Laura Escobar

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RESEARCH INTERESTS

- Algebraic Geometry
- Combinatorics
- Representation Theory

EMPLOYMENT

J.L. Doob Research Assistant Professor, University of Illinois at Urbana-Champaign
Supervisor: Alexander Yong   Fall 2015 - Current
Einstein Summer Postdoctoral Researcher, TU Berlin
Supervisor: Bernd Sturmfels   Summer 2015

EDUCATION

PhD in Mathematics, Cornell University   2015
Advisor: Allen Knutson
Master of Arts in Mathematics, San Francisco State University   2010
Advisor: Federico Ardila
Bachelors of Mathematics with a Minor in Japanese Language and Culture, 2008
Universidad de los Andes

AWARDS AND SCHOLARSHIPS

- **Robert John Batting Graduate Prize**, for Excellence and Promise in Mathematics, Cornell University, 2014.
- **Department of Mathematics Teaching Award**, Cornell University, 2014.
- **Graduate Student Award for Distinguished Achievement**, San Francisco State University, 2010.
- **SFSU Alumni Association Graduate Scholarship**, San Francisco State University, Spring 2009.
- **Provost Scholarship**, San Francisco State University, 2008-2009.
- **Sylow Algebra Prize**, San Francisco State University, 2008-2009.
- **Lawrence Chang Memorial Scholarship Award**, San Francisco State University, Fall 2008, Fall 2009.
- **Beca Uniandinos**, Fall 2007, Spring 2008.

PUBLICATIONS

- *Subword complexes via triangulations of root polytopes*, joint with Karola Mézsáros, arXiv:1502.03997
- *Toric varieties of brick polytopes*, submitted
- *Star[1]-convex funtions on tropical linear spaces of complete graphs*, MA thesis, 2010.

INVITED TALKS AND CONFERENCE PRESENTATIONS

- *AMS Special Session on Algebraic Combinatorics*, *Realizing subword complexes via triangulations of root polytopes*, March 2015; East Lansing, MI.
- *AMS Special Session on Cluster Algebras* , *Toric varieties of associahedra*, January 2015; San Antonio, TX.
- *University of Michigan Commutative Algebra Seminar*, *Brick varieties and the toric variety of the associahedron*, December 2014; Ann Arbor, MI.
- *AMS Special Session on Generalized Catalan Algebraic Combinatorics*, *Toric varieties of associahedra*, October 2014; Halifax, Canada.
- *Formal Power Series and Algebraic Combinatorics Poster Session*, *Brick varieties and toric varieties of associahedra*, June 2014; Chicago, IL.

- **Encuentro Colombiano de Combinatoria**, *A history of the associahedron*, June 2014; Bogota, Colombia.
- **UC Berkeley Commutative Algebra and Algebraic Geometry Seminar**, *Bott-Samelson varieties, subword complexes and brick polytopes*, February 2014; Berkeley, CA.
- **York University Applied Algebra Seminar**, *Bott-Samelson varieties, subword complexes and brick polytopes*, October 2013; Toronto, Canada.
- **Workshop on Quantum/Affine Schubert Calculus**, *k-double Schur functions*, August 2013; Eugene, Oregon.
- **AWM Research Symposium, Special Session: Algebraic Combinatorics**, *Bott-Samelson Varieties, Subword Complexes and Associahedra*, March 2013; Santa Clara, California.
- **Cornell University Computational and Commutative Algebra Seminar**, *A combinatorial strategy to solve the F-conjecture*, November 2012; Ithaca, New York.
- **York University Applied Algebra Seminar**, *A combinatorial strategy to solve the F-conjecture*, November 2012; Toronto, Canada.
- **Formal Power Series and Algebraic Combinatorics Poster Session**, *The combinatorics of the divisors on $\overline{M}_{0,n}$*, July 2012; Nagoya, Japan.
- **Kyoto University Workshop on Convex Polytopes**, *A combinatorial approach to the study of $\overline{M}_{0,n}$*, July 2012; Kyoto, Japan.
- **Encuentro Colombiano de Combinatoria**, *A combinatorial approach to the study of $\overline{M}_{0,n}$*, June 2012; Bogota, Colombia.
- **San Francisco State University Graduate Student Seminar**, *Tropical linear spaces*, Fall 2009; San Francisco, California.

SEMINAR LECTURES

- **Tropical Geometry Seminar**, University of California Berkeley; Berkeley, CA
  - *Tropical Grassmannian*, March 2014
- **Olivetti Seminar**, Cornell University; Ithaca, New York
  - *Schubert Varieties*, March 2013
  - *Tropical Linear Spaces*, March, 2011
- **Berstein Seminar**, Cornell University; Ithaca, New York
  - *Toric Varieties*, March 2012
  - *Equivariant Cohomology of Toric Varieties*, March 2012
- **Discrete Geometry and Combinatorics Seminar**, Cornell University; Ithaca, New York
  - *Symmetric Functions II*, October 2011
- **Toric Varieties Learning Seminar**, Cornell University; Ithaca, New York
  - *Sigularities and Compactness of Toric Varieties*, October 2011

PROFESSIONAL SERVICE AND OUTREACH

- **Organizer for the Center for Talented Youth Family Saturday Program**; Cornell University; March 2015.
- **Organizing Committee of Encuentro Colombiano de Combinatoria**; Bogota, Colombia; Summer 2016, Summer 2012.
- **Workshop assistant for Louis Billera's course** *Matroids, geometric lattices, and arrangements of hyperplanes*; Encuentro Colombiano de Combinatoria; Summer 2014.
- **Designer and Leader of the Module** *Flat Objects and Optimization* **of the Math Explorers Club**; Cornell University; Fall 2012.
- **TA Trainer for Incoming Graduate Students**; Cornell University; Summer 2012-2014.
- **Volunteer at Expanding Your Horizons Conference**; Cornell University; April 2012.
- **Presenter of Center for Talented Youth Family Saturday Program Tilings Workshop**; Cornell University; October 2011.
- **Co-Organizer** *Toric Varieties* **Learning Seminar**; Cornell University; Fall 2011.
- **Organizer of** *Professors' Seminar*; San Francisco State University; October 2011.
- **Mathematics Representative to the Graduate and Professional Student Assembly**; Cornell University; 2012-2013.

- **Member of Graduate and Professional Student Programming Board**; Cornell University; 2012-2013.

TEACHING EXPERIENCE

- **Instructor, Cornell University**
  - Calculus I, Fall 2013, Fall 2011
- **Teaching Assistant, Cornell University**
  - Graduate Algebra, Fall 2014, Fall 2012
  - Applicable Algebra, Spring 2013
  - Algebra, Spring 2012, Spring 2011
  - Calculus I for Engineers, Fall 2010
- **Instructor, San Francisco State University**
  - Algebra II, Fall 2008 - Spring 2010
- **Teaching Assistant, San Francisco State University**
  - Exploration and Proof, Spring 2010
  - Calculus I, Fall 2009
  - Modern Algebra II, Fall 2008
- **Instructor, Universidad de los Andes**
  - Calculus I, Spring 2008
- **Teaching Assistant, Universidad de los Andes**
  - Calculus II, Fall 2007

REFERENCES

Allen Knutson, Professor of Mathematics, Cornell University   `allenk@math.cornell.edu`