Statistics Seminar

Teaching Bayes Theorem: What I Learned this Summer

Alex White
Friday September 21, 2018
12:00 – 1:00 PM
DERR 122

Abstract: In July I attended the International Conference on Teaching Statistics. In this talk I will present what I learned during a session dedicated to teaching conditional probability and Bayes Theorem. Villejoubert & Mandel (2002) identified two common misconceptions in conditional probability: the base-rate fallacy and confusion of the inverse. Studies by Gigerenzer (2014) found that using natural frequencies rather than probabilities can alleviate both misconceptions. I will present recent work by three groups of statistics educators on the use of natural frequencies and different visualizations. Fitch and Budgett from the University of Auckland use an online applet to support student learning. Two separate groups in Germany, Vogel and Böcherer-Linder from Heidelberg and Weber, Krauss and Binder from Regensburg compared student success in computation and conceptual understanding of Bayes Theorem problems. Their results appear to provide clear suggestions implications for the teaching of Bayes Theorem.