



Michigan State University  
Department of Mathematics

Distinguished Undergraduate Lecture Series

Moon Duchin

“Random Walks and Gerrymandering”

A familiar idea in math and computing has recently made a big splash in redistricting lawsuits: if you want to understand a large, complicated space with mysterious structure, you should just drop yourself down in the space and walk around randomly for a long time. What you see when you explore may produce a good representative sample of the space, even if your exploration is way shorter than the time it would take to see everything. This idea is gaining traction in trying to understand whether a congressional redistricting plan is reasonable or not, by comparing it to a huge ensemble of other possibilities found by a random walk in the space of plans. I'll overview some of these ideas and tell you how they've played out in Wisconsin, North Carolina, and Pennsylvania.

Moon Duchin is an Associate Professor of Mathematics at Tufts University and serves as director of the interdisciplinary Program in Science, Technology, and Society. Her research in pure mathematics focuses on geometric group theory, low-dimensional topology, and dynamics. She is also interested in the social studies of science, particularly the role of expertise, authority, intuition, and proof. Duchin is currently engaged in a long-term project on the geometry of gerrymandering, leading a team of mathematicians and computer scientists (the Metric Geometry and Gerrymandering Group, or MGGG) in wide-ranging work on scientific interventions in electoral redistricting.

Friday, April 6th, 2018 - 4:10 pm to 5:00 pm - B117 Wells Hall

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