

Dylan Wilson

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| CONTACT INFORMATION | Department of Mathematics West Virginia University 94 Beechurst Ave Morgantown, WV 26505, USA | dylwil3@gmail.com dylwil3.github.io |
| RESEARCH INTERESTS | Algebraic K -theory, topological Hochschild homology, higher algebra, and various incarnations of homotopy theory: chromatic, equivariant, and motivic, and their intersections. | |
| EDUCATION | Northwestern University Ph.D. Mathematics, June 2017 Advisor: Paul Goerss University of Washington B.S. in Mathematics, June 2012 Advisor: Julia Pevtsova | |
| EMPLOYMENT | West Virginia University Assistant Professor, August 2022-present Harvard University Lecturer and NSF Postdoctoral Fellow, July 2019-June 2022 University of Chicago Dickson RTG Instructor, September 2017-June 2019 | |
| PUBLICATIONS | <i>Redshift and multiplication for truncated Brown-Peterson spectra.</i> With Jeremy Hahn. Annals of Mathematics, Volume 196 (2022). <i>Odd primary analogs of Real orientations.</i> With Jeremy Hahn and Andrew Senger. To appear in Geometry and Topology . <i>Mod 2 power operations revisited.</i> To appear in Algebraic and Geometric Topology . <i>On the C_p-equivariant dual Steenrod algebra.</i> With Krishanu Sankar. Proceedings of the American Mathematical Society 150 (2022). <i>Real topological Hochschild homology and the Segal conjecture.</i> With Jeremy Hahn. Advances in Mathematics 387 (2021). <i>Eilenberg-MacLane spectra as equivariant Thom spectra.</i> With Jeremy Hahn. Geometry and Topology 24 (2020). <i>A C_2-equivariant analog of Mahowald's Thom spectrum theorem.</i> With Mark Behrens. Proceedings of the American Mathematical Society 146 (2018). | |

PREPRINTS

A motivic filtration on the topological cyclic homology of commutative ring spectra. (2022). With Jeremy Hahn and Arpon Raksit. Submitted. [arXiv:2206.11208](#).

C₂-equivariant Homology Operations: Results and Formulas. (2019). Submitted. [arXiv:1905.00058](#).

Quotients of even rings. (2018). With Jeremy Hahn. Preprint. [arXiv:1809.04723](#).

On categories of slices. (2017). Preprint. [arXiv:1711.03472](#).

Orientations and topological modular forms with level structure. (2015). Preprint. [arXiv:1507.05116](#).

Appendix to *Equivariant nonabelian Poincaré duality and equivariant factorization homology of Thom spectra.* (2020). With Jeremy Hahn. Preprint. [arXiv:2006.13348](#).

FUNDING

National Science Foundation Mathematical Sciences Postdoctoral Fellowship
2019-2022

National Science Foundation Graduate Research Fellowship
2012-2017

INVITED TALKS

TBD. University of Michigan. (Spring 2023).

TBD. University of Colorado, Boulder. (Spring 2023).

TBD. University of Kentucky. (Spring 2023).

Calculus in higher chromatic characteristic. Massachusetts Institute of Technology. (December 2021).

Variations on the theme of Lichtenbaum-Quillen. Massachusetts Institute of Technology. (March 2021).

Redshift, Lichtenbaum-Quillen, and multiplication on BP⟨n⟩. Electronic Computational Homotopy Theory. (January 2021).

The multiplication on truncated Brown-Peterson spectra. Warwick Mathematics Institute. (October 2020).

Norms. Massachusetts Institute of Technology. (December 2019).

Real Hochschild homology and the norm of \mathbb{F}_2 . Mid-Atlantic Topology Seminar. (October 2019).

Spoke Algebras. University of British-Columbia. (February 2019)

Complex conjugation at odd primes. Massachusetts Institute of Technology. (October 2018)

Eilenberg-MacLane spectra as equivariant Thom spectra. Notre Dame. (May 2018)

Eilenberg-MacLane spectra as equivariant Thom spectra. University of Rochester. (April

2018)

Eilenberg-MacLane spectra as equivariant Thom spectra. University of Minnesota. (April 2018)

Slice spheres in equivariant and chromatic homotopy theory. Massachusetts Institute of Technology. (October 2017)

Kervaire invariants, even spaces, and equivariant power operations. University of California, Los Angeles. (January 2017)

Equivariant power operations and analogs of BP. University of Chicago. (November 2016)

Kervaire invariants, even spaces, and equivariant power operations. Purdue University. (October 2016)

Orienting tmf with level structure. University of Illinois Urbana-Champaign. (March 2016)

Orienting tmf with level structure. Notre Dame. (December 2015)

Orienting tmf with level structure. University of Virginia. (October 2015)

Orienting tmf with level structure. University of Minnesota. (April 2015)

Cobordism, vector bundles, and group laws, Young Topologists Meeting, Center for Symmetry and Deformation, Copenhagen. (July 2014)

CONTRIBUTED
TALKS

Equivariant K -theory. Chicago Summer School in Geometry and Topology. (Summer 2016)

From cobordism to K -theory. Chicago Summer School in Geometry and Topology. (Summer 2016)

Browder's work on the Kervaire invariant. Pre-Talbot Seminar. (Spring 2016)

Homotopy colimits and universal constructions. Pre-Talbot Seminar. (Spring 2016)

An overview of abstract homotopy theory. Pre-Talbot Seminar. (Spring 2016)

Rational homotopy theory I. Pre-Talbot Seminar. (Spring 2015)

K3 Surfaces Seminar, Northwestern (Fall 2014)

Toric Varieties and Pick's Theorem, Graduate Student Seminar. (Spring 2014)

Proof of Hoyois-Hopkins-Morel Theorem, Talbot Workshop. (March 2014)

Algebraic Geometry Examples and Computations, Pre-Talbot Workshop. (February 2014)

Sheaves of Spectra and Lurie's Theorem, Seminar on Topological Automorphic Forms, Northwestern. (Winter 2013)

The Dwyer-Weiss-Williams Index Theorem, Kan seminar, Northwestern. (Fall 2013)

The Chromatic Spectral Sequence and the Adams-Novikov E_2 -term, Pre-Talbot Seminar, Northwestern. (March 2013)

∞ -categories: *Tip of the iceberg, dip of the toe*, Thom spectra seminar, Northwestern. (Spring 2013)

Thom spectra that are Eilenberg-MacLane spectra, Seminar on elliptic cohomology, Northwestern. (Winter 2012)

The action of the mapping class group on Teichmüller space, Seminar on Teichmüller Theory, Northwestern. (Fall 2012)

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|--------------------------|--------------|-----------|---|
| TEACHING AND OUTREACH | Aug-Dec | 2022 | Instructor, Introduction to Proofs |
| | Aug-Dec | 2022 | Instructor, Graduate Topology |
| | Jan-May | 2022 | Instructor, Hochschild Homology |
| | Jan-May | 2022 | Instructor, Linear Algebra and Applications |
| | Sep-Dec | 2021 | Instructor, Sets, Groups, and Topology |
| | Jan-May | 2021 | Instructor, Discrete Mathematics |
| | Sep-Dec | 2020 | Instructor, Linear Algebra and Applications |
| | Jan-Jun | 2019 | Instructor, Abstract Linear Algebra |
| | Spring | 2018 | Instructor, Abstract Linear Algebra |
| | Winter | 2018 | Instructor, Introduction to Proofs |
| | Fall | 2017 | Instructor, Accelerated Analysis |
| | Fall | 2016 | Instructor, Differential Calculus |
| | Sept-June | 2012-2017 | Volunteer Mentor at Evanston Math Circle |
| | Aug-Sep | 2016 | Lead TA, Bridge program |
| | Fall | 2015 | Teaching Assistant, Honors Abstract Algebra |
| | Aug-Sep | 2015 | Lead TA, Bridge program |
| | Fall | 2014 | Teaching Assistant, Linear Algebra |
| | Aug-Sep | 2014 | Teaching Assistant, Bridge Program |
| | Fall | 2013 | Teaching Assistant, Differential Geometry |
| | Aug-Sep | 2013 | Teaching Assistant, Bridge Program |
| | Sept-June | 2010-2012 | Co-Coordinator University of Washington Math Circle |
| | Summer | 2011-2012 | TA and Counselor Summer Institute for Mathematics at UW |
| | ORGANIZATION | 2022 | |
| 2019-2022 | | | Harvard Thursday Seminar Co-organizer |
| 2017-2019 | | | University of Chicago Algebraic Topology Seminar Co-organizer |
| 2018 | | | Chromatic Homotopy Theory: Journey to the Frontier Co-organizer, NSF DMS-1758849 Co-PI |
| 2015-2017 | | | Northwestern topology seminar Co-organizer |
| 2014- 2017 | | | Talbot workshop Co-organizer |
| 2016 | | | Chicago Summer School in Geometry and Topology Co-organizer |
| 2016 | | | Winter Midwest Topology Seminar Co-organizer |

SERVICE

- 2022. WVU Graduate Program Committee.
- 2022. WVU Graduate Admissions Committee.
- 2022. WVU Faculty Senate Sustainability Subcommittee.
- 2021. Harvard Mathematics Intensive Advising Committee.
- 2020-2022. Harvard Mathematics Community Committee.

Referee and expert opinion for: *Transactions of the American Mathematical Society*, *Advances in Mathematics*, *Mathematische Zeitschrift*, *Journal of Topology*, *Algebraic & Geometric Topology*, *Journal of Homotopy and Related Structures*, *Mathematical Research Letters*, etc.

HONORS AND AWARDS

- 2016 Bridge Teaching Assistant Award
- 2015 Gelfand Award
For outstanding contribution to the department
- 2015 Bridge Teaching Assistant Award
Northwestern University
- 2011 Gullicksen Award in Mathematics
University of Washington

REFERENCES

- Michael Hopkins**, Harvard University, mjh@math.harvard.edu
- Paul Goerss** (advisor), Northwestern University, pgoerss@math.northwestern.edu
- Lars Hesselholt**, University of Copenhagen, larsh@math.nagoya-u.ac.jp
- Mike Hill**, University of California, Los Angeles, mikehill@math.ucla.edu
- Mark Behrens**, University of Notre Dame, mbehren1@nd.edu
- Brendan Kelly** (teaching), Harvard University, kelly@math.harvard.edu
- Eric Zaslow** (teaching), Northwestern University, zaslow@math.northwestern.edu