# *Department of Mathematics*
## *University of Notre Dame*

Mark Behrens - University of Notre Dame

# *TOPOLOGY SEMINAR*

**Guest Speaker: Mark Behrens**

**University of Notre Dame**

***Date:*** Tuesday, November 22, 2022
***Time:*** 2:15 PM
***Location:*** 117 Hayes-Healy Hall
***Zoom Link:*** NA

## *Lecture Title:*
## Recent developments in homotopy theory

***Abstract***
Having recently attended a couple of workshops where I learned of some amazing new results of some folks in my field, I would like to spread the good news.I will explain, in basic and overview terms, some recent breakthrough results in homotoy theory: Hahn-Raksit-Wilson: give a new construction of prismatic cohomology which doesn't use prisms or perfectoid rings, just complex cobordism. This results in a new awesome way to compute algebraic K-theory, THH, and TC. Burkland-Schlank-Yuan: prove a version of the Nullstellensatz for E_oo ring spectra. This has many corollaries, including the complete solution of Rognes' red-shift conjecture in the case of E_oo-rings. Barthel-Carmeli-Schlank-Yanovski: generalize the fourier transform and ambidexterity to pi-finite spectra, and establish local class field theory for E_oo ring spectra