

Christian Carrick

Curriculum Vitae

PERSONAL DETAILS

Mail c.d.carrick@uu.nl

Research Algebraic Topology: Equivariant homotopy theory, chromatic homotopy theory, higher real K -theories, stacks, Hopf algebras, tensor-triangular geometry

POSITIONS AND EDUCATION

Postdoctoral Fellow

Utrecht Geometry Center, Universiteit Utrecht

Supervisor: Lennart Meier.

Jan 2023-

Trimester Program Participant

Hausdorff Institute of Mathematics, Bonn

Spectral Methods in Algebra, Geometry, and Topology

Sep 2022-Dec
2022

Ph.D. Mathematics

UCLA

Advisor: Michael A. Hill. Dissertation: *Stacks and Real-Oriented Homotopy Theory*.

Sep 2017-
May 2022

A.B. Mathematics

Harvard University

Magna Cum Laude. GPA: 3.85. Advisor: Michael J. Hopkins. Senior Thesis: *An Elementary Proof of Quillen's Theorem for Complex Cobordism*.

2012-2016

AWARDS AND HONORS

Pacific Journal of Mathematics Award

Award for 3 best dissertations in Mathematics at UCLA. Awarded \$3500 June 2022.

UCLA Dissertation Year Fellow

Research fellowship for \$20,000. Awarded for 2021-2022 academic year.

Harvard College Research Program Fellow

Research fellowship for \$3000. Awarded Summer 2016.

Derek Bok Teaching Award

Award for outstanding teaching as a course assistant at Harvard University. Awarded Spring 2016 and Fall 2016.

Program for Research in Science and Engineering (PRISE) Fellow

Research fellowship at Harvard University for \$3000. Awarded Summer 2015.

Northern California Scholarship Foundation (NCSF) Winner

Scholarship for \$32000. Awarded Fall 2012.

PUBLICATIONS

The homological slice spectral sequence in motivic and Real bordism.

jt. with Mike Hill and Doug Ravenel. Submitted.
Cofreeness in Real bordism theory and the Segal conjecture.
 Proc. Am. Math. Soc., Volume 150(7), July 2022, 3161-3175.
Smashing localizations in equivariant stable homotopy
 Accepted by Journal of Homotopy and Related Structures. arxiv.org/abs/1909.08771

INVITED TALKS

UCSD Visiting Algebraic Topology Seminar

- *The Homology of $BP_{\mathbb{R}}\langle n \rangle$.* 3/2022

Chicagoland Algebraic Topology Seminar (University of Chicago)

- *The Segal conjecture and Real bordism theory.* 11/2021

AMS Fall Western Sectional Meeting (Special Session on Equivariant and Motivic Homotopy Theory)

- *The Segal conjecture and Real bordism theory.* 11/2021

UCLA Visiting Algebraic Topology Seminar

- *Smashing Localizations in Equivariant Stable Homotopy.* 10/2019

CONTRIBUTED TALKS

Chico Topology Conference

- *A new proof of the Segal conjecture via Real bordism theory.* 4/2022

UCLA Participating Algebraic Topology Seminar

- *Detection theorems in Real bordism Theory.* 11/2020
- *Bousfield localizations of N_{∞} algebras.* 6/2020
- *Introduction to stacks.* 1/2020
- *TP and TC^{-} of perfectoid rings.* 5/2019
- *Goodwillie Derivatives.* 2/2019
- *Homotopy theory of E_{∞} -algebras.* 11/2018
- *Introduction to chromatic homotopy theory.* 10/2017

UCLA Participating Algebra Seminar

- *Classifying spaces in \mathbb{A}^1 homotopy theory.* 4/2019
- *Higher and derived stacks.* 12/2018

UCLA Participating Number Theory Seminar

- *Formal groups and p -divisible groups.* 2/2020
- *Sites and sheaf cohomology.* 10/2018
- *The étale and flat topologies.* 10/2018

UCLA Juvitop Seminar

- *Goerss-Hopkins-Miller theorem.* 3/2019
- *The unoriented cobordism ring.* 10/2018

MIT Juvitop Seminar

- *Quillen's Elementary Proofs.* 12/2016
- *Segal's classifying spaces and spectral sequences.* 12/2016

CONFERENCES/WORKSHOPS ATTENDED

Fields Institute: Conference on Homotopy Theory with Applications to Arithmetic and Geometry

Participant. June 2022.

Chico Topology Conference

Contributed Speaker. April 2022.

Banff International Research Station (BIRS): Equivariant Stable Homotopy

Participant. March 2020.

Southwest Center for Arithmetic Geometry: Topology and Arithmetic

Participant. March 2019.

CU Boulder: Chromatic Homotopy Theory, Journey to the Frontier

Participant. March 2018.

SERVICE

UCLA Directed Research Program (DRP) Mentor

Mentored undergraduates on chromatic homotopy theory. Winter 2021, Spring 2021.

UCLA Participating Algebraic Topology Seminar Organizer

Organized seminars on Higher Real K -theories in Fall 2020, on Stacks in Winter 2020, and on Motivic Homotopy in Fall 2021.

UCLA Juvitop Seminar Founder and Organizer

Founded the UCLA Juvitop Seminar in Fall 2018. Organized seminars on Structured Ring Spectra in Winter 2019 and on Computations in Chromatic Homotopy in Fall 2018.

Harvard College Tutoring Programs

Tutored High School Students in the Cambridge After School Program and the CHANCE tutoring program. Fall 2015 thru Spring 2016.

TEACHING EXPERIENCE

Teaching Assistant

2017-present

UCLA Department of Mathematics

- **Math 33a:** Linear Algebra, Winter 2021.
- **Math 31b:** Calculus II, Winter 2021, Fall 2020, Spring 2020, Winter 2020, Spring 2019, Winter 2019, Fall 2018.
- **Math 31a:** Calculus I, Fall 2020, Fall 2019, Spring 2019, Winter 2019, Fall 2018.
- **Math 32b:** Multivariable Calculus II, Summer 2020, Winter 2020, Summer 2019, Spring 2018.
- **Math 32a:** Multivariable Calculus I, Winter 2018.
- **Math 1a:** Precalculus, Fall 2017.

Course Assistant

2016

Harvard University Department of Mathematics

- **Math 131:** Topology, Fall 2016. Derek Bok Teaching Award.
- **Math 101:** Sets, Groups, and Topology, Spring 2016. Derek Bok Teaching Award.
- **Math 101:** Sets, Groups, and Topology, Fall 2016