

Nicolas Addington

Department of Mathematics
University of Oregon
Eugene, OR 97403-1222

Fenton Hall 208
adding@uoregon.edu
pages.uoregon.edu/adding

Employment

University of Oregon	
Associate Professor	2021–present
Assistant Professor	2015–21
Duke University	2012–15
William W. Elliott Assistant Research Professor	
Imperial College London	2010–12
Research Associate	

Visiting Positions

Max Planck Institute for Mathematics, Bonn	Spring 2023
Visiting Scientist	
Université de Bourgogne	Summer 2016
Enseignant Invité	
Hausdorff Research Institute for Mathematics, Bonn	Spring 2014
Junior Hausdorff Trimester Program	

Education

University of Wisconsin–Madison	2009
Ph.D. in Mathematics	
Dissertation: <i>Spinor sheaves and complete intersections of quadrics</i> , supervised by Andrei Căldăraru.	
University of Washington	2004
B.S. in Mathematics	
Thesis: <i>A method for recovering arbitrary graphs</i> , supervised by James Morrow.	
B.A. in Music Theory and History	
Both degrees <i>cum laude</i> with college honors.	

Papers and Preprints

The Quillen–Lichtenbaum dimension of complex varieties
with E. Elmanto
55 pages. arXiv:2312.06930.

Hodge numbers are not derived invariants in positive characteristic
with D. Bragg.
Math. Ann. 387 (1–2): 847–878, 2023.

A categorical \mathfrak{sl}_2 action on some moduli spaces of sheaves
with R. Takahashi.
Trans. Amer. Math. Soc. 375(12): 8969–9005, 2022.

- On the period of Lehn, Lehn, Sorger, and van Straten's symplectic eightfold
with F. Giovenzana.
Kyoto J. Math. 63(1): 71–86, 2023.
- Rational points and derived equivalence
with B. Antieau, S. Frei, and K. Honigs.
Compositio Math. 157(5):1036–1050, 2021.
- Twisted Fourier–Mukai partners of Enriques surfaces
with A. Wray.
Math. Z. 297:1239–1247, 2021.
- Some non-special cubic fourfolds
with A. Auel.
Documenta Math. 23:647–651, 2018.
- Cubic fourfolds fibered in sextic del Pezzo surfaces
with B. Hassett, Y. Tschinkel, and A. Várilly-Alvarado.
Amer. J. Math. 141(6):1479–1500, 2019.
- Moduli spaces of torsion sheaves on K3 surfaces and derived equivalences
with W. Donovan and C. Meachan.
J. Lond. Math. Soc. (2) 93(3):846–865, 2016.
- Mukai flops and \mathbb{P} -twists
with W. Donovan and C. Meachan.
J. reine angew. Math. 748:227–240, 2019.
- On two rationality conjectures for cubic fourfolds
Math. Res. Lett. 23(1):1–13, 2016.
- On the symplectic eightfold associated to a Pfaffian cubic fourfold
with M. Lehn.
J. reine angew. Math. 731:129–137, 2017.
- The Pfaffian–Grassmannian equivalence revisited
with W. Donovan and E. Segal.
Alg. Geom. 2(3):332–364, 2015.
- The Brauer group is not a derived invariant
In *Brauer groups and obstruction problems: moduli spaces and arithmetic*,
volume 320 of *Progr. Math.*, pp. 1–5. Birkäuser, 2017.
- Categories of massless D-branes and del Pezzo surfaces
with P. S. Aspinwall.
J. High Energy Phys. 7(176):39pp., 2013.
- Hodge theory and derived categories of cubic fourfolds
with R. P. Thomas.
Duke Math. J. 163(10):1885–1927, 2014.
- D-brane probes, branched double covers, and noncommutative resolutions
with E. Segal and E. Sharpe.
Adv. Th. Math. Phys. 18(6):1369–1436, 2014.
- New derived symmetries of some hyperkähler varieties
Alg. Geom. 3(2):223–260, 2016.

The derived category of the intersection of four quadrics
arXiv:0904.1766.

Spinor sheaves on singular quadrics
Proc. Amer. Math. Soc. 139(11):3867–3879, 2011.

Grants and Awards

Faculty Research Mentor Award UO Center for Undergraduate Research and Engagement (CURE)	Spring 2023
NSF RTG Grant no. DMS-2039316 <i>Combinatorics, geometry, representation theory, and topology</i> Co-PI, with PI Daniel Dugger and five other Co-PIs	2021–26
NSF Standard Grant no. DMS-1902213 <i>K3 surfaces, derived categories, and cubic fourfolds</i> No-cost extension to 2023	2019–22
Rector’s Award for Excellence in Teaching Imperial College London	2012
Faculty of Natural Sciences Award for Excellence in Teaching Imperial College London	2012
Excellence in Mathematical Research Award University of Wisconsin	2009
NSF VIGRE Merit Fellowship	Summer 2008, Spring 2009
Phi Beta Kappa	2003

Lecture Series

Technion – Israel Institute of Technology Summer School Derived Categories, Stability Conditions, and Moduli Three lectures and a problem session	July 2023
Pacific Institute for the Mathematical Sciences (PIMS), Vancouver Summer school on Brauer classes in moduli problems and arithmetic Three lectures and problem sessions with Sarah Frei and Katrina Honigs	August 2021
Centre International de Rencontres Mathématiques (CIRM), Luminy Géométrie algébrique et géométrie complexe Short course, three lectures	December 2018
Mathematical Sciences Research Institute (MSRI), Berkeley Summer school on derived categories Two weeks of lectures and problem sessions with Alexander Polishchuk and Ed Segal	Summer 2018
Université de Bourgogne Interacting algebraic geometry Short course, two lectures	July 2016
Research Institute for Mathematical Sciences (RIMS), Kyoto Japanese–European symposium on symplectic varieties Short course, three lectures	October 2015

Conference Talks since 2015

Université de Nantes Hilbert schemes, moduli spaces, and symplectic varieties	May 2023
Simons Center for Geometry and Physics, Stony Brook Hyperkähler quotients, singularities, and quivers	January 2023
University of Michigan Derived categories, moduli Spaces, and hyperkähler varieties	August 2022
Mathematisches Forschungsinstitut Oberwolfach (MFO) Algebraic geometry: moduli spaces, birational geometry and derived aspects	July 2022
University of Massachusetts Amherst Categorical braid group actions and categorical representation theory	June 2021
Steklov Institute of Mathematics, Moscow Categories and birational geometry	December 2020
Banff International Research Station (BIRS) Derived, birational, and categorical algebraic geometry	November 2020
Western Algebraic Geometry Online (WAGON)	April 2020
University of Warsaw Derived categories and geometry in positive characteristic	July 2019
Schiermonnikoog Island, Netherlands Rationality of algebraic varieties	April 2019
International Centre for Mathematical Sciences, Edinburgh Constructions and obstructions in birational geometry	November 2018
Simons Foundation, New York Birational Geometry Conference	August 2017
University of Michigan Mirror Symmetry Conference for Young Mathematicians	May 2017
Rice University Texas Algebraic Geometry Symposium (TAGS)	April 2017
University of Massachusetts Amherst Algebraic Geometry Northeast Series (AGNES)	November 2016
Simons Center for Geometry and Physics, Stony Brook Derived categories and Chow groups of hyperkähler and Calabi–Yau varieties	September 2016
Onuma International Seminar House, Hokkaido On explicit description of holomorphic symplectic varieties	August 2016
Institut de Mathématiques de Toulouse New methods in birational geometry	June 2016
Banff International Research Station (BIRS) Homological mirror geometry	March 2016
University of California, San Diego Complex algebraic geometry	January 2016
University of Utah AMS summer institute in algebraic geometry	July 2015

Seminars and Colloquia since 2015

University of Oslo, Algebra Seminar	June 2023
Max-Planck-Institut Bonn, Algebraic Geometry Seminar	April 2023
Northwestern University, Algebraic Geometry Seminar	March 2023
University of Illinois at Urbana–Champaign, Algebraic Geometry Seminar	November 2022
Indian Institute of Technology, Gandhinagar, Geometry, Algebra, Numbers and Integers, Topology seminar	April 2022
University of Nottingham, Online Algebraic Geometry Seminar	September 2021
International Centre for Mathematical Sciences (ICMS), Edinburgh Derived Seminar	May 2021
University of Michigan / Michigan State University Joint Colloquium	April 2021
Beijing Institute of Mathematical Sciences and Applications, Geometric Representation Seminar	April 2021
Imperial College London, Geometry and Topology Seminar	February 2021
University of Warwick, Algebraic Geometry Seminar	February 2021
UC Santa Barbara, Algebraic Geometry Seminar	January 2021
Kansas State University, Mirror Symmetry Seminar	January 2021
University of Illinois at Chicago, Algebraic Geometry Seminar	January 2021
Leibniz Universität Hannover, Algebraic Geometry Seminar	November 2020
University of California, Davis, Algebraic Geometry Seminar	February 2019
University of British Columbia, Algebraic Geometry Seminar	October 2018
University of Arizona, Algebraic Geometry Seminar	March 2018
Stony Brook University, Algebraic Geometry Seminar	November 2017
Colorado State University, “Fragment” Seminar	October 2017
Indiana University, Algebra Seminar	April 2017
Rice University, Colloquium	April 2017
University of Washington, Algebraic Geometry Seminar	October 2016
Imperial College London, Algebraic Geometry Seminar	July 2016
University of Utah, Algebraic Geometry Seminar	January 2016

Postdoctoral Supervision

Benjamin Tighe	2023–present
Katrina Honigs Assistant Professor, Simon Fraser University	2019–21

Ph.D. Supervision

Sarah Frei	2019
John Wesley Young Research Instructor (postdoc), Dartmouth College	
Ryan Takahashi	2020
Pro tem instructor, University of Oregon	
Andrew Wray	2020
Data Scientist, Fullpower-AI	
Corey Brooke	2023
Visiting Assistant Professor, Carleton College	
Andrew Huchala	expected 2025
María Fernanda Delfin Ares de Parga	expected 2026

Master's and Undergraduate Supervision

Andrew Rehmann, undergraduate research project	Summer 2023
Ethan Reinhart, undergraduate research project	Summer 2023
Raven Biskup, undergraduate research project	Summer 2023
Makenna Greenwalt, undergraduate research project	Summer 2022
<i>An undergraduate introduction to Eckardt points and cubic surfaces</i>	
Isabella Harker, undergraduate research project	Summer 2022
Videos illustrating fibrations on surfaces containing lines available at pages.uoregon.edu/adding/videos	
Karl Richter, honors thesis	2022–23
<i>Lines and conic sections in a family of quartic surfaces</i>	
Video illustrating the Noether–Lefschetz theorem for quartic surfaces available at pages.uoregon.edu/adding/videos	
Chris Keane, MS	2019–22
Jessica Taylor, BS thesis	2021–22
<i>Lines and conics on quartic surfaces: an algorithmic approach</i>	
Simon Venter, translation project	2020–22
<i>Small resolutions of special three-dimensional varieties</i> , arXiv:2208.01383	
Translation of J. Werner, <i>Kleine Auflösungen spezieller dreidimensionaler Varietäten</i> originally published as Bonner Mathematische Schriften No. 186.	
Ian McConachie, undergraduate research project	Summer 2021
Leonie Way, undergraduate research project	Summer 2019
K3nCones, a Macaulay2 package for computing nef and movable cones of hyperkähler varieties of $K3^{[n]}$ type	
Alexander Shmakov, BA thesis	2018
<i>Galois representations in étale fundamental groups and the profinite Grothendieck–Teichmüller group</i>	
Jutta Frieden, MSc thesis (Imperial College)	2012
<i>The Lefschetz hyperplane theorem</i>	
Hugh Gledhill, BSc thesis (Imperial College)	2012
<i>Galois theory, covering spaces, and Riemann surfaces</i>	

Teaching

University of Oregon	2015–present
Math 202–6, Math Labs (2×Fall 2019, 2×Fall 2021, Fall 2023)	
Math 243, Introduction to Statistics (Winter 2022)	
Math 252, Calculus II (Fall 2015, Spring 2016, Winter 2019)	
Math 253, Calculus III (Winter 2024)	
Math 320, ODEs with theory (Spring 2019)	
Math 391–2, Abstract Algebra (2020–21)	
Math 405, Undergraduate reading courses (3 quarters)	
Math 413, Metric spaces and topology (Fall 2023)	
Math 420, Second Course in ODEs (Spring 2016)	
Math 431, Point-set topology (Fall 2018 and 2019)	
Math 432, First course in manifolds (Winter 2020)	
Math 444, Ring theory (Fall 2016)	
Math 445, Group theory (Winter 2016)	
Math 605, Graduate reading courses (12 quarters)	
Math 607, Topics Course: Moduli Spaces of Sheaves (Winter 2016)	
Math 607, Topics Course: Homological Algebra (Spring 2020)	
Math 607, Topics Course: Connections and Characteristic Classes (Winter 2021)	
Math 634, Algebraic Topology I (Fall 2020)	
Math 637, Differential Geometry I (Fall 2021)	
Math 681–2–3, Algebraic Geometry (2017–18, Spring 2022)	
Math 692, “What every topologist should know” (Spring 2019)	
Duke University	2012–15
Multivariable calculus, abstract algebra, mathematical logic, Riemannian geometry, reading course on matrix factorizations, mini-course on derived categories. Recognized for high course evaluation scores, Fall 2013.	
Imperial College London	2010–12
Taught undergraduate algebraic topology three times. Supervised an undergraduate thesis and a master’s thesis. Won two teaching awards.	
University of Wisconsin	2004–09
Teaching assistant for nine semesters: including one teaching calculus independently; one with the Wisconsin Emerging Scholars program, working with students from disadvantaged backgrounds; and one with the Honors program.	
University of Washington	2003
Teaching Assistant, Robinson Center for Young Scholars	

Professional Service

Co-organizer, introductory workshop	February 2024
MSRI semester on Noncommutative Algebraic Geometry (with David Favero, Wendy Lowen, and Alice Rizzardo)	
Co-organizer, special session on “Moduli spaces in algebraic geometry” Pacific Rim Mathematical Association (PRIMA) Congress, Vancouver (with Alexander Polishchuk)	December 2022
Western Algebraic Geometry Symposium (WAGS) steering committee	2021–present

Local co-organizer, Western Algebraic Geometry Symposium (WAGS) (with Nicholas Proudfoot)	October 2018
Co-organizer, Follow-up workshop to JTP “Algebraic Geometry” Hausdorff Research Institute for Mathematics, Bonn (with Margherita Lelli-Chiesa, Dennis Eriksson, Francesco Polizzi)	April 2018
Co-organizer, Derived categories workshop Hausdorff Junior Trimester Program “Algebraic Geometry,” Bonn (with Nathan Broomhead)	February 2014
Co-organizer, Graduate student topology and geometry conference (with Michael Childers, Christine Lien, Jo Nelson)	April 2009
NSF Panelist	(omitted)
Refereeing and quick opinions, including Duke Math. J. and J. Eur. Math. Soc.	2010–present
Referee for a German habilitation thesis	2016
Referee for a European grant agency	2015
Referee for two European Ph.D. theses	2018, 2021

Departmental Service

Dissertation, oral exam, and undergraduate thesis committees Dissertation committees for C. Hsu, C. Dethier, J. Doss, W. Zhang, E. Bodish, J. Aycock, R. Casebolt, D. Miyata, B. Phillips, E. Granath, C. Davis, J. Cohen, J. Hathaway 9 further oral exam committees, 3 undergraduate thesis committees	2017–present
Scholarships and awards committee	2015–21, 2023–24
Graduate advising committee	2016–17, 2018–19
Department head search committee	2017, 2020
Executive committee	2017–18, 2019–22, 2023–24
Colloquium committee	2019–21
Climate committee (DEI)	2020–22
Teaching effectiveness committee	2021–22
Assessment committee (part of undergraduate affairs)	2023–24
Search committee	(omitted)

Other Employment

Madison (Wisconsin) Symphony Orchestra Substitute violin	2007–09
Tacoma (Washington) Symphony Orchestra Substitute violin	2003–04
Milliman & Robertson, Inc. Assistant network and database administrator	2000–03

Languages

English (native), French (good)

Citizenship

United States