Kenneth Blakey
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Curriculum Vitae

Last updated: January 14, 2026

Employment

May 2019 – Aug 2019 Barista, Starbucks

Jun 2017 – Jul 2017 Delivery Driver, I ♥ NY Pizza

Education

2023 – 2028 [1] Ph.D mathematics, Massachusetts Institute of Technology
Advisor: Paul Seidel

2019 – 2023 Sc.B. mathematics with honors, Brown University
Honors advisor: Thomas Goodwillie

2015 – 2019 High school diploma, Pine Ridge High school
Distinguished scholar award, hall of fame recipient, merit scholar designation, summa cum laude, valedictorian

Visits

Jun 2025 – Jun 2025 Nonlinear group at MPI MiS Leipzig

Jan 2024 – Mar 2024 Nonlinear group at MPI MiS Leipzig

Preprints

1. *Ample divisor complements, Floer spectra, and relative Gromov-Witten theory*
   arXiv:2601.08506, submitted

2. *Parameterized Lagrangian Floer homotopy*
   arXiv:2506.20122, with C.M. Bonciocat, submitted

3. *Floer homotopy theory and degenerate Lagrangian intersections*
   arXiv:2410.11478, submitted

4. *Augmentation varieties and disk potentials III*
   arXiv:2401.13024, with S. Chanda, Y. Sun, C.T. Woordward

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[1]Expected

5. *Augmentation varieties and disk potentials II*
   arXiv:2401.13021, with S. Chanda, Y. Sun, C.T. Woordward

6. *Augmentation varieties and disk potentials I*
   arXiv:2310.17821, with S. Chanda, Y. Sun, C.T. Woordward, submitted

7. *Stable Morse flow trees*
   arXiv:2207.00653, submitted

Grants

2026   Banff international research station (BIRS) research in teams, "Floer homotopy theory and mirror symmetry" (with J. Asplund, Y. Deshmukh, N. Porcelli)

Awards, distinctions, and honors

2023   Brown University David Howell premium for excellence in mathematics and natural philosophy

2023   CAARMS Angela E. Grant poster presentation award for "best theory"

2023   National science foundation graduate research fellowship (NSF-GRFP)

2023   Stanford EDGE fellowship (awarded, declined)

2023   Stanford Knights Hennessy fellowship (awarded, declined)

2022   Barry Goldwater scholarship

2019   Brown University presidential scholars program

2019   Daytona Beach News Journal medallion of excellence

2019   The Gates Scholarship

Invited colloquium talks

2025   UMass Boston colloquium

Invited conference talks

2026   AMS sectional meeting "Sheaf-theoretic and Floer-theoretic approaches to contact and symplectic Topology" @ Boston College

2025   Homotopy theory and Floer homology @ Institut Mittag-Leffler

2024   AMS New England graduate student conference @ Brown University

2022   AMS New England graduate student conference @ Brown University

Invited seminar talks

2025 Brandeis topology seminar

2025 Gdańsk University of Technology nonlinear analysis seminar

2025 Humboldt-Universitat zu Berlin symplektische geometrie seminar

2025 Princeton/IAS symplectic seminar

2025 Ruhr-Universität Bochum oberseminar dynamical systems

2025 Rutgers symplectic geometry seminar

2025 Stanford symplectic seminar

2025 Stony Brook symplectic geometry, gauge theory and low-dimensional topology seminar

2025 UCLA topology seminar

2024 MPI MiS Leipzig geometry seminar

2024 Symplectic zoominar

2023 Brown University geometry and topology seminar

2023 MIT symplectic seminar

2022 Brown University mathematics graduate student seminar

Miscellaneous talks/presentations

2025 Harvard zygotop seminar: relating Floer homotopy and string topology

2025 MIT reading seminar: Gromov-Witten invariants from symplectic geometry

2025 MIT reading seminar: symplectic (co)homology and closed-string Rabinowitz Floer homology

2025 UMass Boston: undergraduate math club presentation

2024 MIT Kan seminar: basics of topological K-theory

2024 MIT Kan seminar: Bott periodicity and Fredholm operators

2024 MIT Kan seminar: introduction to Floer homotopy theory

2024 UCLA online learning seminar: operations from glued pairs of discs

2023 CAARMS poster session

2023 Brown University MATH 2720O lecture: the triangulation conjecture and Floer homotopy theory

2023 Brown University mathematics undergraduate colloquium

2022 Brown University MATH 2720U lecture: Hamiltonian Floer homology

2021 DIMACS REU end of program presentation

2019 Brown University mathematics DRP end of program presentation

Advising

Undergraduate students

2026 Owl Chia and Papon Lapate; MIT mathematics DRP
Various flavors of bordism

2025 Amir Kolic; MIT mathematics DRP
Characteristic classes and K-theory

2024 Ariff Johan; MIT-Imperial summer research exchange
Moduli spaces of gradient flows in discrete Morse theory

High school students

2025 Haotian He, Blake Li, and Benjamin Taycher; PRIMES reading group
Basics of algebraic topology

Teaching

Brown University

2023 MATH 1140: Functions of several variables, undergraduate TA

2022 MATH 1140: Functions of several variables, undergraduate TA

2022 MATH 1410: Topology, undergraduate TA

2021 MATH 1410: Topology, undergraduate TA

Programs participated

2026 AMS sectional meeting "Sheaf-theoretic and Floer-theoretic approaches to contact and symplectic Topology"

2026 Contact geometry, general relativity, and thermodynamics

2026 Floer theory beyond Floer

2026 Interactions between quantum and homotopical geometry

2025 Developments in the mathematical sciences

2025 Homotopy theory and Floer homology

2025 Moduli spaces and pseudo-holomorphic curves: analysis and categorical differential topology

2025 Rutgers symplectic summer school

2025 Symplectic topology from the K-theoretic viewpoint

2024 2nd Simons mathematics summer workshop: Moduli

2024 Kylerec: Recent developments in Gromov–Witten theory

2024 Positive geometry in particle physics and cosmology

2024 Rutgers symplectic summer school

2024 Symplectic geometry of representation and quiver varieties

2024 UCLA online learning seminar: Calabi-Yau structure on wrapped Fukaya categories

2021 DIMACS REU

2019 Brown University mathematics DRP

Programs organized

2026 Kylerec: Link spectral invariants and Weyl laws, with Gabriel Beiner, Clair Xinle Dai, Yonghwan Kim, Galen Liang, Lina Liu
Served as "lead organizer"

2025 Kylerec: Wrapped Fukaya categories and symplectic cohomology, with Clair Xinle Dai, Galen Liang, Eric Kilgore, Eha Srivastava

2024 Floer homotopy reading seminar

Departmental service

Massachusetts Institute of Technology

2025 – 2026 DRP mentor

2025 Graduate student panel for prospective students

2024 – 2025 Program for research in mathematics, engineering and science for high school students (PRIMES) mentor

2024 – 2026 Grad-undergrad mathematics mentoring initiative (GUMMI) mentor

2023 – 2025 Undergraduate mathematics association coffee chats

Brown University

2022 Mathematics TA orientation panelist

Service to the profession

Referee service: Transactions of the American Mathematical Society

Service to the community

2025 Brown University presidential scholars program – graduate student panel

2025 Brown University presidential scholars program – new student welcome video

2024 Brown University black alumni outreach

2024 Jack Kent Cooke young scholars program webinar – interview and Q&A

2023 The Gates Scholarship summer institute squad leader

2021 Sprout and STEM mathematics tutor

2021 Sprout and STEM mentor

2018 Tomorrow's leaders, FUTURES foundation for Volusia county schools