# Data Science Seminar

Hosted by Department of Mathematical Sciences

- Date: Friday, Oct 11, 2019
- Time: 3:30pm – 4:30pm
- Room: WH-100E
- Speaker: Paul McNicholas (McMaster University)
- Title: Clustering Higher-Order Data


***Abstract***

**NOTE: Special Time and Date**

There is an extensive body of literature on clustering univariate and multivariate data. However, attention the use of multidimensional arrays for clustering has thus far been limited to two-dimensional arrays, i.e., matrices or order-two tensors. Work on clustering data matrices, or three-way data, is presented before an approach for clustering multi-way data is introduced. The latter is based on a finite mixture of multidimensional arrays., i.e., a finite mixture of d-dimensional arrays, for d>2. For both matrix- and tensor-variate approaches, the Gaussian component approach is introduced first but approaches that use non-Gaussian components are also discussed. Simulated and real data are used for illustration.

Paul McNicholas is the Canada Research Chair in Computational Statistics and an E.W.R. Steacie Memorial Fellow. He is a Professor and University Scholar in the Department of Mathematics and Statistics at McMaster University (Ontario, Canada), where he is also Director of the MacDATA Institute. He has published extensively in computational statistics, with the vast majority of his journal articles, and one of his monographs, focusing on mixture model-based clustering and related topics. He has been an associate or guest editor for several international journals, and is currently an associate editor for Journal of Multivariate Analysis, Journal of Classification, and Advances in Data Analysis and Classification. He is currently President of The Classification Society, a Senior Member of the IEEE, and a member of the College of the Royal Society of Canada.