

# JOSHUA RUITER

Michigan State University  
Department of Mathematics

## CONTACT INFORMATION

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## EDUCATION

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**Ph.D.**, Mathematics, Michigan State University September 2016 - Present  
Advisor: Igor Rapinchuk. Current GPA: 3.66 Graduation expected May 2022

**B.A.**, Mathematics, Calvin College September 2012-May 2016  
Thesis advisor: Christopher Mosely. GPA: 3.9

## RESEARCH

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**Current interests:** Algebraic K-theory, group cohomology, Brauer groups, algebraic number theory.

### Publications:

- Julia Bujalski, Grace Dwyer, Todd Kapitula, Quang-Nhat Le, Harjasleen Malvai, Jordan Rosenthal-Kay, and **Joshua Ruiter**. Consensus and clustering in opinion formation on networks. 376. *Philosophical Transactions of the Royal Society A: Mathematical, Physical and Engineering Sciences*. <http://doi.org/10.1098/rsta.2017.0186>
- Shamuël Auyeung, **Joshua Ruiter**, and Daiwei Zhang. An Algebraic Characterization of Highly Connected  $2n$ -Manifolds. *Rose-Hulman Undergraduate Mathematics Journal*: Vol. 17 : Iss. 2 , Article 5. <https://scholar.rose-hulman.edu/rhumj/vol17/iss2/5>

### Seminars:

- *Group cohomology, brauer groups, and local class field theory* (Lead organizer) Spring 2019
- *Derived categories* Spring 2018
- *Algebraic K-theory* Spring 2018

### Talks:

- *Universal central extensions of groups with connections to K-theory*  
MSU Student Algebra Seminar Fall 2018
- *Absolute values on the rational numbers and Ostrowski's theorem*  
Calvin College Math Colloquium Fall 2018
- *Absolute values, Ostrowski's theorem, and completions of fields*  
MSU Student Algebra Seminar Fall 2018
- *The Galois correspondence for infinite Galois extensions*  
MSU Student Algebra Seminar Spring 2018
- *Lie algebras and their root systems*  
Calvin College Math Colloquium Spring 2016
- *Classification of manifolds via homotopy*  
Calvin College Math Colloquium Spring 2015

- *Is it possible to play in tune?*  
Calvin College Math Colloquium

Fall 2015

## TEACHING

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- Instructor for survey of calculus, MSU Spring 2019
- Instructor for survey of calculus, MSU Fall 2018
- Instructor for multivariable calculus, MSU Summer 2018
- Instructor for multivariable calculus, MSU Summer 2017
- Tutor in math learning center, MSU Fall 2016
- Grader for calculus 2 and linear algebra, Calvin College 2012-2014

## EXPERIENCE

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- **Graduate assistant** for summer REU in dynamical systems at ICERM with Todd Kapitula and Bjorn Sandstede. Summer 2016
- **Summer REU** in algebraic topology at Calvin College with James Turner. Summer 2014
- **Internship** with Milliman, Inc. Systems and Programming group. Worked in VBA (Microsoft Excel) to update and maintain ActFact, a suite of Excel tools for actuaries. Summer 2012, 2013

## HONORS AND AWARDS

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- MSU College of Natural Science Recruiting Fellowship 2016-2017
- Calvin College National Merit Scholarship 2012-2016
- Howard Hughes Medical Institute Scholarship 2012-2016
- Wendell Milliman Scholarship 2012-2016
- Kenneth E. and Jean Baker Mathematics and Music Scholarship 2015
- Calvin College Deans List 2012-2016

## MUSICAL ACTIVITIES

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- Cellist 1998-present
- Member of MSU Symphony Orchestra and MSU Opera Orchestra Fall 2017
- Principal cellist of MSU Concert Orchestra 2016-2017, 2019
- Co-principal cellist of Calvin College orchestra 2014-2016
- Studied with Karen Krummel 2012-2016
- Winner, Calvin College concerto competition 2013
- Toured Costa Rica and Chicago as soloist with Calvin College orchestra 2013,2014
- Founding member and organizer of Calvin College Cello Cabaret 2012-2016
- Solo and chamber recitals at Calvin College 2012-2016
- Composing and arranging for cello ensembles

Arranging portfolio at <https://users.math.msu.edu/users/ruiterj2/music/>