



Discrete Mathematics Seminar

* Please note the time of this talk has been changed to 12:00-1:00 PM. *

Time: Friday, April 14, 2023, 12:00-1:00 PM
Title: Bridge (Barile-Macchia) Resolutions
Speaker: Dr. Selvi Kara, Department of Mathematics, University of Utah
Location: 331 Derrick Hall

Abstract:

In this talk, I will introduce bridge resolutions of monomial ideals. These resolutions are constructed using ideas from discrete Morse theory. Specifically, we provide an algorithm to produce homogeneous acyclic matchings and call them bridge matchings. Bridge resolutions are minimal for various classes of ideals such as the edge ideals of weighted oriented forests and cycles, path ideals of paths and cycles. In addition, we provide results related to independence of directions for edge ideals of weighted oriented paths and cycles while also relating their Betti numbers. Furthermore, we compare bridge resolutions with some well-known simplicial resolutions and also those created by Batzies and Welker.