

# Laura Starkston

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PERSONAL INFORMATION	University of California, Davis Mathematics Department 1 Shields Avenue Davis, CA 95616, USA	<i>Citizenship:</i> USA <i>E-mail:</i> lstarkston@math.ucdavis.edu <a href="http://www.math.ucdavis.edu/~lstarkston/">www.math.ucdavis.edu/~lstarkston/</a>
EMPLOYMENT	Assistant Professor, University of California, Davis, Mathematics Department	<b>2018-present</b>
	NSF Postdoctoral Fellow, Stanford University, Mathematics Department	<b>2015-2018</b>
RESEARCH	Symplectic geometry, contact topology, smooth 4-manifolds, singularities	
EDUCATION	<b>University of Texas at Austin</b> Ph.D. in Mathematics, May 2015 <ul style="list-style-type: none"><li>• Dissertation Title: Classifications and Applications of symplectic fillings of Seifert fibered spaces over <math>S^2</math></li><li>• Advisor: Robert Gompf</li></ul> <b>Harvard University</b> A.B. in Mathematics, magna cum laude, May 2010 <ul style="list-style-type: none"><li>• Undergraduate thesis: Contact structures and classifications of Legendrian and transverse knots</li></ul>	
PUBLICATIONS	<b>Laura Starkston.</b> Arboreal singularities in Weinstein skeleta. Submitted. arXiv:1707.03446. <b>Laura Starkston.</b> A new approach to the symplectic isotopy problem. Submitted. arXiv:1709.02544. <b>Daniel Ruberman and Laura Starkston.</b> Topological realizations of line arrangements. <i>Int. Math. Res. Not. (IMRN)</i> . rnx190. (2017). <b>Laura Starkston.</b> Comparing star surgery to rational blow-down. <i>J. Gökova Geom. Topol.</i> , 10 (2016), 60-79. <b>Çağrı Karakurt and Laura Starkston.</b> Surgery along star shaped plumbings and exotic smooth structures on 4-manifolds. <i>Algebraic and Geometric Topology</i> , 16(3): 1585–1635, 2016. <b>Laura Starkston.</b> Symplectic fillings of Seifert fibered spaces. <i>Transactions of the American Mathematical Society</i> , 367(8): 5971–6016, 2014. <b>Allison Moore and Laura Starkston.</b> Genus two mutant knots with the same dimension in knot Floer and Khovanov homologies. arxiv:1204.2524. <i>Algebraic and Geometric Topology</i> , 15(1), 43–63, 2015. <b>Laura Starkston.</b> The Khovanov homology of $(p, -p, q)$ pretzel knots. <i>Journal of Knot Theory and its Ramifications</i> , 21(5):1250056, 14, 2012. <b>Colin Adams, Rachel Hudson, Ralph Morrison, William George, Laura Starkston, Samuel Taylor, and Olga Turanova.</b> The spiral index of knots. <i>Mathematical Proceedings of the Cambridge Philosophical Society</i> , 149(2):297–315, 2010.	

WORK IN PROGRESS **Daniel Álvarez Gavela, Yakov Eliashberg, David Nadler, Laura Starkston.** Arborealization of Lagrangian skeleta.

**Marco Golla and Laura Starkston.** Symplectic rational cuspidal curves.

TEACHING

**Stanford University**

*Math 146: Differentiable Manifolds* }

*Math 52: Integral Calculus of Several Variables* **Spring 2017, Fall 2017**

- Multivariable integrals, change of variables, Stokes' theorems

*Math 257A: Symplectic Geometry and Topology* **Fall 2016**

- Graduate level course
- First half: introduction to symplectic topology
- Second half: topics in symplectic fillings, J-holomorphic curves, Weinstein manifolds

FELLOWSHIPS AND AWARDS

NSF Mathematical Sciences Postdoctoral Research Fellowship **2015-2018**

Frank Gerth III Dissertation Award **2015**

National Science Foundation Graduate Research Fellowship **2010-2015**

Frank Gerth III Teaching Excellence Award **Fall 2014**

Frank Gerth III Graduate Excellence Award **2012**

Topology Research and Training Grant (RTG) Fellowship **2010-2011, 2015**

Phi Beta Kappa **2010**

Herchel Smith Summer Undergraduate Research Fellowship **2009**

Certificate of Distinction in Teaching **2008-2009**

Robert Fletcher Rogers Prize: Undergraduate math table talk **2009**

INVITED TALKS

Topology in Dimensions 3, 3.5, and 4: a conference in honor of Abby, Marty, and Rob **June 25-29, 2018**

University of California, Berkeley

Geometric Structures on 3- and 4-manifolds **June 11-15, 2018**

Dubrovnik, Croatia

Gokova Geometry Topology Conference **May 28-June 2, 2018**

Eastern Illinois Integrated Conference in Geometry, Dynamics, and Topology **April 6-8, 2018**

Joint meetings **January 12-13, 2018**

AMS-AWM Special session on women in symplectic and contact geometry and topology

Special session on mathematics research from the SMALL undergraduate research program

San Diego, CA

UC Santa Cruz Geometry and Analysis Seminar **December 7, 2017**

MIT Geometry and Topology Seminar **December 4, 2017**

Princeton/IAS Symplectic Geometry Seminar	<b>October 30, 2017</b>
San Francisco State Geometry and Topology Seminar	<b>October 23, 2017</b>
Northwestern Geometry/Physics Seminar	<b>October 5, 2017</b>
Joint University of Georgia and Georgia Tech Seminar	<b>September 11, 2017</b>
Columbia University SGGTC Seminar	<b>September 8, 2017</b>
Holomorphic curves and symplectic topology Mittag-Leffler Institute, Sweden	<b>August 7-11, 2017</b>
BIRS Workshop: Thirty years of Floer Theory for 3-manifolds Oaxaca, Mexico	<b>July 30-August 4, 2017</b>
AIM Workshop on Trisections Introduction for low-dimensional trisectors to symplectic manifolds, Lefschetz fibrations, and open books	<b>March 20-24, 2017</b>
Triangle Topology Seminar Joint seminar between Duke, NCSU, and UNC	<b>March 6, 2017</b>
PATCH Seminar Joint Philadelphia area seminar: Bryn Mawr, Haverford, Penn, and Temple	<b>March 3, 2017</b>
Hamilton Geometry and Topology Workshop Low-dimensional topology, complex and symplectic geometry Dublin, Ireland	<b>August 22-26, 2016</b>
Perspectives in topology and geometry of 4-manifolds A celebration of the work of Fintushel and Stern Dubrovnik, Croatia	<b>June 6-10, 2016</b>
Oregon Topology Seminar	<b>May 10, 2016</b>
Spring Lecture Series University of Arkansas	<b>April 15-17, 2016</b>
Topological and Quantitative Aspects of Symplectic manifolds A conference in honor of Dusa McDuff's 70th birthday. Columbia University, New York	<b>March 17-20, 2016</b>
SNU Winter School on 4-manifolds Seoul, Korea	<b>December 20-23, 2015</b>
Workshop on Flows, Foliations, and Contact structures Institute for Advanced Study, Princeton	<b>December 7-11, 2015</b>
Symplectic geometry and topology Mittag-Leffler conference Uppsala, Sweden	<b>September 21-25, 2015</b>
Geometry and topology of symplectic 4-manifolds workshop University of Massachusetts, Amherst	<b>April 24-26, 2015</b>

AWM Research Symposium at the University of Maryland Symplectic topology session	<b>April 11-12, 2015</b>
Redbud Geometry and Topology Conference Oklahoma State University	<b>April 3-5, 2015</b>
AMS Sectional Meeting at Georgetown University Special Session on Geometric structures on low-dimensional manifolds and their invariants	<b>March 7-8, 2015</b>
Tech Topology Conference Georgia Institute of Technology	<b>December 5-7, 2014</b>
University of Minnesota Symplectic Geometry Seminar	<b>November 20, 2014</b>
University of Georgia Topology Seminar	<b>October 20, 2014</b>
Princeton/IAS joint Topology Seminar	<b>September 25, 2014</b>
Columbia Topology Seminar	<b>September 26, 2014</b>
Workshop on the Topology and Invariants of 4-manifolds Simons Center for Geometry and Physics	<b>August 23, 2014</b>
LSU Topology Seminar	<b>April 30, 2014</b>
AMS Eastern Sectional Meeting, University of Maryland, Baltimore Special Session on Invariants in low dimensional topology	<b>March 29, 2014</b>
Rice University Topology Seminar	<b>March 17, 2014</b>
Conference on the Topology and Invariants of Smooth 4-manifolds University of Minnesota, Twin Cities	<b>August 6, 2013</b>
Graduate Student Geometry Topology Conference University of Notre Dame	<b>April 6, 2013</b>
University of Virginia Geometry Seminar	<b>October 2, 2012</b>
Program for Women and Mathematics: 21st Century Geometry Institute for Advanced Study	<b>May 19, 2012</b> Princeton, NJ

SERVICE AND  
OUTREACH

**Reviewing:**

Referee for *Bulletin of the American Mathematical Society*, *Duke Mathematical Journal*, *International Mathematics Research Notices*, *Journal of Differential Geometry*, *Journal of Symplectic Geometry*, *Journal of Topology*.

Mathematical Reviews

**Mentoring:**

Mentor for Kylerec 2017 Workshop on symplectic fillings of contact manifolds. (Truckee, CA)  
Intensive five day graduate student workshop (Talbot style)  
Worked with student organizers to design the program  
Supported participant speakers during preparations and talks

Directed Reading Program mentor (UT Austin)

Reading program pairing undergraduate students with graduate student mentors. I worked with four different bright students in various topics in topology.

**Outreach Talks:**

SUMaC (Stanford high school summer math camp)

SURIM (Stanford undergraduate summer research)

Math Club (UT Austin undergraduates)

Math Circle interactive lecture (Austin area middle and high school students)

**Organizing:**

The topology and geometry of low-dimensional manifolds: a celebration of the mathematics of Bob Gompf (July 2018)

AIM Workshop: Symplectic 4-manifolds through branched covering (May 2018)

AIM Workshop: Arborealization of singularities of Lagrangian skeleta (March 2018)

Stanford Symplectic Geometry Seminar

Northern California Symplectic Geometry Seminar

Head organizer of the Graduate Student Topology and Geometry Conference (April 2014)

Conference for over 170 graduate students, featuring invited faculty talks and graduate student talks in a broad range of topics in geometry and topology, supported by the National Science Foundation through grant no. 1361929 and the University of Texas at Austin.

Co-organizer of the Distinguished Women in Mathematics Program at UT Austin

Invited lecture series program bringing accomplished female mathematicians to the University of Texas at Austin.