Colloquium

University of Notre Dame
Department of Mathematics

Speaker: Natasha Dobrinen

University of Denver

Will give a lecture entitled
Logic, Ramsey Theory, and Relational Structures

Date: Tuesday, January 25, 2022
Time: 4:00 PM
Location: 127 Hayes-Healy Hall

Zoom URL: notredame.zoom.us/j/95578951572?pwd=TXo3eFY4MWp5dEpsejIrdFpHTlJIQT09 Meeting ID: 955 7895 1572 Passcode: 641835

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

Abstract:

Ramsey theory on relational structures has been investigated ever since Ramsey proved his seminal theorem. While a multitude of classes of finite structures have been found to possess Ramsey theorems, analogues for infinite structures have proven more elusive: It was not until 1979 that the Ramsey theory of the rationals was completely understood, and the Ramsey theory of the Rado graph was only completed in 2006. Methods used in those proofs aided several more advancements. However, those methods were not sufficient for structures with certain forbidden substructures such as triangle-free graphs. We will discuss the main reasons why this is so, and discover how the set-theoretic method of forcing opened new pathways in this arena. Starting with the key example of the universal homogeneous triangle-free graph, we will indicate the important structural properties at play for a complete understanding of the Ramsey theory of several collections of infinite relational structures.

Natasha Dobrinen - University of Denver