Devlin Mallory

malloryd@math.utah.edu   https://devlin-mallory.github.io/

Interests: Singularities, Frobenius summands, differential operators, positivity of vector bundles, jet schemes, Macaulay2.

EMPLOYMENT

Basque Center for Applied Mathematics, Postdoctoral Researcher — Fall 2024

University of Utah, Wylie Assistant Professor Lecturer — Fall 2021 – Summer 2024

University of Michigan, NSF Graduate Fellow — Fall 2015 – Spring 2021

EDUCATION

University of Michigan — Fall 2015 – Spring 2021
PhD, Advisor: Mircea Mustaţă

University of California, Berkeley — Fall 2009 – Fall 2013
B.A. Pure Mathematics (Honors), B.A. Physics

PAPERS AND PREPRINTS

- The tilting property for $F_*^e O_X$ on Fano surfaces and threefolds. arXiv:2405.14070.
- Homogeneous coordinate rings as direct summands of regular rings. Illinois Journal of Mathematics, 68(1), 2024.
- Finite F-representation type for homogeneous coordinate rings of non-Fano varieties. Épijournal de Géométrie Algébrique, Volume 7, 2023.
- An explicit self-duality (with Nikolas Kuhn, Vaidehee Thatte, and Kirsten Wickelgren). In *Stacks Project Expository Collection*, LMS Lecture Note Series, number 480, Cambridge University Press, 2023.
- Bigness of the tangent bundle of del Pezzo surfaces and D-simplicity. Algebra & Number Theory 15(8), 2021.
- Minimal log discrepancies of determinantal varieties via jet schemes. Journal of Pure and Applied Algebra 225(2), 2021.
- Triviality of arc closures and the local isomorphism problem, Journal of Algebra 544(47), 2020.

INVITED TALKS

- Commutative Algebra and Algebraic Geometry in Tucson, April 2024.
- Stony Brook University, Algebraic Geometry seminar, April 2024.
- MSRI/SLMath, Special Seminar on Finite F-Representation Type for Rings and Varieties, March 2024.
- Joint Mathematics Meeting, Special Session on Recent Developments in Commutative Algebra, January 2024.
- AMS Fall Central Sectional, Special Session on Commutative algebra, differential operators, and singularities, October 2023.
- University of Minnesota Commutative Algebra and Algebraic Geometry seminar, April 2022.
- University of Connecticut Algebra seminar, March 2021.
- University of Utah Algebraic Geometry Seminar, October 2020.

- AMS Fall Eastern Sectional, Special Session on Algebraic Singularities in Arbitrary Characteristic, October 2020
- Differential Operators in Commutative Algebra Seminar, May 29 and June 5, 2020.
- University of Michigan Commutative Algebra Seminar, October 2019.
- AMS Fall Central Sectional, AMS Contributed Paper Session on Algebra, Geometry and Lie Theory, September 2019.
- (poster presentation) Midwest Algebraic Geometry Graduate Conference, March 2019.

TEACHING
- Winter 2024: Math 4400 (introduction to number theory).
- Fall 2023: Math 5510 (introduction to general topology).
- August 2023: Co-organizer, new instructor training.
- Winter 2023: Math 3160 (complex analysis)
- Fall 2022: Math 1220 (calculus II)
- Fall 2021: Math 1080 (precalculus)
- Summer 2021: Co-instructor, Michigan Math and Science Scholars, course on cryptography.
- Winter 2021: Math 115 (calculus I).
- Fall 2020: Course co-coordinator, Math 105 (precalculus).
- August 2020: Co-organizer, New instructor training.
- Fall 2018: Math 115 (calculus I).
- Winter 2018: Grader, Math 632 (algebraic geometry II).
- Fall 2017: Grader, Math 631 (algebraic geometry I).
- Winter 2016: Math 105 (precalculus).
- Fall 2015: Math 105 (precalculus).

ORGANIZATIONAL ACTIVITIES
- Organizer, Macaulay2, Computational Algebraic Geometry and String Theory workshop and conference, held at the University of Utah, Spring 2024.
- Organizer, Utah Algebraic Geometry Seminar, Fall 2022 – Spring 2024
- Organizer, Introduction to Algebraic Geometry Reading Group, Winter 2023.
- Mentor, University of Michigan Directed Reading Program, Summer 2020.
- Organizer, Student Algebraic Geometry Seminar, Fall 2018 – Winter 2021.
- Organizer, Seminar on singularities in algebraic geometry and algebra, Fall 2018 – Winter 2019.
- Organizer, Summer graduate student minicourse series, 2018–2021

OTHER PROFESSIONAL ACTIVITIES
- Reviewer, AMS Mathematical Reviews, 2023 – Present.
- Reviewer, zbMath Open, 2022 – Present.

- University of Utah Outstanding Postdoc Award, April 2023.
- University of Michigan Math Department Graduate Student Award, for "contributions to the scholarly life of the Mathematics department," May 2019.
- NSF Graduate Research Fellowship, 2015–2020.
- Dorothea Klumpke Roberts Prize in Mathematics, Department of Mathematics, UC Berkeley, May 2014.
- Honors in Mathematics, Department of Mathematics, UC Berkeley, December 2013.
- Highest Honors, Budapest Semesters in Mathematics, May 2013.
- Most Outstanding Presentation, Young Mathematicians Conference, Ohio State University, July 2012.
- Phi Beta Kappa, UC Berkeley Chapter, June 2012.