Department of Mathematics
University of Notre Dame

LOGIC SEMINAR

Guest Speaker: Natasha Dobrinen
University of Notre Dame

Date: Tuesday, November 14, 2023
Time: 2:00 PM
Location: 125 Hayes-Healy Bldg
Zoom URL: NA

Lecture Title:
Halpern-Läuchli on strong limit cardinals

Abstract

This is joint work with Shelah. The Halpern-Läuchli Theorem is a Ramsey theorem for colorings of products of finitely many trees. $HL_d(\kappa)$ denotes this theorem for $1 \leq d < \omega$ many trees of the form $2^{<\kappa}$. Building on Harrington's 'forcing proof' of $HL_d(\omega)$, Shelah proved that it is consistent from large cardinals that $HL_d(\kappa)$ holds for κ measurable. Džamonja-Larson-Mitchell, D.-Hathaway, and Zhang, built on his work, expanding this area. We will focus on some recent work of D.-Shelah, including the following: In ZFC, $HL_1(\kappa)$ holds whenever κ is strongly inaccessible. It is consistent with ZFC that $HL_d(\kappa)$ holds where κ is a strong limit cardinal of countable cofinality. On the other hand, weak forms of $HL_d(\kappa)$ fail when κ is a strongly inaccessible non-Mahlo cardinal, and in other circumstances.

Natasha Dobrinen - University of Notre Dame