# Pedagogy in a large-enrollment simulation-based introductory biostatistics course

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# Description of STAT 250 (Matt)

- Large enrollment (about 210-225 students)
- Mostly life science majors
- 2015: Kari Morgan revamped course and converted to SBI approach

# Pedagogical considerations: General (Matt)

- Question of the day (GAISE #1, 3)
  - usually life science
  - often real data from real studies
  - sometimes PSU research
  - translate scientific questions into statistical investigation (EDA, estimation, testing, etc)
- Weekly labs
  - real data that cite real studies (GAISE #1, 3)
  - low-stakes lab quizzes (GAISE #6)
- Assessment strategy
  - Short answer exam questions (GAISE #2, 6)
  - Islands project (GAISE #6)

# Pedagogical considerations: SBI (Matt)

- building intution (GAISE #2)
- tangible machinery
- revisit key concepts through SBI & non-SBI (GAISE #2)

# Pedagogical considerations: Large Enrollment (Matt)

- ▶ Smart phones to the rescue (?!)
- ▶ Google Sheet data collection in lecture (GAISE #3, 4, 5)
- ▶ Clickers (GAISE #4, 6)
- ▶ www.polleverywhere.com

# Pedagogical considerations: SBI in Large Enrollment (Matt)

- M&M simulation (GAISE #4)
- StatKey in lecture (GAISE #2, 4, 5)

Compare/Contrast with other approaches (i.e. Kari as informal discussant)

# References

- GAISE (2016)
- Rossman (2008)
- Bulmer