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

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.

Publications

- **K-theoretic Tate-Poitou duality at prime 2**, in *Advances in Mathematics*, 477 (2025), Paper No. 110370, 26 pp.

In preparations

- **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.
- **Green–Griffiths–Demailly Theory and Orbifold Riemann–Roch on Compact Analytic Stacks** with G. Cho.
- **Homological trace methods for real topological Hochschild homology** with T. Gerhardt, L. Keenan, J. Moreno, J.D. Quigley.

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)

Indiana University

Calculus 3 (TA, F2019, S2022, F2023, S2024)

Calculus 1 (F2022)

Calculus 2 (TA, F2019)

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
Fall 2021	Graduate Student Homotopy Theory Seminar, Indiana University
Spring 2021	Graduate Student Homotopy Theory Seminar, Indiana University
2015–2018	Mathemaniac (Graduate Student Biannual Seminar), Seoul National University

References

- **Michael Mandell**
  Department of Mathematics, Indiana University
  mmandell@iu.edu

- **Andrew Blumberg**
  Department of Mathematics, Columbia University
  andrew.blumberg@columbia.edu

- **Ayelet Lindenstrauss**
  Department of Mathematics, Indiana University
  alindens@iu.edu

- **Vladimir Eiderman** (teaching)
  Department of Mathematics, Indiana University
  veiderma@iu.edu

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