Patrick Lei

📍 Chestnut Hill, MA ✉ patrick.lei@bc.edu 🔗 plei99.github.io

Positions Held

Boston College, Visiting Assistant Professor

Chestnut Hill, MA
July 2025 – present

Education

Ph.D. **Columbia University**, Mathematics
Advisor: Chiu-chu Melissa Liu

New York, NY
Sept 2020 – May 2025

B.S. **University of Massachusetts Amherst**, Mathematics, Computer Science
Advisor: Paul Hacking

Amherst, MA
Sept 2017 – May 2020

Publications and Preprints

Higher genus Gromov-Witten theory of one-parameter Calabi-Yau threefolds II: Feynman rule and anomaly equations
Patrick Lei

Dec 2024

Higher-genus Gromov-Witten theory of one-parameter Calabi-Yau threefolds I: Polynomiality
Patrick Lei

Sept 2024

MSP theory for smooth Calabi-Yau threefolds in weighted $\mathbb{P}^4$
Patrick Lei

Sept 2024

Invited Talks

Algebraic Geometry Seminar

University of Maryland
Sept 2025

Mathematics-String Theory Seminar

Kavli IPMU
June 2025

AMS Central Sectional Meeting
Special session on enumerative geometry of moduli spaces in algebraic geometry

University of Kansas
Mar 2025

Algebraic Geometry Seminar

Columbia University
Jan 2025

Program "Recent developments in higher genus curve counting"
Gave two lectures on the Givental formalism and one lecture on Mixed-Spin-P fields

Simons Center for Geometry and Physics
Jan 2025 – Jan 2025

Online Geometry and Physics Seminar

IASM, Zhejiang University
Dec 2024

Enumerative Geometry Seminar

Columbia University
Oct 2024

Algebraic Geometry Seminar

University of Illinois Urbana-Champaign
Sept 2024

Seminars Organized

Learning seminar on computations in enumerative geometry

Columbia University

Spring 2025

Learning seminar on enumerative invariants and birational transformations Columbia University
Spring 2024

Learning seminar on geometric representation theory Columbia University
Spring 2022

Learning seminar on category O Columbia University
Fall 2021

Learning seminar on intersection theory Columbia University
Spring 2021

Learning seminar on geometric invariant theory Columbia University
Fall 2020

Teaching

Linear Algebra Boston College
Fall 2025

Linear Algebra Columbia University
Summer 2024

Undergraduate seminar on quantum information theory Columbia University
Spring 2024

Undergraduate seminar on toric varieties Columbia University
Fall 2023

Calculus II Columbia University
Spring 2023