Breakout 3I
Encouraging Underrepresented Students Through Engagement: Course Policies, Daily Questions, and Biography Assignments

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Rough Outline

Introductions & The Problem

Idea 1

Idea 2

Idea 3

Open Q&A

The Problem

- How can statistics instructors encourage underrepresented students to pursue further studies in statistics?
  - Three major pioneers in our field promoted eugenics!
- Even generations later, the statistics discipline can appear hostile to those who are not white and male.
  - Do birds of a feather *always* fly together?
- This breakout session provides three tangible ways for undergraduate (and secondary) statistics instructors to overcome this apparent barrier.

Intended Audience

- Classroom instructors

- No institutional recommendations here

Recommended Attendance @ virtual JSM 2021

Thursday August 12th:

- 10:00 AM - 11:50 AM Session 220243

  R.A. Fisher and Eugenics

- 12:00 PM - 1:50 PM Session 220273

  Making Our Discipline More Diverse and Inclusive: A Fresh Look at ASA's Efforts to Be More Diverse and Inclusive

Selected Sources:

Clayton, A. (2020). How eugenics shaped statistics. *Nautilus*, *092*. https://nautil.us/issue/92/frontiers/how-eugenics-shaped-statistics

Hawks, M. A. (2017). The daily question. In ACMS 21st Biennial Conference Proceedings (p. 77-89). Association of Christians in the Mathematical Sciences (ACMS). https://acmsonline.org/wp-content/uploads/2018/05/ACMS-2017-Proceedings.pdf

Holleman, H. (2015) The Name Game Professor. Faculty Commons https://www.facultycommons.com/the-name-game-professor/

Kinzie, J., Gonyea, R., Shoup, R., & Kuh, G. D. (2008). Promoting persistence and success of underrepresented students: Lessons for teaching and learning. *New Directions for Teaching and Learning, 2008*(115), 21-38. https://www.csuci.edu/studentsuccesspartnership/kinzie-et-al-underrepresented-students.pdf

Langkjær‐Bain, R. (2019). The troubling legacy of Francis Galton. *Significance*, *16*(3), 16-21. https://rss.onlinelibrary.wiley.com/doi/full/10.1111/j.1740-9713.2019.01275.x

Linden ML, Wright M (2017) Diversity and inclusion - Put it in the syllabus! Tomorrow's Professor. https://tomprof.stanford.edu/posting/1625

Louçã, F. (2009). Emancipation through interaction–how eugenics and statistics converged and diverged. *Journal of the History of Biology*, *42*(4), 649-684. https://www.jstor.org/stable/pdf/25650625.pdf

Rendon, L. I. (1994). Validating culturally diverse students: Toward a new model of learning and student development. *Innovative higher education, 19*(1), 33-51. https://files.eric.ed.gov/fulltext/ED371672.pdf

Speaker Introduction

Who is here?

In the chat:

a. Current institution
b. # of quinquennials teaching experience (years ÷ 5, ignore remainder)

For me:

a. US Naval Academy
b. 1

My “why” for DEI

I fundamentally believe in the inherent worth of each individual as being made in the image of God. (Imago Dei)

Systematic classification and devaluation of people is immoral.

Our statistics discipline in particular must positively affirm the value of individuals!

More on the problem

- *Eugenics*: improving the genetic inheritance of human beings
- Eugenics was the reason for statistical development for three generations
  - Francis Galton (1822-1911) labelled Africans “palavering savages”
  - Karl Pearson (1857-1936) advocated genocide (particularly Jews) and race wars
  - Ronald Aylmer Fisher (1890-1962) advocated sterilization for eugenic purposes
- Statistics as a discipline later abandoned eugenics.

Louçã (2009) and Clayton (2020)

Idea #1:

Formulate a course policy that - up front - explicitly recognizes past exclusions.

Such a statement addresses concerns that a student may not “belong” in the field.

Exercise #1

Go to the USCOTS 2021 Shared Notes (placing url in chat)

Look at Tuesday's panel discussion: "Expanding Horizons and Fostering Diversity" - around page 22.

Basic: Explore the links at the first bullet point. Add your suggestions!

Intermediate: Customize a statement for your Fall course(s)!

Challenge: Place the statement at the top of your syllabus!

Idea #2

Institute a practice that nurtures respect for every individual - the daily question.

Asking a daily question allows students to open up to their peers and provides opportunities for student validation.

Exercise #2

Question: What is one thing that makes you happy today?

Basic: Explore the list of questions here (placing url in chat, scroll to 3rd section)

Intermediate:

- Decide how you will implement this practice in your Fall course(s)!
- Choose the questions you will ask in your first week of class!

Challenge: Stick to this practice throughout the term!

Idea #3

Incorporate a biographical assignment that exposes students to contributions from underrepresented individuals.

Such an assignment helps students to recognize that inherent, immutable characteristics are not predictors of a successful future in statistics.

Exercise #3

Guidelines are here (placing url in chat)

Basic: Review the guidelines.

Intermediate: Which person(s) would you include or exclude, and why?

Challenge: Copy the file and customize the guidelines and people for your Fall course(s)!

Reprise: my “why” for DEI

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Systematic classification and devaluation of people is immoral.

Our statistics discipline in particular must positively affirm the value of individuals!

Course Policy, Daily Question, Biographies -- the tools I use to implement my why!

Open Q&A