The World of Mathematics and Statistics

Dresden Memorial Lecture 2020-2021

❖ <u>**Wednesday, April 21, 8:00-9:00pm**</u>
Dresden Lecture

What is the shape of a polynomial?

We will work with the complex numbers and discuss how one might understand the geometry or "shape" of a given (complex) polynomial function. We will exploit the fact that the domain and range of our function coincide to provide a candidate answer to the question in the title by iterating the polynomial, or composing it with itself over and over again. This opens the door into the beautiful world of Complex Dynamics. We will explore the shapes of many different quadratic polynomials, and we will discover the famous Mandelbrot set along the way. We will then apply some of these ideas to try to understand the shapes of other kinds of complex functions. There will be many pictures and movies in this talk.
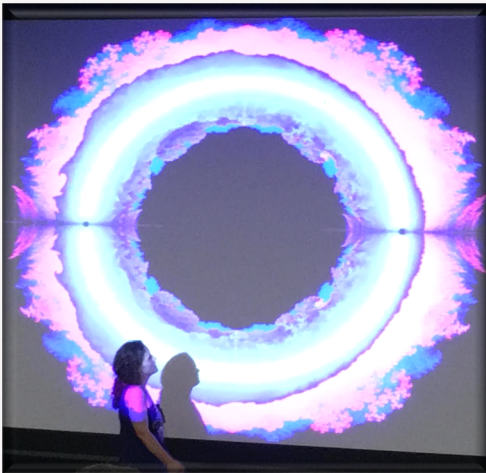
Professor Sarah Koch
University of Michigan

❖ <u>**Friday, April 23, 3:00-4:00pm**</u>
Dresden Presentation and Q&A

Math Circles: a bundle of outreach

One of my favorite parts of being a mathematician is sharing math with other people. I have been extensively involved in outreach since I arrived at the Michigan Math Department in 2013. I have led Math Circle sessions for middle schoolers, high schoolers, and math teachers. In 2018, I was on my way to Dearborn, Michigan to lead a Math Circle session with one of my colleagues. Something happened during that trip that changed my life. I would love to tell you about it!

➤ <u>**Friday, April 23, 4:10-4:40pm**</u>
AWM/W+iMS Virtual Tea with Speaker

Wednesday, April 21 & Friday, April 23
Zoom Link: https://swarthmore.zoom.us/j/92417771543