David Jensen

University of Kentucky, Department of Mathematics

Lexington, KY 40506

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Research Algebraic Geometry

Interests Moduli of Curves, Tropical Brill-Noether Theory, Geometric Invariant Theory

EMPLOYMENT University of Kentucky, Kentucky, USA

AND Assistant Professor August 2014-present

EDUCATION Yale University, Connecticut, USA

Lecturer August 2013-2014

Citizenship: USA

Phone: 512-569-4483

Stony Brook University, New York, USA

Simons Lecturer August 2010-2013

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 Loepp

PUBLICATIONS Tropical Independence II: The Maximal Rank Conjecture for Quadrics

AND with S. Payne, (submitted).

PREPRINTS Toric Graph Associahedra and Compactifications of $M_{0,n}$

with R. Feirrera da Rosa and D. Ranganathan, (submitted).

Realization of Groups with Pairing as Jacobians of Finite Graphs

with L. Gaudet, D. Ranganathan, N. Wawrykow and T. Weisman, (submitted).

Gonality of Random Graphs

with A. Deveau, J. Kainic and D. Mitropolsky, (submitted).

The Locus of Brill-Noether General Graphs is Not Dense (submitted).

Lifting Divisors on a Generic Chain of Loops

with D. Cartwright and S. Payne

Canadian Mathematical Bulletin, to appear.

Tropical Independence I: Shapes of Divisors and a Proof of the Gieseker-Petri Theorem with S. Payne

Algebra and Number Theory, to appear.

A Non-Reductive GIT Approach to the Effective Cone of $\overline{M}_{0,n}$

with B. Doran and N. Giansiracusa, (submitted).

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.

GIT Compactifications of $M_{0,n}$ and Flips

with N. Giansiracusa and H. Moon

Advances in Mathematics 248 (2013), 242-278.

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.

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.

Stability of Second Hilbert Points of Canonical Curves with M. Fedorchuk

International Mathematics Research Notices (2012).

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).

Rational Fibrations of $\overline{M}_{5,1}$ and $\overline{M}_{6,1}$

Journal of Pure and Applied Algebra 216 (2012), 633-642.

Birational Contractions of $\overline{M}_{3,1}$ and $\overline{M}_{4,1}$

Transactions of the American Mathematical Society 365 (2013), 2863-2879.

Completions of UFDs with Semi-Local Formal Fibers Communications in Algebra, 34, 347-360 (2006).

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 AMS Simons Travel Grant Fall 2013 - Fall 2015 NSF Research Training Grant Fellowship Spring 2008 Frank Gerth III Graduate Excellence Award Fall 2005

Rosenberg Prize for Excellence in Mathematics Spring 2004

SERVICE AND

Outreach Mentor for Summer Undergraduate Math Research at Yale Summer 2014

US Based Organizer for Géométrie Algébrique en Liberté Spring 2013

Coordinator of Undergraduate Research Group on Tropical Geometry Spring 2012

Speaker for Brookhaven National Labs Gifted Math Program Spring and Fall 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

Referee for Contemp. Math., Math Research Letters, Crelle,

Journal of Algebraic Combinatorics, Advances in Geometry Spring 2007 - Fall 2014

INVITED LECTURE SERIES

INVITED				
Talks	• Gonality of Random Graphs			
	University of Tennessee	September 2014		
	Fordham University	July 2014		
	• Tropical Brill-Noether Theory and the Gieseker-Petri Theorem			
	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 $M_{0,n}$			
	Courant Institute	September 2013		
	Conference on Moduli and Birational Geometry, Pohang, South	n 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, Sou	_		
	• 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	October 2011		
	Fordham University	July 2014		
	Washington and Lee University	February 2013		
	• Towards a Tropical Proof of the Gieseker-Petri Theorem	rebluary 2015		
	University of Colorado Colloquium	November 2012		
	Simons Postdoctoral Fellows Meeting	April 2012		
	Beyond the Boundary: Log Minimal Models for the Moduli Space	_		
	University of Colorado November 2012			
	Joint Mathematics Meetings, Special Session on Algebraic Geo			
	Stony Brook University	September 2010		
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	• Rational Fibrations of $\overline{M}_{g,1}$	7 1 1 0010		
	Workshop on Moduli and Birational Geometry, Busan, South I			
	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

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• Intr	oduction to Alg	ebraic Geometry		Spring 2015
• Cal	culus IV			Fall 2014
• Intr	oduction to Nu	mber Theory		Fall 2013

Classes Taught at Yale University

• Calculus I	Spring 2014
Algebraic Curves and Linear Series	Fall 2013

Classes Taught at Stony Brook University

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

Assistant Instructor Positions Held at the University of Texas

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

Teaching Assistant Positions Held at the University of Texas

Discrete Mathematics
 Introduction to Statistical and Scientific Computation
 Differential Equations
 Differential and Integral Calculus
 Integral Calculus
 Fall 2005 and Summer 2006
 Fall 2004 and Spring 2005

Grading Positions Held at the University of Texas

Graduate Algebra
 Real Analysis
 Spring 2007
 Summer 2007
 Classes Taught at Canada/USA Mathcamp
 Summer 2007

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