Nick Rekuski

Department of Mathematics, Wayne State University
Email: `rekuski@wayne.edu` · *Website:* `rekuski.wayne.edu`
Mailing Address: 1261 FAB · 656 W Kirby St · Detroit, MI 48202 · USA

Employment

Wayne State University - Detroit, Michigan
Postdoctoral Researcher   Aug. 2022 - Present

Education

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

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

Publications/Preprints

Algebraic Geometry

Compactifying the space of stability conditions with C. Dare, B. Farman, L. Marquand, E. Macrì, T. Peng, L. Pertusi, X. Qin, F. Rota, In preparation

Elliptic curves and their principal homogeneous spaces: splitting Severi-Brauer varieties with E. Mackall, Submitted `arXiv:2401.10493` (2024)

Contractibility of the geometric stability manifold on a surface, `arXiv:2310.10499` (2023)

Stability of kernel sheaves on del Pezzo surfaces, Submitted, `arXiv:2305.16306` (2023)

Stability of kernel sheaves associated to rank one torsion-free sheaves, Submitted, `arXiv:2303.13459` (2023)

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. Submitted, `arXiv:2305.16178` (2023)

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

Academica Sinica
   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

Honors

Michigan State University Dissertation Completion Fellowship   Fall 2021

Michigan State University Dissertation Continuation Fellowship   Spring 2020

Workshops/Schools Attended

FRG Workshop on Brauer groups and derived categories
Northwestern University   Oct. 2023

School on $K3$ surfaces, hyperkähler manifolds, and cubic fourfolds
Hausdorff Research Institute for Mathematics   Sep. 2023

AMS Math Research Community in Derived Categories   Jun. 2023

MSRI Summer School in Commutative Algebra and its Applications to Algebraic Geometry
Notre Dame   Jun. 2019

Teaching

Teaching Experience

Wayne State University
Informal 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 Brigss 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

Dissertation Committee Member

Wayne State University

Diego Yepez	Spring 2024

Updated January 22, 2024