

# Gabriel Angelini-Knoll

## Curriculum Vitae

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## Education

**Wayne State University:** Ph.D. in Mathematics, 2017. Advisor: Andrew Salch.

**Wayne State University:** M.A. in Mathematics, 2013.

**Kalamazoo College:** B.A. in Mathematics, cum laude, 2011.

**Kalamazoo College:** B.A. in Psychology, cum laude, 2011.

## Employment

**Freie Universität Berlin,** Postdoctoral Researcher, 2019 - Present.

**Michigan State University,** Postdoctoral Researcher, 2017 - 2019.

## Research interests

Algebraic topology and algebraic K-theory.

## Publications

### PUBLISHED AND ACCEPTED

Gabriel Angelini-Knoll. On topological Hochschild homology of the  $K(1)$ -local sphere. *J. Topol.* (2021) 14: 258-290. [doi.org/10.1112/topo.12182](https://doi.org/10.1112/topo.12182).

Gabriel Angelini-Knoll and J.D. Quigley. The Segal Conjecture for topological Hochschild homology of Ravenel spectra. *J. Homotopy Relat. Struct.* (2021) 16: 41-60. [doi.org/10.1007/s40062-021-00275-7](https://doi.org/10.1007/s40062-021-00275-7).

Gabriel Angelini-Knoll and Andrew Salch. A May-type spectral sequence for higher topological Hochschild homology. *Algebr. Geom. Topol.* (2018) 18 no. 5, 2593-2660. [msp.org/agt/2018/18-5/p03.xhtml](https://msp.org/agt/2018/18-5/p03.xhtml).

Gabriel Angelini-Knoll. Complex orientations and TP of complete discrete valuation rings. Accepted for publication in *Homol. Homotopy Appl.* [arXiv:2104.07306](https://arxiv.org/abs/2104.07306).

### SUBMITTED

Gabriel Angelini-Knoll. Detecting  $\beta$  elements in iterated algebraic K-theory of finite fields. Recommended for publication in *Transactions of the AMS* pending final revisions. [arXiv:1810.10088](https://arxiv.org/abs/1810.10088).

Gabriel Angelini-Knoll and J.D. Quigley. Chromatic complexity of the algebraic K-theory of the Thom spectra  $y(n)$ . Invited to Revise and Resubmit. [arXiv:1908.09164](https://arxiv.org/abs/1908.09164).

Gabriel Angelini-Knoll and Andrew Salch. Commuting unbounded homotopy limits with Morava K-theory. Invited to Revise and Resubmit. [arXiv:2003.03510](https://arxiv.org/abs/2003.03510).

Gabriel Angelini-Knoll, Dominic Leon Culver, and Eva Höning. Topological Hochschild homology of truncated Brown-Peterson spectra I. Invited to Revise and Resubmit. [arXiv:2106.06785](https://arxiv.org/abs/2106.06785).

Gabriel Angelini-Knoll, Teena Gerhardt, and Mike Hill. Real topological Hochschild homology via the norm and Real Witt vectors. Submitted for Initial Review. [arXiv:2111.06970](https://arxiv.org/abs/2111.06970).

Gabriel Angelini-Knoll, Christian Ausoni, Dominic Culver, Eva Höning, and John Rognes. Algebraic K-theory of elliptic cohomology. Submitted for Initial Review. [arXiv:2204.05890](https://arxiv.org/abs/2204.05890)

## Talks

### INVITED TALKS

Electronic Computational Homotopy Theory Seminar, 2022.

University of California, San Diego, Topology Seminar, 2022.

University of Pennsylvania, Geometry and Topology Seminar, 2021.

AIM Workshop on Equivariant Techniques in Stable Homotopy theory, 2021.

University of Warwick, Topology Seminar, 2021.

École polytechnique fédérale de Lausanne, Topology Seminar, 2020.

Massachusetts Institute of Technology, Topology Seminar, 2020.

Equivariant Stable Homotopy Theory and p-adic Hodge Theory, BIRS, 2020.

Freie Universität Berlin, Topology Seminar, 2019.

University of California Los Angeles, Algebraic Topology Seminar, 2019.

University of Illinois Urbana-Champaign, Topology Seminar, 2019.

AMS Sectional, University of Hawaii at Manoa, 2019.

Northwestern University, Topology Seminar, 2019.

Electronic Computational Homotopy Theory Seminar, 2019

AMS Sectional, Ohio State University, 2018.

AMS Sectional: Bloomington, Indiana, 2017.

Midwest Topology Conference, Wayne State University, 2017.

University of Kentucky, Topology Seminar, 2017.

Johns Hopkins University, Topology Seminar, 2017.

University of Chicago, Topology Seminar, 2017.

University of Notre Dame, Topology Seminar, 2016.

Michigan State University, Topology Seminar, 2016.

Indiana University, Topology Seminar, 2016.

University of Illinois Urbana-Champaign, Topology Seminar, 2016.

Ohio State University, K-theory Seminar, 2016.

INVITED TALKS FOR AN UNDERGRADUATE AUDIENCE.

REU in experimental mathematics, Michigan State University, 2018.

Math Club, University of Kentucky, 2017.

Undergraduate mathematics seminar, Kalamazoo College, 2014.

Undergraduate mathematics seminar, Wayne State University, 2013.

## Teaching

FREIE UNIVERSITÄT BERLIN

Primary instructor

Topology I. Summer 2022.

Higher Algebra II (co-teaching with Holger Reich). Winter 2021/22.

Research module in Topology: Cyclic homology. Winter 2021/22.

Seminar on Algebra: Symmetries. Summer 2021.

Algebraic K-theory. Winter 2020/21.

Research module in Topology: Equivariant stable homotopy theory. Winter 2020/21.

Research module in Topology: Cohomology of Groups. Summer 2020.

Seminar on Topology: Simplicial Methods. Winter 2019/20.

Research seminar organizer

Research seminar in Geometry and Topology. Hermitian K-theory I. Summer 2022

Research seminar in Geometry and Topology. Hermitian K-theory I. Winter 2021/22.

Research seminar in Geometry and Topology. Summer 2021.

Research seminar in Geometry and Topology: Higher symmetry. Winter 2020/21.

Research seminar in Geometry and Topology: K-theory of pullbacks. Winter 2020/21.

Research seminar in Geometry and Topology: Chromatic homotopy. Summer 2020.

Teaching Assistant

Higher algebra: A course on  $\infty$ -categories. (Course taught by H. Reich.) Summer 2021.

Advanced module in Topology III: Homotopy. (Course taught by H. Reich.) Summer 2020.

Basic module in Topology II: Homology. (Course taught by H. Reich.) Winter 2019/20.

MICHIGAN STATE UNIVERSITY

Primary instructor

Algebraic Topology II: Homotopy theory. Winter 2019.

Calculus I. Fall 2018.  
Abstract Algebra I and Number Theory: Ring theory. Winter 2018.  
Survey of Calculus I. Fall 2017.

Research seminar organization:

Seminar on Algebraic K-theory (co-organized with N. Grieve). Winter 2018.

WAYNE STATE UNIVERSITY

Primary instructor

Intermediate Algebra with Trigonometry. Winter 2014, Winter 2015, and Fall 2015.

Elementary Statistics. Summer 2013.

Elementary Functions: Pre-calculus. Fall 2012, Winter 2013, and Fall 2013.

Math in Today's World: Quantitative literacy. Summer 2012 and Summer 2013.

## Service

CONFERENCE ORGANIZATION

Co-organizer for AMS Special Session on Homotopy theory, UW Madison, 2019.

Co-organizer for Midwest Topology Conference, Michigan State University, 2019.

REFEREE

Referee for *Ann. K-Theory*, *Int. Math. Res. Not.*, *Tbilisi Math. J.*, *Trans. Amer. Math. Soc.*.

Reviewer for *zbMATH* and *MathSciNet*.

MASTERS RESEARCH MENTORSHIP

Masters thesis advisor, Lucas Piessevaux, Freie Universität Berlin, 2022.

Masters thesis co-advisor (with H. Reich), Ferry Saavedra, Freie Universität Berlin, 2022.

Masters thesis co-advisor (with H. Reich), Daniel Krupa, Title:  $\infty$ -categories and K-theory. Freie Universität Berlin, 2021.

UNDERGRADUATE RESEARCH MENTORSHIP

Bachelors Thesis advisor, Sebastian Schneider, Freie Universität Berlin, 2022.

Bachelors Thesis co-advisor (with H. Reich), Vittorio Di Fraia, Title: Variation on the Little Cubes Operads

and Involution Algebra Objects. Freie Universität Berlin, 2021.  
Undergraduate research project leader, nation-wide REU, Michigan State University (MSU), 2019.  
Undergraduate research mentor (with T. Gerhardt), REU exchange program, MSU, 2019.

#### TEACHING MENTORSHIP AND SERVICE

Teaching Mentor for Graduate Teaching Assistants, Michigan State University, 2018.  
Teaching Mentor for Graduate Teaching Assistants, Wayne State University (WSU), 2013 and 2015.  
Course coordinator for Math in Today's World, WSU, 2013.

## Awards

The Dr. Chorng-Shi Houh Award, Wayne State University (WSU), 2017.  
Rumble Fellowship, WSU, 2016.  
K. W. and H. L. Folley Endowed Mathematics Scholarship, WSU, 2016.  
R. and N. Irvan Endowed Scholarship in Mathematics, WSU, 2015.  
The M. J. Zelonka Endowed Mathematics Scholarship, WSU, 2014.  
The Alfred L. Nelson Award, WSU, 2013.  
The Sheila Sparbeck Award, WSU, 2012.

## Languages

English (mother tongue), Spanish (B2), German (A2), French (A1).

## References

Teena Gerhardt (Postdoc Mentor), Michigan State University, [teena@math.msu.edu](mailto:teena@math.msu.edu).  
Michael Hill, University of California, Los Angeles [mikehill@math.ucla](mailto:mikehill@math.ucla).  
Mona Merling, University of Pennsylvania, [mmerling@math.upenn.edu](mailto:mmerling@math.upenn.edu).  
Jack Morava, Johns Hopkins University, [jack@chow.mat.jhu.edu](mailto:jack@chow.mat.jhu.edu).  
Holger Reich (Postdoc Mentor), Freie Universität Berlin, [holger.reich@fu-berlin.de](mailto:holger.reich@fu-berlin.de).  
John Rognes, University of Oslo, [rognes@math.uio.no](mailto:rognes@math.uio.no).  
Andrew Salch (Thesis Advisor), Wayne State University, [asalch@math.wayne.edu](mailto:asalch@math.wayne.edu).  
Tsveta Sendova (Teaching reference), Michigan State University, [tsendova@math.msu.edu](mailto:tsendova@math.msu.edu).