

# Sarah E. Blackwell

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Department of Mathematics

University of Georgia

Athens, GA 30602

## Education

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Ph.D. student in Mathematics, University of Georgia, Athens, GA	Aug 2016-present
<ul style="list-style-type: none"><li>• Advisor: David Gay</li><li>• Max Planck Institute for Mathematics (Guest Program)</li><li>• Graduate Certificate in Mathematics Education</li></ul>	Oct 2019-May 2020
M.A. in Mathematics, University of Georgia, Athens, GA	May 2018
B.A. in Mathematics, Saint Louis University, St. Louis, MO	May 2016
<ul style="list-style-type: none"><li>• Minor in Philosophy</li><li>• National University of Ireland Galway (Study Abroad)</li></ul>	Aug-Dec 2014

## Research Interests

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Low-dimensional and geometric topology, contact geometry, knot theory.

## Publications & Preprints

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- "Bisecting and Trisecting Groups of Knots and Manifolds" (with Robion Kirby, Michael Klug, Vincent Longo, Benjamin Ruppik), in preparation (draft upon request)
- "[Constructions of Lagrangian Cobordisms](#)" (with Noémie Legout, Caitlin Levenson, Maÿlis Limouzinéau, Ziva Myer, Yu Pan, Samantha Pezzimenti, Lara Simone Suárez, Lisa Traynor), to appear in *Proceedings of the 2019 Research Collaboration Conference for Women in Symplectic and Contact Geometry and Topology (WiSCon) Workshop*
- "[Good Reduction of Preperiodic Points](#)," *Minnesota Journal of Undergraduate Mathematics* 4 (2018), no. 1
- "[A Generalization of a Method of Mordell to Ternary Quadratic Forms](#)" (with Gabriel Durham, Katherine Thompson, Tiffany Treece), *International Journal of Number Theory* 12 (2016), no. 8, 2081-2105

## Expository Works

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- "[The Mathematics of Gerrymandering](#)" (with Zack Garza, Terrin Warren, Peter Woolfitt, Skylar Zhang), YouTube video, 2<sup>nd</sup> place in UGA Capturing Science Contest (2020)
- "[Knots Model DNA](#)," YouTube video, winner of the National Academy of Sciences Elevating Mathematics video competition (2020)
- "[Torus Tic-Tac-Toe](#)," Ignite talk (and resources on website), Park City Mathematics Institute (2019)
- "[Community, Professional Advice, and Exposure to New Ideas at the Carleton Summer Mathematics Program](#)" (with Rose Kaplan-Kelly and Lilly Webster), blog post, *AMS Blog On Teaching and Learning* (2015)

## Awards & Honors

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Outstanding Teaching Assistant Award, University of Georgia	2021
Presidential Graduate Fellow, University of Georgia	2016-2021
Oden-Beder Prize (for the Elevating Mathematics video competition), National Academy of Sciences	2020
B.J. Ball Scholarship, University of Georgia	2019, 2020
Collins Award (given to one graduating student in each department of the College of Arts and Sciences), Saint Louis University	2016
Garneau Award (departmental award), Saint Louis University	2016
Phi Beta Kappa, Saint Louis University	2015
Costigan Scholarship (departmental award), Saint Louis University	2014, 2015

## Research Talks (⚡ denotes lightning talk)

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"Triple Knot Grid Diagrams"	
• Joint Mathematics Meeting ( <b>invited, special session</b> )	Jan 2022
• Rice Topology Seminar ( <b>invited</b> )	Dec 2021
• AMS Southeastern Sectional Meeting ( <b>invited, special session</b> )	Nov 2021
• Tech Topology Summer School (⚡)	Jul 2021
"Group Trisections and Smoothly Knotted Surfaces"	
• Joint Mathematics Meeting ( <b>invited, special session</b> )	Jan 2022
• AMS Central Sectional Meeting ( <b>invited, special session</b> )	Oct 2021
• Young Topologists Meeting	Jul 2021
• Graduate Student Conference in Algebra, Geometry, and Topology	May 2021
• Graduate Student Topology and Geometry Conference	Apr 2021
• AIM 4-Dimensional Topology Research Community (⚡)	Mar 2021
• Virtual Trisections Meeting (with Vincent Longo and Benjamin Ruppik)	Feb 2021
• UGA Topology Seminar	Feb 2021
• Tech Topology Conference (⚡)	Dec 2020
"Distinguish Knotted Surfaces With This One Weird Trick"	
• UGA Graduate Student Summer Conference	Aug 2021
"Visualizing the 4 <sup>th</sup> Dimension"	
• UGA Math Graduate Visitation Day	Mar 2021
"Intro to Trisections Redux"	
• UGA Topology Student Seminar	Oct 2020
"Intro to Trisections"	
• UGA Graduate Student Seminar	Oct 2020
"The Worst Definition of Linking Number"	
• UGA Graduate Student Summer Conference	Jul 2020
"My Favorite Proof Concerning Legendrian Knots"	
• Geometric Topology Grad and Postdoc Seminar	Mar 2020
"A Short History of Me (feat. Legendrian Knots)"	
• MPIM Oberseminar	Jan 2020

"Configuration Space Integrals for Links"	Dec 2019
• Geometric Topology Grad and Postdoc Seminar	
"Linking Numbers and Gauss Integrals"	Oct 2019
• MPIM Configuration Spaces Seminar (with Jason Joseph)	
"Lagrangian Cobordisms Between Legendrians"	Jul 2019
• Geometric Topology Grad and Postdoc Seminar	
"Legendrian Knots in Contact Topology"	Mar 2019
• UGA Topology Student Seminar	
"Chekanov's DGA in the Front Projection"	Nov 2018
• UGA Topology Student Seminar	
"Differential Graded Algebras of Legendrian Knots"	Jul 2018
• UGA Graduate Student Summer Conference	
"Knot Floer Homology and Legendrian Knots"	Apr 2018
• UGA Topology Student Seminar	
"Zeeman's Collapsibility Conjecture"	Oct 2017
• UGA Topology Student Seminar	

### **Conferences, Workshops, Summer Schools**

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Joint Mathematics Meeting, Seattle, WA	Jan 2022
Tech Topology Conference, online	Dec 2021
AMS Southeastern Sectional Meeting, online	Nov 2021
AMS Central Sectional Meeting, online	Oct 2021
AIM 4-Dimensional Topology Research Community, online	Feb-Aug 2021
Tech Topology Summer School, online	Jul 2021
Park City Mathematics Institute Graduate Summer School: Illustrating Mathematics, online	Jul 2021
Young Topologists Meeting, online	Jul 2021
Nearly Carbon Neutral Geometric Topology Conference ( <b>session organizer</b> ), online	Jun 2021
Georgia Topology Conference, online	Jun 2021
Summer Trisectors Workshop, online	Jun 2021
Graduate Student Conference in Algebra, Geometry, and Topology, online	May 2021
paraDIGMS (Diversity in Graduate Mathematical Sciences), online	Apr 2021
Graduate Student Topology and Geometry Conference, online	Apr 2021
Winter Trisectors Workshop, online	Dec 2020
Tech Topology Conference, online	Dec 2020
Graduate Online Anything Topology Series ( <b>organizer</b> ), online	Apr, Jun, Jul 2020
Virtual Summer Trisectors Workshop, online	Jun 2020
Nearly Carbon Neutral Geometric Topology Conference, online	Jun 2020
Winter Braids X, Pisa, IT	Feb 2020
Symplectic Geometry, Contact Geometry and Interactions (CAST), Antwerp, BE	Feb 2020
Women in Symplectic and Contact Geometry and Topology, Providence, RI	Jul 2019
Park City Mathematics Institute Graduate Summer School, Park City, UT	Jul 2019
Spring Trisectors Meeting, Athens, GA	Apr 2019

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Nebraska Conference for Undergraduate Women in Mathematics ( <b>invited graduate student</b> ), Lincoln, NE	Jan 2019
Virginia Topology Conference, Charlottesville, VA	Dec 2018
Tech Topology Conference, Atlanta, GA	Dec 2018
Topology Students Workshop, Atlanta, GA	Jun 2018
Critical Issues in Mathematics Education, Berkeley, CA	Feb 2018
Tech Topology Conference, Atlanta, GA	Dec 2017
Joint Mathematics Meeting, Atlanta, GA	Jan 2017
Joint Mathematics Meeting, Seattle, WA	Jan 2016
MAA MathFest, Washington D.C.	Aug 2015
Wake/Davidson Experience in Number Theory Research, REU, Winston-Salem, NC	Jun-Aug 2015
Nebraska Conference for Undergraduate Women in Mathematics, Lincoln, NE	Jan 2015
Carleton College Summer Mathematics Program for Women, Northfield, MN	Jun-Jul 2014

## **Teaching Experience**

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Instructor of Record, Calculus, University of Georgia	2021-2022 (x2)
Instructor of Record, Precalculus, University of Georgia	2018-2021 (x6)
Mentor, Directed Reading Program, University of Georgia	Summer 2021
Assistant Mentor, Camp Euclid, Euclid Lab	Summer 2020, 2021
Graduate Student Leader, Qualifying Exam Preparation Course, University of Georgia	2020-2021 (x2)
Teaching Assistant, Undergraduate Summer School, Park City Mathematics Institute	Summer 2019
Tutor, Study Hall, University of Georgia	Spring 2019
Tutor, Mathnasium, St. Louis, MO	Jan 2013-Jul 2016

## **Service & Outreach**

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AWM Mentor Network, Mentor	Apr 2020-present
UGA Math Graduate Orientation, Problem Session Leader	Aug 2021
UGA Math Graduate Orientation, Peer Mentor	Aug 2020-Jul 2021
UGA VP for Research Search, Graduate Student Representative	May 2021
UGA Math Graduate Visitation Day, Panel Member	Mar 2017, 2018, 2021
SciREN Lesson Planning Workshop and Networking Event, Lesson Plan Designer	Jan-Feb 2021
AWM 50 <sup>th</sup> Anniversary Volume, Reviewer	Aug 2020
UGA Math Talk Workshop, Panel Member	Jul 2020
UGA Student Chapter of the AMS, President	Aug 2017-Jul 2019
UGA Chapter of the AWM, Secretary	Aug 2016-Jul 2019
STEMzone, Booth Developer and Volunteer	Nov 2018
UGA High School Math Tournament, Volunteer	Oct 2016, 2017, 2018
UGA MathCamp, Organizer and Graduate Student Leader	Jul 2018
Project MEGSSS, Alumni Speaker	May 2018

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Wake/Davidson Experience in Number Theory Research (REU), Panel Member	Jul 2016, 2017
Athens Area Girls Math Team, Coach	Aug 2016-May 2017
UGA Center for Undergraduate Research Opportunities Symposium, Oral Session Convener	Apr 2017

**Professional Memberships**

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American Mathematical Society	2016-present
Association for Women in Mathematics	2015-present
National Council of Teachers of Mathematics	2019-present