

Masahiro Nakahara

CONTACT INFORMATION	University of Washington Padelford Hall Seattle WA 98195, USA https://sites.math.washington.edu/~mn75/index.html	mn75@uw.edu
RESEARCH INTERESTS	Arithmetic geometry, number theory, rational points	
SKILLS	Python (Numpy, Pandas, Scikit-learn, TensorFlow), Magma, Sage, LaTeX	
EMPLOYMENT	University of Washington Postdoctoral Scholar - supervised by Bianca Viray	September 2020-Present
	University of Bath Research Associate - supervised by Daniel Loughran	April 2019-June 2020
	University of Manchester Research Associate - supervised by Daniel Loughran	July 2018-March 2019
EDUCATION	Rice University Ph.D. in Mathematics Advisor: Anthony Várilly-Alvarado	May 2018
	University of Florida B.S. in Mathematics and Statistics	May 2012
AWARDS	AMS-Simons Travel Grant	2021-2023
PUBLICATIONS	The elliptic sieve and Brauer groups (w/ S. Bhakta, D. Loughran, S. L. Rydin Myerson) <i>Proceedings of the London Mathematical Society, to appear</i> , arXiv:2109.03746.	
	Uniform potential density for rational points on algebraic groups and elliptic K3 surfaces (w/ K.-W. Lai) <i>International Mathematics Research Notices</i> 2022 , no. 28, 18541–18588.	
	Bijective Cremona transformations of the plane (w/ S. Asgarli, K.-W. Lai, S. Zimmermann) <i>Selecta Mathematica</i> 28 (2022), no. 3, Paper No. 53, 58 pp.	
	Quantitative arithmetic of diagonal degree 2 K3 surfaces (w/ D. Gvirtz, D. Loughran) <i>Mathematische Annalen</i> 384 (2022), no. 1-2, 135–209.	
	Rational points on conic bundles over elliptic curves. (w/ J. Berg) <i>Mathematische Zeitschrift</i> 300 (2022), no. 3, 2429–2449.	
	Index of fibrations and Brauer classes that never obstruct the Hasse principle. <i>Advances in Mathematics</i> , 348 (2019), 512-522.	

Brauer–Manin obstructions on degree 2 K3 surfaces. (w/ P. Corn)
Research in Number Theory **4** (2018), no. 3, Art. 33, 16 pp.

PREPRINTS

Weak approximation and the Hilbert property for Campana points (w/ S. Streeter)
submitted for publication arXiv:2010.12555.

Weak approximation on Châtelet surfaces (w/ S. Roven)
submitted for publication arXiv:2206.10556.

Semi-integral Brauer-Manin obstruction and quadric orbifolds (w/ V. Mitankin and S. Streeter)
submitted for publication arXiv:2209.15582.

INVITED TALKS

Simons Center for Geometry and Physics, Birational Complexity of Algebraic Varieties (December 2022)

Pacific Rim Mathematical Association Congress 2022, Arithmetic Geometry: Theory and Computation (December 2022)

University of Hannover, Number Theory and Arithmetic Geometry Seminar (May 2022)

University of California San Diego, Number Theory Seminar (May 2022)

University of Georgia, Number Theory Seminar (April 2022)

Rational Points 2022 Workshop (March 2022)

Simon Fraser University, QNTAG (March 2022)

Heilbronn Number Theory Seminar (February 2022)

University of Washington, Algebra and Algebraic Geometry Seminar (December 2021)

Goettingen-Hannover Number Theory Seminar (June 2021)

Institut Mittag-Leffler, Number Theory Mini Conference (April 2021)

University of Washington, Number Theory Seminar (October 2020)

University of Washington, Colloquium (October 2020)

University of Massachusetts at Amherst, Algebraic Geometry Seminar (December 2019)

University of Bath, AGENT Seminar (November 2019)

Rice University, Algebraic Geometry and Number Theory Seminar (March 2019)

University of Sheffield, Number Theory Seminar (February 2019)

Young Researchers in Algebraic Number Theory (November 2018)

University of Manchester, Number Theory Seminar (October 2018)

K3 surfaces and Galois representations (May 2018)

University of Wisconsin-Madison, Number Theory Seminar (November 2017)

Brown University, Algebra Seminar (October 2017)

Rice University, Algebraic Geometry and Number Theory Seminar (February 2017)

TEACHING
EXPERIENCE

University of Washington

Winter 2022 Instructor, MATH300B/E Introduction to Proofs and Mathematical Reasoning

Fall 2021 Instructor, MATH224A/D Advanced Multivariable Calculus

Summer 2021 Instructor, MATH340A Abstract Linear Algebra

Spring 2021 Instructor, MATH308C/D Matrix Algebra

Winter 2020 Instructor, MATH308L Matrix Algebra

Rice University

Fall 2014 Instructor, MATH101 Calculus I

MENTORING
EXPERIENCE

MATH 399, Washington eXperimental Mathematics Lab research. *Permutation Polynomials* (Spring, Fall 2022)

PROFESSIONAL
SERVICE

Co-organizer of Number Theory Seminar, University of Washington (Winter 2023)

REFERENCES

Research:

Daniel Loughran, University of Bath, dt132@bath.ac.uk

Alexei Skorobogatov, Imperial College London, a.skorobogatov@imperial.ac.uk

Anthony Várilly-Alvarado, Rice University, av15@rice.edu

Bianca Viray, University of Washington, bviray@uw.edu

Teaching:

Natalie Naehrig, University of Washington, naehrn@uw.edu