

# Libby Taylor

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CONTACT INFORMATION	Stanford University Department of Mathematics Stanford, California 94305  libbytaylor@stanford.edu
RESEARCH INTERESTS	Algebraic and arithmetic geometry
EDUCATION	<b>Stanford University</b> Ph.D., Mathematics fall 2018-present  <b>Georgia Institute of Technology</b> B.S. in Mathematics, May 2018
PUBLICATIONS	<p>Barrera-Cruz, Garcia, Harris, Kubik, Smith, Talbott, Taylor and Trotter, <i>The graph of critical pairs of a crown</i>, (2016). Order, to appear. Available at <a href="https://arxiv.org/abs/1708.06675">https://arxiv.org/abs/1708.06675</a>.</p> <p>Taylor, <i>Kasteleyn cokernels and perfect matchings on planar bipartite graphs</i>, submitted (2018). Available at <a href="https://arxiv.org/abs/1808.09927">https://arxiv.org/abs/1808.09927</a>.</p> <p>Barrera-Cruz, Felsner, Meszaros, Micek, Smith, Taylor and Trotter, <i>The separation of tree-chromatic number from path-chromatic number</i>. Journal of Combinatorial Theory, Series B, to appear. Available at <a href="https://arxiv.org/abs/1703.03973">https://arxiv.org/abs/1703.03973</a>.</p> <p>Barrera-Cruz, Prag, Smith, Taylor and Trotter, <i>Comparing Dushnik-Miller dimension, boolean dimension and local dimension</i>, submitted (2017). Available at <a href="https://arxiv.org/abs/1710.09467">https://arxiv.org/abs/1710.09467</a>.</p> <p>Asplund, Do, Hamm, Szekely, Taylor and Wang, <i>The k-planar crossing number of random graphs and random regular graphs</i>, (2017). Discrete Applied Math Vol. 247, 419-422. Available at <a href="https://arxiv.org/abs/1709.08136">https://arxiv.org/abs/1709.08136</a>.</p> <p>Taylor, <i>On the regularity of orientable matroids</i>, submitted (2017). Available at <a href="https://arxiv.org/pdf/1712.01921.pdf">https://arxiv.org/pdf/1712.01921.pdf</a>.</p>
EXPOSITORY ARTICLES	Taylor and Trinh, <i>The Hodge theory of Soergel bimodules</i> , contributed chapter to <i>Soergel Bimodules</i> , edited by Ben Elias and Geordie Williamson. Springer.
HONORS AND AWARDS	2018 Alice T. Schafer Prize for undergraduate women in mathematics.  2018 Georgia Tech School of Mathematics outstanding math major award.  2018 Robert A. Pierotti Memorial Scholarship.  2017 Georgia Tech School of Mathematics outstanding junior award.
SCHOLARSHIPS AND FELLOWSHIPS	

2018-2023	NSF Graduate Fellowship
2018-2023	Stanford Graduate Fellowship Stanford University
2018-2020	EDGE Fellowship Stanford University
2016-2018	Zell Miller Scholarship Georgia Institute of Technology

## TALKS

*“27 lines” on a smooth cubic surface over arbitrary fields*, Stanford algebraic geometry student seminar. 7 November 2018.

*Introduction to descent*, student seminar on rational points on varieties. 23 October 2018.

*GAGA*, Stanford algebraic geometry student seminar. 17 October 2018.

*Geometric properties of schemes over non-algebraically closed fields*, student seminar on rational points on varieties. 27 September 2018.

*Motives and motivic cohomology*, Georgia Tech algebraic geometry student seminar. 16 February 2018.

*p-adic measures*, Emory University learning seminar on Iwasawa theory. 7 February 2018.

*On the regularity of orientable matroids*, Joint Mathematics Meetings, San Diego, California. 12 January 2018.

*Divisor theory on curves and schemes*, Georgia Tech algebraic geometry student seminar. 13 October, 2017.

*The Alexander polynomial*, Georgia Tech geometry/topology student seminar. 4 October, 2017.

*When is an orientable matroid regular?*, Dalton State College math seminar. 26 September, 2017.

*Ramsey theory for binary trees and applications to boolean and local dimension*, American Mathematical Society southeastern sectional meeting, Charleston, South Carolina. 12 March 2017.

*Kasteleyn cokernels and perfect matchings on planar bipartite graphs*, Nebraska Conference for Undergraduate Women in Mathematics, University of Nebraska. 4 February, 2017.

*Kasteleyn cokernels and perfect matchings on planar bipartite graphs*, Undergraduate seminar, Georgia Tech. 1 December 2016.

*Kasteleyn cokernels and perfect matchings on planar bipartite graphs*, Association for Women in Mathematics presentation, Georgia Tech. 1 December 2016.

*The graph of critical pairs of a crown*, 6<sup>th</sup> Polish Combinatorics Conference. 28 September,

ber 2016.

PROFESSIONAL  
SERVICE

Fall 2018. Co-organizer for the Stanford student algebraic geometry seminar.

Fall 2018. Organizer for the Stanford student seminar on Bjorn Poonen's book "Rational points on varieties."

Fall 2016-spring 2018. Vice President of the Georgia Tech student chapter of the Association for Women in Mathematics.

Spring 2018. Member of the organizing committee for the Georgia Tech High School Math Competition.

Spring 2017. Member of the organizing committee for the Georgia Tech High School Math Competition.

15 April 2017. Proctor and grader for the Georgia Tech High School Math Competition.

Spring 2017. Georgia Tech College of Sciences student ambassador.

TEACHING  
EXPERIENCE

Fall 2016 Tutor, Calculus I and II

Spring 2017 Teaching assistant, Number theory and cryptography

Fall 2017 Teaching assistant, Abstract algebra I

Spring 2018 Teaching assistant, Abstract algebra II

Spring 2018 Teaching assistant, Number theory