

Colloquium

**DEPARTMENT OF
MATHEMATICS & STATISTICS**
University of Michigan-Dearborn

TUESDAY, SEPTEMBER 16TH, 2025

3:30PM - 4:30PM | 1041 CB

**IS REPRODUCIBILITY
EVEN POSSIBLE?**

Speaker: Andrew Ekstrom



Andrew (Drew) Ekstrom studied Physics and Biochemistry as an undergraduate at Oakland University. He holds a master's degree from U of M Dearborn in Applied and Computational Mathematics. He also has graduate studies at U of M Dearborn in Data Science. He has been teaching courses in statistics, management science and business analytics for about a decade. He has also worked as a contractor on several projects for various companies in the Metro Detroit Area. The topics he'll present in this talk come from his experiences working with data for some of those projects.

Abstract

In Machine Learning, we take a data set and break it into training, testing and possibly validation partitions using a random seed. We use those partitions to create and test models. With the hope that we will not over fit the data. Once this is done we have some "Important Features" or "Statistically Significant Variables". If set our random seed to a set value, our models will always be the same. If we change that random seed, our models will change. Most would predict that the changes in the model will be small and that you will see some changes in coefficients or weights. What we will see, is that if we rerun our data many times and change the random seed each time, we will create multiple models that generally will not agree with each other, when it comes to what is an "Important Feature". And, depending upon the data, no one will have the same results. This begs the questions, "What is reproducibility?" and "Is reproducibility even possible?"

Refreshments will be provided!