

J.D. Quigley

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Employment

H.C. Wang Assistant Professor, Cornell University. July 2019 - June 2022.

Education

Ph.D. in Mathematics, University of Notre Dame. June 2014 - May 2019.

Advisor: Mark Behrens.

B.S. in Mathematics, University of Illinois at Urbana-Champaign. August 2011 - December 2013.

Cum Laude with Departmental Distinction.

Publications and preprints

Topology

1. *Algebraic slice spectral sequences*, with Dominic Culver and Hana Jia Kong. Submitted. [arXiv:2007.08682](https://arxiv.org/abs/2007.08682).
2. *tmf-based Mahowald invariants*. Submitted. [arXiv:1911.07975](https://arxiv.org/abs/1911.07975).
3. *Tate blueshift and vanishing for Real oriented cohomology*, with Guchuan Li and Vitaly Lorman. Submitted. [arXiv:1910.06191](https://arxiv.org/abs/1910.06191).
4. *On the parametrized Tate construction and two theories of real p -cyclotomic spectra*, with Jay Shah. Submitted. [arXiv:1909.03920](https://arxiv.org/abs/1909.03920).
5. *Chromatic complexity of the algebraic K -theory of $y(n)$* , with Gabe Angelini-Knoll. Submitted. [arXiv:1908.09164](https://arxiv.org/abs/1908.09164).
6. *kq-resolutions I*, with Dominic Culver. Submitted. [arXiv:1905.11952](https://arxiv.org/abs/1905.11952).
7. *Motivic Mahowald invariants over general base fields*. Submitted. [arXiv:1905.03902](https://arxiv.org/abs/1905.03902).
8. *Real motivic and C_2 -equivariant Mahowald invariants*. Submitted. [arXiv:1904.12996](https://arxiv.org/abs/1904.12996).
9. *The Segal Conjecture for topological Hochschild homology of $X(n)$ and $T(n)$* , with Gabe Angelini-Knoll. Submitted. [arXiv:1705.03343](https://arxiv.org/abs/1705.03343).
10. *The motivic Mahowald invariant*. *Algebr. Geom. Topol.* 19-5 (2019), 2485–2534.

Combinatorics and theoretical computer science

1. *Computing Primitively-Rooted Squares and Runs in Partial Words*, with Francine Blanchet-Sadri, Justin Lazarow, Jordan Nikkel, and Xufan Zhang, *European Journal of Combinatorics* 68: 223-241 (2018).
2. *Squares and Primitivity in Partial Words*, with Francine Blanchet-Sadri, Michelle Bodnar, Jordan Nikkel, and Xufan Zhang, *Discrete Applied Mathematics* 185: 26-37 (2015).
3. *Computing Primitively-Rooted Squares and Runs in Partial Words*, with Francine Blanchet-Sadri, Jordan Nikkel, and Xufan Zhang, *IWOCA 2014, 25th International Workshop on Combinatorial Algorithms*, October 15-17, 2014, Duluth, Minnesota, *Lecture Notes in Computer Science*, Springer-Verlag, Berlin, Heidelberg: 86-97 (2015).
4. *Squares in Partial Words*, with Francine Blanchet-Sadri, Yang Jiao, John Machacek, and Xufan Zhang, *Theoretical Computer Science* 530: 42-57 (2014).

Talks

Invited conference talks

Midwest Topology Seminar. October 2020.

Special Session on Motivic Aspects of Topology and Geometry, AMS Sectional Meeting, University of Virginia. March 2020. (cancelled)

Workshop on Equivariant Stable Homotopy Theory and p -adic Hodge Theory, Banff International Research Station. March 2020.

Graduate Student Session, International Workshop on Algebraic Topology, Fudan University. August 2019.

Special Session on Structured Homotopy, AMS Sectional Meeting, University of Michigan. October 2018.

Special Session on Homotopy Theory, AMS Sectional Meeting, Ohio State University. March 2018.

Invited seminar talks and lecture series

Lecture series on *Real cyclotomic spectra*. Free University of Berlin Topology Seminar. June 2020. (cancelled)

Johns Hopkins University Topology Seminar. February 2020.

Wayne State University Topology Seminar. November 2019.

Massachusetts Institute of Technology Topology Seminar. October 2019.

University of Osnabrueck Topology Seminar. April 2019.

University of Rochester Topology Seminar. February 2019.

University of Virginia Topology Seminar. November 2018.

University of Illinois at Urbana-Champaign Topology Seminar. November 2018.

University of Chicago Topology Seminar. November 2018.

Northwestern University Topology Seminar. October 2018.

University of Kentucky Topology Seminar. October 2018.

University of Notre Dame Topology Seminar. October 2018.

University of Oslo Topology Seminar. August 2018.

Michigan State University Geometry and Topology Seminar. November 2017.

Ohio State University Motivic Cohomology and Homotopy Theory Seminar. October 2017.

Selected contributed talks

Cornell Topology and Geometric Group Theory Seminar. September 2019.

Equivariant Topology & Derived Algebra (A Jolly Pleasant Conference for Greenlees), Norwegian University of Science and Technology. August 2019.

Young Topologists Meeting, University of Copenhagen. July 2018.

Young Topologists Meeting, University of Stockholm. July 2017.

Selected expository talks

K-Theory Summer School at University of Southern California. August 2018.

European Talbot Workshop. June 2017.

Talbot Workshop. May 2017.

Talbot Workshop. April 2016.

Teaching

Cornell University

Instructor, Topics in Topology: Stable homotopy, Spring 2021.

Instructor, Finite Math for the Life and Social Sciences (2 sections), Fall 2020.

Instructor, Calculus III, Spring 2020.

Instructor, Calculus I (2 sections), Fall 2019.

University of Notre Dame

Head TA, Calculus B (2 sections), Spring 2019.

Head TA, Calculus A (2 sections), Fall 2017.

Instructor, Elements of Calculus I, Fall 2016.

TA, Calculus B (2 sections), Notre Dame, Spring 2016.

TA, Calculus A (3 sections), Notre Dame, Fall 2015.

Service and Outreach

Co-organizer, Electronic Computational Homotopy Theory Seminar, Fall 2019 - Spring 2021.

Main research seminar (Fall 2019 - Spring 2021), reading seminar on motives (Spring 2020), and Kan seminar (Fall 2019 and 2020).

Advanced Placement Exams Committee, Math Department, Cornell University. Fall 2019 - Spring 2021.

Advisor, Math Explorers' Club, Cornell University. Fall 2019 - Spring 2020.

Co-organizer, Notre Dame Graduate Student Topology Seminar, Fall 2016 - Spring 2019.

Topics included functor calculus (Spring 2019), geometric group theory (Fall 2018), topological field theories (Spring 2018), operads and delooping machinery (Fall 2017), equivariant stable homotopy theory (Spring 2017), and rational homotopy theory (Fall 2016).

Mentor, Notre Dame undergraduate directed reading program, Fall 2016 - Spring 2019.

"Algebraic number theory (Jarvis)" and "Algebraic number theory (Neukirch)" with Ting Gong.

"Modern cryptography and elliptic curves (Shemanske)" with Anthony Napolitano.

"Elliptic curves, modular forms, and their L-functions (Lozano-Robledo)" with Christian Hokaj.

Volunteer, Robinson Community Learning Center, South Bend, IN. Spring 2017 - Spring 2019.

Instructor, Riverbend Community Math Center, South Bend, IN. Summer 2014 - Summer 2016.

Assistant Manager, Illinois Geometry Lab, University of Illinois at Urbana-Champaign. Spring 2014.

Honors, Awards, Fellowships, and Grants

Sady Dissertation Prize. Mathematics Department, University of Notre Dame. 2019.

Oberwolfach Junior Fellows Travel Grant. 2018, 2019.

AMS Graduate Student Travel Grant. 2016.

Honorable Mention, National Science Foundation Graduate Research Fellowship. 2015, 2016.

Elizabeth R. Bennett Scholarship in Mathematics. University of Illinois at Urbana-Champaign. 2013.

Elsie Thomas Fraser Award in Mathematics. University of Illinois at Urbana-Champaign. 2012.

References

Mark Behrens (advisor), University of Notre Dame, mbehren1@nd.edu

Teena Gerhardt, Michigan State University, teena@math.msu.edu

Dan Isaksen, Wayne State University, isaksen@wayne.edu

Karsten Grove (teaching), University of Notre Dame, kgrove2@nd.edu