

TOM EDGAR
Curriculum Vitae

Department of Mathematics
Pacific Lutheran University
Tacoma, WA

253.535.7238
edgartj@plu.edu
<https://tom-edgar.github.io/>

EDUCATION

Ph.D., Mathematics, August 2009, University of Notre Dame, Notre Dame, Indiana

Ph.D. Thesis: *Dominance and Regularity in Coxeter Groups*

Ph.D. Advisor: Matthew Dyer

M.S., Mathematics, May 2004, Colorado State University, Fort Collins, Colorado

M.S. Thesis: Finite Projective Geometries and Linear Codes

M.S. Advisor: Anton Betten

B.S. Mathematics (summa cum laude), February 2002, Dickinson College, Carlisle, Pennsylvania

ACADEMIC POSITIONS

DEPARTMENT OF MATHEMATICS, PACIFIC LUTHERAN UNIVERSITY

Professor, Fall 2021-present.

Associate Professor, Fall 2015-Spring 2021.

Assistant Professor, Fall 2009-Spring 2015.

DEPARTMENT OF MATHEMATICS, UNITED STATES AIR FORCE ACADEMY

Distinguished Visiting Professor, Fall 2024-Spring 2025.

MATH HORIZONS

Editor, 2020-2024 (Editor-elect, 2019).

EPSILON CAMP, OGDEN, UT; COLORADO SPRINGS, CO; OXFORD, OH

Academic Director, October 2023-present

Faculty member, Summer 2018, Summer 2019, virtual 2020, virtual 2021, Summer 2024.

DEPARTMENT OF MATHEMATICS, SEATTLE UNIVERSITY

Visiting Faculty Mentor for NSF SUMMER Program, Summer 2016, and Summer 2017.

DEPARTMENT OF MATHEMATICS, UNIVERSITY OF NOTRE DAME

Graduate Teaching Assistant, Fall 2004-Spring 2009.

DEPARTMENT OF MATHEMATICS, COLORADO STATE UNIVERSITY

Graduate Teaching Assistant, Fall 2002-Summer 2004.

TEACHING EXPERIENCE

PACIFIC LUTHERAN UNIVERSITY - Professor

M105: Personal Finance

M115: College Algebra

M151: Calculus I

M245: Discrete Structures

M317: Introduction to Proofs/Number Theory

M331: Linear Algebra

M381: Mathematical Modeling Seminar

M455: Real Analysis

M480: Providing the Proofs for PWW

M499: Senior Capstone

M107: Mathematical Explorations

M128: Linear Models and Calculus

M152: Calculus II

M253: Calculus III

M318: Introduction to Proofs/Combinatorics

M381: Problem Solving Seminar

M433: Abstract Algebra

M480: Enumerative Combinatorics

M495: Algebraic Topology Independent Study

UNIVERSITY OF NOTRE DAME - Instructor

M10360: Calculus B (for Life Sciences)

M10250: Elements of Calculus I (for Business)

M10240: Principles of Calculus

COLORADO STATE UNIVERSITY - Instructor

M130: Math for Social Sciences

M155: Calculus I for Biological Sciences

M125: Numerical Trigonometry

M161: Calculus II for Physical Sciences

M124: Logarithms and Exponents

M126: Analytic Trigonometry

NSF RESEARCH EXPERIENCE FOR TEACHERS - Workshop Leader

Voting Theory with Linear Algebra Workshop

Probability and Statistics Workshop

Number Theory and Symmetry Workshop

UNIVERSITY OF NOTRE DAME - Teaching Assistant

M20550: Calculus III

M10350: Calculus A

M10560: Calculus II,

M13150: Freshman Seminar: Number Theory

UNIVERSITY OF NOTRE DAME - Undergraduate Reading Seminar Leader

Coxeter Groups and Finite Reflection Groups,

COLORADO STATE UNIVERSITY - Teaching Assistant/Tutor in Individualized Mathematics Program

PUBLICATIONS - * INDICATES UNDERGRADUATE*Proof without words: modified sum of cubes*, to appear in Math Mag.*Summing squares with hexagons*, to appear in Math Mag.*Proof without words: sum of cubes*, to appear in Math Mag.*A month of April fools*, Math Horizons. April 2024.*Math in 60 seconds*, Math Horizons. April 2024.*Ohm my: an electrifying method of summing arithmetic sequences*, The Amer. Math. Monthly 131 (2024), no. 3.*Proof without words: two geometric series*, Math Mag. 96 (2023), no. 5.*Aftermath: B or $-B$* , with A. Crans, Math Horizons. September 2023.*Balancing the Square Root of Two*, College Math. J. 54 (2023), no. 2.*Balancing Magic with Mathematics*, Math Horizons. April 2023.*Balanced and Unbalanced: physical proofs of the mean inequalities*, Math Mag. 96 (2023), no. 1.*On Magic and Math—A Conversation with Matt Baker*, Math Horizons. February 2023.*How Much Do YOU Know About the MAA Periodicals?*, with A. Henrich, MAA FOCUS, December 2022/January 2023.*Visualizing the sum of squares induction proof*, to appear in Int. J. Math. Educ. Sci. Technol.*Euler bricks: visually*, Math Mag. 95 (2022), no. 4.*Podcasting Mathematics*, Math Horizons. April 2022.*Visual sums of integers in polygonal arrays*, College Math. J. 53 (2022), no. 1.*A Visual Tour of Identities for the Padovan Sequence*, with D. Nacin, The Mathematical Intelligencer (2021).*Review of Mage Merlin's Unsolved Mathematical Mysteries*, Math Horizons, February 2021.*Visual triangular number identities from positional number systems*, College Math. J. 52 (2021), no. 2.*Proof without words: binomial coefficients modulo p* , Math Mag. 93 (2020), no. 2.*Combinatorics of factorial base representations*, with T. Ball, J. Beckford*, P. Dalenberg* and T. Rajabi*, J. of Integer Sequences, **23** (2020), Art. 20.3.3.*Visual decompositions of polygonal numbers*, College Math. J. 51 (2020), no. 1.*A visual proof of Gregory's theorem*, with D. Richeson, Math. Mag. 92 (2019), no. 5.*Combinatorics of Zeckendorf representations*, with T. Ball, R. Chaiser*, D. Dustin* and P. Lagarde*, Involve 12 (2019), no. 7.*A factorial card trick*, Math Horizons. September 2019.*Proof without words: sums of even and odd powers*, Math. Mag. 92 (2019), no. 4.*"Sum" visual rearrangements of the alternating harmonic series*, with Yajun An, College Math. J. 50 (2019), no. 4.*The First 100 issues*, Math Horizons. November 2018.*Proof without words: Abel's transformation*, with Y. An, Math. Mag. 91 (2018), no. 4.*Roger Nelsen's books, so far*, College Math. J. 49 (2018), no. 4.*On the number of hyper m -ary partitions*, Integers. 18 (2018), A47.*Counting binomial coefficients divisible by a prime power*, with P. de Castro*, D. Domini*, S. Klee, D. Johnson*, and R. Sundaresan* The Amer. Math. Monthly 125 (2018), no. 6.

- Consecutive factorial base Niven numbers*, with P. Dalenberg*, The Fibonacci Quarterly, **56** (2018) no. 2.
- Staircase series*, Math Mag. 91 (2018), no. 2.
- Proof without words: Rearranged alternating harmonic series*, with Y. An, College Math. J. 49 (2018), no. 1.
- Digital representations of rows of Pascal's triangle with no entries divisible by a fixed prime power*, with P. de Castro*, D. Domini*, S. Klee, D. Johnson*, and R. Sundaresan*, in Pi Mu Epsilon 14 (2017), no. 7.
- The dist. of the number of parts of m-ary partitions mod m*, Rocky Mountain J. Math. 47, no. 6 (2017).
- Proof without words: series of perfect powers*, Math Mag. 90 (2017), no. 4.
- Happiness is integral, but not rational*, with A. Bland*, Z. Cramer*, P. de Castro*, D. Domini*, S. Klee, D. Johnson*, J. Koblitz*, and R. Sundaresan*, Math Horizons. September 2017.
- A visual validation of Viète's verification*, with N.C. Meyer, College Math J. 48 (2017), no. 2.
- Proof without words: a recursion for triangular numbers and more*, Math Mag. 90 (2017), no. 2.
- Proof without words: Factorial sums*, Math Mag. 89 (2016), no. 5.
- Proof without words: the average of square pyramidal and triangular is tetrahedral*, Math. Gaz. 100 (2016), no. 549.
- Approximating the Fibonacci sequence*, with H. Olafson* and J. van Alstine*, Integers. 16 (2016), A63.
- Proof without words: matchstick triangles*, College Math. J. 47 (2016), no. 3.
- Proof without words: sums of powers of $\frac{4}{9}$* , Math Mag. 89 (2016), no. 3.
- Proof without words: sums of reciprocals of binomial coefficients*, Math Mag. 89 (2016), no. 3.
- A confused electrician uses Smith normal form*, with J.K. Sklar, Math Mag. 89 (2016), no. 1.
- Extending some Fibonacci–Lucas relations*, The Fibonacci Quarterly, **54** (2016) no. 1.
- Mult. funcs. and their gen. bin. coeffs. and Catalan numbers*, with M. Spivey, J. of Integer Sequences, **19** (2016), Art. 16.1.6.
- On the structure of involutions and symmetric spaces of dihedral groups*, Note Mat. **34** (2014) no. 2, 23–40.
- Totientomial coefficients*, Integers. 14 (2014), A62.
- Cryptographic word search*, with A. Lloyd*, Math Horizons. November 2014, 26-27.
- Dominance orders, generalized binomial coefficients, Kummer's thm*, with T. Ball* and D. Juda*, Math Mag. 87 (2014), no. 2.
- Universal reflection subgroups and exponential growth in Coxeter groups*, Comm. in Algebra. **41** (2013), no. 4, 1558-1569.
- A case-free characterization of hyperbolic Coxeter groups*, J. of Group Theory. **14** (2011), no. 5, 777-782.
- Reduced expressions in semidirect products of Coxeter groups*, J. of Group Theory. **13** (2010), no. 1, 109-115.
- Dominance and Regularity in Coxeter Groups*, Ph.D. Thesis, University of Notre Dame (2009).
- Sets of reflections defining twisted Bruhat orders*, J. Algebraic Combin. **26** (2007), no. 3, 357-362.

GRANTS AND FINANCIAL AWARDS

AMERICAN INSTITUTE OF MATHEMATICS WORKSHOP, Pasadena, CA, December 2023.

Received full funding to attend the “Open-source cyberinfrastructure supporting mathematics research” workshop.

BENSON-STARKOVICH FACULTY DEVELOPMENT GRANT, Pacific Lutheran University, 2019.

Received \$1700 award to attend the Illustrating Algebra and Number Theory workshop at ICERM in October 2019.

REGENCY ADVANCEMENT AWARD, Pacific Lutheran University, 2017.

Received \$4000 award to have PLU student participate alongside NSF REU at Seattle University in Summer 2017.

FACULTY-STUDENT RESEARCH AWARD, Scandinavian Cultural Center at Pacific Lutheran University, 2015.

Received \$2000 to work with undergraduate to investigate contributions of Scandinavian mathematicians.

REGENCY ADVANCEMENT AWARD, Pacific Lutheran University, 2015.

Received \$3990 award for department and students to attend the Joint Mathematics Meetings in Seattle, WA.

NSCI UNDERGRAD RESEARCH PROGRAM, Pacific Lutheran University, Summer 2014.

Received \$16,440 to act as Summer Undergraduate Research Mentor with two PLU undergraduates.

ACADEMY OF INQUIRY BASED LEARNING SMALL GRANT, Academy of Inquiry Based Learning, 2013.

Received \$1500 to develop course notes to run M480: Enumerative Combinatorics in IBL style.

NSF GRANT DMS-0846477 THROUGH THE MAA RUMC PROGRAM, MAA/NSF, 2013.

Received \$2990 award for hosting the Northwest Undergraduate Mathematics Symposium.

AMERICAN INSTITUTE OF MATHEMATICS TRAVEL GRANT, Palo Alto, CA, Summer 2012.

Received \$500 to travel to MathFest with undergraduate researchers.

REGENCY ADVANCEMENT AWARD, Pacific Lutheran University, 2012.

Received \$4000 award for installing a Sage server at Pacific Lutheran University.

NSCI UNDERGRAD RESEARCH PROGRAM, Pacific Lutheran University, Summer 2012.

Received \$16,440 to act as Summer Undergraduate Research Mentor with two PLU undergraduates.

TEACHING AND LEARNING WITH TECHNOLOGY GRANT, Pacific Lutheran University, Fall 2011.

Received a one-course release (in lieu of \$5000) to implement the use of Sage in M331: Linear Algebra.

AMERICAN INSTITUTE OF MATHEMATICS WORKSHOP, Palo Alto, CA, Summer 2011.

Received full funding to attend the week-long “Research experiences for undergraduate faculty” workshop.

RELATED WORK EXPERIENCE

@*MathVisualProofs*, over 400 mathematical videos/animations, YouTube (154K subscribers); Instagram (178K subscribers)

How to write an excellent expository article in mathematics, MAA Minicourse, with D. Dumbaugh, August 2023

Authored OEIS Sequences

A187813, A214681, A228179, A234957, A226636, A226969, A227062, A227080, A235384, A227092, A227095, A227238, A234959, A235127, A238453, A238498, A238688, A238743, A238754, A239682, A239619, A239702, A239672, A239633, A239695, A239694, A239692, A239691, A239690, A239693, A242848, A242849, A242954, A243756, A243757, A243758, A243759, A245321, A245338, A245345, A245350, A245355, A245400, A245417, A245420, A245425, A245430, A245798, A246458, A246465, A246466, A253628, A254609, A255199, A255219, A254730, A247503, A248101, A248909, A255914, A255915, A253203, A256799, A257087, A258073, A258074, A260119, A261640, A261691, A267959, A268081, A268127, A268128, A267856, A268269, A268354, A268355, A268357, A268443, A268444, A270360, A270390, A270774, A270775, A262354, A272079, A272080, A272177, A272178, A272328, A272329, A272344, A272270, A273000, A273035, A273036, A273181, A273183, A273184, A273317, A273338, A273867, A331128

AP Calculus Exam Reader, College Board, 2005

Helped to develop MapleTA for the Trigonometry Intensive Review at Colorado State University, 2004

Coauthor of “Instructor Resources for Workshop Calculus,” Key College Publishing, 2000-2002

Agentsmart LLC - Developed math problems for a computer-learning precalculus tutorial, 2002

Whitaker Research Grant, Assistant, Dickinson College, 2001, <http://users.dickinson.edu/richesod/waves/>

PRESENTATIONS

Invited

Keynote Speaker, Pikes Peak Regional Undergraduate Mathematics at The United States Air Force Academy

Seeking Balance in Mathematics, March 2024

Brown Bag Lunch Talks, The United States Air Force Academy

The Kevin Bacon of Mathematical Objects?, March 2024

BAMA, Virtual

Providing Perspective on Practical and Pleasant Pictorial Proofs, September 2023

Celebration of Mind, Gathering 4 Gardner, Virtual

From Bourbaki to “Look and See”, July 2023

Wisconsin Section Meeting of the MAA, University of Stout, WI

Seeking Balance in Mathematics, April 2023

Oklahoma-Arkansas Section Meeting of the MAA, East Central University, Ada, OK

Seeking Balance in Mathematics, March 2023

Math Day Plenary Speaker, University of Washington, Seattle, WA

The Magic of Numeration Systems, March 2023

Colloquium, University of Puget Sound

A Mathematician’s Groundhog Day: Prove, reflect, and repeat, February 2023

Montana State University

Proofs without words in Introduction to Proofs, March 2022

Allegheny Mountain Section Meeting of the MAA, Virtual

A Mathematician's Groundhog Day: Prove, reflect, and repeat, April 2021

Intermountain Section Meeting of the MAA, Virtual

A Mathematician's Groundhog Day: Prove, reflect, and repeat, March 2021

Prison Mathematics Project Pi Day 2021 Celebration, Virtual

No Numeration without Representation, March 2021

Allegheny Mountain Section Meeting of the MAA, Grove City College

Find a Problem that Sustains You, April 2020 (canceled due to COVID19)

Dickinson College Math/CS Chats, Dickinson College

No Numeration without Representation, January 2019

Mathematics Seminar, University of Washington, Tacoma

No Numeration without Representation, April 2018

Keynote Speaker, Western Washington Community College Student Mathematics Conference at Bellevue College

No Numeration without Representation, February 2018

Colloquium, Seattle University

Generalized Binomial Coefficients via the Dominance Order on Natural Numbers, October 2014

Colloquium, University of Puget Sound

Generalized Binomial Coefficients via the Dominance Order on Natural Numbers, October 2013

Dickinson College Math/CS Chats, Dickinson College

A Fascinating Connection Between Number Theory and Combinatorics, October 2013

International Linear Algebra Society - 2013 Meeting (*Linear Algebra Education Issues*), Providence, Rhode Island

Flipping the Technology in Linear Algebra, June 2013

Teaching Seminar, University of Notre Dame

Picking up the SLAC: Life at a small liberal arts college, April 2013

Colloquium, University of Puget Sound

Rock the Vote or Vote the Rock, October 2012

Colloquium, Western Washington University

Coxeter Groups and Root Systems via Automatic Structures, February 2012

Colloquium, University of Puget Sound

Connecting the Dots: Posets and Inversion to Understand Finite Sums, Combinatorics and Number Theory, April 2010

Colloquium, Kalamazoo College

Unlocking the Mysterious Möbius Function, November 2008

Contributed

PNW Section Meeting of the MAA, Western Washington University, Bellingham

Starting a Math YouTube Channel, April 2022

PNW Section Meeting of the MAA, University of Portland, Portland

A visual decomposition of even polygonal numbers, April 2019

Math Day, University of Washington, Seattle, WA

No Numeration without Representation, March 2019

Joint Meetings of the AMS and MAA, San Diego, CA

An inquiry-based approach to elementary number theory via proofs without words, January 2018

Joint Meetings of the AMS and MAA, Seattle, WA

Confused Electrician Games, January 2016

PNW Section Meeting of the MAA, University of Washington, Tacoma

Families of Generalized Catalan Numbers, April 2015

Faculty Development Workshop Series, Pacific Lutheran University

Improving Pedagogy in the Classroom—the Interactive Lecture, October 2014

MAA MathFest 2014, Portland, OR

6959 Open Problems for Undergraduates, August 2014

- PNW Section Meeting of the MAA, University of Montana
Totienomial Coefficients, June 2014
- Faculty Scholarship Lecture Series, Pacific Lutheran University
The Mathematics Behind Mathematical Modeling, November 2016
Incorporating Technology in Linear Algebra, November 2012
- PNW Section Meeting of the MAA, University of Portland
Symmetric Spaces of Dihedral Groups, April 2012
- Joint Meetings of the AMS and MAA, Boston, MA
Web 2.0 for Linear Algebra Classes, January 2012
- Western Sectional Meeting of the AMS, University of Utah
A Conjectural Normal Form for Elements of Coxeter Groups, October 2011
- PNW Section Meeting of the MAA, Seattle University
Adopt-a-Group Project with a Course Wiki, April 2010
- Mathematics Seminar, Pacific Lutheran University
What Color is Your Molecule (with Justin Lytle), March 2016
Generalized Binomial Coefficients via the Dominance Order on Natural Numbers, February 2014
Rock the Vote or Vote the Rock, September 2012
An Introduction to the Beamer package for \LaTeX , November 2011, November 2012
How to use \LaTeX , October 2010, September 2011, September 2012, September 2013
Abstract Algebra in our World, October 2009
- Algebra Seminar, University of Notre Dame
Coxeter Groups and Automata, October 2008
Hecke Algebras and Kazhdan-Lusztig Polynomials, March 2005
Coxeter Groups, Root Systems, and Bruhat Order, February 2005
- Indiana Section Meeting of the MAA, St. Mary's College
An Introduction to Posets and Möbius Inversion, March 2008
- Commutative Algebra Seminar, University of Notre Dame
Twisted Bruhat Orders and Shellability, December 2006
- Graduate Student Seminar, University of Notre Dame
Rock the Vote or Vote The Rock, October 2008
Root Systems for the Infinite Dihedral Group, April 2007
Wild Weyl and Twisted Bruhat, October 2007
- Rocky Mountain Algebraic Combinatorics Seminar, Colorado State University
Linear Codes and Finite Projective Geometries, April 2004

HONORS, AWARDS, AND MEMBERSHIPS

Honors

Phi Beta Kappa

Pi Mu Epsilon

Awards and Scholarships

- PLU Faculty Excellence Award in Teaching, 2019-2020
- The Distinguished Teaching Award for the Pacific Northwest Section of the MAA, 2019
- Kaneb Center Outstanding Graduate Student Teacher Award, University of Notre Dame, 2007
- Striving For Excellence in Teaching Certification, Kaneb Center, 2004-2008
- University Graduate Fellowship Award, Colorado State University, 2002
- The Lance E. Kohlhaas Memorial Prize in Mathematics, Dickinson College, 2002
- Caroline H. Clarke Scholarship for Mathematics (2), Dickinson College, 2000-2002
- Benjamin Rush Scholarship, Dickinson College, 1998-2002

Memberships

- American Mathematics Society, 2002-2016
- Mathematical Association of America, 2006-Present

 UNDERGRADUATE RESEARCH PROJECTS AND CAPSTONES ADVISED

Research Projects

NSF SUMMER Program (REU) at Seattle University Summer 2017, with Rachel Chaiser, Dean Dustin, and Paul Lagarde (co-mentor Tyler Ball).

Awarded “Outstanding” Poster at the MAA Poster Session at JMM 2018.

NSF SUMMER Program (REU) at Seattle University Summer 2017, with Joanne Beckford, Paul Dalenberg, and Tina Rajabi (co-mentor Tyler Ball).

Scandinavian Cultural Center Faculty-Student Research, 2016-2017, with Benjamin Haffly.

NSF SUMMER Program (REU) at Seattle University Summer 2016, with Philip de Castro, Desiree Domini, Devon Johnson, and Ranjani Sundaresan (co-mentor Steven Klee).

NSF SUMMER Program (REU) at Seattle University Summer 2016, with Andre Bland, Zoe Cramer, and Joseph Koblitz (co-mentor Steven Klee).

PLU NSCI Undergrad Research Program Summer 2014, with Hailey Olafson and James Van Alstine.

Olafson, H. and J. Van Alstine, “Elementary construction of rational base representations,” in preparation.

PLU NSCI Undergrad Research Program Summer 2012, with Tyler Ball and Dan Juda.

Ball, Tyler and Dan Juda, “Dominance over \mathbb{N} ,” *Rose-Hulman Undergraduate Mathematics Journal*.

Capstones Advised

- | | |
|-----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2021-2022 | <i>Raabe’s Test</i> , Jacob Espinosa |
| 2020-2021 | <i>Lights Out</i> , Colin McKay
<i>Gaussian Blur</i> , Vicky Krastev
<i>Applications of Division Algorithm</i> , Alicia Downs |
| 2019-2020 | <i>Cryptography and Proofs of Security</i> , Nathan Hohnbaum
<i>Quaternions, Rings and Homomorphisms</i> , Quinn Kiel |
| 2018-2019 | <i>An Exploration of Egyptian Fractions</i> , Seth Chapman
<i>Chutes, Ladders, and Chains</i> , Kevin Dang
<i>Error Detection and Correction Through Linear Algebra</i> , Kate Morgan
<i>Error-Correcting Codes in Hamming Spaces</i> , Justin Pennington
<i>Complex dynamics: understanding the Mandelbrot and Julia sets</i> , Cameron Raber (co-advisor)
<i>A Survey of Generating Functions</i> , Alex Shearer
<i>How to always win the game of Nim</i> , Ryan Sturdivan |
| 2017-2018 | <i>Spot it!</i> , Sian Beck
<i>Chebyshev Polynomials</i> , Paul Dalenberg
<i>Stern-Brocot Tree</i> , Matthew Dixon
<i>Frieze Patterns</i> , Caroline Dreher
<i>Kirkman’s School Girls</i> , Megan Hall
<i>The Cap Set Problem</i> , Curtis Sorgenfrey |
| 2016-2017 | <i>Testing for compositeness</i> , Miguel Amezola
<i>Mathematics in RSA Cryptosystem</i> , Hannah Bortel
<i>Division algorithm for polynomials</i> , Leanna Davis
<i>Lie groups and Lie algebras</i> , Jason Gomez
<i>The Prouhet-Thue-Morse sequence</i> , Benjamin Haffly
<i>Quadratic Reciprocity Law</i> , Kenyah Huskey
<i>Multinomial coefficients and divisibility by prime powers</i> , Devon Johnson
<i>Group theory applied to chemistry</i> , Ashlee McGovern
<i>That’s not fair! Who really won the election?</i> , Devin Tracy |

- 2014-2015 *Group actions on sets and how it relates to combinatorics*, Kyle Geinzer
Investigating elusive perfect numbers, Owen Hunt
The Lucas numbers, Daisy Johnson
q-Analogs and the equidistribution of t-subset sums modulo m, Noah Kime
Linear/Integer programming, Rachel Kinkella
Latin squares and their relevance to Sudoku puzzles, Mathilde Moller
Generalizing valuation maps to rational base representations, James Van Alstine
- 2013-2014 *Direct products of cyclic groups*, Lewis Hitchiner
The transfer matrix method, Andrew Lloyd
Light's Out-type problems, Ashley Morrison
Applications of block designs and the Hamming code, Hailey Olafson
Symmetry point group classification and construction, Victoria Richmond
The (n, q, k)-liar game, Peter Rise (co-advisor)
The "interestingness" of numbers viewed through the lens of Sloane's gap, Lance Winchell
Public key cryptosystems, Leanna VanZanten
- 2012-2013 *Can every tree be graceful?*, Tyler Ball
Properties of $\text{Aut}(\mathbb{Z}_n \times \mathbb{Z}_n)$, Dan Juda
Equivalence relations, Jym Kinney (co-advisor)
Vertex coloring of graphs, Rita Than
- 2011-2012 *Perfect information games*, Matthew Christopher (co-advisor)
Square roots of 1 modulo n, Andrew Clear
RSA encryption, Rachael Devlaeminck
The Stirling numbers, Stacey Hagensen
Voting, Eric Herde
- 2010-2011 *Dance and mathematics*, Monica Boldizar
Deciphering the secrets of cryptography, Andrew Carpenter
Finite state automata and automata theory, Daniel Case
The Riemann hypothesis, Janessa Gramson
An analysis of communications between the Mars rover and Earth, Graham Malek (co-advisor)
The complexities of voting, Linda Nusser
Pairs of circles and their intersections, Sam Rise (co-advisor)
- 2009-2010 *Galois theory and its applications*, Ahmed Benkhalti
Fermat's last theorem, Dustin Hunt
Permutation groups acting for the Enigma machine, Shallan Ley
Error correcting codes, Shayne Smith

SERVICE

Pacific Lutheran University

- University Parliamentarian, 2023-2024
- Member of Formal Dismissal Hearing Committee, 2021
- Member and Chair of APIC, 2019-2020
- Member of Core Theme Three Accreditation Committee, 2018-2019
- New faculty teacher mentoring, 2018
- Member of the Faculty Executive Committee, 2018-2020
- Member of the ARTS Committee, 2017-2019; Secretary, 2017-2018; Chair 2018-2019
- ARTS Representative to SEMAC, 2017-2019
- Division of Natural Sciences Representative to General Education Council, 2016-2017
- Explore! Retreat Facilitator, January 2014
- Common Reading Book Selection Committee, Spring 2013-Spring 2015
- Secretary of Areté Society, Fall 2012-Spring 2016
- Member of Long-Range Planning Committee, Spring 2012

President's and Regents' Scholarships Interviewer, Spring 2012, 2013, 2014, 2018, 2019, 2020
 Mathematics Curriculum Committee Member, 2009-2017 (Chair 2012-2014)
 Major Advisor, Spring 2010-present
 First-Year and Transfer Advisor, Fall 2010-present
 Department Webmaster, Fall 2009-present
 Mathematics Seminar Coordinator, 2010-2011
 Math Club Advisor, Fall 2009-Fall 2016
 Putnam Exam Advisor, Fall 2010, 2011, 2012, 2013
 Mathematical Modeling Contest Advisor, Spring 2011
 Academic Festival Coordinator, 2011
 Climbing Club Advisor, 2017-2018
 Smash Club Advisor, 2010-2011
 MESA Day Judge, Spring 2011
 Math Day Workshop Coordinator, Fall 2011
 Mathematics Tutor, Lincoln Center at Lincoln High School, Fall 2011

Mathematics Community

Co-organizer for MAA MathFest 2023 Panel Session: "The Art of Publishing in MAA Journals"
 Panel Presentation: Publishing in MAA Periodicals, Wisconsin MAA Section, April 2023
 Faculty Workshop Organizer: Writing for the MAA Publications, OK-AR MAA Section, March 2023
 24 Hour Maths Game Show presenter, Virtual, October 2022
 Co-organizer for MAA MathFest 2022 Panel Session: "The Art of Publishing in MAA Journals"
 Prison Mathematics Project Pi Day 2022 Celebration Host, Virtual
 Co-organizer for MAA MathFest 2021 Panel Session: "The Art of Publishing in MAA Journals"
 Editorial board member for Math Horizons, October 2017-December 2019
 Co-organizer for MAA Contributed Paper Session: "Addressing the Needs of Mathematics and Computer Science Majors in Discrete Mathematics Courses," at the Joint Mathematics Meetings in Seattle, WA, January 2016
 Chapter Reviewer for FURM.
 Peer Reviewer for Discrete Mathematics (1 time).
 Peer Reviewer for Journal of Integer Sequences (6 times).
 Peer Reviewer for Integers: Electronic Journal of Combinatorial Number Theory (2 times).
 Peer Reviewer for PRIMUS (2 times).
 Peer Reviewer for Mathematics Magazine (34 times).
 Peer Reviewer for the American Mathematical Monthly (5 times).
 Peer Reviewer for the College Mathematics Journal (9 times).
 Volunteer at Julia Robinson Festival: Calgary, March 2015; Seattle, April 2016; Tacoma, April 2019, November 2020
 Grant Peer Reviewer for the American Mathematical Society, May 2014
 Associate Editor for the Online Encyclopedia of Integer Sequences, March 2013-present
 Co-organizer of NUMS Undergraduate Research Symposium, Pacific Lutheran University, April 2013
 Judge for Undergraduate Poster Session, Joint Mathematics Meetings, San Diego, 2013; Seattle, 2016; San Diego 2018
 Judge for Undergraduate Presentation Session, MathFest, Denver, 2018
 External reviewer for promotion case at University of Alaska Southeast, 2015
 External reviewer for promotion case at University of Washington Tacoma, 2018
 External reviewer for promotion case at University of Washington Tacoma, 2021
 External reviewer for promotion case at Villanova University, 2021
 External reviewer for promotion case at University of Washington Tacoma, 2022

University of Notre Dame

Organizer for Mathematics Graduate Teaching Assistants, Fall 2007-Spring 2009
 Speaker, "Experiences in Teaching," Mathematics Teaching Seminar, University of Notre Dame, Spring 2008
 Co-organizer for SUMR Graduate/Undergraduate Reading Seminars, Spring 2007
 Panelist, Mathematics Teaching Seminar, University of Notre Dame, Spring 2007
 Judge, The Northern Indiana Regional Science and Engineering Fair, Spring 2006
 Graduate Representative of Parking Appeals Committee, University of Notre Dame, 2005-2006
 GSU Representative to Ad Hoc Parking Committee, University of Notre Dame, 2005-2006

CONFERENCES/WORKSHOPS ATTENDED

Pikes Peak Regional Undergraduate Mathematics at The United States Air Force Academy, March 2024
 MAA MathFest, Tampa Bay, August 2023
 Wisconsin Section of the MAA Annual Meeting, UW-Stout, April 2023
 Oklahoma-Arkansas Section of the MAA Annual Meeting, Eastern Oklahoma University, March 2023
 Cascadia Combinatorial Feast, Seattle University, November 2022
 MAA MathFest, Philadelphia, August 2022
 PNW-MAA Annual Meeting, Western Washington University of Portland, April 2022
 MAA MathFest, Virtual, August 2021
 PNW-MAA Annual Meeting, Virtual, June 2021
 Allegheny Section of the MAA Annual Meeting, Edinboro University (virtual), April 2021
 Intermountain Section of the MAA Annual Meeting, BYU Rexburg (virtual), March 2021
 AMS-MAA Joint Meetings, Denver, January 2020
 Illustrating Number Theory and Algebra, ICERM, Providence, October 2019
 MAA MathFest, Cincinnati, August 2019
 PNW-MAA Annual Meeting, University of Portland, April 2019
 AMS-MAA Joint Meetings, Baltimore, January 2019
 MAA MathFest, Denver, August 2018
 PNW-MAA Annual Meeting, Seattle University, April 2018
 Western Washington Community College Student Mathematics Conferences, Bellevue, WA, February 2018
 AMS-MAA Joint Meetings, San Diego, January 2018
 NUMS, Western Washington University, October 2017
 AMS-MAA Joint Meetings, Atlanta, January 2017
 Cascadia Combinatorial Feast, Seattle University, November 2016
 AMS-MAA Joint Meetings, Seattle, January 2016
 PNW-MAA Annual Meeting, University of Washington Tacoma, April 2015
 Integer Sequences K-12, Banff International Research Station, February 2015
 Cascadia Combinatorial Feast, Western Washington University, November 2014
 MAA MathFest, Portland, August 2014
 PNW-MAA Annual Meeting, University of Montana, June 2014
 PNW-MAA Annual Meeting, Willamette University, April 2013
 NUMS, Pacific Lutheran University, April 2013
 AMS-MAA Joint Meetings, San Diego, January 2013
 MAA MathFest, Madison, August 2012
 PNW-MAA Annual Meeting, University of Portland, April 2012
 AMS-MAA Joint Meetings, Boston, January 2012
 Cascadia Combinatorial Feast, Seattle University, November 2011
 AMS Sectional Meeting, University of Utah, October 2011
 Research experiences for undergraduate faculty, American Institute of Mathematics, Palo Alto, CA, July 2011
 Scottfest, University of Puget Sound, April, 2010
 PNW-MAA Annual Meeting, Seattle University, March 2010
 AMS-MAA Joint Meetings, San Francisco, January 2010
 AMS-MAA Joint Meetings, Washington, D.C., January 2009
 MAA Section Meeting, St. Mary's College, March, 2008
 AMS Sectional Meeting, University of Notre Dame, April 2006
 Midwest Algebra, Geometry and Interactions Conference, University of Notre Dame, October 2005
 Midwest Representation Theory Conference, University of Michigan, October 2005
 CBMS Regional Conference on Algebraic and Topological Combinatorics, August 2005
 MAA Rocky Mountain Section Meeting, Colorado College, April 2004
 AMS Sectional Meeting, University of Colorado, October 2003