

David Jensen

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EMPLOYMENT **University of Kentucky**, Kentucky, USA
Assistant Professor August 2013-present
Stony Brook University, New York, USA
Simons Postdoc August 2010-2013

EDUCATION **University of Texas**, Texas, USA
Ph.D., Mathematics May 2010
• Thesis Topic: Birational geometry of $\overline{M}_{g,1}$
• Advisor: Sean Keel
Williams College, Massachusetts, USA
B.A., Highest Honors in Mathematics and Philosophy June 2004
• Thesis Topic: Completions of UFDs with Semi-Local Formal Fibers
• Advisor: Susan Loopp

VISITING **Yale University**, Connecticut, USA August 2013 - August 2014
POSITIONS January - May 2016
June - December 2017

PUBLICATIONS AND PREPRINTS

- 24 *Brill-Noether Theory for Curves of a Fixed Gonality*
with D. Ranganathan, (submitted).
- 23 *Brill-Noether Theory of Curves on $\mathbb{P}^1 \times \mathbb{P}^1$: Tropical and Classical Approach*
with F. Cools, M. D'Adderio and M. Panizzut, (submitted).
- 22 *Combinatorial and Inductive Methods for the Tropical Maximal Rank Conjecture*
with S. Payne
Journal of Combinatorial Theory, Series A, 152 (2017), 138-158.
- 21 *Gonality of Expander Graphs*
with N. Dutta, (submitted).
- 20 *Tropicalization of Theta Characteristics, Double Covers, and Prym Varieties*
with Y. Len
Selecta Mathematica (to appear).
- 19 *Tropical Independence II: The Maximal Rank Conjecture for Quadrics*
with S. Payne
Algebra and Number Theory, 10(8) (2015).
- 18 *Degeneration of Linear Series From the Tropical Point of View and Applications*
with M. Baker
Proceedings of Simons Symposium on Nonarchimedean Geometry.
- 17 *Toric Graph Associahedra and Compactifications of $M_{0,n}$*
with R. Feirrer da Rosa and D. Ranganathan
Journal of Algebraic Combinatorics, 43(1), 139-151.
- 16 *Realization of Groups with Pairing as Jacobians of Finite Graphs*
with L. Gaudet, D. Ranganathan, N. Wawrykow and T. Weisman
Annals of Combinatorics, (to appear).

- 15 *Gonality of Random Graphs*
with A. Deveau, J. Kainic and D. Mitropolsky
Involve, a Journal of Mathematics, 9-4 (2016), 715-620. DOI 10.2140/involve.2016.9.715
- 14 *The Locus of Brill-Noether General Graphs is Not Dense*
Portugalia Mathematica, 73(3) (2016).
- 13 *Lifting Divisors on a Generic Chain of Loops*
with D. Cartwright and S. Payne
Canadian Mathematical Bulletin, 58 (2015).
- 12 *Tropical Independence I: Shapes of Divisors and a Proof of the Gieseker-Petri Theorem*
with S. Payne
Algebra and Number Theory, 8(9) (2014).
- 11 *A Simplicial Approach to the Effective Cone of $\overline{M}_{0,n}$*
with B. Doran and N. Giansiracusa
International Mathematics Research Notices, (2017) (2):529-565.
- 10 *Log Canonical Models and Variation of GIT for Genus 4 Canonical Curves*
with S. Casalaina-Martin and R. Laza
Journal of Algebraic Geometry 23 (2014), 727-764.
- 9 *GIT Compactifications of $M_{0,n}$ and Flips*
with N. Giansiracusa and H. Moon
Advances in Mathematics 248 (2013), 242-278.
- 8 *Veronese Quotient Models of $\overline{M}_{0,n}$ and Conformal Blocks*
with A. Gibney, H. Moon and D. Swinarski
Michigan Mathematical Journal 62 (2013), 721-751.
- 7 *Towards a Tropical Proof of the Gieseker-Petri Theorem*
with V. Baratham, C. Mata, D. Nguyen and S. Parekh
Collectanea Mathematica 65 (2014), 17-27.
- 6 *Stability of Second Hilbert Points of Canonical Curves*
with M. Fedorchuk
International Mathematics Research Notices (2012).
- 5 *Geometry of the Ball Quotient Model of the Moduli Space of Genus 4 Curves*
with S. Casalaina-Martin and R. Laza
Compact Moduli Spaces and Vector Bundles, Contemp. Math. 564 (2012).
- 4 *Rational Fibrations of $\overline{M}_{5,1}$ and $\overline{M}_{6,1}$*
Journal of Pure and Applied Algebra 216 (2012), 633-642.
- 3 *Birational Contractions of $\overline{M}_{3,1}$ and $\overline{M}_{4,1}$*
Transactions of the American Mathematical Society 365 (2013), 2863-2879.
- 2 *Completions of UFDs with Semi-Local Formal Fibers*
Communications in Algebra, 34, 347-360 (2006).
- 1 *Controlling Formal Fibers of Principal Prime Ideals*
with A. Dundon, S. Loepp, J. Provine, and J. Rodu
Rocky Mountain Journal of Mathematics, 37, 1871-1891 (2007).

HONORS AND AWARDS	NSF Standard Grant DMS-1601896	Fall 2016 - Fall 2019
	AMS Simons Travel Grant	Summer 2013 - Summer 2016
	NSF Research Training Grant Fellowship	Spring 2008
	Frank Gerth III Graduate Excellence Award	Fall 2005
	Rosenberg Prize for Excellence in Mathematics	Spring 2004

PROFESSIONAL
SERVICE

Organizer for AIM Workshop on Foundations for Tropical Schemes Spring 2017
Organizer for MSRI Summer School on Chip-Firing and Tropical Curves Summer 2016
Organizer for Conference on Tropical and Nonarchimedean Analytic
Geometry of Moduli Spaces at Casa Matematica Oaxaca Spring 2016
US Based Organizer for Géométrie Algébrique en Liberté Spring 2013
Referee for: Advances in Geometry, Advances in Mathematics, Annali di Matematica Pura
ed Applicata, Central European Journal of Mathematics, Collectanea Mathematica, Compo-
sio Mathematica, Contemp. Math., Crelle, Documenta Mathematica, Duke Math Journal,
European Journal of Combinatorics, Forum of Mathematics Sigma, International Mathe-
matics Research Notices, Journal of Algebraic Combinatorics, Manuscripta Mathematica,
Math Research Letters, Proceedings of the AMS Summer Institute, Proceedings of Combi-
natorial Algebraic Geometry Thematic Program, Proceedings of the London Math Society,
Selecta Mathematica

UNIVERSITY
OF KENTUCKY
SERVICE

Project Leader for UK Math Lab Spring 2018
Organizer of Algebra and Geometry Seminar Spring 2015 - Fall 2016
Algebra Prelim Committee Spring 2017 - Spring 2018
Tenure-Stream Hiring Committee Fall 2016
Graduate Program Committee Fall 2016
Undergraduate Committee Fall 2015
Faculty Student Mentoring Program Fall 2015
AWM Job Search Panel Spring 2015
Volunteer for University of Kentucky High School Math Day for Women Fall 2014
Speaker for Central Kentucky Math Circle Spring 2015 and Fall 2016

PHD
STUDENTS
SUPERVISED

Kalila Sawyer
Kaelin Cook-Powell

POSTDOCTORAL
FELLOWS

Max Kutler, expected 2018

UNDERGRADUATE

RESEARCH SUPERVISED UK Math Lab project with Jessica Appel, Jackson Morris, and Kristopher Andrew
Independent research project with Neelav Dutta at University of Kentucky
Independent research projects with Andrew Deveau, Rodrigo Ferreira da Rosa, Louis Gaudet,
Jenna Kainic, Dan Mitropolsky, Nick Wawrykow, and Teddy Weisman at the SUMRY pro-
gram at Yale
Independent research project with Vyassa Baratham, Cristina Mata, Dat Nguyen, and
Shalin Parekh at SUNY Stony Brook

SERVICE AT
PRIOR
INSTITUTIONS

Mentor for Summer Undergraduate Math Research at Yale Summer 2014
Department Liaison to the Yale Undergraduate Math Society Fall 2013 and Spring 2014
Speaker for Brookhaven National Labs Gifted Math Program Spring and Fall 2012
Coordinator of Undergraduate Research Group on Tropical Geometry Spring 2012

Faculty Sponsor of the Stony Brook Slack-Line Club	Fall 2011 and Spring 2012
Organizer of Academic Job Search Panel	Spring 2010
Organizer of Saturday Morning Math Group/Austin Math Circle	Spring and Fall 2009
Observer for Inquiry-Based Learning Mathematics Project	Fall 2008 and Spring 2009
Volunteer for Explore UT Day (college-wide open house)	Spring 2008 and Spring 2009
Developer and Organizer of Introduction to Algebraic Geometry Seminar	Fall 2007
Inaugural Speaker for UT Math Club	Fall 2007
Mentor (with tenure) at Canada/USA Mathcamp	Summer 2007
Mentor for Intellectual Entrepreneurship Pre-Grad Internship	Spring 2007 and Fall 2008
Organizer of Sophomore Exploratory Seminar	Spring and Fall 2006

INVITED
LECTURE
SERIES

- *Tropical Brill-Noether Theory*
Roma Tre University May 2017
- *Moduli Spaces of Curves and Their Birational Geometry*
Summer School on Algebraic Geometry, Yangyang, South Korea June 2012

INVITED
TALKS

- *The Kodaira Dimensions of Moduli Spaces of Curves*
Tufts University March 2018
AMS Sectional, The Ohio State University March 2018
Georgia Algebraic Geometry Symposium, Georgia Tech University February 2018
- *Linear Systems on General Curves of Fixed Gonality*
University of Texas November 2017
Harvard University October 2017
Rutgers University October 2017
Roma Tre University May 2017
Combinatorial Moduli Spaces, Fields Institute December 2016
- *A Nonarchimedean Analytic Approach to the Geometry of General Curves*
Geometry at the ANU, Canberra, Australia August 2016
New Methods in Birational Geometry, University of Toulouse, France June 2016
- *Tropicalization of Theta Characteristics*
Rice University October 2016
BATMOBYLE, Yale University April 2016
University of Virginia April 2016
- *Tropical Independence and the Maximal Rank Conjecture for Quadrics*
AMS Sectional, University of Georgia March 2016
AGNES, Brown University October 2015
University of Illinois, Chicago September 2015
Workshop on Degenerations in Algebraic Geometry, AIM, San Diego August 2015
AMS Summer Institute in Algebraic Geometry, University of Utah July 2015
- *Gonality of Random Graphs*
Williams College September 2017
Waterloo University, Canada November 2015
University of Tennessee September 2014
Fordham University July 2014
- *Tropical Brill-Noether Theory and the Gieseker-Petri Theorem*
Simons Symposium on Nonarchimedean Geometry, Puerto Rico February 2015
University of Georgia December 2014
Emory University October 2014
The Ohio State University April 2014
Harvard University April 2014
Banff International Research Station, Canada March 2014
Yale University October 2013

- *A Non-Reductive Approach to the Effective Cone of $\overline{M}_{0,n}$*
 Courant Institute September 2013
 Conference on Moduli and Birational Geometry, Pohang, South Korea August 2013
- *Hassett-Keel Program in Genus Four*
 University of Georgia March 2013
 Oklahoma State University February 2013
 University of Kentucky January 2013
 University of South Carolina January 2013
 American Institute of Mathematics December 2012
 The Ohio State University December 2012
 Columbia University November 2012
 Princeton University October 2012
 Stony Brook University April 2012
 Workshop on Moduli and Birational Geometry, Gyeongju, South Korea July 2011
- *Flips Between Compactifications of $M_{0,n}$*
 Boston College April 2013
 University of Texas September 2012
 Rice University September 2012
 Yale University September 2012
 University of Georgia January 2012
 University of Massachusetts, Amherst October 2011
- *Curves, Chip Firing, and Catalan Numbers*
 Fordham University July 2014
 Washington and Lee University February 2013
- *Towards a Tropical Proof of the Gieseker-Petri Theorem*
 University of Colorado Colloquium November 2012
 Simons Postdoctoral Fellows Meeting April 2012
- *Beyond the Boundary: Log Minimal Models for the Moduli Space of Curves*
 University of Colorado November 2012
 Joint Mathematics Meetings, Special Session on Algebraic Geometry January 2011
 Stony Brook University September 2010
- *Rational Fibrations of $\overline{M}_{g,1}$*
 Workshop on Moduli and Birational Geometry, Busan, South Korea July 2012
 Brown University March 2011
 Rice University April 2010
 University of Texas October 2009
 Texas A & M University March 2009

TEACHING
EXPERIENCE

Classes Taught at University of Kentucky

- Matrix Algebra Fall 2018
- Introduction to Algebraic Geometry Spring 2018
- History of Math Spring 2018
- Graduate Modern Algebra Fall 2016 and Spring 2017
- Calculus I Spring 2017 and Fall 2018
- Graduate Linear Algebra Fall 2015
- Modern Algebra Fall 2015
- Introduction to Algebraic Curves Spring 2015
- Calculus IV Fall 2014
- Introduction to Number Theory Fall 2013

Classes Taught at Yale University

- Undergraduate Algebraic Geometry Spring 2016
- Tropical Brill-Noether Theory Spring 2016
- Calculus I Spring 2014
- Algebraic Curves and Linear Series Fall 2013

Classes Taught at Stony Brook University

- Graduate Problem Seminar Fall 2011 and 2012
- Differential Equations with Linear Algebra Spring 2012
- Logic, Language and Proof Fall 2011
- Mathematical Puzzles and Games Spring 2011
- Introduction to Mathematical Thinking Spring 2011
- Calculus B Spring 2013 and Fall 2010

Assistant Instructor Positions Held at the University of Texas

- Saturday Morning Math Group and Austin Math Circle Spring and Fall 2009
- Foundations of Arithmetic Fall 2008

Classes Taught at Canada/USA Mathcamp Summer 2007

- Algebraic Geometry
- Nonstandard Analysis
- Mathematics of Juggling
- Mathematics of Elections
- Constructible or Not?
- How to Win the Finite Group Game