

Benjamin Schmidt

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Education/Positions

- 08/16– University of Texas at Austin, *R. H. Bing Fellow*.
- 06/16–08/16 Northeastern University, *Research Assistant*.
- 08/12–05/16 The Ohio State University, *Ph.D. in Mathematics*.
Ph.D. Thesis, Emanuele Macrì, *Stability Conditions on Threefolds and Space Curves*.
- 09/11–07/12 Universität Bonn, *Ph.D. Student*.
- 10/09–08/11 Universität Bonn, *Master of Science in Mathematics*.
Master's Thesis, Nicolas Perrin, *Resolutions of some Schubert Varieties*.
- 10/06–09/09 Universität Hannover, *Bachelor of Science in Mathematics*, With Distinction.
Bachelor's Thesis, Christine Bessenrodt, *The Divisor Matrix, Dirichlet Series and $SL(2, \mathbb{Z})$* .

Research Interests

Algebraic Geometry, *Geometry of Moduli Spaces of Semistable Sheaves, Birational Geometry*.

Derived Categories, *Bridgeland Stability Conditions, Exceptional Collections*.

Representation Theory, *Moduli of Quiver Representations*.

Papers

- 1 **Bridgeland Stability on Blow Ups and Counterexamples**, *Joint with Cristian Martinez, Appendix by Omprokash Das*, Accessible online at <https://arxiv.org/abs/1708.08567>.
- 2 **Families of Elliptic Curves in \mathbb{P}^3 and Bridgeland Stability**, *Joint with Patricio Gallardo and César Lozano Huerta*, To appear in Michigan Mathematical Journal, Accessible online at <http://arxiv.org/abs/1609.08184>.
- 3 **Bridgeland Stability Conditions on Fano Threefolds**, *Joint with Marcello Bernardara, Emanuele Macrì, and Xiaolei Zhao*, *Épjournal de Géométrie Algébrique* vol. 1 (2017), Accessible online at <http://arxiv.org/abs/1607.08199>.
- 4 **Lectures on Bridgeland Stability**, *Joint with Emanuele Macrì*, To appear in the Proceedings of the "CIMPA-CIMAT-ICTP School on Moduli of Curves" (Guanajuato, Mexico, 2016), Springer 2017, Accessible online at <http://arxiv.org/abs/1607.01262>.

- 5 **Counterexample to the Generalized Bogomolov-Gieseker Inequality for Threefolds**, *Int. Math. Res. Not. IMRN 2017*, no. 8, 2562–2566., Accessible online at <http://arxiv.org/abs/1602.05055>.
- 6 **Stability Conditions on Threefolds - First Wall Crossings**, *Accessible online at <http://arxiv.org/abs/1509.04608>*.
- 7 **Nef Cones of Hilbert Schemes of Points on Surfaces**, *Joint with Barbara Bolognese, Jack Huizenga, Yinbang Lin, Eric Riedl, Matthew Woolf, and Xiaolei Zhao*, *Algebra Number Theory 10 (2016)*, no. 4, 907–930, Accessible online at <http://arxiv.org/abs/1509.04722>.
- 8 **A Generalized Bogomolov-Gieseker Inequality for the Smooth Quadric Threefold**, *Bull. Lond. Math. Soc. 46 (2014)*, no. 5, 915–923, Accessible online at <http://arxiv.org/abs/1309.4265>.
- 9 **On the Birational Geometry of Schubert Varieties**, *Bull. Soc. Math. France 143 (2015)*, no. 3, 489–502, Accessible online at <http://arxiv.org/abs/1208.5507>.

Fellowships

- 2015–2016 **Presidential Fellowship**, *The Ohio State University*.
- Spring 2015 **Special Graduate Assignment**, *The Ohio State University*.
- 2012–2013 **Graduate Fellowship**, *The Ohio State University*.
- 2007–2009 **Tuition Fellowship**, *Universität Hannover*.

Conference Talks

- 06/2017 **Edge Days**, *University of Edinburgh*, The Genus of Space Curves.
- 9/2015 **BC-Northeastern Algebraic Geometry Conference**, *Ample Divisors on Hilbert Schemes of Points on Surfaces*.
- 12/2014 **Workshop on Algebraic Geometry**, *Milan*, Bridgeland Stability on Threefolds and Moduli of Quiver Representations.
- 2/2014 **Midwest Algebraic Geometry Graduate Conference**, *University of Illinois at Chicago*, Bridgeland Stability on the Quadric Threefold.
- 10/2012 **AMS Sectional Meeting**, *Special Session on Geometry of Algebraic Varieties*, Akron Ohio, On the Birational Geometry of Schubert Varieties.

Other Talks

- 09/2017 **Universidad Nacional Autónoma de México in Oaxaca**, *Three lectures on Derived Categories and the Genus of Space Curves*.
- 06/2017 **University of Glasgow**, *Algebra Seminar*, The Genus of Space Curves.
- 06/2017 **University of Sheffield**, *Algebraic Geometry Seminar*, The Genus of Space Curves.
- 06/2017 **Université de Versaille**, *Séminaire d'Algèbre-Géométrie*, The Genus of Space Curves.
- 03/2017 **Pennsylvania State University**, *Algebra and Number Theory Seminar*, The Genus of Space Curves.

- 03/2017 **Rice University**, *Algebraic Geometry and Number Theory Seminar*, The Genus of Space Curves.
- 03/2017 **Northeastern University**, *Derived Categories Student Learning Seminar*, The Genus of Space Curves.
- 11/2016 **University of Oregon**, *Algebra Seminar*, Classical Algebraic Geometry and Derived Categories.
- 9/2016 **The University of Texas at Austin**, *Geometry Seminar*, Nef Cones of Hilbert Schemes of Points on Surfaces.
- 8/2016 **The University of Texas at Austin**, *Sean Keel's Back Porch Seminar*, Introduction to Bridgeland Stability.
- 4/2016 **The Ohio State University**, *Graduate Student Seminar*, What has Algebraic Geometry to do with Geometry.
- 3/2016 **Harvard University**, *Yau's Student Seminar*, Constructing Stability Conditions on Threefolds.
- 2/2016 **Princeton University**, *Algebraic Geometry Seminar*, Ample divisors on Hilbert schemes of points on surfaces.
- 2/2016 **Northeastern University**, *Geometry, Algebra, Singularities, Combinatorics Seminar*, Stability Conditions on Threefolds - Some Wall-Crossings.
- 2/2016 **Northeastern University**, *Graduate Student Seminar*, Moduli Spaces and Derived Categories.
- 1/2016 **University of Alberta**, *Moduli Spaces and Derived Categories*.
- 1/2016 **ETH Zürich**, *Moduli Spaces and Derived Categories*.
- 12/2015 **Universität Hannover**, *Algebraic Geometry Seminar*, Stability Conditions on Threefolds - Some Wall-Crossings.
- 12/2015 **Massachusetts Institute of Technology**, *Introduction to Derived Categories and Fourier Mukai Transforms*.
- 10/2015 **University of Georgia**, *Lunch with Algebraic Structures Seminar*, Introduction to Stability Conditions.
- 10/2015 **University of Georgia**, *Algebraic Geometry Seminar*, Stability Conditions on Threefolds - Some Wall-Crossings.
- 10/2015 **University of South Carolina**, *Algebraic Geometry Seminar*, Ample Divisors on Hilbert Schemes of Points on Surfaces.
- 10/2015 **Northeastern University**, *Graduate Student Seminar*, Quiver Representations and Algebraic Geometry.
- 9/2015 **University of Illinois at Chicago**, *Algebraic Geometry Seminar*, Stability Conditions on Threefolds - Some Wall-Crossings.
- 9/2013 **The Ohio State University**, *Algebraic Geometry Seminar*, Bridgeland Stability on the Quadric Threefold.
- 9/2012 **The Ohio State University**, *Algebraic Geometry Seminar*, On the Birational Geometry of Schubert Varieties.

Poster Presentations

- 10/2015 **Western Algebraic Geometry Symposium**, *University of Seattle*, Stability Conditions on Threefolds - First Wall Crossings.
- 10/2015 **Algebraic Geometry Northeastern Series**, *Brown University*, Stability Conditions on Threefolds - First Wall Crossings.
- 7/2015 **AMS Summer Institute in Algebraic Geometry**, *University of Utah*, Stability Conditions on Threefolds - First Wall Crossings.
- 7/2015 **Algebraic Geometry Graduate Student Bootcamp**, *University of Utah*, Stability Conditions on Threefolds - First Wall Crossings.
- 6/2014 **GAel XXII**, *SISSA Trieste*, Generalized Bogomolov-Gieseker Inequality for the Quadric Threefold.
- 4/2014 **Homological Methods in Algebraic Geometry**, *University of Wisconsin*, Generalized Bogomolov-Gieseker Inequality for the Quadric Threefold.
- 4/2014 **Texas Algebraic Geometry Symposium**, *Rice University*, Generalized Bogomolov-Gieseker Inequality for the Quadric Threefold.
- 10/2013 **Algebraic Geometry Northeastern Series**, *Boston College*, Generalized Bogomolov-Gieseker Inequality for the Quadric Threefold.

Attended Conferences

- 4/2017 **Texas Algebraic Geometry Symposium**, *Rice University*.
- 3/2017 **Georgia Algebraic Geometry Symposium**, *University of Georgia*.
- 1/2017 **Stability and Moduli Spaces**, *American Institute of Mathematics*.
- 5/2016 **Local & Global Methods in Algebraic Geometry**, *A Conference in honor of Lawrence Ein's 60th Birthday*, *University of Illinois at Chicago*.
- 3/2016 **Homological Mirror Geometry**, *Banff International Research Station*.
- 11/2015 **Workshop on New Developments in Moduli and Geometric Invariant Theory**, *University of North Carolina at Chapel Hill*.
- 10/2015 **Georgia Algebraic Geometry Symposium**, *Emory University*.
- 6/2015 **II Latin American School of Algebraic Geometry and Applications**, *Cabo Frio, Rio de Janeiro, Brazil*.
- 3/2015 **Algebraic Geometry Northeastern Series**, *Boston College*.
- 2/2015 **Workshop on Geometry from Stability Conditions**, *University of Warwick*.
- 10/2014 **Current Developments in Moduli Theory**, *Northeastern University*.
- 10/2014 **Georgia Algebraic Geometry Symposium**, *University of Georgia*.
- 6/2014 **Conference on Arithmetic Algebraic Geometry on the occasion of Gerd Faltings' 60th birthday**, *Max Planck Institut for Mathematics, Bonn*.
- 5/2013 **Advanced Course "Compactifying Moduli Spaces"**, *Centre de Recerca Matemàtica*.
- 5/2013 **Recent Advances in Algebraic Geometry**, *a conference in honor of Rob Lazarsfeld's 60th birthday*, *University of Michigan*.
- 5/2013 **Hodge Theory and Classical Algebraic Geometry**, *The Ohio State University*.

- 3/2013 **Graduate Student Workshop on Moduli Spaces and Bridgeland Stability**, *University of Illinois at Chicago.*
- 10/2012 **The Michigan-Ohio State-UIC Algebraic Geometry Workshop**, *University of Illinois at Chicago.*

Long/Short Term Visitor

- 6/2017 **University of Sheffield**, *One week visitor.*
- 6/2017 **Institut Henri Poincaré**, *Two week visitor.*
- 2015–2016 **Northeastern University**, *Visiting Student.*
- 10/2015 **University of Georgia**, *One week visitor.*
- 9/2015 **University of Illinois at Chicago**, *One week visitor.*

Teaching Experiences

- Fall 2017 **Instructor**, *University of Texas at Austin*, Differential and Integral Calculus.
- Spring 2017 **Instructor**, *University of Texas at Austin*, Functions of a Complex Variable.
- Fall 2016 **Instructor**, *University of Texas at Austin*, Introduction to Number Theory.
- Autumn 2014 **Teaching Assistant**, *The Ohio State University*, Calculus 1.
- Spring 2014 **Teaching Assistant**, *The Ohio State University*, Calculus 1.
- Autumn 2013 **Teaching Assistant**, *The Ohio State University*, Calculus 1.
- Summer 2009 **Teaching Assistant**, *Institut für Stochastik*, Hannover, Introduction to Probability Theory.
- Winter 2008/09 **Teaching Assistant**, *Institut für Stochastik*, Hannover, Probability Theory.
- Summer 2008 **Teaching Assistant**, *Institut für Algebra, Zahlentheorie und Diskrete Mathematik*, Hannover, Analysis II.
- Summer 2008 **Teaching Assistant**, *Institut für Algebra, Zahlentheorie und Diskrete Mathematik*, Hannover, Linear Algebra II.
- Winter 2007/08 **Teaching Assistant**, *Institut für Algebra, Zahlentheorie und Diskrete Mathematik*, Hannover, Analysis I.
- Winter 2007/08 **Teaching Assistant**, *Institut für Algebra, Zahlentheorie und Diskrete Mathematik*, Hannover, Linear Algebra I.

Service

- Spring 2018 **Conference (Co-)Organizer**, *Special Session of the AMS Sectional Meeting and Northeastern University.*
- Fall 2017 **(Co-)Organizer**, *Geometry Seminar at the University of Texas at Austin.*
- 2012–2014 **(Co-)Organizer**, *Algebraic geometry reading seminar at the Ohio State University*, Topics on Derived Categories, Stability Conditions, Quot Schemes, GIT, Toric Varieties, Intersection Theory.
- Autumn 2014 **Graduate Student Mentor**, *A voluntary role that consists of assisting an incoming graduate student become acclimated with the department and the city.*

Referee, **Advances in Geometry, Algebraic Geometry, International Mathematical Research Notices, Israel Journal of Mathematics, Journal of the European Mathematical Society, Pacific Journal of Mathematics, Zentralblatt Math.**
Reviewer