BI-CO MATHEMATICS COLLOQUIUM

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"Knot Mosaics: Cusps and Cubes!"

Monday, April 24, 2023
Talk at 4:00 – Park 338
Tea at 3:30 – Park 361, Math Lounge

Abstract:
Knot projections can be constructed by arranging a set of mosaic tiles into a square grid. These knot mosaics, which were first introduced by Lomonaco and Kauffman in 2008, are useful in tabulating knots and defining invariants, such as the mosaic number. In this talk, we will discuss some known results about knot mosaics, as well as two variations to this idea – Legendrian knot mosaics and cubic knot mosaics. Legendrian knots have additional geometric structure that require a modified set of tiles. Cubic knot mosaics use the traditional tiles but are arranged on the surface of a cube instead of a square grid. In both projects, we define variations of the mosaic number in the given context and explore the implications. These projects were all joint with first and second-year undergraduate students, and this talk will be accessible to a general audience.

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