What's New with CAUSEweb and MERLOT?

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USCOTS 2015

At the end of May, the United States Conference on Teaching Statistics 2015 (USCOTS '15) took place at a new location, the State College Pennsylvania at the Penn Stater Conference Center Hotel. This year's theme was Making Connections. For those who could not attend the conference, please be sure to visit www.causeweb.org/uscots to view conference materials and videos of different conference presentations.

The conference started off with a wine and cheese reception hosted by Minitab followed by the opening session that had us immediately re-examine our own teaching. Dick De Veaux from Williams College and George Cobb from Mount Holyoke College began with short presentations about what is <u>wrong</u> with the first introductory statistics course. After their presentations, six discussants (Amy Wagaman, Jeff Witmer, Jessica Utts, Milo Schield, Nathan Tintle and Webster West) continued the debate about this topic; is there indeed something wrong with the course?

Over the next two days, four great plenary speakers discussed topics ranging from data science to productive struggle to professional development. The first plenary talk was given on Friday by Jim Stigler from UCLA. He talked about "Teaching for Understanding" and challenged us to

increase students' understanding by invoking: "productive struggle, explicit connections and deliberate practice." Roger Peng from John Hopkins University talked next about the "Role of MOOCs at the University: A Case Study with the John Hopkins Data Science Specialization." He related the process that had occurred at John Hopkins to create a 9-course sequence of MOOCs (Massively Open Online Course) on data science topics that enrolled 1.5 million people from April to December of 2014.

Saturday started with a plenary talk by Shonda Kuiper from Grinnell College, who presented "Making Statistics Relevant in a Data Rich Society." Shonda challenged us to think about how we could get students to tell stories from data. She showed an example of data obtained from the New York Police Department's (NYPD) "Stop, Question, and Frisk" database and explained how this could be used to give students some experience dealing with messy data and asking interesting questions. One method of doing this would be to create a map of New York City that could be manipulated to show arrest rates within certain areas of New York. The final plenary talk was given by Michael Posner from Villanova University. Michael presented "Statistics Education Research: It Takes a Village," and he shared his successes and failures in using evidence-based methods to improve the teaching of statistics. He also presented useful tips and resources for those starting out with these methods.

New to USCOTS were four (as opposed to three) opportunities to attend a breakout session. There were a total of 23 possible breakout sessions, including such topics as connecting undergraduate programs to your own program and using fun in the classroom in order to help students make connections. Also new, eight of the breakout sessions were repeated, thus giving attendees more opportunity to participate in those sessions.

Half of the 46 "Poster and Beyond" presentations were presented each day so that attendees could view and talk to each of the presenters in depth. "Birds of feather" lunch conversations enhanced the opportunity to make connections with fellow attendees interested in the same topics.

The 2015 USCOTS Lifetime Achievement Award, an award given to an individual, who over an extended period of time, has made a lasting and broad impact on statistics education, was given to two individuals for the first time ever. The awards went to J. Michael Shaughnessy from Portland State University and Ann Watkins from California State University, Northridge. After the award ceremony, attendees were entertained by the A-μ-Sing Competition Song winner: "The P-Value Song" with lyrics written by Michael Greenacre and Gurdeep Stephens, "Our Experiment" with lyrics written by Laura Krajewski, and "On Average" with music and lyrics written by Larry Lesser from the University of Texas at El Paso.

Not to be out done by the opening ceremony and to end on a positive note, a panel (Amy Froelich, Ann Cannon, Chris Malone, Ginger Holmes Rowell, John Gabrosek and John Holcomb) discussed what is right about the introductory statistics curriculum. Ginger, in particular, reminded us that one of the things that is right about the introductory statistics course is that the statistics education community supports each other to grow and to improve statistical understanding for all.

Recent CAUSEweb Webinars

CAUSEweb offers three webinar series: Activity Series, Teaching and Learning Series and Journal of Statistics Education Series. Below is a list of the most recent webinars from each series. The slides of the presentations as well as the recorded webinars are available for viewing at the indicated websites.

Teaching and Learning Webinar Series

These webinars present general topics in statistics education and are usually held on the <u>second</u> Tuesday of the month. Ellen Gundlach from Purdue University has been hosting these webinars since 2012; Camille Fairborn from Utah State University will take over hosting these webinars in the fall of 2015.
- "Updating the Guidelines for Assessment and Instruction in Statistics Education (GAISE)" by Michelle Everson, The Ohio State University and Megan Mocko, University of Florida, https://www.causeweb.org/webinar/teaching/2015-07/.
- "ASA DataFest: Teaching Data Science through Data Hackathons" by Rob Gould, UCLA, https://www.causeweb.org/webinar/teaching/2015-05-19/.
- "Examining Student Conceptions of Covariation: A Focus on the Line of Best Fit" by Stephanie Casey, Eastern Michigan University, https://www.causeweb.org/webinar/teaching/2015-05/.
- "Developing Teachers' Understanding of Statistics" by Tim Jacobbe, University of Florida https://www.causeweb.org/webinar/teaching/2015-04/.

Journal of Statistics Education Series

These webinars present highlights from the most recent issue of the *Journal of Statistics Education* (JSE) and are usually held on the <u>third</u> Tuesday of the month. Beginning in August, 2015, these webinars will be held on the third Wednesday of each month. The webinars are general hosted by the Editor or one of the Associate Editors of JSE.
- "A Pilot Study Teaching Metrology in an Introductory Statistics Course" by Emily Casleton and Ulrike Genschel, Iowa State University, https://www.causeweb.org/webinar/jse/2015-04/.

Activity Webinar Series

These webinars present individual activities with complete do-it-yourself guidance and are usually held on the <u>fourth</u> Tuesday of the month. They are hosted by Leigh Johnson, Capital University. There have not been any recent activity webinars.

If you have any ideas for webinars, please be sure to contact Dennis Pearl at dkp13@psu.edu.

Resource Highlight

For graphically-oriented data analysis, JMP is a good choice. As more universities provide campus-wide licenses (and educational licenses are available otherwise), we thought it would be useful to mention the large number of resources available at the JMP Academic Resources Center, https://community.jmp.com/community/academic/academic-resources-center. There are data-based lab activities, case studies with worksheets, a collection of one-page guides that can be provided to students in classes using JMP, and scripts for a variety of demonstrations such as sampling distributions, inference for regression, ANOVA, and distributional calculators. There is also a *Teaching Room* with course materials for regression, data mining, time series and the 2015 JMP AP Statistics Workshop. Those currently using JMP (or exploring future possibilities) might find it worthwhile to browse the available material and find something relevant for their classes.

Merlot Statistics Portal

The MERLOT Statistics Portal is a joint project with CAUSE and provides access to a variety of statistics education resources. Read and/or contribute at http://statistics.merlot.org/. In particular, we would like to highlight the *Learning Materials* section posted at http://www.merlot.org/merlot/materials.htm?community=3026, which contain several collections of online-based material such as the *Rice Virtual Lab in Statistics*, the *Rossman-Chance Applet Collection,* Shonda Kuiper's *Stat2Labs*, and many others. This is certainly worth at least a quick perusal of available resources!

JOLT News

The *Journal of Online Learning and Teaching* is merging with the *Online Learning Consortium*. The merged journal will be called *Online Learning* and aims to "aims to expand scholarly research in the field of online education." Be sure to visit http://onlinelearningconsortium.org/read/online-learning-journal/ to see the most recent issue.

We thought that two articles would be of special interest to online educators. "*Mechanizing People and Pedagogy: Establishing Social Presence in the Online Classroom*" by Jennifer Cunningham examines the need for establishing a social presence online. Evidence is presented that "a responsive, attentive instructor and the ability to work collaboratively with other students in the online environment" was much more important to students than some features of modern Web 2.0 technology such as Voki avatars.

"*Using Instructor-Generated Video Lectures in Online Mathematics Course Improves Student Learning*" by Jennifer Hegeman compared two sections in an online freshman-level College Algebra course. One section made extensive use of the text-based multimedia tools and listed all instructor generated resources as optional supplemental material. In the other section, the roles were switched as students were required to complete instructor-generated note-taking sheets while watching instructor-generated video lectures, with all text-based resources listed as supplemental material. The author reports that students in the latter section scored significantly better in both online and handwritten assessments.