

Myungsin Cho

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Appointment

Aug 2025– **Ritt Assistant Professor**, Columbia University

Education

Jul 2025 **Ph.D. in Mathematics**, Indiana University

○ Advisor: **Prof. Michael Mandell**

Aug 2018 **M.Sc. in Mathematics**, Seoul National University

○ Advisor: **Prof. Otto van Koert**

Aug 2015 **B.Sc. in Engineering**, Korea Aerospace University

Research Interests

Algebraic Topology; Stable homotopy theory, algebraic K-theory, and equivariant algebra with a focus on duality phenomena, Real and equivariant refinements, and connections to number theory, combinatorics, and homotopy-theoretic methods meeting complex geometry.

Preprints and Publications

- **K-theoretic Tate-Poitou duality at prime 2**, in *Advances in Mathematics*, 477 (2025), Paper No. 110370, 26 pp.
- **Realizing Compatible Pairs of Transfer Systems by Combinatorial N_∞ -Operads** with D. Chan, D. Mehrle, P. Sanchez Ocal, A. Osorno, B. Szczesny, and P. Verdugo, Preprint, *arXiv:2510.26047*, 2025.
- **Structural invariance of Green-Griffiths-Demailly Thresholds on compact complex orbifolds** with G. Cho. *arXiv:2511.05830*, 2025.

In preparations

- **Homological trace methods for real topological Hochschild homology** with T. Gerhardt, L. Keenan, J. Moreno, J.D. Quigley.
- **Algebraic extension of Tambara functors**

Honors & Awards

- 2025 Outstanding Thesis Award, Indiana University
- 2024–2025 College of Arts and Sciences Dissertation Research Fellowship, Indiana University
- 2019 Robert E. Weber Memorial Award, Indiana University
- 2016 Lecture and Research Scholarship, Seoul National University

Talks

Invited

- Jan 2026 Joint Mathematics Meetings, Special Session on New Voices in Homotopy Theory
- Oct 2025 Texas State University, Topology Seminar
- Jul 2025 Scissors Congruence and K-theory
- Apr 2025 Indiana University, Algebra Seminar
- Mar 2025 AMS 2025 Spring Central Sectional Meeting, Special Session on Homotopy Theory and Algebraic K-Theory
- Oct 2024 Columbia University, Algebraic Topology Seminar
- Oct 2024 University of Virginia, Topology Seminar
- Sep 2024 Indiana University, Topology Seminar
- Sep 2024 Ohio State University, Homotopy Seminar
- Jan 2024 FRG Virtual Seminar

Contributed

- Aug 2024 MathFest 2024, Contributed Session: Advances in Algebraic Topology, Indianapolis
- Nov 2023 BUGCAT Conference, Binghamton University
- Jun 2023 Scissors Congruence, Algebraic K-Theory, and Trace Methods, Indiana University

Teaching

Columbia University

Analysis and Optimization (F2025, S2026)

Indiana University

Calculus 1 (F2022)

Calculus 2/3 – TA (multiple semesters, 2018–2025)

Mathematics of Decision and Beauty (Co-instructor, Su2020, F2020, S2021)

Seoul National University

Calculus I/II – TA (multiple semesters, 2015–2018)

Mentoring

Directed Reading Program (Indiana University)

- Fall 2023 *Exponential Law in Vector Spaces — A Glimpse of the Adjoint Isomorphism Theorem.* Book: J. Rotman, *An Introduction to Homological Algebra.*
- Spring 2023 *Simplicial Homotopy Theory.* Book: P. Goerss and R. Jardine, *Simplicial Homotopy Theory.*
- Fall 2022 *A Ring Structure on Vector Bundles.* Book: M. Aguilar, S. Gitler, C. Prieto, *Algebraic Topology from a Homotopical Viewpoint.*

Service and Organizational Activities

- 2025–2026 Algebraic Topology Seminar, Columbia University
2023–2025 Topology Seminar, Indiana University
Apr 2025 Graduate Student Topology and Geometry Conference 2025, Indiana University
Fall 2023 Reading Seminar on Equivariant Stable Homotopy Theory, Indiana University
May 2023 Reading Seminar on Stable Homotopy Theory, Indiana University
2021 Graduate Student Homotopy Theory Seminar, Indiana University
2015–2018 Mathemaniac (Graduate Student Biannual Seminar), Seoul National University

References

- **Michael Mandell**
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- **Andrew Blumberg**
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- **Ayelet Lindenstrauss**
Department of Mathematics, Indiana University
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- **Vladimir Eiderman** (teaching)
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