



August 30, 2018

## News You Can Use

### WHAT'S COMING UP?

We have a number of webinars planned to help you with using StatPREP materials or to better understand some of the technological tools available to help you run a more data-centric course. Several previous webinars are archived on our website and can be [viewed here](#). We also have some live webinars coming up. Here is information about the first one:

*We are pleased to announce the first StatPREP webinar of the 2018-19 academic year.*

**Title:** Using StatPREP Little Apps to Teach Descriptive Statistics

**Date:** Sep 7, 2018

**Time:** Noon PDT, 1 pm MDT, 2 pm CDT, 3 pm EDT

**Duration:** 1 hour

**How to join:** Please click the link below to join the webinar:

- <https://zoom.us/j/532717173?pwd=RzN6Ni1JcExHQ2lJcTczZVBHNGxHdz09>  
Password: statprep18
- iPhone one-tap US: +14086380968,,532717173# or +16468769923,,532717173#
- Telephone: US: +1 408 638 0968 or +1 646 876 9923 or +1 669 900 6833  
Webinar ID: 532 717 173

**Summary:** This webinar will focus on the nuts and bolts of designing a class lesson around using the little apps for teaching descriptive statistics. The webinar will include:

- Showing 95% confidence interval to introduce the idea of inference
- Choosing an explanatory variable and then discussing difference in means
- Where to find the little apps
- Some comments on sample size
- How to use the little app to demonstrate center and spread
- Types of assessment that could be done
- Picking different response variables  
Showing mean and standard deviation in the graphical output
- Time for webinar participants to ask questions

### WHO'S WHO LEADERSHIP TEAM

Mike Brilleslyper,  
Air Force Academy

Jenna Carpenter,  
Campbell University

Danny Kaplan,  
Macalester College

Kathryn Kozak  
Coconino College

Donna LaLonde,  
ASA

Ambika Silva  
College of the Canyons

Rachel Levy  
MAA

### HUB LEADERS

Joe Roith, St. Catherine's  
University, Minneapolis,  
MN (2017-18)

Ambika Silva, College of  
the Canyons, Santa  
Clarita, CA (2017-18)

Helen Burn, Highline  
College, Seattle, WA  
(2018-19)

Hwayeon Ryu, University  
of Hartford, Hartford,  
CT (2018-19)

Carol Howald, Howard  
Community College, Co-  
lumbia, MD (2019-2020)

Thomas Kinzler, Tar-  
rant County College, Fort  
Worth, TX (2019-2010)

Rona Axelrod, Florida  
SW State College, Fort  
Myers, FL (2020-2021)

Brooke Orosz, Essex  
Community College,  
Newark, NJ (2020-2021)



## WORDS FROM DANNY

One of the challenges we face in our professional lives is adapting to change. In the marketplace of data and statistics, change has been so rapid that even the concept of “career” is becoming obsolete. People not long out of graduate school have to face new technologies, new mathematical paradigms, new sources and uses of data: machine learning, Bayesian methods, data warehousing, the causal calculus, et cetera. It’s understandably tempting to retreat from the bustling marketplace to the Ivory Tower, to turn to the unchanging certainties of the mathematics in which we were trained and are expert. Yet there is not so much room in the tower. Our stu-

dents need to be prepared for the marketplace. It’s heartening to see so many instructors taking on the challenge of the contemporary world of data, changing their focus from century-old statistical techniques developed for bench-top lab experiments in an era pre-dating computers, to the methods of modern statistics and data science that have co-evolved with science and technology and the changing demands of society. We at StatPREP are lucky to be guides on the path to teaching in a way that brings students into this exciting new world.

*“Our students need to be prepared for the marketplace.”*

### WHERE DO I FIND IT?

If you are looking for information about how to do something, there is a lot of information on <http://statprep.org>. In addition, many people are interested in learning about various aspects of teaching with real data. In future additions of this newsletter, we will list some valuable resources that you can consult to learn even more about teaching with data and the technology needed to do it.

### WHO WANTS TO CHAT?

The best way to work on curriculum change and on incorporating new ideas and tools is to talk to other people that are doing the same thing. A significant goal of StatPREP is to establish online communities of statistics instructors who are actively engaged in sharing ideas, successes, and failures. We strongly encourage StatPREP participants to reach out to the other members of their regional hubs by email. **Simply use a reply all to any email sent from your hub leader. Feel free to include any member of the StatPREP leadership team on the email you send.**

## A REVIEW OF *THE BOOK OF WHY: THE NEW SCIENCE OF CAUSE AND EFFECT*

BY JUDEA PEARL AND DANA MACKENZIE

You may be familiar with Dana Mackenzie through the American Mathematical Society series of books, “[What’s happening in the mathematical sciences?](#)” In *The Book of Why*, Mackenzie teams up with Turing Award-winning statistician and computer scientist Judea Pearl to tell the story of the “causal revolution.” Like many political revolutions, the causal revolution has been driven by a genuine need that the ruling statistical elite long failed to acknowledge: using observational evidence to inform decisions and interventions in the world. This is, of course, all about knowing what causes what. We know a lot about this from everyday life, science, and common sense. The correlation between the rooster’s crow the rising sun is, in fact, causation, and it’s not a matter of the crow causing the sun to rise.

The revolution has been brewing for 50 years, a good starting marker being the US Surgeon General’s 1964 report on the health effects of smoking. That story is well told in *The Book of Why*. While we’re all familiar with the immense public health impact of the reduction in smoking that stemmed from the 1964 report, it’s less well known that Sir Ronald Fisher was a staunch and statistically principled defender of smoking. Progress was made possible only by a rebel movement led by Sir Austin Bradford Hill (who succeeded Fisher as president of the Royal Statistical Society) followed by a generation of epidemiologists, statisticians such as Don Rubin, and Pearl himself.

Pearl’s contributions in particular have translated an abstract theoretical framework of causal inference into concrete criteria for examining directed graphs and that is readily accessible to statistics students. Science journalist Mackenzie has helped shape *The Book of Why* into a story that’s accessible to a general audience -- the book has even been [reviewed in the New York Times](#) -- and provides an outstanding example of how mathematical abstraction can support critical thinking.