

1154-AE-2854 **Beth Chance***. *Conceptual approaches to teaching multivariable statistical thinking: Using simulation methods and visualization.*

Use of simulations to motivate and improve student understanding of formal inference procedures has shown promising results. In particular, students can more quickly focus on the entire statistical investigation process by leveraging tactile experiences, a conceptual focus that stays close to real data, and visualizing the simulation process. However, additional topics and concepts are also important. In particular, multivariable thinking continues to grow in importance as a fundamental part of a student's statistical training. In this presentation, we will share ideas for using simulation methods and visualization techniques in order to explore multivariable reasoning (e.g., randomized block designs, interactions, conditional associations) with students in first and second algebra-based statistics courses. (Received September 17, 2019)