Résumé/Curriculum Vitae

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Name: Eoin Mackall
Citizenship: United States

Languages: Python, Julia, C/C++, Bash, Nix, SQL
CASs: Oscar, Macaulay2, SageMath

Employment

Jul 2024–	Visiting Assistant Professor University of California, Santa Cruz
Jul 2023–Jun 2024	Lecturer University of California, San Diego
Aug 2020–Jul 2023	Sergei Novikov Postdoctoral Fellow University of Maryland, College Park
Jan 2020–Aug 2020	Postdoctoral Fellow University of Victoria, Victoria

Education

2015–2019	Ph.D. in Mathematics University of Alberta, Edmonton Advisor: Nikita Karpenko
2013–2015	B.A. in Mathematics with a minor in Chemistry California State University, Chico

Awards

2019 Anton Alexander Cseuz Gold Medal in Mathematics
2019 Faculty of Science Dissertation Award
2017 University of Alberta Graduate Student Teaching Award
2014 Undergraduate Award for Research and Creativity Grant

Publications/Preprints

2025 **A looming of phantoms**
coauthored with K. Kemboi, D. Krashen, T. Liu, Y. Liu, S. Makarova, A. Perry, A.A. Robotis, and S. Venkatesh.
Preprint, 28 pages.

2025 **On deformations of Azumaya algebras with quadratic pair**
coauthored with Cameron Ruether
Preprint, 50 pages.

2025 **A factorization algorithm based on Cohn's irreducibility criterion**
Preprint, 8 pages.

2024 **Elliptic curves and their principal homogeneous spaces: splitting Severi–Brauer varieties**
coauthored with Nick Rekuski
Preprint, 24 pages.

2023 **On the algebraizability of formal deformations in K-cohomology**
Preprint, 17 pages.

2023 **The period and index of a generic geometrically elliptic normal curve**
Journal of Algebra

2022 **Pro-representability of K^M-cohomology in weight 3 generalizing a result of Bloch**
Annals of K-theory

2022 **On the Chow groups of a biquaternion Severi–Brauer variety**
Pacific Journal of Mathematics

2021 **Algebraic connective K-theory of a Severi-Brauer variety with prescribed reduced behavior**
Documenta Mathematica

2020 **A universal coefficient theorem with applications to torsion in Chow groups of Severi–Brauer varieties**
New York Journal of Mathematics

2020 **Codimension 2 cycles on Severi-Brauer varieties and decomposability**
Manuscripta Mathematica

2020 **$\mathbb{A}^1$-homotopy equivalences and a theorem of Whitehead**
Homology, Homotopy and Applications

2020 **Universal additive Chern classes and a GRR-type theorem**
Journal of Algebra

2019 **Functorality of the gamma filtration and computations for some twisted flag varieties**
Annals of K-theory

2019 **On the K-theory coniveau epimorphism for products of Severi-Brauer varieties**
coauthored with Nikita Karpenko
Annals of K-theory

2019 **The Coniveau Filtration on K_1 for Some Severi–Brauer Varieties**
Canadian Mathematical Bulletin

2018 **Six variations on a theme: almost planar graphs**
coauthored with M. Lipton, T. Mattman, M. Pierce, S. Robinson, J. Thomas, I. Weinschelbaum.
Involve

Books

2022 Algebraic K-theory in Algebraic Geometry (*In progress*, 118 pages.)

Invited talks

2025 On deformations of Azumaya algebras with quadratic pair
Clay Mathematics Institute: Arithmetic, K-theory, and Algebraic Cycles
Ohio State University

2025 A factorization algorithm based on Cohn's irreducibility criterion
Chico State Mathematics Colloquium
California State University, Chico

2025 A quadratic pair with obstructed deformations
UC Davis Algebraic Geometry and Number Theory Seminar
UC Davis

2024 Quadratic pairs on Azumaya algebras and canonical extension classes
Michigan Algebraic Geometry Seminar
University of Michigan - Ann arbor

2024 Deformations of Azumaya algebras with involution
AMS Sectional on Ramification in Algebraic and Arithmetic Geometry
University of Wisconsin-Milwaukee

2023 Formal representability of Chow groups using Milnor K-theory
CMS Summer Meeting
University of Ottawa

2023 Generic geometric elliptic normal curves on Severi–Brauer varieties
AMS Sectional on Brauer groups in Algebraic Geometry and Arithmetic
University of Cincinnati

2023 Naive $\mathbb{A}^1$-homotopy equivalences and theorems of Whitehead and Zariski
JMM Special Session on Homotopy theory: connections and applications
Boston

2022 Naive $\mathbb{A}^1$-homotopy equivalences and theorems of Whitehead and Zariski
Wayne State Topology Seminar
Wayne State University

2022 Chow groups of biquaternion Severi–Brauer threefolds
Wayne State Mathematics Colloquium
Wayne State University

2022 Naive $\mathbb{A}^1$-homotopy equivalences and theorems of Whitehead and Zariski
MIT topology seminar
Massachusetts Institute of Technology

2022 Pro-representability of some K-cohomology groups
The Euler International Mathematical Institute
Online (https://youtu.be/q93CEszYbCo)

2021 Chow groups of Severi–Brauer varieties and biquaternion algebras
Michigan State University Algebra Seminar
Online

2021 Finding noncyclic torsion in $\mathrm{CH}^2(X)$ when X is a Severi–Brauer variety
Algebra and Geometry of Homogeneous Spaces Online Workshop
Online

2021 Curves on Severi–Brauer varieties and nontriviality of reduced Whitehead groups
AMS Special Session on Galois Cohomology in Arithmetic Geometry, II
Online

2019 Cycles of large codimension on generic twisted flag varieties of type A
The Forms, Flags, Graphs and Beyond Workshop
University of Ottawa

2018 On torsion in the Chow groups of some Severi-Brauer varieties
The 13th Brauer Group Conference
Pingree Park Colorado State University

Professional Development

2025 Nvidia Getting Started with Accelerated Computing in Modern CUDA C++
2025 EDGE-DS Data Science Integration Program
2024 IBM Basics of Quantum Information
2024–2025 EDGE-DS Interdisciplinary Fellow in Data Science
2023 Member in MRC on Derived Categories, Arithmetic and Geometry

Other

Referee for	Journal of Algebra
	Épijournal de Géométrie Algébrique
	Proceedings of the Amitsur Centennial Symposium
Organizer for	Algebra and Number Theory Seminar at UC Santa Cruz (FA24-SP25)
	Student Algebra Seminar at the University of Alberta (WI17-FA18)
Contributor to	Oscar.jl, the Open Source Computer Algebra System
	Hecke.jl, Computational algebraic number theory
Maintainer of	FiniteVarietiesDB (github.com/eoinmackall/FiniteVarietiesDatabase)