



Michigan State University, Department of Mathematics

## Distinguished Undergraduate Lecture Series

Professor Matt Baker

Georgia Tech School of Mathematics

*Card shuffling, necklaces, and the  
Mandelbrot set*



Professor Baker will begin by performing a magic trick and then explaining its mathematical underpinnings. This will lead to an interesting sequence of numbers with unexpected connections to the Mandelbrot set, a fractal which is rather magical in its own right. An intriguing recent observation about this sequence, due to Buff, Floyd, Koch, and Parry, has up until now lacked a bijective proof. In joint work with students from the PROMYS program, we provide such a proof by connecting the sequence in question to certain families of combinatorial necklaces.



Tuesday, March 18, 2025 - 4:10 pm to 5 pm - D101 Wells Hall

The lecture will be preceded by a reception from 3:30 pm - 4:00 pm in C204 Wells Hall, and followed by dinner at 5:10 pm to be held in D101 Wells Hall.