The University of Pittsburgh is celebrating 2021 - 2022 as the Year of Data and Society. As a part of this initiative they are hosting a number of events including webinars which are available to the public. Mimi Ọnụọha, who is a Nigerian-American artist presented a webinar entitled - The Hair in the Cable (recording available). At the end of October, the Justice, Equity, Diversity, and Inclusion (JEDI) Outreach Group hosted its first webinar - Incorporating Diversity Equity and Inclusion into Biostatistics Courses. Although the focus of these two webinars was not on teaching Introductory Statistics, they made me think about the opportunities to encourage important discussions.

The Social Justice & Big Data Repository maintained by Grand Valley State University is a useful starting point. The repository includes links to articles, visualizations and datasets to explore social justice issues.

....continued on page 2
Shannon Ellis who is an assistant teaching professor in cognitive science at the University of California San Diego wrote an informative blog - Incorporating Ethics into a Data Science course. In the blog she shares slides, favorite readings, and the course project. She also describes the course assignments including an assignment on data privacy which had students wrangle a dataset.

In the JEDI Outreach Group webinar mentioned in the opening paragraph, one of the suggestions for engaging students was to require short discussion posts. In this article, Nathan Yau provides some pointers on spotting “lies” in visualizations. The recently published Do No Harm Guide: Applying Equity Awareness in Data Visualizations. The guide was written by the Urban Institute’s Jon Schwabish and Alice Feng. In the introduction, the authors state, “In this guide, we explore ways to help data scientists, researchers, and data communicators take a more purposeful diversity, equity, and inclusion (DEI) approach to their work.” I think students could be added to the list of intended audiences. Although the weekly ASA - NY Times Learning Network series - What’s Going on in this Graph? is focused on middle and high school students, the visualizations are interesting and the activities could easily be adapted for older students.

I’ll look forward to reading your ideas on incorporating justice, equity, diversity, and inclusion into intro stats. Please share your activities, assignments, and projects on the MAA Connect StatPREP community.
When comparing two groups, how do I generate a simple random sample vs. a stratified sample?

If the stratify option is unchecked then a simple random is generated with subjects assigned to one of two groups based on the value of the explanatory variable.

If the stratify option is checked then a stratified sample is generated with an equal number of subjects assigned to each group based on the value of the explanatory variable.

If I stratify the sample, why did the sample size change?

If the stratify option is checked then the sample size selected (e.g., n=50) will be selected for each group. The sample size display will then read n=100 to reflect the total sample size.

When I use the t-interval option, why didn’t it behave as you described?

I’m still researching/learning how the t-interval option works. For now, it was recommended to turn off the t-interval option and look for an overlap between the two confidence intervals.

During a recent StatPREP webinar, we explored confidence intervals using the Confidence and T Little App. At the beginning of the session, participants were introduced to the Little App tabs (Data, Graph, Compare, and Stats), the available data sources, and the control options. We then discussed how to use the Confidence and T Little App to construct and visualize a confidence interval using one response variable and then to construct and compare two confidence intervals using one response variable and one categorical explanatory variable with two levels.

After the webinar concluded, participants reached out with the following questions:

• When comparing two groups, how do I generate a simple random sample vs. a stratified sample?
  - If the stratify option is unchecked then a simple random is generated with subjects assigned to one of two groups based on the value of the explanatory variable.
  - If the stratify option is checked then a stratified sample is generated with an equal number of subjects assigned to each group based on the value of the explanatory variable.

• If I stratify the sample, why did the sample size change?
  - If the stratify option is checked then the sample size selected (e.g., n=50) will be selected for each group. The sample size display will then read n=100 to reflect the total sample size.

• When I use the t-interval option, why didn’t it behave as you described?
  - I’m still researching/learning how the t-interval option works. For now, it was recommended to turn off the t-interval option and look for an overlap between the two confidence intervals.

Many of the learning objectives that we cover in the introductory statistics course for confidence intervals were discussed during this webinar. To learn more about the Confidence and T Little App, check out the webinar recording.
There are multiple activities written for the Little Apps that can be used in a classroom. But when should each one be utilized with students? To help answer this question, on the StatPREP’s website, under the For Instructor tab, there is the Textbook companions link.

Textbook Companions

Textbook companions help instructors link their textbook to the StatPREP materials. Currently, we have companion materials for several textbooks. Follow the links below to get to the curriculum companion for each book.

- **OpenIntro Statistics** (e/4) by David Diez, Mine Çetinkaya-Rundel, and Christopher Barr.
  There are some extended comments here.

- **Statistics with Technology** (e/3) by Kathryn Kozak

- **Elementary Statistics** (e/13) by Mario F. Triola

- **Statistics: Informed Decisions Using Data** (e/6) by Michael Sullivan III

This site contains links to the table of contents of four different books, OpenIntro Statistics by Diez, et al; Statistics Using Technology by Kathryn Kozak, Elementary Statistics by Mario Triola, and Statistics: Informed Decisions Using Data by Michael Sullivan III. Each link takes you to a listing of the textbook’s table of contents, which also lists a different Little App activity that can be used to help explain the topics of that chapter. Here are portions of those table of contents:
Also on the companion site is a listing of different textbooks that can be used in an introduction to statistics course. Though we don’t endorse any book, this gives a listing of some of the options that are available. Of course, it is not an exhaustive list.

As one can see, not every chapter has Little App activities. However, if you have activities that you do in your classes that you would like to share, please let the statPREP team know. These activities do not need to be tied to the Little Apps since not all of the topics fit in with the Little Apps. Sharing your activities can help to improve student learning.

Lastly, if you use a textbook other than one of the ones listed on the site, and would like to have a curriculum guide for that textbook, please let Kathryn Kozak know, (kathryn.kozak@coconino.edu). As long as the table of contents is accessible, a companion site can be created for that textbook.

The OpenIntro Statistics book also has extended comments, in which an annotated table of contents offers suggestions for how to cover material in the textbook.
Many instructors have material that they’ve made for online instruction and are wondering what to do with all the content they have. I encourage all faculty to think about flipping their in-person statistics classroom as it truly changed my life as an educator. Making videos and having students fill in notes as homework and then coming to class and doing activities and homework assignments was more engaging, I believe, for both me and my students. We had time for activities we never had time for before, and students were able to work together on the material.

WHAT DOES IT MEAN TO FLIP A CLASSROOM?
The flipped classroom is a pedagogical model in which the typical lecture and homework elements of a course are reversed. Short video lectures are viewed by students at home before the class session, while in-class time is devoted to exercises, projects, or discussions. (Educause, 2012)

In a flipped classroom, the “lecture” is done prior to class. That way, when the students enter the classroom they have come in with some knowledge of the material. In class, we can then reinforce, practice, and do activities related to the material rather than a traditional class where students learn in class then do homework out of class.
WHAT DO I DO TO GET STARTED?
During the pandemic, you may have already made lots of content or found content online. If not, ask yourself if you want to make your content or find already-made content.

Making Content:
- First, create a document (doc, ppt) for students to fill in as they watch.
- Then you need to make a video to add the extra content!
- Put minimal work in the handout, make them write the essentials! Just like you would in class

Personally, when I first started recording videos I used Screencast-O-Matic but I’ve used my Zoom recording recently as it does closed-captioning automatically.

WHAT DID MY STUDENTS SAY PRE-PANDEMIC?
The short answer is…. They love it!!! I usually had about 1 or 2 out of every 100 students say they don’t like it. And usually, they’ve changed their mind by the end of the semester!

But don’t take MY word for it, read a few quotes from them!
In-Person Workshop in Fort Myers, Florida, will be held on May 20-21, 2022. Workshops are open to anyone teaching post-secondary introductory statistics during the 2022-2023 academic year. The workshop is free, and all materials and meals during the workshop are provided. There is an up-to $100 stipend available to help cover travel expenses for workshop participants.

StatPREP will resume monthly webinars beginning in January 2022. You look forward to topics such as: Little App activities for your classroom, RStudio training, and more.

Can't wait? Don't worry - all of our fall and previous webinars are posted on statprep.org.
LEADERSHIP TEAM
Mike Brilleslyper, Florida Polytechnic University
Jenna Carpenter, Campbell University
Danny Kaplan, Macalester College
Kathryn Kozak, Coconino Community College
Donna LaLonde, ASA
Ambika Silva, College of the Canyons
Deirdre Longacher Smeltzer, MAA

HUB LEADERS
Joe Roith, St. Olaf College, Northfield, MN (2017-18)
Ambika Silva, College of the Canyons, Santa Clarita, CA (2017-18)
Helen Burn, Highline College, Seattle, WA (2018-19)
Hwayeon Ryu, Elon University, Elon, NC (2018-19)
Carol Howald, Howard Community College, Columbia, MD (2019-2020)
Thomas Kinzeler, Tarrant County College, Fort Worth, TX (2019-2010)
Rona Axelrod, Florida SW State College, Fort Myers, FL (2020-2021)

Be sure to check out our upcoming fall webinars and conference plans on page 4.