Patrick Naylor

University of Waterloo
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Research Interests:

Low dimensional and geometric topology: in particular, questions about 3- and 4-manifolds, knotted surfaces, and trisections of 4-manifolds.

Education

2016–Present	**PhD, Pure Mathematics**, *University of Waterloo*, Waterloo, Canada. Advised by Doug Park.
2015–2016	**MMath, Pure Mathematics**, *University of Waterloo*, Waterloo, Canada.
2011–2015	**BSc Honours, Pure Mathematics**, *University of Manitoba*, Winnipeg, Canada.

Research Visits

Fall 2019	**Visiting Student**, *Max Planck Institute for Mathematics*.
Fall 2018	**Visiting Student**, *University of Georgia*.

Papers and Preprints

P. Naylor, H. Schwartz, **Gluck twisting roll-spun knots**, [arXiv:2009.05703], 2020.

P. Naylor, **Trisection diagrams and twists of 4-manifolds**, [arXiv:1906.01495], 2019. Submitted.

A. Beyaz, P. Naylor, S. Onaran, D. Park, **From automorphisms of Riemann surfaces to smooth 4-manifolds**, *Math. Res. Lett.* 27(3), 629-645, 2020.

A. Clay, C. Desmarais, P. Naylor, **Testing bi-orderability of knot groups**, *Canad. Math. Bull.* 59(3), 472-482, 2016.

R. Craigen, C. Desmarais, T. Eaton, P. Naylor, **Negacylic Weighing Matrices**, 2016. Submitted.

Talks

Invited Talks

Sep 2019	Workshop on 4-manifolds (lightning talk), Max Planck Institute for Mathematics
Jun 2019	CMS Summer Meeting Topology Session, University of Regina
May 2019	Quantum Gravity Seminar, Perimeter Institute for Theoretical Physics
Mar 2019	Joint Pure Math and C&O Graduate Student Colloquium, University of Waterloo
Mar 2018	Geometry and Topology Seminar, McMaster University
Sep 2017	Pure Math Graduate Student Colloquium, University of Waterloo

Seminar Talks

2018-Present	GT GAPS Seminar, Online
2019-Present	Geometry Working Seminar, University of Waterloo
2020	TQFT and Frobenius Algebras Learning Seminar, University of Waterloo
2018	Topology Student Seminar, University of Georgia
2017–2018	Topology and Geometry Learning Seminar, University of Waterloo
2016–2018	Algebraic Geometry Learning Seminar, University of Waterloo
2015–2016	Ring Theory Learning Seminar, University of Waterloo

Conferences Attended

Jun 2020	Virtual Summer Trisectors Workshop, Online
Jun 2020	Nearly Carbon Neutral Geometric Topology Conference, Online
Nov 2019	Unifying 4-dimensional Knot Theory, Banff International Research Station
Sep 2019	Workshop on 4-manifolds, Max Planck Institute for Mathematics
Jul 2019	Four manifolds: Confluence of High and Low Dimensions, The Fields Institute
Jun 2019	Canadian Mathematical Society Summer Meeting, University of Regina
Apr 2019	Spring Trisectors Meeting, University of Georgia
Dec 2018	Virginia Topology Conference, University of Virginia
Dec 2018	Canadian Mathematical Society Winter Meeting, Vancouver
Jun 2018	Topology Students Workshop, Georgia Institute of Technology
Mar 2018	1st Canadian Geometry and Topology Seminar, The Fields Institute
Dec 2017	Canadian Mathematical Society Winter Meeting, University of Waterloo
Dec 2016	Canadian Mathematical Society Winter Meeting, Niagara Falls

Service and Extracurricular

2020–Present	**Math Circles Presenter**, *CEMC, University of Waterloo*. Organized math enrichment workshops for high school students.
2020-Present	**CEMC Contest Committee member**, *CEMC, University of Waterloo*. Committee to generate a contest problems for national high school math contests.
2020-Present	**Problem of the Month Committee member**, *CEMC, University of Waterloo*. Committee to generate a "problem of the month" for enthusiastic high school students.
2016–Present	**Math Contest Marker**, *CEMC, University of Waterloo*. Marker for national high school math contests run by the University of Waterloo.
2020	**Camp Euclid Mentor**, *Euclid Lab*. Mentor for an online mathematical research enrichment program for high school students.
2013–2015	**Undergraduate Research Assistant**, *Department of Mathematics, University of Manitoba*. with Adam Clay in 2014 and 2015, with Andriy Prymak in 2014, and with Robert Craigen in 2013.

Teaching

Spring 2020	**Instructor**, *University of Waterloo*. Math 235: Linear Algebra 2 for Honours Math (Online)
2015–Present	**Teaching Assistant**, *Department of Pure Mathematics, University of Waterloo*. TA for a wide variety of undergraduate, graduate, and online math courses.
2013–2015	**Teaching Assistant**, *Department of Mathematics/Statistics, University of Manitoba*. TA for introductory mathematics and statistics courses.

Awards and Honours

Academic

2017-2020	**NSERC Alexander Graham Bell CGS-D Scholarship**, *University of Waterloo*.
2016-2020	**President's Graduate Scholarship**, *University of Waterloo*.
2018	**NSERC CGS-D MSFSS Scholarship**, *University of Waterloo*.
2018	**David Johnston International Experience Award**, *University of Waterloo*.
2016	**NSERC CGS-M Scholarship**, *University of Waterloo*.
2015	**Special Graduate Scholarship**, *University of Waterloo*.
2013; 2014	**Agnes Stewart Hart Award in Mathematics**, *University of Manitoba*.
2013	**Faculty of Science Undergraduate Research Award**, *University of Manitoba*. To support mathematics research throughout the summer term.
2012; 2013	**President's Scholarship**, *University of Manitoba*.
2011	**Canadian Association of Physicists Award**. For high performance on the CAP national physics contest.

Extracurricular

2012–2014	**CIS Academic All Canadian**, *University of Manitoba*. Maintaining an 80% average while competing on the varsity track team.
2013	**Track & Field/Cross Country Athletic Award**, *University of Manitoba*.
2009–2011	**National Triathlon Age Group Medalist**, *Kelowna, British Columbia*. Silver medalist (2009), and gold medalist (2010, 2011) in the U19 division.

Interests

Playing piano, track and field, cycling, being a master chef for departmental BBQs.