrication, which includes the wholesale making up of data.

There is a general perception that falsification and fabrication are “worse”.

- But falsification, *p*-Hacking, HARKing, and other methods of data manipulation all serve to undermine the scientific record.

# Perspectives on Research Misconduct Motives

Gary Becker's consequentialist view: you should p-hack if:

$$E(\text{benefit}) > E(\text{cost}) = \Pr(\text{caught}) * \text{penalty}$$

Diederik Stapel:

- “*Nobody ever checked my work. They trusted me...I did everything myself and next to me was a big jar of cookies...All I had to do was take it.*”

Dan Ariely's “fudge factor” theory of honesty:

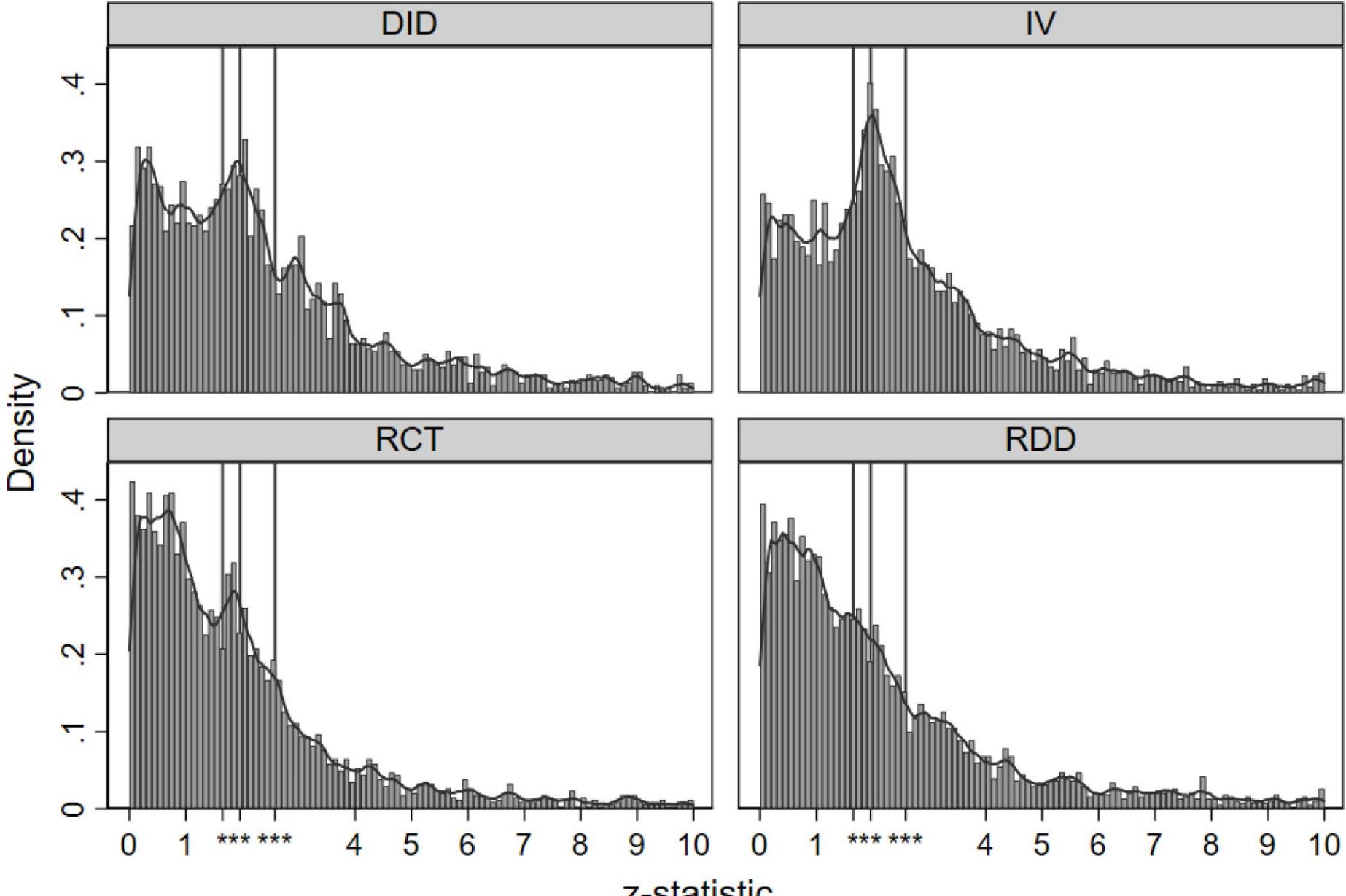
- Many (most?) have a strong preference for cheating in small ways, so they can still consider themselves basically honest.
- THIS IS THE GUY FROM A FEW SLIDES AGO !

# Perspectives on Research Misconduct Motives

Andrew Gelman – a moralistic framing of these issues is unhelpful and misses the fact that most researchers live in a “statistical fantasy world” in which  $p < 0.05$  is the norm:

- *“It’s fine to encourage good behavior and slam bad behavior—but let’s remember that lots of bad work is being done by good people.”*
- *“The problem is a fundamental lack of understanding. Yes, cheating occurs, but the cheating arises out of statistical confusion... The big problem is not overt ‘manipulation’ but researchers fooling themselves.”*

Brodeur et al. (2016)



Graphs by Method

5. What odd pet did Teddy Roosevelt have?

HYENA

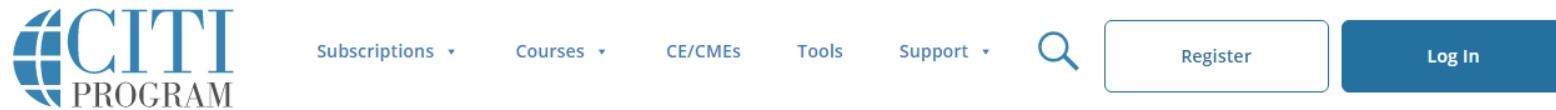


# How Can We Change Incentives?

- 1) Pre-commitments to “tie hands”
- 2) Transparency and openness

**More on this with Dr. Michler next week!**

# Due: 15 Setpember



## Research Ethics and Compliance Training

A grid of four cards representing training modules. From left to right: 1. "Laboratory Chemical Safety" (NEW) - Describes fundamental safety practices for working with hazardous chemicals. Includes a hazard symbol graphic. 2. "Webinars" (NEW) - Offers topics like GDPR, FERPA, and the revised Common Rule. Includes a microphone and headphones icon. 3. "Protocol Registration and Results Summary Disclosure in ClinicalTrials.gov" (NEW) - Provides a video-enhanced practical guide to protocol registration and reporting. Includes a tablet icon. 4. "Biomedical PI" (NEW) - Reviews the role of the biomedical investigator in clinical investigation. Includes a test tube icon. Each card has a "View Course" button at the bottom. Navigation arrows are present on the left and right sides of the grid.

- Complete CITI training: “Social and Behavioral Responsible Conduct of Research”
- Send certificate to: aljosephson@arizona.edu

# A FALSEHOOD !

- Students who missed class today are responsible for listening to this lecture to know this content!
- I've included these five facts as a check for knowing if folks have listened.
- IF SOMEONE ASKS YOU WHAT THE ASSIGNMENT IS FOR THOSE WHO MISSED CLASS, this means they haven't listened to the lecture!
  - Tell them to listen to the lecture.
  - If they don't seem to want to do that, tell them that they need to write a 5-page paper supporting and condemning the argument for the abolition of the IRB.
    - NO ONE NEEDS TO DO THIS.
    - BUT EVERYONE NEEDS TO LISTEN.