

# Applied Topology in Albany (ATiA) Seminar

ROBIN BELTON  
Vassar College

## SEARCHING FOR THE UNKNOWN: PARAMETER SELECTION IN MAPPER

Friday, March 26, 2026  
12:00 p.m. Hudson 0110

ABSTRACT. The Mapper algorithm is a popular tool for visualization and data exploration in TDA with applications ranging from discovering new types of breast cancer to classifying plants. However, it is difficult to use the Mapper algorithm because the user needs to input values for several parameters, and the "best" values are unknown. In this talk, I'll introduce Mapper and how my collaborators, students, and I have approached parameter selection in this setting. In particular, we have focused on studying the inverse problem, proving probabilistic statements, and developing parameter selection algorithms in this setting.