

Patterns and Recurrence: *the Math of Music*

What: **Bi-State Colloquium**

When: **Friday, September 18, 4pm**

Where: **Loras College, Hennessy 250**

Who: **Angela Kohlhaas**



When I tell people I was a music major as well as a math major in college, I often get “I hear those go together” as a response. But how? Why? Both are formal systems that rely on structure and patterns, but the direct connections are not always obvious. In this talk, we will use mathematical concepts to make sense of some of the patterns that appear in music. We’ll talk about function transformations, modular arithmetic, fractals, and recurrence relations, and we’ll hear Bach, Copland, Schoenberg, and some student compositions from a “math in music” class I taught last January. If we have time, we will even use math to create our own musical compositions. No music background is necessary, and pre-calculus is the only math background needed.

Angela Kohlhaas is an Assistant Professor of Mathematics at Loras College. She has a PhD in commutative algebra and a BA in piano music and loves to explore connections between the two.