

Joshua D. Laison

Mathematics Department
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Research Interests

Graph theory, discrete and computational geometry, and combinatorics, including geometric representations of graphs and ordered sets, and algorithmic and algebraic graph theory.

Education

Ph.D. Mathematics, June 2001, Dartmouth College, Hanover, NH

Advisor: Kenneth P. Bogart

Dissertation: Tube Representations of Ordered Sets

A.M. Mathematics, June 1999, Dartmouth College, Hanover, NH

B.A. Mathematics, June 1996, Oberlin College, Oberlin, OH

Honors in Mathematics

Minors in Computer Science and English

Teaching Experience

Assistant Professor, Willamette University, 2007-present

College Colloquium Living Mathematics: The Greatest Discoveries of the Last 30 Years; Contemporary Mathematics (2); Statistics (5); Calculus 1 (2); Foundations of Advanced Mathematics (3); Linear Algebra (2); Geometry (2); Graph Theory; Senior Seminar Mathematical Algorithms; Mathematics Meetings (2)

Research with undergraduate students:

- Segment deletion numbers of graphs with Christina Edholm, Hannah Jackson, Dominique Lomax, Leo Maloney, and Professors Erin McNicholas and Colin Starr
- Weighted pebbling numbers of graphs with Stephanie Jones and Professors Cameron McLeman and Kathryn Nyman (Funded through a College Colloquium Student Research grant)
- Prime distance graphs with Andrea Walker and Professor Colin Starr
- Obstacle numbers of graphs with Hannah Alpert and Christina Koch (NSF Willamette Valley Research Experience with Undergraduates summer program)

Visiting Assistant Professor, St. Olaf College, 2006-2007

Principles of Statistics (2); Calculus 2; Multivariable Calculus; Abstract Algebra 1 (2)

Research with undergraduate students:

- Visibility graphs with Karin Gilje
- Partitions of 0-1 matrices with William Voorhees and Professors Kristina Garrett and Olaf Hall-Holt
- Non-greedy and semi-greedy graph pebbling with Nathan Clement, Bjorn Paulson, and Thomas McConville

Visiting Assistant Professor, Colorado College, 2002-2006

Probability and Statistics (6); Mathematical Explorations (2); Calculus 1 (3); Calculus 2 (3); Calculus 3; Linear Algebra (3); Abstract Algebra 1; Number Theory; Geometry; Graph Theory; Combinatorics; Research in Mathematics; Topics in Graph Theory; Knot Theory; Independent study in Advanced Linear Algebra; Independent Study in Algebraic Topology

Research with undergraduate students:

- Line segment contact graphs with Jacob Siedlik
- Bar k -visibility graphs with Bernadette Hoatam
- Critical graph pebbling with Courtney Gibbons and Erick Paul
- Subspace intersection graphs with Yulan Qing
- Ringel's conjecture with Courtney Gibbons, Yulan Qing, and Professor John Watkins
- Obstacle numbers of graphs with Arden Brookstein, Richard Marcus, and Andrew Ravits (as part of the Research in Mathematics course)
- Minimal lattice shapes with Patrick Bergeron, Peter Finn, and Eason Jostad (as part of the Research in Mathematics course)
- Critical sets in 0-1 matrices with Tra Ho and Sarah Switzer (as part of the Research in Mathematics course)
- Fixing numbers of graphs and groups with Courtney Gibbons (Funded through a summer faculty-student collaborative research grant and senior distinction project)
- Lattice point visibility with Michelle Schick (senior distinction project)
- Dual unfoldings of polyhedra with Lucian Wilson and Professor John Watkins (senior distinction project)

Visiting Assistant Professor, Kenyon College, 2001-2002

Pre-calculus; Calculus A (2); Discrete Mathematics and Combinatorics; Topics in Contemporary Mathematics

Research with undergraduate students:

- Graph coloring with Stephanie TerMeer (senior thesis project)

Publications

(* indicates undergraduate co-author)

1. Subspace Intersection Graphs

with Yulan Qing*, *Discrete Mathematics* **310** (2010), no. 23, 3413-3416.

2. **Triangle, Parallelogram, and Trapezoid Orders**
with Kenneth P. Bogart and Stephen P. Ryan, *Order* **27** (2010), no. 2, 163-175.
3. **Obstacle Numbers of Graphs**
with Hannah Alpert* and Christina Koch*, *Discrete and Computational Geometry* **44** (2010), no. 1, 223-244.
4. **Fixing Numbers of Graphs and Groups**
with Courtney R. Gibbons*, *Electronic Journal of Combinatorics* **16** (2009), no. 1 (electronic).
5. **Dual Unfoldings of Polyhedra**
with John J. Watkins and Lucian Wilson*, *Congressus Numerantium* **191** (2008), 161-172.
6. **Unit and Proper Tube Orders**
Order **25** (2008), no. 3, 237-242.
7. **Seeing Dots: Visibility of Lattice Points**
with Michelle Schick*, *Mathematics Magazine* **80** (2007), no. 4, 274-282.
8. **Bar k -Visibility Graphs**
with Alice Dean, William Evans, Ellen Gethner, Mohammad A. Safari, and William T. Trotter, *Journal of Graph Algorithms and Applications* **11** (2007) no. 1, 45-59.
9. **Bar k -Visibility Graphs: Bounds on the Number of Edges, Chromatic Number, and Thickness**
with Alice Dean, William Evans, Ellen Gethner, Mohammad A. Safari, and William T. Trotter, in Patrick Healy and Nikola S. Nikolov, editors, *Graph Drawing*, volume 3843 of *Lecture Notes in Computer Science*, Springer-Verlag, Berlin, 2006. Revised papers from the 13th International Symposium on Graph Drawing (GD2005), Limerick, Ireland, September 2005.
10. **Tube Representations of Ordered Sets**
Order **21** (2004), no. 3, 209-232.
11. **Free Triangle Orders**
Order **20** (2003), no. 2, 99-108. (cover article)
12. **Comparability Invariance Results for Tolerance Orders**
with Kenneth P. Bogart, Garth Isaak, and Ann N. Trenk, *Order* **18** (2001), no. 3, 281-294.
13. **More Directions in Visibility Graphs**
with Ellen Gethner, to appear in the *Australasian Journal of Combinatorics*.
14. **Critical Pebbling Numbers of Graphs**
with Courtney R. Gibbons* and Erick J. Paul*, in revision
15. **Fixing Numbers of Kneser Graphs**
with Karen L. Collins, in preparation
16. **0-1 Latin Square Graphs**
with David Neel and Barry Balof, in preparation

17. **Finite Prime Distance Graphs and 2-Odd Graphs**
with Colin Starr and Andrea Walker*, in preparation
18. **Weighted Pebbling Numbers of Graphs**
with Stephanie Jones*, Cameron McLeman, and Kathryn Nyman, in preparation
19. **Set Fixing Sets of Groups**
with Erin McNicholas and Nicole Webb, in preparation
20. **Minimal Representations of Rectangle Visibility Graphs**
with Colin Starr, Nancy Neudauer, Chuck Dunn, and John Caughman, in preparation
21. **Ramsey Numbers of Intersection and Visibility Graphs**
with Michael Ferrara, Ellen Gethner, and Paul Wenger, in preparation

Expository Articles

22. **Just Visiting**, *The Notices of the American Mathematical Society* **56** (2009), no. 11, 1451-1454.
23. **My Experiences Researching With Undergraduate Mathematicians: The Collaboration Model**
in Joseph A. Gallian, editor, *Proceedings of the Conference on Promoting Undergraduate Research in Mathematics*, American Mathematical Society, 2007.

Service to Willamette

- CLA Faculty Secretary, 2009–2010
- Faculty Colloquium Committee, 2008–2010
- Faculty and Staff TGIF Committee, chair 2008–2009, member 2007–2010
- Mathematics Department Visiting Assistant Professor Search Committee, 2009-2010 (2 positions)
- Mathematics Department Tenure-Track Search Committee, 2008-2009
- Pi Mu Epsilon National Honorary Society Permanent Faculty Correspondent, 2008-2010
- Mathematics Department Game Night Organizer, 2007-2010
- SSRD session moderator, 2008–2010
- Willamette Academy Faculty/Staff Meet and Greet, June 2009
- Faculty Meeting Meditation, March 2010
- Panelist, Pacific Northwest College Consortium Counselor Tour, Willamette University Admissions Office, March 2010
- Parents and Family Weekend Mini-University Session Presenter, October 2009

- Panelist, Kaneko Conversation on the Transformative Classroom: Challenges and Joys of an Inclusive Pedagogy, March 2008

Professional Activities

Grants and Awards

- Senior personnel, Pending NSF Willamette Valley Mathematics Research Consortium for Undergraduates and Teachers grant, [Summer 2011]
- Atkinson Research Travel Grant for *Ramsey Numbers of Intersection and Visibility Graphs*, Willamette University College of Liberal Arts, Fall 2010
- Junior faculty research leave, Willamette University College of Liberal Arts, Fall 2010
- Faculty Merit Award for Teaching, Academic year 2009–2010
- College Colloquium Research Grant to work with Stephanie Jones, Summer 2009
- Hewlett Grant to develop the course *Mathematics Meetings*, Summer 2009
- Faculty mentor, NSF Willamette Valley Mathematics Research Consortium for Undergraduates and Teachers, Summer 2008
- Atkinson Research Grant for *Obstacle Numbers of Graphs*, Willamette University College of Liberal Arts, Summer 2008
- Research Travel Grant for *0-1 Latin Square Graphs*, Willamette University College of Liberal Arts, March 2008
- Research Travel Grant for *More Directions in Visibility Graphs*, Willamette University College of Liberal Arts, February 2008
- Grant from the Natural Sciences Division, Colorado College, to attend the 13th International Symposium on Graph Drawing, Limerick, Ireland, September 2005
- Van Vleck Visiting Scholar, Wesleyan University Mathematics and Computer Science Department, November 2005
- Colorado College Faculty-Student Collaborative Research Grant with Courtney Gibbons, summer 2005
- Grant from the Dean of the College, Colorado College, to fund Graph Theory class trip to the 36th International Southeastern Conference on Graph Theory, Combinatorics, and Computing, Florida Atlantic University, March 2005
- Grant from the Natural Sciences Division, Colorado College, to attend the 35th International Southeastern Conference on Graph Theory, Combinatorics, and Computing, Florida Atlantic University, March 2004
- Third place, American Mathematical Society T-shirt Caption Contest, January 2006
- Funded participant, AMS-NSA Conference on Promoting Undergraduate Research in Mathematics, September 2006
- Funded participant, 6th and 8th Annual Legacy of R. L. Moore Conferences, March 2003 and March 2005
- Funded participant, NSF Workshop on Teaching Introductory Combinatorics by Guided Discovery, Dartmouth College, August 2003

- Funded participant, AMS-IMS-SIAM Summer Research Conference on Graph Coloring and Symmetry, Mount Holyoke College, July 2002
- Project NExT (New Experiences in Teaching) Fellow, 2002-2003
- Graduate Fellowship, Dartmouth College, 1996-2001
- Sigma Xi National Honor Society
full membership, Dartmouth College, 2001
associate membership, Oberlin College, 1996

Sessions, Panels, Conferences, and Seminars

- Co-organizer and session chair, Young Mathematicians' Network Open Forum, National Joint Meetings of the American Mathematical Society and the Mathematical Association of America, 2008–2011
- Session chair, AMS Session on Combinatorics and Graph Theory V, National Joint Meetings of the American Mathematical Society and the Mathematical Association of America, New Orleans, LA, January 2011
- Co-organizer, Young Mathematicians' Network Panel on Promotion and Tenure: You Know You Want It, National Joint Meetings of the American Mathematical Society and the Mathematical Association of America, San Francisco, CA, January 2010
- Co-organizer, Mathematics Department Colloquium Series, Willamette University, 2008-2009
- Co-organizer and Panelist, Project NExT Panel on Finding Your n th Job for $n \geq 2$, National Joint Meetings of the American Mathematical Society and the Mathematical Association of America, Washington D.C., January 2009
- Organizer and Chair, Invited Speaker Session on Graph Theory with Connections to Geometry and Topology, MathFest (National Summer Meetings of the Mathematical Association of America), Madison, WI, July 2008
- Session Chair, AMS Session on Combinatorics III, National Joint Meetings of the American Mathematical Society and the Mathematical Association of America, San Diego, CA, January 2008
- Participant, Mathematics Faculty Seminar on Elliptic Curves, Willamette University, Fall 2007
- Presenter, Course Preview Night, Mathematics Department, Willamette University, November 2007
- Panelist, Graduate School Information Night, Mathematics Department, Willamette University, October 2007
- Co-organizer, Project NExT Panel on Publishing Undergraduate Research and Expository Articles, National Joint Meetings of the American Mathematical Society and the Mathematical Association of America, New Orleans, LA, January 2007
- Co-organizer, Young Mathematicians' Network Panel on Career Opportunities for Mathematics Majors, MathFest (National Summer Meetings of the Mathematical Association of America), Knoxville, TN, August 2006
- Co-organizer and Presenter, Special Session in Memory of Kenneth P. Bogart, SIAM Conference on Discrete Mathematics, Victoria, Canada, June 2006

- Co-organizer and Presenter, SIAM Special Session on Representations of Graphs, National Joint Meetings of the American Mathematical Society and the Mathematical Association of America, San Antonio, TX, January 2006
- Co-organizer, MAA Panel on Professional Development Opportunities, National Joint Meetings of the American Mathematical Society and the Mathematical Association of America, San Antonio, TX, January 2006
- Panelist, Project NExT Panel on Negotiating with the Administration, MathFest (National Summer Meetings of the Mathematical Association of America), Albuquerque, NM, August 2006
- Co-organizer and Presenter, Project NExT Session on Labs and Projects Appropriate for Calculus Courses, MathFest (National Summer Meetings of the Mathematical Association of America), University of Colorado Boulder, July 2003
- Faculty mentor, Third Annual Young Mathematicians Conference, Columbus, OH, August 2005
- Session chair, Third Annual Young Mathematicians Conference, Columbus, OH, August 2005
- Faculty advisor, Pew Mid-states Science and Mathematics Consortium Undergraduate Research Symposium, Washington University, November 2004
- Co-Director, Pikes Peak Regional Undergraduate Mathematics Conference, Colorado College, February 2005
- Co-Director, Rocky Mountain Discrete Math Days, Colorado College, August 2004
- Co-Director, Rocky Mountain Section Meeting of the MAA, Colorado College, April 2004
- Organizer, Mathematics Department Colloquium Series, Colorado College, 2002-2005
- Participant, Mathematics, Statistics, and Computer Science Department Stat Chat Meetings, St. Olaf College, 2006-2007
- Participant, Mathematics Faculty Seminar on Bioinformatics and String Matching Algorithms, Colorado College, 2005-2006
- Participant, Mathematics Faculty Seminar on Elliptic Curves, Colorado College, 2004-2005
- Organizer, Mathematics Faculty Seminar on Polytopes, Colorado College, 2003-2004
- Participant, Mathematics Faculty Seminar on Kolmogorov Complexity, Colorado College, 2002-2003

Teaching Workshops

- Project NExT Workshop on Teaching an Introductory Statistics Course, MathFest (National Summer Meetings of the Mathematical Association of America), Madison WI, July 2008
- College Colloquium Workshop on Teaching Writing, Willamette University, May 2008 and June 2008
- MAA Minicourse on Getting Students Involved in Undergraduate Research, National Joint Meetings of the American Mathematical Society and the Mathematical Association of America, Atlanta GA, January 2005

- NSF Workshop on Teaching Introductory Combinatorics by Guided Discovery, Dartmouth College, August 2003
- Project NExT Workshop on Teaching an Introductory Statistics Course, MathFest (National Summer Meetings of the Mathematical Association of America), Boulder CO, July 2003

Written Contributions

- Co-author, Summary of the Discussion Group on Helping Undergraduate Students into Graduate School, with Murlı M. Gupta, in Joseph A. Gallian, editor, *Proceedings of the Conference on Promoting Undergraduate Research in Mathematics*, 2007
- Contributor, Instructor Resources for *The Heart of Mathematics, 2E*, by Edward B. Burger and Michael Starbird, 2004
- Reviewer, Mathematical Reviews database, 2004–present
 - Fabrizio Frati, Michael Kaufmann, Stephen Kobourov. Constrained simultaneous and near-simultaneous embeddings, *J. Graph Algorithms Appl.*, 13(3):447–465, 2009.
 - Jan Kynčl, János Pach, Géza Tóth. Long alternating paths in bicolored point sets, *Discrete Math*, 308:4315–4321, 2008.
 - Martin Charles Golumbic, Marina Lipshteyn, Michal Stern. The k -edge intersection graphs of paths in a tree, *Discrete Appl. Math*, 156(4):451–461, 2008.
 - S. M. Almeida, C. P. de Mello, A. Gomide, On the representation of a PI-graph, *TEMA Tend. Mat. Apl. Comput.* 8(1):1–10, 2007.
 - János Pach, Géza Tóth. How many ways can one draw a graph? *Combinatorica* 26(5):559–576, 2006.
 - Stefan Felsner, Ferran Hurtado, Marc Noy, Ileana Streinu. Hamiltonicity and colorings of arrangement graphs. *Discrete Appl. Math.*, 154(17):2470–2483, 2006.
 - Jing Huang. Representation characterizations of chordal bipartite graphs. *J. Combin. Theory Ser. B*, 96(5):673–683, 2006.
 - Prosenjit Bose, Ferran Hurtado, Eduardo Rivera-Campo, David R. Wood. Partitions of complete geometric graphs into plane trees. *Comput. Geom.*, 34:116–125, 2006.
 - Branko Grünbaum. 3-connected configurations (n_3) with no Hamiltonian circuit. *Bull. Inst. Combin. Appl.*, 46:15–26, 2006.
 - Criel Merino, Gelasio Salazar, and Jorge Urrutia. On the intersection number of matchings and minimum weight perfect matchings of multicolored point sets. *Graphs Combin.*, 21(3):333–341, 2005.
 - Wei Ho. The m -step, same-step, and any step competition graphs. *Discrete Appl. Math.*, 152(1–3):159–175, 2005.
 - Cesim Erten and Stephen G. Kobourov, Simultaneous embedding of a planar graph and its dual on the grid, *Theory Comput. Syst.* 38(3):313–327, 2005.
 - Robert E. Jamison and Henry Martyn Mulder, Constant tolerance intersection graphs of subtrees of a tree, *Discrete Math.* 290(1):27–46, 2005.
 - Alexandr Kostochka, Coloring intersection graphs of geometric figures with a given clique number, in *Towards a theory of geometric graphs*, 127–138, Contemp. Math., 342, Amer. Math. Soc., Providence, RI, 2004

Problem Solving

- Writer, Ohio Four Colleges Mathematics Competition, February 2010
- Co-organizer and writer, Oregon Invitational Mathematics Tournament, Willamette University, May 2008
- Faculty advisor, Mathematics Contest in Modeling, Willamette University, February 2008
- Editor, Problem of the Week, Willamette University Mathematics Department, 2007-2008
- Organizer, Fifteenth Annual Konhauser Problemfest, St. Olaf College, February 2007
- Faculty advisor, William Lowell Putnam Mathematical Competition, St. Olaf College, December 2006
- Organizer and Writer, Carlson Problem Solving Contest, St. Olaf College, October 2006
- Director, Problem Solving Group, St. Olaf College Mathematics Department, 2006-2007
- Editor, Problem of the Week, St. Olaf College Mathematics Department, 2006-2007
- Writer, Ohio Five Colleges Mathematics Competition, February 2006
- Co-organizer and writer, Thomas H. Rawles Mathematics Competition, Colorado College Mathematics Department, 2003-2006
- Co-organizer and writer, Problem of the Month, Colorado College Mathematics Department, 2003-2006
- Organizer and writer, Problem of the Week, Kenyon College Mathematics Department, 2001-2002
- Participant, Putnam Examination Study Group, Kenyon College Mathematics Department, Fall 2001

Professional Organizations

- Founding member and permanent faculty correspondent, Pi Mu Epsilon, Willamette University Chapter, 2009–present
- Founding member, Pi Mu Epsilon, Kenyon College Chapter, 2002
- American Mathematical Society
- Mathematical Association of America
- Editorial Board, Young Mathematicians' Network

Other

- Participant, AMS Minicourse on the History of Combinatorics, National Joint Meetings of the American Mathematical Society and the Mathematical Association of America, San Diego, CA, January 2008
- Mentor, Employment Center Applicant Resumé Help Desk, National Joint Meetings of the American Mathematical Society and the Mathematical Association of America, San Diego, CA, January 2008
- Reviewer, Young Mathematicians Conference, August 2007
- Reader, College Board Advanced Placement Calculus Exam, 2006-2009

- Advanced Placement Calculus Course Auditor, 2007-2008
- Graduate School Advisor, Colorado College Mathematics Department, 2003-2006
- Organizer, Mathematics Department Game Night, Willamette University, 2007-present
- Organizer, Mathematics, Statistics, and Computer Science Department Game Night, St. Olaf College, 2006-2007
- Organizer, Mathematics Department Game Night, Colorado College, 2004-2006
- Judge, MAA Undergraduate Poster Session, National Joint Meetings of the American Mathematical Society and the Mathematical Association of America, 2003, 2004, 2005, 2009
- Member, Calculus Focus Group, Key College Press, MathFest (National Summer Meetings of the Mathematical Association of America), Providence, RI, August 2004
- Member, Calculus Focus Group, W.H. Freeman Publishers, National Joint Meetings of the American Mathematical Society and the Mathematical Association of America, Phoenix, AZ, January 2004
- Member, Calculus Text Evaluation Committee, Colorado College Mathematics Department, 2002-2003
- Member, Calculus Text Evaluation Committee, Kenyon College Mathematics Department, 2001-2002
- Director, Mathematica Technical Support, Dartmouth College Mathematics Department, Fall 1997
- Chair, Mathematics Department Tea Committee, Dartmouth College, 1997-1998

Presentations

- **Prime Distance Graphs**
 1. Mathematics Department Colloquium, Willamette University, December 2010
 2. Invited speaker, Undergraduate Mathematics Colloquium, University of Nebraska at Lincoln, October 2010
- **Obstacle Numbers of Graphs**
 3. National Joint Meetings of the American Mathematical Society and the Mathematical Association of America, New Orleans, LA, January 2011
 4. Invited speaker, Discrete Mathematics seminar, University of Colorado at Denver, November 2010
 5. Invited speaker, Discrete Mathematics seminar, University of Nebraska at Lincoln, October 2010
 6. Invited speaker, Graph Portland Area Lecture Series, Portland State University, November 2008
 7. Mathematics Department Colloquium, Willamette University, October 2008
- **Symmetry**

8. Invited speaker, Parents and Family Weekend Mini-University Session, Willamette University, October 2009
- **Symmetry Breaking in Graphs**
 9. Invited speaker, Linfield College Mathematics and Science Colloquium, April 2009
 10. Willamette Valley REU-RET, Willamette University, August 2008
 - **My Friends the Triangles: The Study of Geometric Networks**
 11. Faculty Colloquium, Willamette University, October 2008
 - **Pebbling a Graph**
 12. Invited Speaker, Mathematics Department Colloquium, Pacific University, November 2008
 13. Invited Speaker, Mathematics Department Colloquium, University of Portland, April 2008
 14. Faculty Colloquium, Willamette University, September 2007
 15. Invited Speaker, Math Club, Wesleyan University, Middletown, CT, November 2005
 16. Invited Speaker, MathPath Summer Program for gifted middle school students, Colorado College, July 2005
 17. Mathematics Department Colloquium, Colorado College, February 2003
 18. Mathematics Department Colloquium, Kenyon College, September 2001
 19. Invited speaker, Ohio Five Colleges Speakers Circuit, Oberlin College, November 2001
 - **Dual Unfoldings of Polyhedra**
 20. 39th International Southeastern Conference on Graph Theory, Combinatorics, and Computing, Florida Atlantic University, March 2008
 - **My Experiences Researching With Undergraduate Mathematicians: The Collaboration Model**
 21. MAA Contributed Paper Session on Research and Professional Development Activities for Math Majors I, National Joint Meetings of the American Mathematical Society and the Mathematical Association of America, San Diego, CA, January 2008
 - **The Weierstrass \wp -function**
 22. Mathematics Department Elliptic Curves Seminar, Willamette University, November 2007 (2 talks)
 - **Critical Pebbling Numbers of Graphs**
 23. AMS Contributed Paper Session on Combinatorics, National Joint Meetings of the American Mathematical Society and the Mathematical Association of America, San Diego, CA, January 2008
 24. Mathematics Department Colloquium, Colorado College, September 2004
 - **Count on the Platonic Solids**

25. Mathematics Department Colloquium, Willamette University, October 2007
- **Classification of Subspace Intersection Graphs**
 26. Project NExT/Young Mathematician's Network Poster Session, National Joint Meetings of the American Mathematical Society and the Mathematical Association of America, New Orleans, LA, January 2007
 - **Fixing Numbers of Graphs**
 27. Mathematics, Statistics, and Computer Science Department Research Seminar, St. Olaf College, November 2006 (2 talks)
 28. Summer Science Research Group Meeting, Colorado College, July 2005
 - **My Favorite Intersection Graphs**
 29. Mathematics, Statistics, and Computer Science Department Colloquium, St. Olaf College, October 2006
 - **Generalizations of Bar Visibility Graphs**
 30. Invited Speaker, Special Session in Memory of Kenneth P. Bogart, Society of Industrial and Applied Mathematics Conference on Discrete Mathematics, Victoria, Canada, June 2006
 - **Bar k -Visibility Graphs**
 31. Invited Speaker, 13th International Symposium on Graph Drawing, Limerick, Ireland, September 2005
 32. Invited speaker, Graph Theory with Altitude: Conference in Honor of Joan P. Hutchinson on the Occasion of her 60th Birthday, University of Colorado at Denver, May 2005
 33. Project NExT/Young Mathematician's Network Poster Session, National Joint Meetings of the American Mathematical Society and the Mathematical Association of America, Atlanta, GA, January 2005
 34. Rocky Mountain Discrete Math Days, Colorado College, August 2004
 35. Invited speaker, Special Session on Representations of Graphs, 35th International Southeastern Conference on Graph Theory, Combinatorics, and Computing, Florida Atlantic University, March 2004
 - **05C62: The Exciting World of Geometric Graph Representations**
 36. Invited Speaker, MathPath Summer Program for gifted middle school students, Colorado College, July 2005
 37. Mathematics Department Colloquium, Colorado College, January 2005
 - **Incorporating Guided Discovery**
 38. Invited speaker, 8th Annual Legacy of R.L. Moore Conference, Austin, TX, April 2005
 - **Problems of Visibility**
 39. Invited speaker, Special Topics in Computational and Combinatorial Geometry seminar meeting, University of Colorado at Denver, September 2004

- **Tube Graphs and Tube Orders**

40. Rocky Mountain Discrete Math Days, University of Colorado at Denver, August 2003
41. Invited Speaker, Discrete Math Seminar, University of Colorado at Denver, April 2003
42. Invited speaker, DIMACS Connect Institute, Center for Discrete Mathematics and Theoretical Computer Science, Rutgers University, Piscataway, NJ, August 2001

- **A Few Strange Things About Polytopes**

43. Mathematics Department, Colorado College, September 2003

- **Using LaTeX: Making Any Mathematical Writing Look Good**

44. Mathematics Department workshop, Willamette University, September 2008
45. Mathematics Department Colloquium, Colorado College, March 2003

- **Circling the Desks: A Weekly Discussion in a Liberal Arts Mathematics Course**

46. MAA Contributed Paper Session on Getting Students to Discuss and to Write About Mathematics, National Joint Meetings of the American Mathematical Society and the Mathematical Association of America, Baltimore, MD, January 2003

- **Getting the Biggest Piece: An Introduction to Cake-Cutting Algorithms**

47. Explorations in Mathematics course meeting, Colorado College, December 2005
48. Mathematics Department Colloquium, Colorado College, September 2002

- **Unit and Proper Tube Graphs and Orders**

49. AMS Contributed Paper Session on Combinatorics and Graph Theory, National Joint Meetings of the American Mathematical Society and the Mathematical Association of America, San Diego, CA, January 2002

- **An Introduction to Network Flows**

50. Graduate Student Seminar, Dartmouth College, May 2001

- **Geometric Representations of Ordered Sets**

51. Invited speaker, Combinatorists of New England, Smith College, February 2001
52. AMS Contributed Paper Session on Combinatorics, National Joint Meetings of the American Mathematical Society and the Mathematical Association of America, New Orleans, LA, January 2001
53. Invited Speaker, Combinatorics Seminar, University of Vermont, November 2000
54. Graduate Student Seminar, Dartmouth College, November 2000

- **Free Triangle Orders**

55. 31st International Southeastern Conference on Graph Theory, Combinatorics, and Computing, Florida Atlantic University, March 2000

- **Comparability Invariance of Ordered Sets**

56. Combinatorics Seminar, Dartmouth College, October 1999

- **Comparability Graphs**

- 57. Combinatorics Seminar, Dartmouth College, March 1999

- **Keller's Conjecture: From 1930 Until the End of Time**

- 58. Graduate Student Seminar, Dartmouth College, February 1999

- **The Structure and Spectrum of Graphs: The Automorphism Group and Beyond**

- 59. Honors Presentation, Oberlin College, May 1996

Student Presentations

- Stephanie Jones, *Weighted Pebbling Numbers: A Battle of Wits Against an Evil Opponent*
 - Willamette University Student Scholarship Recognition Day, April 2010
 - Northwest Undergraduate Mathematics Symposium, Oregon State University, April 2010 (winner of award for best long talk)
- Andrew Hoskins, *The Fujimoto Algorithm: An Origamists Way of Studying Modular Arithmetic*, Mathematics Department Colloquium, Willamette University, April 2010
- Jared Nishikawa, *Okay, Now What?*, Mathematics Department Colloquium, Willamette University, April 2010
- Hannah Jackson, *Voting in Trees*, Mathematics Department Colloquium, Willamette University, April 2010
- Mathew Polzin, *Word Sense Disambiguation: A look at link (or triangular line) graphs as a solution*, Mathematics Department Colloquium, Willamette University, April 2010
- Dominique Lomax, *M&M sequences*, Mathematics Department Colloquium, Willamette University, April 2010
- Hanna Bliden, *Does Your Vote Count? Gerrymandering in the Voting System*, Mathematics Department Colloquium, Willamette University, April 2010
- Wesley Smith, *Finding Faulty Processors: An Application of Vertex Identifying Codes*, Mathematics Department Colloquium, Willamette University, April 2010
- Ross Casebolt, *The Building Blocks of Algebra*, Mathematics Department Colloquium, Willamette University, April 2010
- Hannah Alpert and Christina Koch, *Obstacle Numbers of Graphs*
 - St. Olaf Science Symposium, May 2009
 - Pi Mu Epsilon Conference, College of St. Benedict/St. John's University, April 2009
 - Undergraduate Poster Session, Joint Meetings of the American Mathematical Society and Mathematical Association of America, January 2009 (prize winning poster)

- Colorado Math Circle meeting, September 2008
- ORCA Math Conference for Teachers and Undergraduates, July 2008 (2 talks)
- Andrea Walker, *Prime Distance Graphs*, Willamette University Student Scholarship Recognition Day, April 2008
- Courtney Gibbons, *Critical Pebbling Numbers of Graphs*
 - Pikes Peak Regional Undergraduate Mathematics Conference, February 2005
 - Pew Mid-States Science and Mathematics Consortium Undergraduate Research Symposium, November 2004
(funded through the conference grant)
 - Rocky Mountain Section Meeting of the Mathematical Association of America, April 2004

Fixing Numbers of Groups and Graphs

- Undergraduate Poster Session, Joint Meetings of the American Mathematical Society and Mathematical Association of America, January 2006
(prize winning poster)
- Colorado College Mathematics Distinction Day, April 2006
- Colorado College Summer Science Research Group meeting, July 2005
- Young Mathematicians Conference, August 2005
(funded through the conference grant)
- Yulan Qing, *Subspace Intersection Graphs*
 - Pikes Peak Regional Undergraduate Mathematics Conference, February 2005
 - Rocky Mountain Discrete Math Days, August 2004
 - Rocky Mountain Section Meeting of the Mathematical Association of America, April 2004
- Luc Wilson, *Dual Unfolding of Polyhedra*
 - Pikes Peak Regional Undergraduate Mathematics Conference, February 2005
 - Colorado College Mathematics Distinction Day, April 2005
- Michelle Schick, *Seeing Dots: Explorations on the Visibility of Lattice Points*, Colorado College Mathematics Distinction Day, April 2004