

# ISAAC SUNDBERG

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updated Sep 2021

## Education

**Ph.D. in Mathematics** | Expected May 2022 | Bryn Mawr College, Bryn Mawr, Pennsylvania, USA

*Thesis title:* The Khovanov homology of slice disks

*Advisor:* Paul Melvin

**M.A. in Mathematics** | 2018 | Bryn Mawr College, Bryn Mawr, Pennsylvania, USA

*Thesis title:* On fibering 3-manifolds

*Advisor:* Paul Melvin

**B.S. in Mathematics** | 2016 | University of Wisconsin La Crosse, La Crosse, Wisconsin, USA

## Research Interests

Low-dimensional topology: concordance, exotic phenomena in 4-dimensions, Khovanov homology, link cobordisms, slice disks, smooth 4-manifolds, surfaces in 4-manifolds

## Papers

*Khovanov homology and exotic surfaces in the 4-ball*, joint with Kyle Hayden, 2021, arXiv:2108.04810, submitted

*Relative Khovanov-Jacobsson classes*, joint with Jonah Swann, 2020, to appear in Algebr. & Geom. Topol.

*Multiplication operators on weighted Banach spaces of a tree*, joint with Robert F. Allen, Bulletin of the Korean Mathematical Society, 54:3 (2017), 747-761

## Talks

Duke Geometry & Topology Seminar, Duke University	Jan 2022
MIT Geometry & Topology Seminar, Online	Sep 2021
Columbia Geometric Topology Seminar, Online	Sep 2021
Philadelphia Area Contact Topology (PACT) Seminar, Bryn Mawr College	Sept-Oct 2021
Nearly Carbon Neutral Geometric Topology Conference, Online	Jun 2021
AIM Research Community in 4-dimensional Topology, Online	Apr 2021
Graduate Student Topology and Geometry Conference (GSTGC), UI Urbana-Champaign	Mar 2019
EPaDel MAA Section Meeting, King's College	Mar 2019
UWL Mathematics & Statistics Club, UW La Crosse	Nov 2018
EPaDel MAA Section Meeting, Temple University	Mar 2018
AMS Session on Undergraduate Research, JMM Seattle	Jan 2016

## Conferences & Workshops

Tech Topology Summer School on 4-manifolds, Online	Jul 2021
Nearly Carbon Neutral Geometric Topology Conference, Online	Jun 2021
Nearly Carbon Neutral Geometric Topology Conference, Online	Jun 2020
Graduate Student Conference in Algebra, Geometry, & Topology, Temple University	Jun 2019
Graduate Student Topology and Geometry Conference, UI Urbana-Champaign	Mar 2019
EPaDel MAA Section Meeting, King's College	Mar 2019
Graduate Student Conference in Algebra, Geometry, & Topology, Temple University	Jun 2018
MSRI Summer Graduate School on H-Principles, Tambara Institute, University of Tokyo	Jun-Jul 2018

Summer Geometry/Topology RTG mini-conference, Princeton University	Jun 2018
Topology Student Workshop, Georgia Institute of Technology	Jun 2018
EPaDel MAA Section Meeting, Temple University	Mar 2018
Joint Mathematics Meeting, Seattle, WA	Jan 2016

## Regular Research Seminars

Philadelphia Area Contact Topology (PACT)	2016-Present
Philadelphia Area Topology Contact/Hyperbolic (PATCH)	2016-Present

## Teaching Positions

<b>Instructor of Record</b> , Department of Mathematics, Bryn Mawr College <i>Courses</i> : Calculus I	Spring 2020
<b>Teaching Assistant</b> , Department of Mathematics, Bryn Mawr College <i>Courses</i> : Abstract Algebra I & II, History of Math, Theory of Probability, Transitions, Topology	2016-2021
<b>Substitute Lecturer</b> , Department of Mathematics, Bryn Mawr College <i>Courses</i> : Abstract Algebra, Graduate Algebraic Topology, History of Math, Graduate Topology	2016-2019
<b>Tutor in Mathematics</b> , Murphy Learning Center, UW La Crosse <i>Courses</i> : College Algebra, Pre-calculus and Trigonometry, Calculus I-III, Differential Equations	2013-2016

## Service

<b>Seminar co-founder and co-organizer</b> , Graduate Research Seminar, Bryn Mawr College	2019-2021
<b>Department representative</b> , Graduate Student Association, Bryn Mawr College	2019-2020
<b>Chapter president</b> , AMS Graduate Student Chapter, Bryn Mawr College	2018-2020
<b>Seminar organizer</b> , Professional Development Seminar, Bryn Mawr College	2018-2019
<b>Co-chair</b> , Graduate Student Association, Bryn Mawr College	2017-2019
<b>Club president</b> , Mathematics & Statistics Club, UW La Crosse	2015-2016
<b>Tutor and staff</b> , FastTrack Remedial Mathematics Camp, UW La Crosse	2015
<b>Teaching assistant and staff</b> , Girls in Science Day Camp, UW La Crosse	2015

## Awards & Honors

Doris Sill Carland Award for Excellence in Teaching, Bryn Mawr College	2021
Research Assistantship, Bryn Mawr College,	Fall 2020, Fall 2021
Bryn Mawr Community Building Honor Roll, Bryn Mawr College	2019
Convocation Speaker Representing the Graduate Student Association, Bryn Mawr College	2018
McPherson Graduate Award for Excellence, Bryn Mawr College	2018
Department of Mathematics Outstanding Service Award, UW La Crosse	2016
SIAM Outstanding Efforts & Accomplishments in the Chapter, UW La Crosse	2016