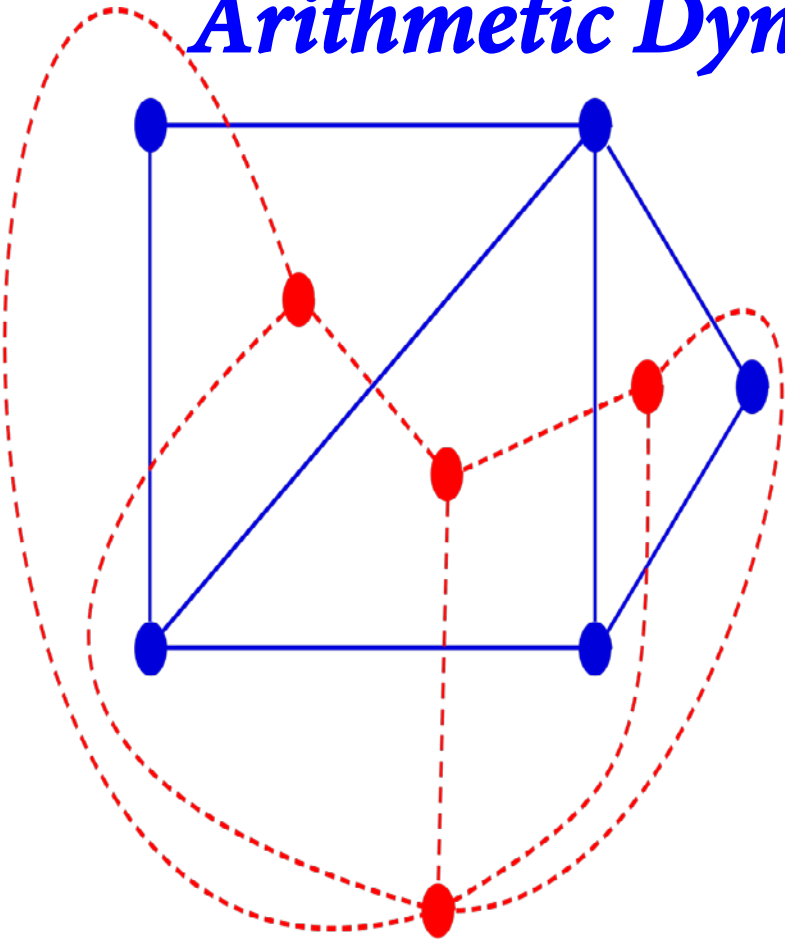


# COLLOQUIUM

## *Title: Automorphism Groups for Arithmetic Dynamical Systems*



**9-29-22**

**BENJAMIN HUTZ**

St. Louis University

Time: 3-4:00 pm Place:  
Neckers 156

**Reception immediately following in the Math Library.**

Abstract: Algebraic dynamics is the study of iteration of polynomial or rational functions. This talk focuses on endomorphisms of projective space with non-trivial automorphisms. Under the action of conjugation by the projective general linear group, we can form a moduli space of dynamical systems of a certain degree. Certain elements in these moduli spaces have non-trivial automorphisms. This is analogous to the elliptic curves with complex multiplication in the moduli space of elliptic curves. These special maps have connections to many problems in arithmetic dynamics. We focus on two problems: identifying the locus of maps with non-trivial automorphisms and the realizability of subgroups of the projective linear group as automorphism groups.