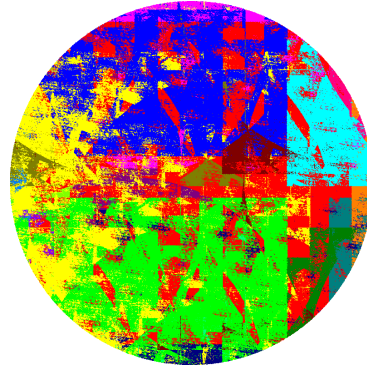
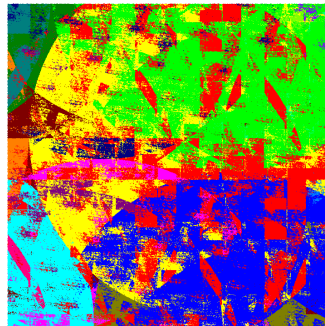


From Banach Tarski To Squaring the Circle

Undergraduate Math Club
CORNELL UNIVERSITY



SPEAKER

Nathaniel Bannister

ZOOM LINK

<https://cornell.zoom.us/j/92205813476?pwd=NUpSZXloTXcyazNtNFB1czRkRlZmZz09>

ABSTRACT

What's an anagram for Banach-Tarski? Banach-Tarski Banach-Tarski! The Banach Tarski theorem is a result from 1924 asserting that, given any two subsets A and B of \mathbb{R}^n with $n \geq 3$ which are bounded with nonempty interior, there is a way to decompose A into finitely many pieces which, through a combination of rotations, reflections and translations, can be reassembled to make B . Some particularly surprising examples include when A is a ball and B is two balls or B is a larger ball. We will outline a proof of this result and outline some recent results showing that, under certain conditions, the pieces can be made somewhat "nice," including decomposing a square into finitely many Borel pieces and translating them to make a circle.

APR 29 at 6:00pm