

# Nick Rekuski

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## Employment

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### The University of Liverpool - Liverpool, United Kingdom

Postdoctoral Research Associate

Apr. 2024 - Present

### Wayne State University - Detroit, Michigan

Postdoctoral Researcher

Aug. 2022 - Apr. 2024

## Education

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### Michigan State University - East Lansing, Michigan

Ph.D. in Mathematics

Aug. 2016 - Aug. 2022

Advisor: Rajesh Kulkarni

### St. Olaf College - Northfield, Minnesota

B.A. in Mathematics with Distinction

Sept. 2012 - May. 2016

## Research

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### Research Interests

Algebraic Geometry, Derived Categories, Stability Conditions, Moduli of Stable Bundles

### Publications/Preprints

Algebraic Geometry

*Elliptic curves and their principal homogeneous spaces: splitting Severi-Brauer varieties* with E. Mackall, Submitted, [arXiv:2401.10493](https://arxiv.org/abs/2401.10493) (2024)

*Contractibility of the geometric stability manifold on a surface*, [arXiv:2310.10499](https://arxiv.org/abs/2310.10499) (2023)

*Stability of kernel sheaves on del Pezzo surfaces*, Submitted, [arXiv:2305.16306](https://arxiv.org/abs/2305.16306) (2023)

*Stability of kernel sheaves associated to rank one torsion-free sheaves*, *Math. Z.* **307** (2024), Paper No. 2

*Wall-crossing for tilt stability*, Ph.D. Thesis, Michigan State University (2022)

Mathematical Physics

*Effective rationality for local unitary invariants of mixed states of two qubits* with L. Candelori, V. Chernyak, J. Klein. *J. Phys. A: Math. Theor.* **57** (2024), Paper No. 145303

*Rational local unitary invariants of symmetrically mixed states of two qubits* with L. Candelori, V. Chernyak, and J. Klein, *Adv. in Appl. Math* **153** (2024), Paper No. 102613

### Invited Talks

Illinois State University

Pure and Applied Mathematics Seminar

Apr. 2024

Academica Sinica

Algebraic Geometry Seminar

Feb. 2024

University of Arizona

Algebraic Geometry Seminar

Feb. 2024

AMS Spring Central Sectional Meeting. University of Cincinnati

Special Session on Brauer Groups in Algebraic Geometry and Arithmetic

Apr. 2023

Michigan Algebraic Geometry Symposium. University of Michigan

Mar. 2023

Wayne State University

Algebra Seminar

Apr. 2022

## Teaching

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### Teaching Experience

Wayne State University

Reading Course in Commutative Algebra

Fall 2022

Michigan State University	
MTH 133: Calculus II (Lead Recitation Instructor)	Spring 2022
MTH 234: Multivariable Calculus (Instructor of Record)	Summer 2021
MTH 309: Linear Algebra (Recitation Instructor)	Fall 2020
MTH 299: Introduction to Proof (Instructor of Record)	Summer 2020
MTH 103A: College Algebra I (Instructor of Record)	Spring 2020
MTH 299: Introduction to Proof (Instructor of Record)	Fall 2019
MTH 132: Calculus I (Recitation Instructor)	Summer 2019
MTH 299: Introduction to Proof (Recitation Instructor)	Spring 2019
MTH 101: Quantitative Literacy I (Lead Recitation Instructor)	Fall 2018
MTH 101: Quantitative Literacy I (Instructor of Record)	Summer 2018
MTH 101: Quantitative Literacy I (Lead Recitation Instructor)	Spring 2018
MTH 124: Business Calculus (Instructor of Record)	Fall 2017
MTH 132: Calculus I (Instructor of Record)	Summer 2017
St. Olaf College	
MATH 220: Linear Algebra (Teaching Assistant)	Spring 2016
MATH 120: Calculus I (Teaching Assistant)	Fall 2015
MATH 226: Multivariable Calculus (Teaching Assistant)	Spring 2015

### **Mentoring Experience**

Michigan State University	
College of Natural Sciences Digital Education Liaison	Spring 2020 - Summer 2021
Center for Instructional Mentoring Lead Instructor	Summer 2019, Summer 2020
Mock Teaching Facilitator for New Teachers	Summer 2018, Summer 2019
Lyman Briggs College Teaching Mentor	Fall 2017, Spring 2018

### **Talks**

National Numeracy Network Conference	
Michigan State University	Oct. 2018

### **Honors**

Michigan State University Excellence-in-Teaching Citation	Spring 2022
Michigan State University College of Natural Sciences Excellence-in-Teaching Citation	Fall 2021
#iteachmsu Educator Award	Summer 2021
Michigan State University Department of Mathematics Excellence in Teaching Award	Spring 2018

### **Professional Development**

Supplemental Diversity, Equity, and Inclusion Training	May. 2021
Summer Online Instruction Readiness for Educational Excellence	Jun. 2020
Certification in College Teaching Workshop	May. 2018
Inclusion in Math and Advising Professional Learning Community	Apr. 2018

### **Service**

#### **Conference Organization**

AMS Spring Central Sectional Meeting, University of Wisconsin - Milwaukee	
Co-organizer: Special Session on Ramification in Algebraic and Arithmetic Geometry	Apr. 2024

#### **Seminar Organization**

Wayne State University	
Geometric Invariant Theory Learning Seminar	Fall 2022

Michigan State University	
Student Algebraic Geometry	Spring 2020 - Spring 2022
Student Algebra	Fall 2019 - Spring 2020
Brauer Groups Learning Seminar	Spring 2019
Derived Categories Learning Seminar	Spring 2018
<b>Degree Committee Member</b>	
Wayne State University	
Diego Yopez (PhD)	Spring 2024
Ash Ayesh (Masters)	Summer 2023