

Ana Wright

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EDUCATION

University of Nebraska–Lincoln, Lincoln, Nebraska, USA

- Ph.D. in Mathematics
• Dissertation Title: Effect of Crossing Changes on the Alexander Polynomial and Double Branched Cover
• Advisors: Mark Brittenham and Alex Zupan
- M.S. in Mathematics

Expected May 2023

May 2019

Willamette University, Salem, Oregon, USA

- B.A. in Mathematics and Spanish with a minor in English
• Cumulative GPA: 3.93, Mathematics Major GPA: 4.0, Spanish Major GPA: 4.0

May 2017

WORK EXPERIENCE

University of Nebraska–Lincoln

- Graduate Teaching Assistant
- Associate Convener for Math 103 College Algebra and Trigonometry
• Organized weekly instructor meetings, created a course schedule, wrote exams
• Oversaw 11 sections in the fall and 4 sections in the spring taught by 14 instructors
- Graduate Teaching Assistant for Polymath Jr.
• Served as a graduate teaching assistant for Alex Zupan's projects for the online undergraduate research program Polymath Jr. supported by NSF grant DMS-2005518.
- Graduate Research Assistant
• Coded and summarized interviews for a project in computer science education funded by a Computer Science for All grant from the National Science Foundation called Adapt, Implement, and Research at Nebraska (AIR@NE) DUE-1837476 with Wendy Smith and Sally Ahrens

Aug. 2017 - Present

Fall 2020 - Spring 2021

Summer 2021 & 2022

Dec. 2020 - Jan. 2021

Willamette University

- Math Tutor and Preceptor for Modeling With Calculus (MATH 140), Linear Algebra (MATH 253), and Multivariable Calculus (MATH 249)
- Grader for the proofwriting course Foundations of Advanced Math (MATH 251W)
- Undergraduate Researcher for the Willamette University Mathematics Research Experience for Undergraduates (REU)
• Project: Mixing Times of the Generalized Rook's Walk
• Advisor: Peter Otto

Nov. 2013 - May 2017

Nov. 2016 - May 2017

June 2016 - July 2016

AWARDS

Ben Nolting Award

Annual award for one or two graduate students in mathematics at UNL recognizing work in diversity and inclusion

2021

Linda Bors Fellowship

Annual fellowship awarded to 3 graduate students in mathematics at UNL based on excellence of scholarship

2020

Chester F. Luther Mathematics Scholarship

Annual scholarship awarded to 4-6 undergraduate students at Willamette University for excellence in mathematics

2016

INSTRUCTOR OF RECORD	Teaching Experience	
	MATH 314 Linear Algebra	Spring 2022
	• 33 students	
	MATH 300 Mathematics Matters	Spring 2020
	• This course is for pre-service elementary school teachers and the last six weeks of this course were administered online due to COVID-19. 22 students	
	MATH 203 Contemporary Mathematics	Spring 2019
	• 30 students	
	MATH 106 Calculus I	Summer 2020
	• This was an online class due to COVID-19. 34 students	
	MATH 104 Applied Calculus	Summer 2019
TEACHING ASSISTANT EXPERIENCE	• 17 students	
	MATH 103 College Algebra and Trigonometry	Fall 2020
	• This class used a flexible hybrid model to accommodate for social distancing regulations due to COVID-19. 34 students	
	• 39 students	Fall 2019
	MATH 101 College Algebra	Fall 2021
	• In Fall 2021, I taught this class as part of the federal outreach and student services program TRIO meant to identify and provide services to eligible students from disadvantaged backgrounds. The class meets 5 times per week rather than the typical 3 and has extra office hours and a smaller class size than other sections. 4 students	
	• 41 students	Fall 2018
	MATH 107R Calculus II Recitation	Summer 2018
	• 21 students	
	MATH 106R Calculus I Recitation	Spring 2018
GRADING EXPERIENCE	• (2 Sections) 22 students & 23 students	Fall 2017
	• (2 Sections) 22 students & 28 students	
	MATH 871 Topology I	Fall 2022
	Graded and gave feedback on student proofs on problem sets	
	MATH 856 Differential Topology	Spring 2022
	Graded and gave feedback on student proofs on problem sets	
UNDERGRADUATE MENTORSHIP	MATH 104 Applied Calculus	Fall 2019 & Fall 2022
	Graded midterms and final exam	
	Mentorship Experience	
UNDERGRADUATE MENTORSHIP	Polymath Jr: Symmetric Union Presentations for Ribbon Links	Summer 2022
	This undergraduate research project was held online and organized by Alex Zupan. Meetings were conducted via Zoom and other communication was conducted via email and Discord. I curated student proofs for a solution guide to problem sets on the background material. I participated in weekly progress meetings with 24 undergraduate students and held weekly office hours.	

	Polymath Jr: Knotted Surface Tabulation Via Tri-plane Diagrams This undergraduate research project was held online and organized by Alex Zupan. Meetings were conducted via Zoom and other communication was conducted via email and Discord. I participated in weekly progress meetings with 22 undergraduate students. I led weekly research meetings with 7 of the undergraduate researchers. I also held weekly office hours and helped compile results from the project.	Summer 2021
	Learning Assistant Math 103 College Algebra and Trigonometry Pedagogy Leader I ran biweekly course content meetings with the undergraduate learning assistants in Math 103 to go over the course content and related pedagogical issues.	Fall 2020 - Spring 2021
	Directed Reading Program I met weekly with an undergraduate student as she worked through An Interactive Introduction to Knot Theory by Inga Johnson and Allison Henrich.	Spring 2020
GRADUATE MENTORSHIP	Landscapes Seminar Landscapes seminar is a weekly seminar of talks and a panel to help 11 first year grad students prepare to ask a professor to be their advisor and begin research. I organized the seminar in Spring 2021.	Spring 2021
	Topology Qualifying Exam Workshop I organized previous topology qualifying exam problems into a database, which can be sorted by topic and helped 3 graduate students prepare for the exam.	Jan. 2021
	Peer Mentorship Program I served as a peer mentor to a first year graduate student.	Aug. 2019 - May 2020
PAPERS	Publications, Presentations, and Travel	
	(with Chris Anderson, Kenneth L. Baker, Xinghua Gao, Marc Kegel, Khanh Le, Kyle Miller, Sinem Onaran, Geoffrey Sangston, Samuel Tripp, and Adam Wood) <i>L-space knots with tunnel number >1 by experiment</i> Experimental Mathematics (2021) 1-15	
	<i>Effect of Crossing Changes on the Alexander Polynomial and Double Branched Cover</i> (In Preparation) (with Ben Clingenpeel, Zongzheng (Jason) Dai, Gabriel Diraviam, Kareem Jaber, Ziyun Liu, Teo Miklethun, Haritha N, Michael Perry, Moses Samuelson-Lynn, Eli Seamans, Krishnendu Kar, Nicole Xie, Ruiqi Zou, and Alex Zupan) <i>Symmetric Union Presentations of Ribbon Knots</i> (In Preparation) (with Wolfgang Allred, Manuel Aragón, Zack Dooley, Alexander Goldman, Yucong Lei, Isaiah Martinez, Nick Meyer, Devon Peters, Scott Warrander, and Alex Zupan) <i>Tri-Plane Crossing Number of Unknotted Surfaces and CH-Diagram to Tri-Plane Diagram Conversions</i> (In Preparation)	
PRESENTATIONS	“A Topological Journey Through Spaces and Knots” (Invited Speaker)	
	<ul style="list-style-type: none"> Math RaMP at Spelman College, online, as part of the Great Plains Alliance 	Mar. 2021
	Non-Euclidean Geometry Presentation	
	<ul style="list-style-type: none"> I visited an undergraduate geometry class at Nebraska Wesleyan University and gave a talk about non-euclidean geometry, introducing hyperbolic and elliptic geometry. 	Oct. 2021
	“A Journey Through Hyperbolic Space” (Invited Speaker)	
	<ul style="list-style-type: none"> Jim Albaugh Mathematics Colloquium at Willamette University, online 	Apr. 2020
	“Senior Thesis: Mountain Graphs in Origami Crease Patterns”	
	<ul style="list-style-type: none"> Jim Albaugh Mathematics Colloquium at Willamette University 	Apr. 2017

	“Mixing Times for the Generalized Rook’s Walk”	
	• Nebraska Conference for Undergraduate Women in Math	Feb. 2017
	• Joint Mathematics Meetings: Contributed Papers in Probability and Statistics I and Student Poster Session	Jan. 2017
	• Jim Albaugh Mathematics Colloquium at Willamette University	Dec. 2016
	CONFERENCES AND TRAVEL	
	Max Planck Institute of Mathematics (2 month visit) Bonn, Germany	Sept.-Oct. 2022
	Séminaire de Mathématiques Supérieures (Mathematical Sciences Research Institute Summer School) Vancouver, Canada	Jul. 2022
	Winter Trisectors Workshop Online workshop	Dec. 2020
	Kirby Calculus and 4-manifolds UT Austin Minicourse Online minicourse	Jul. 2020
	Heegaard Splittings and Dehn Surgery UT Austin Minicourse Online minicourse	Jul. 2020
	Topology Student’s Workshop Online conference	Jul. 2020
	Joint Mathematics Meetings Denver, Colorado	Jan. 2020
	Midwest Geometry Conference Ames, Iowa	Sep. 2019
	Perspectives on Dehn Surgery Providence, Rhode Island	Jul. 2019
	Georgia Topology Conference Athens, Georgia	May 2019
	LOCAL TALKS (UNL)	
	Groups, Semigroups, and Topology (GST) Seminar	
	• “End Spaces and Compact Closures” (online)	Apr. 2022
	• “Maps From 3-Manifolds to 4-Manifolds That Induce Isomorphism on π_1 by Hongbin Sun and Zhongzi Wang (Part 1)” (online and in person)	Oct. 2021
	• “Knot Groups and Colorability” (online)	Mar. 2021
	• “Alexander Polynomials and Gordian Distance” (online)	Oct. 2020
	• “Efficient Computation of the Kauffman Bracket”	Feb. 2020
	• “Introduction to Foliations”	Nov. 2019
	Graduate Students Talking in Groups, Semigroups, and Topology (GST)² Seminar	
	• “Diagrams of Knotted Surfaces”	Oct. 2021
	• “Alexander Polynomials and Gordian Distance” (online)	Sept. 2020
	• “To Knot or Not to Knot”	Feb. 2020
	• “Conveniences of Alternating Diagrams”	Oct. 2019
	• “Algorithms Transforming Links into Closed Braid Form”	Mar. 2019
	Matemáticas en español Seminar	
	• “Nudos de cinta” (Ribbon Knots) (online)	Sept. 2022
	• “Pruebas sin palabras” (Proofs Without Words) (online)	Feb. 2022
	• “Introducción a superficies anudadas” (Introduction to Knotted Surfaces)	Oct. 2021
	• “Geometría elíptica” (Elliptic Geometry)	Sept. 2021
	• “Introducción a la característica de Euler” (Introduction to the Euler Characteristic) (online)	Feb. 2021
	• “Grafos montes en patrones de pliegues origami” (Mountain Graphs in Origami Crease Patterns) (online)	Sept. 2020
	• “Introducción a la geometría hiperbólica” (Introduction to Hyperbolic Geometry) (online)	Apr. 2020
	• “Cruces múltiples en diagramas de nudos” (Multi-crossings in Knot Diagrams)	Oct. 2019

- “La magia de flexágonos” (The Magic of Flexagons) Sept. 2019
- “Introducción a la teoría de nudos” (Introduction to Knot Theory) Mar. 2019

Graduate Student Seminar

- “Using Graphs to Think About the Jones Polynomial” (online) Apr. 2021
- “Hyperbolic Geometry and Topology” Sept. 2019
- “Heegaard Splitting Stability” Dec. 2018

4-Manifolds Reading Seminar

- “Trisections of 4-Manifolds” Sept. 2019

Mathematics Literature

- “Thin Position of Knot Diagrams and Essential Planar Surfaces in Knot Compliments” June 2018

Involvement

OUTREACH

Matemáticas en español seminario

Feb. 2019 - Present

I co-founded a Spanish math seminar with Amadeus Martin and organized the seminar since it began. It is meant for undergraduate level talks for students and faculty of all Spanish skill levels to practice communicating math in Spanish.

Math Club

Nov. 2021

I gave a talk and led an activity about flexagons in the undergraduate math club at UNL.

Great Plains Alliance

Mar. 2019

I served in a support role for the speaker in a Great Plains Alliance Talk at Wayne State College. The Great Plains Alliance allows UNL graduate students to give talks to undergraduates interested in math at local universities and colleges. The speaker and supporting graduate student hold a Q&A after the talk about graduate school.

Nebraska Conference for Undergraduate Women in Math

2018 - 2022

Each year I volunteer for NCUWM, which encourages undergraduate women to pursue math. In 2020 I was the invited graduate student representative from UNL to speak on a panel about choosing a graduate program.

University of Nebraska–Lincoln Math Day

2017 - 2022

Each year I volunteer for UNL Math Day, where over a thousand high school students from across Nebraska visit UNL’s campus to participate in math competitions.

SERVICE

Graduate Student Advisory Board

May 2020 - May 2022

I served on this board, which plans community events and acts as a liaison between the graduate students and faculty in the department.

Graduate Students Talking in Groups Semigroups and Topology (GST)²

Fall 2021

(GST)² is a graduate student seminar for students in geometric group theory and topology. I organized the seminar in Fall 2021.

Field of Dreams

Nov. 2021

I represented the UNL math graduate students at a virtual recruitment booth at the conference Field of Dreams. I talked to several interested undergraduate students about the program.

Equity in Teaching Orientation Session

Aug. 2021

I ran a session during the UNL math graduate student orientation with two other graduate students about equitable teaching practices.

Math Department Recognition Ceremony and Graduation Receptions

Apr. & Sept. 2021

I helped host and organize these events online.

First & Second Year Mathematics Graduate Student Picnic

Aug. 2018

This is an annual event to foster community between first and second year graduate students. I organized the picnic in 2018.