## VIRGINIA TECH DEPARTMENT OF STATISTICS COLLOQUIUM



SUBGROUP IDENTIFICATION USING BAYESIAN CLUSTERING FACTOR MODELS WITH APPLICATIONS TO RECOVERY FROM OPIOID USE DISORDER

## **ALLISON TEGGE**

## MARCH 30 | 3.30 PM (ET)

## **IN-PERSON SEMINAR**

JOIN ONLINE: ZOOM MEETING https://virginiatech.zoom.us/j/86237780926?pwd=cjVDTHFkTUpnUnBQSGg4Q1RFVzMxQT09

MEETING ID: 862 3778 0926, PASSCODE: STATSROCKS

**Abstract:** This talk will discuss the importance of subgroup identification when investigating populations of individuals in recovery from opioid use disorder. We propose a novel Bayesian factor model to cluster multivariate data. Our model assumes that the common factors follow a mixture of Gaussian distributions. We are particularly interested in correctly estimating the number of components in the mixture, which is known to be a non-trivial problem. We present results from a simulation study, including the estimation of the number of components in the mixture. We illustrate the usefulness and flexibility of our proposed approach. Together, the number of



components and the characteristics of the subjects in each group have implications for medical treatment.

**Bio:** Dr. Tegge is a Research Assistant Professor in the Department of Statistics at Virginia Tech. Her research interests lie in developing novel methodologies motivated by real world hypotheses. Recently, her research interests include the application and development of statistical methods to understanding substance use and recovery from substance use disorders. In addition, she is interested in open data sharing initiatives that bring together multiple data sets to provide more power to perform statistical analyses.