Section on Statistics and Data Science Education JSM 2022

Sunday, August 7

2:00 PM – 3:50 PM
**Perspectives on Nontraditional Grading in Statistics Courses**
*Topic-Contributed Panel*

Panelists:
- Eric Reyes, Rose-Hulman Institute of Technology
- Adam Loy, Carleton College
- Jillian Downey, Gustavus Adolphus College
- Katherine Kinnaird, Smith College

4:00 PM – 5:50 PM
**Fostering Growth in Data Science and Analytics**
*Contributed Papers*

4:05 PM  Developing a Learning Map for Introductory Statistics
- Jennifer Kaplan, Middle Tennessee State University; Angela Broaddus, Benedictine College; Dionne Maxwell, Walton School District; Heidi Hulsizer, Benedictine College

4:20 PM  Effective Mentoring: A Guideline to Train a New Generation of Statistician
- Suhwon Lee, University of Missouri

4:35 PM  The Importance of Workflow as a Topic in Data Science Education
- Hunter Glanz, California Polytechnic State University

4:50 PM  Growth in Analytics Jobs in the Last One, Two, and Four Years
- Jacqueline Johnson, SAS Institute

5:05 PM  Lessons from Creating a New Analytics Major and a Lynchpin Course During a Pandemic
- Penelope S. Pooler Eisenbies, Syracuse University

5:20 PM  Analytics for the Masses: Teaching Data Science Driving vs. Data Science Engineering
- Thomas Fisher, The University of Miami - Ohio; A. John Bailer, Miami University

5:35 PM  Using Six Sigma to Increase a College Campus's COVID-19 Daily Symptom Monitoring
- Diane Evans, Rose-Hulman Institute of Technology; Megan Korbel, Milwaukee Tool

Monday, August 8

10:30 AM – 12:20 PM
**Improving Data Science Education Infrastructure at Community Colleges, Teaching, and Research Universities**
*Invited Panel*

Panelists:
2:00 PM – 3:50 PM
**Theory and Methods for Building Successful Data Analyses**
*Topic Contributed Papers*

2:05 PM  
**Diagnosing Data Analytic Problems in the Classroom**
- Roger Peng, Johns Hopkins Bloomberg School of Public Health

2:25 PM  
**Veridical Data Science: Highlighting the Role of Judgment Calls in Data Science Practice and Training**
- Rebecca Barter, University of California, Berkeley; Bin Yu, University of California, Berkeley

2:45 PM  
**Design Thinking: Empirical Evidence for Six Principles of Data Analysis**
- Lucy D’Agostino McGowan, Wake Forest University

3:05 PM  
**Optimizing for Impact: Defining Success in Exploratory Data Analysis**
- Caitlin Hudon, OnlineMedEd

3:25 PM  
**Reproducibility: You Can Do Data Analysis Without it, but Should You?**
- Tiffany A Timbers, University of British Columbia

3:45 PM  
Floor Discussion

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**Tuesday, August 9**

10:30 AM – 12:20 PM
**Transforming Higher Education to Achieve Equity**
*Topic Contributed Panel*

Panelists:
- Julia L Sharp, Colorado State University
- Shirley Malcom, AAAS
- Abbe Herzig, TPSE

10:30 AM – 12:20 PM
**Assessment Tools in Statistics and Data Science Education**
*Contributed Papers*

10:35 AM  
**Three Cognitive Science Principles Every Stats Teacher Should Know**
- Ross Metusalem, JMP Statistical Discovery

10:50 AM  
**I Love Data Science! Do My Students? Let’s Measure It!**
- Michael Posner, Villanova University; April Kerby-Helm, Winona State University; Alana Unfried, CSU Monterey Bay; Douglas Whitaker, Mount Saint Vincent University; Marjorie Bond, Monmouth College; Leyla Batakci, Elizabethtown College

11:05 AM  
**Measuring Statistics and Data Science Attitudes: A Modern Approach, and Why You Should Get Involved**
• Alana Unfried, CSU Monterey Bay; Douglas Whitaker, Mount Saint Vincent University; Marjorie Bond, Monmouth College; Leyla Batakci, Elizabethtown College; April Kerby-Helm, Winona State University; Michael Posner, Villanova University

11:20 AM  What Do Instructors Think About Teaching Statistics?
• Marjorie Bond, Monmouth College; Leyla Batakci, Elizabethtown College; Michael Posner, Villanova University; Douglas Whitaker, Mount Saint Vincent University; April Kerby-Helm, Winona State University; Alana Unfried, CSU Monterey Bay

11:35 AM  The Role of Context in Developing Statistics Assessment Items
• Laura Ziegler, Iowa State University; Jennifer Kaplan, Middle Tennessee State University; Angela Broaddus, Benedictine College

11:50 AM  Towards a Data Science Competency Framework for Teaching Future Employees of Official Statistics
• Monika Rozkrut, University of Szczecin; Malgorzata Ludmi?a Tarczynska-Luniewska, University of Szczecin; Dominik Antoni Rozkrut, Statistics Poland

12:05 PM  Tensions in Student Thinking About Statistical Design
• Kelly Findley, University of Illinois at Urbana-Champaign; Brein Mosely, University of Illinois at Urbana-Champaign

2:00 PM – 3:50 PM  
**Teaching Statistical Communication**
*Invited Papers*

2:05 PM  Audiences and Arguments: Teaching the Strategies of Effective Data Communicators
• Sara Stoudt, Bucknell University

2:25 PM  What ‘Counts’ as Statistical Communication?
• Amelia McNamara, University of St Thomas

2:45 PM  Data Space: Using Data and Stories to Bring Disciplines Together
• Shonda Kuiper, Grinnell College

3:05 PM  Argument Scaffolding: A Template for Quick and Effective Communication
• Jonathan Auerbach, George Mason University; Regina Nuzzo, Gallaudet University

3:25 PM  Discussant: Regina Nuzzo, Gallaudet University

**Wednesday, August 10**

8:30 AM – 10:20 AM  
**Causal Inference for Undergraduates: Teaching Correlation Does Not Imply Students Understand Causal Inference**
*Invited Papers*

8:35 AM  Covariate Balance as Paramount to Causal Inference
• Kari Lock Morgan, Penn State University

9:00 AM  Ideas, Challenges, and Opportunities to Develop Causal Thinking in Undergraduate Statistics
• Kevin Cummiskey, West Point

9:25 AM  Causal Inference Throughout the Statistics Curriculum
• Leslie Myint, Macalester College

9:50 AM Discussant: Jeff Witmer, Oberlin College
10:15 AM Floor Discussion

10:30 AM – 12:20 PM

How to Build (and Sustain) a Data Science Program

Topic Contributed Panel

Panelists:
• Ann Cannon, Cornell College
• Silas Bergen, Winona State University
• Stacey Hancock, Montana State University
• Brian Kotz, Montgomery College

10:30 AM – 12:20 PM

Contributed Poster Presentations

37: Time to War in the Thucydides Trap
• Jake Tan, Wissahickon High School; Chris McDaniels, Wissahickon High School

38: Selective Inference in Practice
• Anni Hong, Carnegie Mellon University - Statistics dept.; Arun K Kuchibhotla, Carnegie Mellon University

39: Resiliency of a Project-Based Statistics Curriculum in the Face of COVID-19 and Online Learning
• Robin Donatello, California State University, Chico; Courtney Merrick, California State University, Chico; Lisa Dierker, Wesleyan University

40: Foundations for NLP-Assisted Formative Assessment Feedback for Short-Answer Tasks in Large-Enrollment Classes
• Susan Lloyd, The Pennsylvania State University; Matthew Beckman, The Pennsylvania State University; Dennis Pearl, Pennsylvania State University; Rebecca Passonneau, The Pennsylvania State University; Zhaohui Li, The Pennsylvania State University; Zekun Wang, The Pennsylvania State University

41: Teaching Students in Statistics Courses to Read Critically
• Lisa W. Kay, Eastern Kentucky University; Jill Parrott, Eastern Kentucky University

2:00 PM – 3:50 PM

Innovations in Introductory Statistics

Contributed Papers

2:05 PM Teaching Statistical Inference More Conceptually by Avoiding Standardized Statistics
• Mortaza Jamshidian, California State University, Fullerton, Mathematics; Parsa Jamshidian, UCLA Biostatistics

2:20 PM Statistics Education for Graduate Students with Visual Impairment
• Annabel Li, University of Northern Colorado

2:35 PM Infusing History of Statistics Readings in an Introductory Statistics Course
• Grant Lee Innerst, Shippensburg University
2:50 PM  Creating a STEM-Based Study Abroad Experience in England Featuring the History of Statistics
  • Elizabeth Johnson, University of Florida; David Holmes, University of Florida
3:05 PM  Statistical Literacy: UNM Math1300 First Year Results
  • Milo Schield, University of New Mexico
3:20 PM  Projects with Purpose in Introductory Statistics
  • Kathy Gray, California State University-Chico
3:35 PM  Modeling Architectural Factors and Garden Visibility in Pompeii
  • Ben N Dyhr, Metropolitan State University of Denver; Summer Trentin, Metropolitan State University of Denver; Janae Bacca, Metropolitan State University of Denver

Thursday, August 11

8:30 AM – 10:20 PM
Invited Papers

8:35 AM  Utilizing Spiral Learning to Enhance Conceptual Retention in Mathematical Statistics
  • Peter E. Freeman, Carnegie Mellon University
8:55 AM  Three-Course Dinner or Thanksgiving Feast? Putting the Pieces Together in a Modern Math/Stat Sequence
  • Randall Pruim, Calvin University
9:15 AM  Teaching Probability Theory in the Inverted Style
  • Jonathan Wells, Reed College
9:35 AM  Calcu Less - Compute More: Rethinking Traditional Pathways for Increasing Access to Data Science
  • Ayona Chatterjee, Cal State Univ East Bay
9:55 AM  Cutting Through the Theory: Emphasizing and Assessing Conceptual Understanding in Mathematical Statistics
  • Erin Blankenship, University of Nebraska-Lincoln; Jennifer Green, Michigan State University
10:15 AM  Floor Discussion