

**Research interests** algebraic & geometric topology, operads, homotopy calculus

**Education**

<b>University of Notre Dame</b>	South Bend, IN
PhD candidate in Mathematics	2019 – Present
Adviser: Mark Behrens	
 <b>University of Alabama</b>	 Tuscaloosa, AL
BA, MA in Mathematics	2015 – 2019
Adviser: Lawrence Roberts	

## Publications

**The stable embedding tower and operadic structures on configuration spaces.**

Connor Malin. 2023. to appear in *Homology, Homotopy and Applications*. [arxiv](#)

**An elementary proof of the homotopy invariance of stabilized configuration spaces.**

Connor Malin. *Proc. Amer. Math. Soc.* 151 (2023), 3635-3644. [arxiv](#)

## Preprints

**Koszul self duality of manifolds.** Connor Malin. 2023. [arxiv](#)

**Invited talks**

**TBA.** January 2024. JMM Special Session: *Homotopy Theory*. San Francisco

**TBA.** January 2024. JMM Special Session: *Modern developments in the theory of configuration spaces*. San Francisco

**TBA.** November 2023. New Mexico State University Geometry and Topology Seminar

**Koszul duality and manifold calculus.** June 2023. *Advances in Homotopy theory IV*.

**Embedding calculus of singular manifolds.** March 2023. University of Lafayette Topology Seminar

**The homotopy theory of configuration spaces.** February 2023. University of Alabama Algebra and Topology Seminar

**Koszul duality and the Lie bracket on the homology of configuration spaces.** September 2022. European Autumn School in Topology

**Duality in topology.** August 2022. Notre Dame Math Orientation

**Seminars organized**

**Factorization Homology.** Notre Dame Graduate Student Topology Seminar. Spring 2023.

**Embedding Calculus.** Notre Dame Graduate Student Topology Seminar. Spring 2021.

**Contributed talks**

**Koszul duality from a homotopical perspective.** September 2023. Notre Dame Graduate Student Seminar

**Koszul self duality of manifolds.** July 2023. Young Topologists Meeting

**Differentiating automorphisms of the  $E_n$  operad.** July 2023. Stability in Topology, Arithmetic, and Representation Theory Workshop

**An operadic proof of Poincaré-Koszul duality.** March 2023. Notre Dame Graduate Topology Seminar

**An introduction to factorization homology.** February 2023. Notre Dame Graduate Topology Seminar

**Nonabelian Poincaré Duality.** February 2023. Notre Dame Graduate Topology Seminar

**Resolutions of moduli spaces by moduli spaces.** October 2022. Notre Dame Graduate Topology Seminar

**Spectral Lie algebra models for unstable  $v_n$ -periodic homotopy theory.** April 2022. Notre Dame Graduate Topology Seminar

**Diff isomorphic implies diffeomorphic.** September 2021. Notre Dame Graduate Topology Seminar

**Demystifying buzzwords: real homotopy theory is derived algebra.** September 2021. Notre Dame Graduate Seminar

**Operads and manifold Calculus.** March 2021. Notre Dame Graduate Topology Seminar

**Homotopy sheaves and manifold calculus.** March 2021. Notre Dame Graduate Topology Seminar

**Funky manifolds.** September 2020. Notre Dame Graduate Topology Seminar

**Applications of the Poincaré conjecture.** September 2020. Notre Dame Graduate Topology Seminar

**Manifold up to homotopy = Poincaré duality + what?.** August 2020. Notre Dame Graduate Seminar

**Spaces of manifolds, cobordism categories, and the Madsen-Weiss theorem.** July 2020. Notre Dame Oral Exam

**The geometric model structure on categories.** January 2020. Notre Dame Infinity Category Reading Seminar

**The Hopf invariant 1 problem via Adams operations.** November 2019. Notre Dame Graduate Topology Seminar

**Homotopy and its application to the Brouwer fixed point theorem.** April 2019. Troy MathFest

**Games on groups.** August 2018. University of Alabama Algebra & Topology seminar

**On subsums of series with positive terms.** April 2018. University of Tennessee Undergraduate Math Conference

Teaching experience  
Fall 2020-Present

**Teaching assistant, Notre Dame Department of Mathematics:**  
Calculus A, Calculus B, Calculus II, Calculus III

**Grader, Notre Dame Department of Mathematics:**  
Topology I, Topology II

Scholarships  
and fellowships

Bayer Fellowship (Notre Dame) 2022

Schmitt Fellowship (Notre Dame) 2019

Thomas W. Palmer Scholarship (University of Alabama)  
National Merit Scholarship

2019  
2015