

JACKSON MORRIS

CURRICULUM VITAE

Department of Mathematics
University of Washington
Seattle, WA 98195-4350

Pronouns: he/they | jackmann@uw.edu | [jackson-morris.github.io](https://github.com/jackson-morris)

EDUCATION

Ph.D. in Mathematics

June 2026 (Expected)

University of Washington

Advisors: Kyle Ormsby and John Palmieri

Thesis title: Cooperations and periodicity in motivic homotopy theory

B.S. in Mathematics, *magna cum laude*

December 2020

University of Kentucky

RESEARCH INTERESTS

Algebraic Topology: motivic homotopy theory, chromatic homotopy theory, Hermitian K-theory, algebraic K-theory, Brown–Gitler spectra, synthetic spectra, nilpotence and periodicity, Adams spectral sequence, Steenrod algebra, spectral splittings, slice spectral sequence, periodic self-maps, telescope conjecture

PUBLICATIONS AND PREPRINTS

1. *Real K-theory of C_2 -equivariant stunted projective spaces*, joint with Manyi Guo, Alex Waugh, and Albert Jinghui Yang. In preparation
2. *Slices of fixed points and diachromatic blueshift*, joint with Kyle Ormsby. In preparation.
3. *Exotic motivic self-maps of periodicity 1*. In preparation.
4. *Spectrum level splittings of truncated motivic Brown–Peterson cooperations algebras*, joint with Sarah Petersen and Elizabeth Tatum. Submitted. <https://arxiv.org/abs/2509.19542>
5. *Rings of cooperations for Hermitian K-theory over finite fields*. Submitted. <https://arxiv.org/abs/2509.02786>
6. *On the ring of cooperations for real Hermitian K-theory*. Submitted. <https://arxiv.org/abs/2506.16672>
7. *Toric Double Determinantal Varieties*, joint with Alexander Blose, Patricia Klein, and Owen McGrath. *Communications in Algebra* **49** (2020), **7**, 3085–3093. <https://arxiv.org/abs/2006.04191>

SELECTED PRESENTATIONS & SEMINAR TALKS

University of Washington Topology Seminar, Seattle, WA

February 2026

Invited talk: Splittings and periodicity in motivic homotopy theory

University of Illinois Champaign-Urbana, Champaign-Urbana, IL

January 2026

Invited talk: Splittings and cooperations in motivic homotopy theory

Joint Math Meetings, Washington D.C.

January 2026

Invited talk: Cooperations in motivic homotopy theory

University of Virginia Topology Seminar, Charlottesville, VA

November 2025

Invited talk: Splittings and cooperations in motivic homotopy theory

University of Kentucky Topology Seminar, Lexington, KY

November 2025

Invited talk: Splittings and cooperations in motivic homotopy theory

eCHT Secondary Steenrod algebra seminar, Online

November 2025

Contributed talk: Higher Adams differentials and hidden extensions

Duke University Geometry and Topology Seminar, Durham, NC

October 2025

Invited talk: Splittings and cooperations in motivic homotopy theory

University of Colorado Boulder Homotopy Theory Seminar , Boulder, CO <i>Invited talk</i> : Splittings of truncated motivic Brown–Peterson cooperations algebras	<i>September 2025</i>
University of Michigan Geometry Seminar , Ann Arbor, MI <i>Invited talk</i> : On the ring of cooperations for real Hermitian K-theory	<i>September 2025</i>
University of Notre Dame Topology Seminar , South Bend, IN <i>Invited talk</i> : Splittings and cooperations in motivic homotopy theory	<i>September 2025</i>
University of Washington Topology Seminar , Seattle, WA <i>Invited talk</i> : On the ring of cooperations for real Hermitian K-theory <i>Preseminar</i> : The algebraic Atiyah–Hirzebruch spectral sequence	<i>June 2025</i>
GSTGC 2025 , Bloomington, IN <i>Invited talk</i> : On the ring of cooperations for real Hermitian K-theory	<i>April 2025</i>
Reed College Colloquium , Portland, OR <i>Invited talk</i> : Finding fixed points with invariants	<i>February 2025</i>
Joint Math Meetings , Seattle WA <i>Invited talk</i> : Towards real kq-resolutions	<i>January 2025</i>
EAST 2024 , Utrecht, NL <i>Lightning talk</i> : Towards real kq-resolutions	<i>September 2024</i>
GROOT seminar , Online <i>Invited talk</i> : Symplectic orientations	<i>August 2024</i>
Talbot 2024 , Nacogdoches, TX <i>Contributed talk</i> : $\pi_*\mathrm{THH}(\mathbb{Z}_p^{\mathrm{fil}})/p$ and $\pi_*\mathrm{THH}(\ell_p^{\mathrm{fil}})/(p, v_1)$	<i>August 2024</i>
eCHT Hopf rings seminar , Online <i>Contributed talk</i> : Motivic twisted K-theory	<i>April 2024</i>

SERVICE AND PROFESSIONAL ACTIVITIES

Refereeing and Reviewing

Algebraic and Geometric Topology <i>Refereeing</i>	<i>2025–Present</i>
ZBMath <i>Reviewing</i>	<i>2026–Present</i>

Conference Organization

JMM Special Session: Homotopy Theory <i>Secondary local organizer for satellite session.</i> <i>Reserved room on UW campus, set up projector, directed foot traffic.</i>	<i>January 2025</i>
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Seminar Organization

DUBTOP Seminar <i>Topics included: Chromatic homotopy theory, stacks, Goodwillie calculus</i>	<i>2025–2026</i>
Back-To-School seminar <i>Sole organizer.</i> <i>Student lectures on fun math learned over the summer.</i>	<i>Fall 2024</i>
Reading seminars <i>Topics included: Algebraic K-theory, cohomology operations, motivic homotopy theory, vector bundles and topological K-theory, categorical homotopy theory, model categories</i>	<i>2023 – 2024</i>

TEACHING EXPERIENCE

Instructor of Record

University of Washington <i>Math 480 – Homotopy theory</i> <i>Math 208 – Linear Algebra</i>	<i>Spring 2026</i> <i>Winter 2023, Summer 2023</i>
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Graduate Assistant

Electronic Computational Homotopy Theory (eCHT)

Research Seminar

Quadratic Curve Counting (TA for Thomas Brazelton and Sabrina Pauli)

Fall 2025, Spring 2026

Fall 2024

Park City Math Institute (PCMI)

Experimental Math Lab (TA for JD Quigley)

Summer 2024

University of Washington

Math 441 – Topology

Math 300 – Intro to Proofs

Math 208 – Linear Algebra

Summer 2022, Summer 2024

Spring 2023, Winter 2024

*Fall 2023, Spring 2024, Winter 2025,
Spring 2025, Fall 2025, Winter 2026*

Math 126 – Multivariable Calculus

Math 124 – Differential Calculus

Math 120 – Precalculus

Spring 2022, Fall 2024

Fall 2021, Winter 2022

Fall 2022

Directed Reading Mentor

University of Washington

Homotopy Theory (Mentee: Solden Stoll)

Representation Theory (Mentees: Dylan Rosenlind, Samuel Hsu, and Jin Hu)

Geometric Group Theory (Mentee: Jack Zhang)

Introductory Homotopy Theory (Mentees: Ansel Goh, Nathan Louie)

Spring 2025, Summer 2025

Spring 2024, Fall 2024

Winter 2023

Fall 2022, Winter 2023

Graduate Student Mentor

University of Washington

Mentor of an incoming first year graduate student

2023-2024

Math Olympiad Judge

UW Math Hour

Judge for elementary school math competition

2023, 2024

HONORS AND AWARDS

Lee and Cozette McFarlan Travel Fellowship

Department of Mathematics – University of Washington

For travel to European Talbot in Kolding, Denmark

Summer 2025

\$750

Research Assistantship

Graduate School – University of Washington

For “good research progress.”

Selected by mathematics graduate program committee.

Summer 2025

JC Eaves Scholarship

Department of Mathematics – University of Kentucky

For “continued excellence in mathematics as a Kentuckian.”

Nominated by mathematics faculty.

2019 -2020

\$2000

Carolyn Bunyan Award

Department of Mathematics – University of Kentucky

For “outstanding mathematics majors interested in continuing education in mathematics.”

Nominated by mathematics faculty.

2020

\$2000

SELECTED WORKSHOP AND CONFERENCE PARTICIPATION

(∞, ∞) -Categories Workshop

Chicago, IL

March 2026

Igorfest: Midwest Topology Conference Fall 2025

Minneapolis, MN

October 2025

European Talbot

Kolding, DEN

July 2025

(WAGS) Western Algebraic Geometry Seminar <i>Vancouver, VAN</i>	<i>April 2025</i>
(GSTGC) Graduate Student Topology and Geometry Conference <i>Bloomington, IN</i>	<i>April 2025</i>
Joint Math Meetings <i>Seattle, WA</i>	<i>January 2025</i>
Hot Topics: Life after the Telescope Conjecture <i>Berkeley, CA</i>	<i>December 2024</i>
(EAST) European Autumn School in Topology <i>Utrecht, NL</i>	<i>September 2024</i>
Talbot <i>Nacogdoches, TX</i>	<i>August 2024</i>
Motivic Homotopy, K-theory, and Modular Representations <i>Los Angeles, CA</i>	<i>August 2024</i>
PCMI 2024: Motivic Homotopy Theory <i>Park City, UT</i>	<i>July 2024</i>
eCHT Research Workshop on Hopf Rings <i>Online</i>	<i>June 2024</i>
Scissors Congruence, Algebraic K-theory, & Trace Methods <i>Bloomington, IN</i>	<i>July 2023</i>

REFERENCES

Mark Behrens John and Margaret McAndrews Professor of Mathematics University of Notre Dame <i>Relationship: Research mentor</i>	mbehren1@nd.edu
Kyle Ormsby Mathematics Department Chair Reed College <i>Relationship: PhD advisor and research collaborator</i>	ormsbyk@reed.edu
John Palmieri Professor of Mathematics University of Washington <i>Relationship: PhD advisor; Mathematics Department Chair during first 2 years of graduate study</i>	jpalmier@uw.edu
J.D. Quigley Assistant Professor of Mathematics University of Virginia <i>Relationship: Research mentor; Program supervisor and mentor at PCMI</i>	mbp6pj@virginia.edu
Charles Camacho Assistant Teaching Professor University of Washington <i>Relationship: Teaching supervisor and mentor</i>	camachoc@uw.edu
Natalie Naehrig Assistant Teaching Professor University of Washington <i>Relationship: Teaching supervisor and mentor</i>	naehrn@uw.edu