

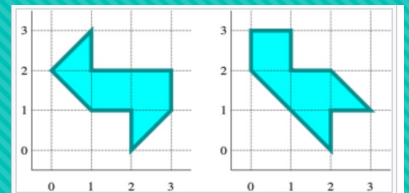
Kaori Kitao Lecture



Danny Krashen
Rutgers/U Penn

Tuesday, October 26
Science Center 101
Refreshments: 4:15PM
Lecture: 4:30PM

**Algebraic structures and the
algebraic structures on which they live**



Mathematical objects often have two lives. On the one hand, they are something like creatures living in complex ecosystems, but on the other hand, they can also be like the planets on which these creatures live. Sometimes these "planetary" algebraic structures can be given additional geometric or topological features, giving a range of new tools from other mathematical disciplines.

In this talk I will try to push this metaphor, and use it as a lens through which to view some open problems in the theory of quadratic forms and division algebras. In particular, we will see how these problems connect to ideas in geometry, such as the (in)famous "hearing the shape of the drum" problem (https://en.wikipedia.org/wiki/Hearing_the_shape_of_a_drum).