

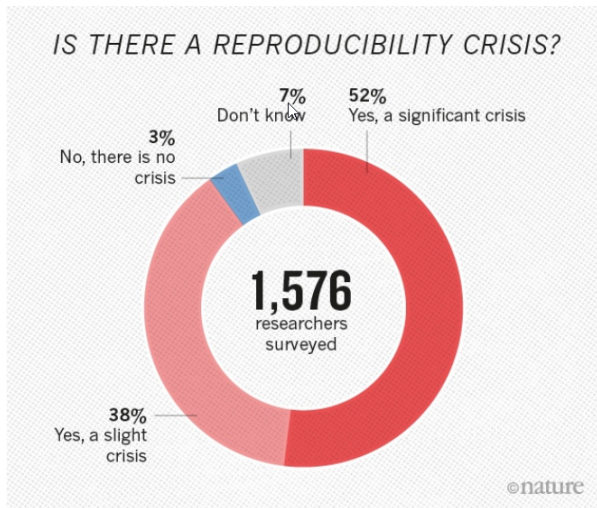
# Statistics and R Computing Workshop Using IBIS Data

Kevin Donovan

UNC-Chapel Hill and IBIS Network

10/22/2020

## Reproducibility in the Computing Age



Evidence shows low reproducibility of scientific research despite

- 1 Extensive professional specialization
- 2 Well-developed methodology for study design and data analysis
- 3 Explosion in open source statistical software and computing tools
- 4 Software supported by extensive documentation

**How can we turn the tide on the reproducibility issue?**

## **My part:**

Principled and detailed statistical consulting and education

## **Goals with IBIS:**

### **NOT** to:

- 1 Teach scientists to be self-reliant statistically
- 2 Use statistical jargon scientists and expect them to decipher

### **YES** to:

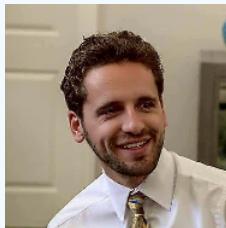
- 1 Teach scientists about fundamental statistical methods and concepts
- 2 Teach scientists good programming practices for data management and visualization
- 3 Focus less on jargon and more on concepts of statistical analysis

# Welcome

## Motivation for class:

Acting on goals for **whole IBIS network**

## About Me



PhD student in Biostatistics

UNC at Chapel Hill

Email: [kmdono02@ad.unc.edu](mailto:kmdono02@ad.unc.edu)

Basketball and Green Bay Packers enthusiast

## Structure for class:

- Lecture and Q+A sessions - 1 hour, twice a month
- Office Hours - 2 hours, twice a month, open
- No slides filled with code, **NO** droning on about coding
- Focus on **live and conceptual programming**
- **All lectures and code publicly available**



"But before we move on, allow me to belabor the point even further..."

## Goals for class:

- ① Primary: Promote the understanding of statistical concepts and mindset
- ② Secondary: Teach tools in R software for
  - ① data management
  - ② data visualization/tabulation
  - ③ exploratory analysis
  - ④ **reproducibility**
- ③ Make statistics and coding less intimidating and more exciting!