

# Gabriel Angelini-Knoll

## Curriculum Vitae

Freie Universität Berlin  
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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

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).

Gabe 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).

### SUBMITTED

Gabriel Angelini-Knoll. Detecting  $\beta$  elements in iterated algebraic K-theory of finite fields. *Submitted to Transactions of the AMS*. [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  $y(n)$ . *Submitted to Annals of K-theory*. [arXiv:1908.09164](https://arxiv.org/abs/1908.09164).

Gabriel Angelini-Knoll and Andrew Salch. Commuting unbounded homotopy limits with Morava K-theory. *Submitted Mathematische Zeitschrift*. [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. *Submitted to Algebraic & Geometric Topology*. [arXiv:2106.06785](https://arxiv.org/abs/2106.06785).

Gabriel Angelini-Knoll. Complex orientations and TP of complete discrete valuation rings. *Submitted to Proceedings of the AMS*. [arXiv:2104.07306](https://arxiv.org/abs/2104.07306).

#### IN PREPARATION

Gabriel Angelini-Knoll, Teena Gerhardt, and Mike Hill. Real topological Hochschild homology, Witt vectors, and norms.

Gabriel Angelini-Knoll, Dominic Culver, and Eva Höning, Topological Hochschild homology of truncated Brown-Peterson spectra II.

Gabriel Angelini-Knoll, Mona Merling, and Maximilien Péroux. Topological crossed simplicial group homology.

Gabriel Angelini-Knoll, Jeremy Hahn, and Dylan Wilson. Red-shift for Morava K-theory.

Gabriel Angelini-Knoll, Christian Ausoni, Dominic Culver, Eva Höning, and John Rognes. Algebraic K-theory of elliptic cohomology

## Talks

#### INVITED TALKS

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.

#### CONTRIBUTED TALKS

LG $\acute{e}$ TBQ Conference at University of Michigan, 2019.  
Transatlantic Transchromatic Homotopy theory conference, University of Regensburg, 2017.  
Graduate Student Geometry and Topology Conference, Indiana University, 2016.  
Young Topologists' Meeting, École Polytechnique Fédérale de Lausanne, 2015.  
Graduate Student Geometry and Topology Conference, UIUC, 2015.

#### INVITED TALKS FOR AN UNDERGRADUATE AUDIENCE.

REU in experimental mathematics, Michigan State University, 2018.  
Math Club, University of Kentucky, 2017.  
Undergraduate seminar, Kalamazoo College, 2014.  
Undergraduate seminar, Wayne State University, 2013.

## Teaching

#### FREIE UNIVERSITÄT BERLIN

Primary instructor

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. 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.

### MASTERS RESEARCH MENTORSHIP

Masters thesis advisor, Lucas Piessevaux, Freie Universität Berlin, 2021.  
Masters thesis co-advisor (with H. Reich), Daniel Krupa, Freie Universität Berlin, 2021.  
Masters thesis co-advisor (with H. Reich), Ferry Saavedra, Freie Universität Berlin, 2021.

#### UNDERGRADUATE RESEARCH MENTORSHIP

Bachelors Thesis co-advisor (with H. Reich), Vittorio Di Fraia, 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), 2015.  
Teaching Mentor for Graduate Teaching Assistants, WSU, 2013.  
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).