

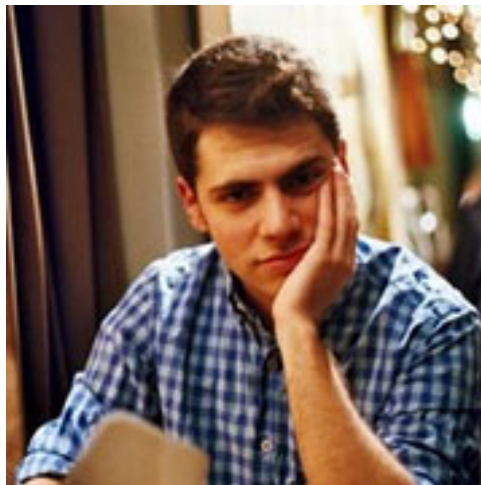
Colloquium

University of Notre Dame
Department of Mathematics

Nicholas Ramsey - University of California Los Angeles

Speaker: Nicholas Ramsey

University of California Los Angeles



Will give a lecture entitled

Independence and Classification in Model Theory

Date: Tuesday, January 18, 2022

Time: 4:00 PM

Location: 127 Hayes-Healy Hall

Zoom URL: notredame.zoom.us/j/91695159336?pwd=N01oU2xpYUITKzNqelJ2SkREcFBMdz09

Departmental Tea: Tea in Room 257 (lounge in Hurley Hall) at 3:30 p.m.

Abstract:

Classification theory, in the sense of model theory, grew out of the attempt to answer the question: given a collection of axioms, when can the structures satisfying these axioms be classified by the assignment of invariants? In addressing this question, Shelah introduced non-forking which gives an abstract combinatorial notion of independence that generalizes linear independence in vector spaces and algebraic independence in algebraically closed fields and plays a crucial role in the analysis of classifiability. Subsequent work showed that non-forking specializes in particular examples, like differentially closed or difference closed fields, to give rise to useful notions of independence, dimension, and genericity that have relevance well beyond the motivating classification problem. I will describe my recent work on Kim-independence which corresponds to independence at a generic scale and which has considerably broader applicability than non-forking. We will explain both the role Kim-independence has played in our recent work in classification theory and also explain its connection to natural notions of independence arising in algebra and combinatorics.