Bi-State Math Colloquium

Who: Chris Frayer
Where: Thursday, January 31, 4:00 pm
When: Ottensman 126

The Basel Problem:
An amazingly simple proof

We will discuss several very natural infinite sums, and quickly move onto the Basel Problem, one of the most famous infinite sums of the 17th and 18th centuries. The Basel problem, which got its name when Jakob Bernoulli sent out a plea for help from Basel Switzerland in 1689, asks what is the sum of the reciprocals of the squares. That is, we wish to evaluate the sum:

$$\sum_{k=1}^{\infty} \frac{1}{k^2}$$

The Basel problem was first solved by Euler in 1735, when at the age of 29 he gave a solution that shocked the mathematical community. We will take a journey through Euler's spectacular solution (using nothing more than Calculus 2), and then explore a more modern argument. The material will target someone who has completed Calculus 2.

Chris Frayer is a graduate of the University of Kentucky and is in his fifth year at UW-Platteville. Chris enjoys spending time with his wife and daughter, as well as rock climbing and running.