

Lauren M. Nelsen

Website: <https://sites.google.com/view/laurennelsen>

E-mail: lnelsen@uccs.edu

EDUCATION

University of Denver, Denver, Colorado USA

Ph.D. Mathematics

June 2019

Area: Graph Theory and Combinatorics

Advisor: Paul Horn, Ph.D.

University of Denver, Denver, Colorado USA

M.S. Mathematics

August 2015

University of Montana, Missoula, Montana USA

B.A. Mathematics

May 2013

Thesis: *Integral enumeration formulas: theory and applications*

Advisor: P. Mark Kayll, Ph.D.

Minor: Central and Southwest Asian Studies

PROFESSIONAL EXPERIENCE

Assistant Teaching Professor of Quantitative Methods

August 2023-Present

College of Business

University of Colorado - Colorado Springs, Colorado Springs, CO

- Teach business statistics and descriptive analytics courses for students in the College of Business.
- Engage in mathematical research.

Visiting Assistant Professor

August 2021-May 2023

Department of Mathematics and Computer Science

Colorado College, Colorado Springs, CO

- Teach a wide range of courses on an accelerated block schedule.
- Engage in mathematical research.
- Supervise student capstone project.

Assistant Professor

August 2019–May 2021

Department of Mathematical Sciences

University of Indianapolis, Indianapolis, IN

- Taught a wide range of undergraduate courses for mathematics majors and non-majors and advised students.
- Engaged in mathematical research and published papers.
- Served on committees to support the work of the Department of Mathematical Sciences and the University.

Teaching Assistant

September 2013– June 2019

Department of Mathematics

University of Denver, Denver, CO

- Led recitation sections, held office hours, and graded assessments for math courses.

Academic Excellence Workshop Facilitator

2017–2018

University of Denver, Denver, CO

- Developed activities and led students majoring in STEM fields through a weekly workshop that complements the Calculus sequence. The goal of the workshops was to utilize collaborative learning teaching methods and principles to help historically underrepresented undergraduate students in STEM majors develop the academic success strategies and study skills that are necessary to succeed and excel.

Instructor
Morgridge College of Education
University of Denver, Denver, CO

Summer 2017, Summer 2018

- Taught graduate-level mathematics education courses for students in the Teacher Education Program.

AWARDS

Graduate Teaching Assistant Excellence in Teaching Award, 2016-2017
University of Denver Department of Mathematics
Awarded annually to a Graduate Teaching Assistant.

Robin Morgan Outstanding Woman Award (Graduate Student), University of Denver 2017
Presented annually by Women's Staff Alliance for Networking and Development to a DU woman who goes beyond her job responsibilities to advocate for women in the University of Denver community.

Doctoral Fellowship for Inclusive Engagement, Univ. of Denver Graduate Studies 2016-2017
Awarded to students practicing values of diversity and inclusive excellence, and demonstrating leadership in fostering the values and principles of inclusive excellence campus-wide or in their communities.

TEACHING
EXPERIENCE

University of Colorado - Colorado Springs

Courses taught include Business Statistics and Descriptive Analytics.

Colorado College

Courses taught include Calculus 1-3, Precalculus and Calculus, Ordinary Differential Equations, Linear Algebra, and Graph Theory.

University of Indianapolis

Courses taught include Differential Equations, Linear Algebra, Calculus and Analytic Geometry 1, Success in Calculus 1, Proof and Linear Algebra Seminar, and Discovery in Mathematics.

University of Denver

Courses taught include Calculus 2 and College Algebra and Trigonometry, Mathematics for Elementary School Teachers I (co-taught), and Math Across the Content Areas (co-taught).

Worked as a teaching assistant for the following courses: Group Theory, Intro. to Abstract Algebra, Intro. to Real Analysis, Intro. to Probability, Mathematical Reasoning and Proof, Intro. to Differential Equations, Elements of Linear Algebra, Calculus 1, Calculus 2, Calculus 3, Multivariable Calculus, Business Calculus, The Heart of Mathematics, and Graph Theory in the Real World.

PUBLICATIONS

Published

P. Horn and L.M. Nelsen (2020). Gradient and Harnack-type estimates for PageRank. *Network Science*, 1-19. doi:10.1017/nws.2020.34

P. Horn and L. M. Nelsen (2020). A Gradient Estimate for PageRank. In: Cherifi H., Gaito S., Mendes J., Moro E., Rocha L. (eds) Complex Networks and Their Applications VIII. COMPLEX NETWORKS 2019. Studies in Computational Intelligence, vol 881. Springer, Cham

J. Diemunsch, N. Graber, L. Kramer, V. Larsen, L. M. Nelsen, L. L. Nelsen, D. Sigler, D. Stolee and C. Suer., Color-blind index in graphs of very low degree, *Discrete Appl. Math.* **225**, (2017) 122-129.

L. Morey, An integral formula for counting perfect matchings in graphs, *Pi Mu Epsilon Journal* **13** (2013), no. 9, 541-548.

To Appear

A.M. Marr, L.M. Nelsen L.L. Nelsen, C. Osborne, and V. Vasilevska. *Domino Antimagic Squares and Rectangles* (to appear in *Recreational Mathematics Magazine*).

ACADEMIC SERVICE

| | |
|---|------------------|
| QUAN 2010 Course Coordinator College of Business University of Colorado Colorado Springs | 2024-present |
| QUAN Tutoring Coordinator College of Business University of Colorado Colorado Springs | 2024-present |
| Scholarship Committee College of Business University of Colorado Colorado Springs | 2024 |
| IRC Promotion Committee College of Business University of Colorado Colorado Springs | 2023-present |
| Outreach Committee Department of Mathematics and Computer Sciences Colorado College | 2021-present |
| United Math Club Advisor (Math Club, AWM, SIAM) Department of Mathematics and Computer Sciences Colorado College | 2021-present |
| Organized movie screening and panel discussion Secrets of the Surface: The Mathematical Vision of Maryam Mirzakhani University of Indianapolis | February 1, 2021 |
| Inclusion and Equity Council University of Indianapolis | 2020-2021 |
| Inclusive Excellence Strategic Leadership Coalition University of Indianapolis | 2020-2021 |
| Honors College Committee University of Indianapolis | 2020-2021 |
| Student Engagement Committee Department of Mathematical Sciences University of Indianapolis | 2020-2021 |
| Referee for manuscript submitted to <i>Rocky Mountain Journal of Mathematics</i> | 2020 |
| Coached a team for the modeling challenge SCUDEM IV 2019 University of Indianapolis | 2019 |

| | |
|---|-------------------|
| Curriculum and Assessment Committee Department of Mathematical Sciences University of Indianapolis | 2019-2020 |
| Professionalism and Inclusive Excellence Training University of Denver I was chosen by the Graduate Committee to assist with the Professionalism and Inclusive Excellence Training for new graduate students in mathematics. | 2017, 2018 |
| NSMentoring: Face to Face Program mentor University of Denver Division of Natural Sciences and Mathematics | 2016-2019 |
| Organizer of Student-Only Seminar University of Denver | 2016-2017 |
| Association for Women in Mathematics Student Chapter University of Denver Vice President Secretary and Treasurer | Fall 2016 2016 |
| Student Evaluation Committee University of Montana Reviewed and summarized student evaluations of mathematics courses. | Fall 2012 |

OUTREACH

| | |
|---|-----------------------------------|
| <i>Pikes Peak Regional Science Fair</i> Judge | 2024 Colorado Springs, CO |
| <i>Circles and Pairs Mathematics Program</i> Co-organizer | 2021-2022 Colorado Springs, CO |
| <i>Math and Science Night</i> Brooks School Elementary Maze puzzles and tangrams | February 12, 2020 Fishers, IN |
| <i>STEAM Night for Cub Scouts Pack 417</i> Da Vinci Bridges | March 15, 2018 Thornton, CO |
| <i>Colorado State MathCounts competition</i> University of Denver | March 18, 2017 Denver, CO |
| <i>Denver Metro MathCounts competition</i> University of Denver | February 4, 2017 Denver, CO |
| <i>Problem-Based Learning presentation day panel member</i> STEM Launch K-8 The students were given the problem of addressing how funding for national parks should be distributed, with the focus being on Rocky Mountain National Park. The students gave a presentation of their solutions and ideas for funding, and the panel discussed presentations and asked the students questions about their work. | December 1, 2016 Thornton, CO |
| <i>Active Learning Activities for Teaching Precalculus</i> Rocky Mountain Math Teachers' Circle Helped with a week-long bootcamp focused on active learning activities for the precalculus classroom. | June 13-17, 2016 Denver, CO |

Pi Day activities: Ricochet Robots, Chocolate Fix, da Vinci bridge, 3D printer March 14, 2016
Foundations Academy Brighton, CO

STEMosphere September 26, 2015
University of Denver Denver, CO
STEMosphere is a free one-day event for people of all ages to learn about and explore STEM ideas. Led activities geared toward elementary and middle school students teaching them how to approximate pi in different ways.

Missoula Math Circle Spring 2012
University of Montana Missoula, MT
Assisted 8th-12th graders in mathematics workshops.

PROFESSIONAL
DEVELOPMENT

COMaT Workshop: Getting Started With PreTeXt May 2024
Denver, CO

V.E.T.S Training March 20, 2024
University of Colorado Colorado Springs

UCCS Teaching and Learning Conference January 9, 2024
University of Colorado Colorado Springs

Fall 2021 Indiana MAA Section Meeting September 25, 2021
Virtual

Analysis and Differential Equations at Undergraduate Institutions June 23, 2021
MAA Virtual Programming

Mastery Grading Conference June 11-12, 2021
Virtual

Fall 2020 Indiana MAA Section Meeting October 3, 2020
Virtual

SCUDEM IV 2019 November 9, 2019
Earlham College

Fall 2019 Indiana MAA Section Meeting October 26, 2019
(Hosted by Wabash College)

MAA Project NExT Fellow Silver'19

Diversity, Inclusion, and the Ethical Responsibilities of Future STEM Faculty April 14, 2017
University of Denver

Cognitive Diversity and Inclusive Pedagogy in STEM February 17, 2017
University of Denver

Inclusive Excellence and Our Teaching December 5, 2016
University of Denver Office of Teaching and Learning

How Research on Learning Can Inform Our Teaching November 2, 2016
University of Denver Office of Teaching and Learning

Intermountain/Rocky Mountain MAA Joint Meeting April 8-9, 2016
(Hosted by Colorado Mesa University)

PRESENTATIONS

Invited Talks

| | |
|---|---------------------------------------|
| <i>Rainbow Spanning Trees</i> Marian University | November 19, 2019 Indianapolis, IN |
| <i>Rainbow Spanning Trees in General Graphs</i> Joint Mathematics Meetings | January 19, 2019 Baltimore, MD |
| <i>Panel member for panel on graduate school</i> Math Club and Society for Women in Mathematics at Mines Colorado School of Mines | October 2, 2018 Golden, CO |
| <i>Rainbow Spanning Trees in General Graphs</i> SIAM Conference on Discrete Mathematics University of Colorado Denver | June 5, 2018 Denver, CO |
| <i>Rainbow spanning trees in general graphs</i> University of Colorado Denver discrete seminar | March 12, 2018 Denver, CO |
| <i>Panel member for panel on graduate school</i> Society for Women in Mathematics at Mines Colorado School of Mines | November 4, 2014 Golden, CO |
| <i>Color-blind index of graphs</i> Rocky Mountain-Great Plains Graduate Workshop in Combinatorics | July 31, 2014 Denver, CO |

Contributed Talks

| | |
|--|---|
| <i>Grading for Growth in an Introductory Statistics Course</i> UCCS Teaching and Learning Conference | January 9, 2024 Colorado Springs, CO |
| <i>Graph Theory at The Office</i> Intermountain MAA Section Meeting, | March 25, 2022 Virtual |
| <i>Trying to make modeling less scary in the differential equations classroom</i> Fall 2021 Indiana MAA Section Meeting, | September 25, 2021 Virtual |
| <i>Diffusion of PageRank on Graphs</i> Joint Mathematics Meetings | January 16, 2020 Denver, CO |
| <i>Ups and Downs: A two player game with dots</i> Fall 2019 Indiana MAA Section Meeting, Wabash College | October 26, 2019 Crawfordsville, IN |
| <i>Many edge-disjoint rainbow spanning trees in general graphs</i> SIAM Front Range Applied Mathematics Student Conference, CU Denver | March 3, 2018 Denver, CO |
| <i>Many edge-disjoint rainbow spanning trees in general graphs</i> Graduate Student Combinatorics Conference, University of Kansas | April 9, 2017 Lawrence, KS |
| <i>Color-blind index of graphs</i> Intermountain/Rocky Mountain MAA Joint Meeting, Colorado Mesa University | April 9, 2016 Grand Junction, CO |
| <i>Color-blind index of graphs</i> SIAM Front Range Applied Mathematics Student Conference, CU Denver | March 5, 2016 Denver, CO |
| <i>A new proof of an integral formula for counting perfect matchings in graphs</i> University of Montana Conference on Undergraduate Research | April 12, 2013 Missoula, MT |

Local Talks

| | |
|--|---|
| <i>Using Spectral Graph Theory to Analyze TV Shows</i> Colorado College, Fearless Fridays | November 12, 2021 Colorado Springs, CO |
| <i>Enumeration by Integration</i> University of Colorado Denver Student-Led Seminar | April 25, 2018 Denver, CO |
| <i>Rainbow spanning trees in general graphs</i> University of Denver Mathematics Department colloquium | June 2, 2017 Denver, CO |
| <i>Rainbow spanning trees in graphs</i> University of Denver student seminar | May 8, 2017 Denver, CO |
| <i>Enumeration by integration</i> University of Denver Math Club | January 25, 2017 Denver, CO |
| <i>Counting with LEGOs</i> University of Denver student seminar | November 9, 2016 Denver, CO |
| <i>Enumeration by integration</i> University of Denver student seminar | April 6, 2016 Denver, CO |
| <i>The color-blind index of graphs</i> University of Denver student seminar | November 11, 2015 Denver, CO |
| <i>Integral enumeration formulas</i> University of Denver Mathematics Department colloquium | April 11, 2014 Denver, CO |
| <i>A new proof of an integral formula for counting perfect matchings in graphs</i> University of Denver student seminar | October 21, 2013 Denver, CO |

Poster Presentations

| | |
|--|-----------------------------------|
| <i>Generalized Bol-Moufang Identities of Loops and Quasigroups</i> Joint Mathematics Meetings | January 11, 2013 San Diego, CA |
|--|-----------------------------------|
