Pat Lank

plankmathematics@gmail.com —www.patlank.com

PERSONAL

- Born on October 7th, 1993
- Citizenship: United States

RESEARCH INTERESTS

Algebraic geometry, commutative algebra, triangulated categories

POSITIONS

Università degli Studi di Milano

- *Postdoctoral researcher*, Supervisor: Amnon Neeman in Milan, Italy   Fall 2024 — Present

Simons-Laufer Mathematical Sciences Institute

- *Program Associate* in Berkeley, California   April 2024

EDUCATION

University of South Carolina

- Phd in Mathematics, Advisor: Matthew Ballard   January 2021 to May 2024

University of New Mexico

- M.Sc. in Mathematics, Advisor: Alexandru Buium   August 2017 to December 2020

University of Massachusetts in Lowell

- B.Sc. in Mathematics   August 2015 to August 2017

AWARDS

- Student Disability Resource Center at University of South Carolina "Two Thumbs Up Recognition" for teaching

GRANTS

- AMS Graduate Student Sectional Travel Grant   March 2023

RESEARCH

Published

- Descent conditions for generation in derived categories, `J.Pure Appl. Algebra` (2024)

Preprints

- "Triangulated characterizations of singularities" joint with Sridhar Venkatesh - in preparation
- "Closedness of the singular locus and generation for derived categories" joint with Souvik Dey - `arXiv version`
- "Dévissage for generation in derived categories" joint with Souvik Dey - `arXiv version`
- "Approximation by perfect complexes detects Rouquier dimension" joint with Noah Olander - `arXiv version`
- "A note on generation and descent for derived categories of noncommutative schemes" joint with Anirban Bhaduri, Souvik Dey - `arXiv version`
- "Strong generation and (co)ghost index for module categories" joint with Souvik Dey, Ryo Takahashi - `arXiv version`
- "High Frobenius pushforwards generate the bounded derived category" joint with Matthew Ballard, Srikanth Iyengar, Alapan Mukhopadhyay, and Josh Pollitz - `arXiv version`

INVITED TALKS

- Representation Theory and Related Geometry: Progress and Prospects, University of Georgia — May 2024
- AMS Special Session on Commutative Algebra and its Applications, Howard University, Washington, DC — April 2024
- AMS Contributed Paper Session, Howard University, Washington, DC — April 2024
- COMA/NAG Joint Graduate Student Seminar for Simons-Laufer Mathematical Sciences Institute — March 2024
- AMS Contributed Paper Session on Commutative Algebra at the Joint Mathematics Meetings — January 2024
- Algebraic Geometry seminar, University of Georgia — October 2023
- Syzygies and mirror symmetry workshop, American Institute of Mathematics — September 2023
- New Directions in Group Theory and Triangulated Categories — May 2023
- Georgia Algebraic Geometry Symposium, University of Georgia — May 2023
- Categorical methods in moduli theory, University of Pennsylvania — April 2023
- AMS Special Session on Interactions between Noncommutative Ring Theory and Algebraic Geometry, Spring Central Sectional — April 2023
- AMS Special Session on Recent Developments in Commutative Algebra, Southeast Sectional — March 2023
- Algebraic Geometry seminar, University of Utah — September 2022
- Algebraic Geometry & Singularity theory workshop, University of Washington — June 2022
- Commutative Algebra Regional Expository Seminar — April 2022
- University of South Carolina, Algebraic Geometry & Commutative Algebra Seminar — February 2022
- Commutative Algebra Regional Expository Seminar — October 2021
- University of South Carolina, Algebraic Geometry Number Theory Seminar — March 2021
- Algebra & Geometry Seminar, University of New Mexico — November 2019
- Algebra & Geometry Seminar, University of New Mexico — December 2018
- Women in Mathematics in New England (WIMIN 2016), Smith College — September 2016
- MAA Northeast Spring Section Meeting, University of New England — June 2016

TEACHING

University of South Carolina

Instructor of Record

- MATH 241 - Calculus III — Summer 2021, Summer 2022
- MATH 174 - Discrete structures for computer science — Spring 2023
- MATH 122 - Business Calculus — Spring 2021, Spring 2022, Spring 2024
- MATH 115 - Precalculus — Fall 2021
- MATH 111 - Basic College Mathematics — Fall 2021 (overload), Fall 2022
- MATH 111i - Intensive Basic College Mathematics — Fall 2023

University of New Mexico

Instructor of Record

- MATH 180 - Calculus I — Summer 2020
- MATH 121 - College Algebra — Fall 2017
- MATH 101, 102, 103 - Intermediate Algebra Part I, II, III — Fall 2018

Graduate Teaching Assistant

- MATH 521 - Abstract Algebra — Spring 2020
- MATH 327 - Discrete Structures — Spring 2019
- MATH 322 - Modern Algebra — Spring 2019
- MATH 321 - Linear Algebra W/ Applications — Fall 2019
- Math 319 - Number theory — Spring 2020

ORGANIZATION

- Joint Mathematics Meeting Special Session on Derived Categories, Arithmetic and Geometry — January 2024
- Graduate Colloquium, University of South Carolina — Fall 2021 to Spring 2023
- Algebraic Geometry & Commutative Algebra Seminar, University of South Carolina — Fall 2021 to Spring 2023

SERVICE

- Math 111 Textbook Committee for University of South Carolina — Spring 2024

- Math Tutoring Center Coordinator   Summer 2023
- Graduate Student Panel Committee   Summer 2021, Spring 2022
- Proctor for UNM PNM State Wide Mathematics Exam   Fall 2017, Spring 2019
- City-wide Concert & Fundraiser, Nashua NH Soup Kitchen   Fall 2011