

Nicolas Addington

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Employment

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

Education

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

Research Interests

Algebraic geometry: derived categories, hyperkähler varieties, rationality questions.

Papers and Preprints

A categorical \mathfrak{sl}_2 action on some moduli spaces of sheaves
with R. Takahashi
Preprint. arXiv:2009.08522.

On the period of Lehn, Lehn, Sorger, and van Straten’s symplectic eightfold
with F. Giovenzana
Submitted. arXiv:2003.10984.

Rational points and derived equivalence.
with B. Antieau, S. Frei, and K. Honigs.
Compositio Math., to appear. arXiv:1906.02261.

Twisted Fourier–Mukai partners of Enriques surfaces.
with A. Wray.
Math. Z., 9 pp. published online ahead of print, 2020.

- 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. Birkhäuser, 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
Preprint. arXiv:0904.1766.
- Spinor sheaves on singular quadrics
Proc. Amer. Math. Soc. 139(11):3867–3879, 2011.

Visiting Positions

Université de Bourgogne Enseignant Invité	Summer 2016
Hausdorff Research Institute for Mathematics, Bonn Junior Hausdorff Trimester Program	Spring 2014

Awards

NSF Grant no. DMS-1902213	2019-2022
Rector's Award for Excellence in Teaching	2012
Faculty of Natural Sciences Award for Excellence in Teaching	2012
Excellence in Mathematical Research Award	2008-09
NSF VIGRE Merit Fellowship	Summer 2008, Spring 2009
Phi Beta Kappa	2003

Invited Lectures: Conferences

Banff International Research Station Derived, birational, and categorical algebraic geometry (online)	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
Centre International de Rencontres Mathématiques, Luminy Géométrie algébrique et géométrie complexe Short course (3 lectures)	December 2018
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	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
Université de Bourgogne Interacting algebraic geometry Short course (2 lectures)	July 2016
Institut de Mathématiques de Toulouse New methods in birational geometry	June 2016
Banff International Research Station Homological mirror geometry	March 2016
University of California, San Diego Complex algebraic geometry	January 2016
RIMS, Kyoto University Japanese–European symposium on symplectic varieties Short course (3 lectures)	October 2015
University of Utah AMS summer institute in algebraic geometry	July 2015
University of Warwick Derived categories and birational geometry	June 2015
Stony Brook University New techniques in birational geometry	April 2015
Michigan State University AMS sectional meeting, special session on the geometry of algebraic varieties	March 2015
University of North Carolina at Greensboro AMS sectional meeting, special session on mirror symmetry	November 2014
University of North Carolina at Chapel Hill Workshop on moduli spaces, derived geometry, and geometric representation theory	November 2014
Université de Lille 1 Meeting on moduli spaces of irreducible symplectic varieties, cubics and Enriques surfaces	March 2014
University of South Carolina Commutative Algebra – Algebraic Geometry in the Southeast	November 2013
Kansai Seminar House, Kyoto Symplectic algebraic geometry workshop	October 2013
Erwin Schrödinger Institute, Vienna Matrix factorizations workshop	May 2013
Simons Center for Geometry and Physics, Stony Brook Hyperkähler geometry workshop	October 2012

Université de Bourgogne Derived categories in algebraic geometry workshop	May 2012
University of Chicago Graduate student topology conference	April 2007

Invited Lectures: Seminars and Colloquia

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
University of South Carolina, Colloquium	February 2015
University of Oregon, Colloquium	January 2015
University of North Carolina, Colloquium	January 2015
University of Wisconsin, Colloquium	January 2015
University of Miami, Colloquium	January 2015
Boston University, Colloquium	January 2015
University of Maryland, Algebra–Number Theory Seminar	October 2014
Emory University, Algebra Seminar	October 2014
Ohio State University, Algebraic Geometry Seminar	September 2014
University of Warwick, Algebraic Geometry Seminar	May 2014
Imperial College London, Algebraic Geometry Seminar	April 2014
University of Wisconsin, Algebraic Geometry Seminar	September 2013
University of Washington, Algebraic Geometry Seminar	May 2013
Ohio State University, Algebraic Geometry Seminar	April 2013
Rice University, Algebraic Geometry Seminar	March 2013
University of Warwick, Algebraic Geometry Seminar	October 2011

Loughborough University, Mathematical Physics Seminar	May 2011
University of Oxford, Homological Research Seminar (HORSE)	February 2011
Max-Planck-Institut Bonn, Algebraic Geometry Seminar	December 2010
University of Cambridge, Algebraic Geometry Seminar	November 2010
University of Warwick, Algebraic Geometry Seminar	October 2010
University of Glasgow, Geometry and Topology Seminar	September 2010

Ph.D. Students

Sarah Frei	2019
RTG Lovett Instructor, Rice University.	
Moduli spaces of sheaves on K3 surfaces and Galois representations. <i>Selecta Math.</i> 26(1):16pp, 2020.	
Ryan Takahashi	2020
Andrew Wray	2020
Corey Brooke	expected 2023

Master's and Undergraduate Theses Advised

A. Shmakov, BA Oregon	2018
Galois representations in étale fundamental groups and the profinite Grothendieck–Teichmüller group	
J. Frieden, MSc Imperial College	2012
The Lefschetz hyperplane theorem	
H. Gledhill, BSc Imperial College	2012
Galois theory, covering spaces, and Riemann surfaces	

Teaching

University of Oregon	2015–present
Math 205, Math Lab (Fall 2019, two sections)	
Math 252, Calculus II (Fall 2015, Spring 2016, Winter 2019)	
Math 320, ODEs with theory (Spring 2019)	
Math 391–2, Abstract Algebra (2020–21)	
Math 420, Second Course in ODEs (Spring 2016)	
Math 431, Point-set topology (Fall 2018, Fall 2019)	
Math 432, First course in manifolds (Winter 2020)	
Math 444, Ring theory (Fall 2016)	
Math 445, Group theory (Winter 2016)	
Math 605, Reading courses (8 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 681–2–3, Algebraic Geometry (2017–18)	
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

Local co-organizer, Western Algebraic Geometry Symposium (with N. Proudfoot)	October 2018
Co-organizer, MSRI summer graduate school on derived categories (with A. Polishchuk)	Summer 2018
Co-organizer, Follow-up workshop to JTP “Algebraic Geometry” Hausdorff Research Institute for Mathematics, Bonn (with M. Lelli-Chiesa, D. Eriksson, F. Polizzi)	April 2018
Co-organizer, Derived categories workshop Hausdorff Junior Trimester Program “Algebraic Geometry,” Bonn (with N. Broomhead)	February 2014
Co-organizer, Graduate student topology and geometry conference (with M. Childers, T.-S. Lien, J. Nelson)	April 2009
Referee for various journals, including Duke Math. J. and J. Eur. Math. Soc.	2010–present
Reviewer for Mathematical Reviews (MathSciNet)	2012–17
Referee for a German habilitation thesis	2016
Referee for a European grant agency	2015

Departmental Service

Dissertation, oral exam, or undergraduate thesis committees C. Hsu, C. Dethier; J. Aycock, E. Bellah, R. Casebolt, J. Cohen, J. Hathaway, W. Zhang; N. Schieber	2017–present
Scholarships and awards committee Chair since 2016	2015–present
Colloquium committee Chair	2019–20
Executive committee	2017–18, 2019–21
Department head search committee	2017, 2020
Graduate advising committee	2016–17, 2018–19

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