

LOGIC SEMINAR

Guest Speaker: Joel Hamkins
**University of Notre Dame, Dept. of
Philosophy**

Date: Tuesday, February 8, 2022

Time: 2:00 PM

Location: 125 Hayes-Healy Hall

Zoom URL: NA



Lecture Title:

The model theory of set-theoretic mereology

Abstract

Mereology, the study of the relation of part to whole, is often contrasted with set theory and its membership relation, the relation of element to set. Whereas set theory has found comparative success in the foundation of mathematics, since the time of Cantor, Zermelo and Hilbert, mereology is strangely absent. Can a set-theoretic mereology, based upon the set-theoretic inclusion relation \subseteq rather than the element-of relation \in , serve as a foundation of mathematics? How well is a model of set theory $\langle M, \in \rangle$ captured by its mereological reduct $\langle M, \subseteq \rangle$? In short, how much set theory does set-theoretic mereology know? In this talk, I shall present results on the model theory of set-theoretic mereology that lead broadly to negative answers to these questions and explain why mereology has not been successful as a foundation of mathematics.