

Michael Joseph Ferrara

Department of Mathematical and Statistical Sciences
University of Colorado Denver
Office: 303-315-1705
Home: 720-379-7859
michael.ferrara@ucdenver.edu
math.ucdenver.edu/~mferrara

Research Interests

Graph Theory, Combinatorics, STEM Education and Teacher Preparation.

Education

August, 2005
Emory University, Atlanta, GA
PhD. In Mathematics
Dissertation Title: The Degree Stripping Method for Potentially H -graphic Sequences.
Dissertation Advisor: Ronald J. Gould.

May, 2000
Stevens Institute of Technology, Hoboken, NJ
B.S. in Mathematics (minor: Music)
High Honors w/ Thesis

Professional Experience

June, 2013
- Present
Associate Professor
University of Colorado Denver, Denver CO
Department of Mathematical and Statistical Sciences
(On Sabbatical, Fall 2016)

August, 2013
- July, 2016
Graduate Program Director
Department of Mathematical and Statistical Sciences
University of Colorado Denver, Denver CO

August, 2009
- June, 2013
Assistant Professor
University of Colorado Denver, Denver CO
Department of Mathematical and Statistical Sciences

August, 2007
- August, 2009
Assistant Professor
The University of Akron, Akron OH
Department of Theoretical and Applied Mathematics

August, 2005
- August, 2007
Visiting Assistant Professor
University of Colorado Denver, Denver CO
Department of Mathematical Sciences

September, 2001
- August, 2005
Teaching Associate
Emory University, Atlanta GA

Awards

2016	Graduate School Dean's Mentoring Award <i>University of Colorado Denver</i>
2015	Excellence in Service Award <i>College of Liberal Arts and Sciences, University of Colorado Denver</i>
2013	Excellence in Research and Creative Activities Award <i>College of Liberal Arts and Sciences, University of Colorado Denver</i>
2012	Excellence in Teaching Award <i>College of Liberal Arts and Sciences, University of Colorado Denver</i>
2005	Marshall Hall Award for Excellence in Graduate Teaching <i>Department of Mathematics and Computer Science, Emory University</i>
2001-2005	Woodruff Fellowship <i>Emory University</i>

Publications

Submitted Papers:

1. P. DeOrsey, J. Diemunsch, M. Ferrara, N. Graber, S. Hartke, S. Jahanbekam, B. Lidicky, L. Nelsen, D. Stolee and E. Sullivan, *On the Strong Chromatic Index of Sparse Graphs*.
2. M. Ferrara, E. Gethner, S. Hartke, D. Stolee and P. Wenger, *Extending Precolorings to Distinguish Group Actions*.
3. C. Erbes, M. Ferrara, R. Martin and P. Wenger, *On the Approximate Shape of Degree Sequences that are not Potentially H -graphic*.
4. M. Dairyko, M. Ferrara, B. Lidicky, R. R. Martin, F. Pfender and A. Uzzell, *Ore and Chvátal-type Degree Conditions for Bootstrap Percolation from Small Sets*.
5. M. Ferrara, W. Kay, L. Kramer, R. R. Martin, B. Reiniger, H. Smith and E. Sullivan *The Saturation Number of Induced Subposets of the Boolean Lattice*.
6. C. Erbes, M. Ferrara, R. R. Martin and P. Wenger, *Stability of the Potential Function*.

Accepted for Publication:

1. M. Ferrara, T. LeSaulnier, C. Moffatt and P. Wenger, *On the Degree-Sum Necessary to Ensure a Degree Sequence is Potentially H -Graphic*, to appear in *Combinatorica*.
2. M. Barrus, M. Ferrara, J. Vandenbussche and P. Wenger, *Colored Saturation Parameters for Rainbow Subgraphs*, to appear in *J. Graph Theory*.

Refereed Journal Publications:

1. V. Borozan, M. Ferrara, S. Fujita, M. Furuya, N. Narayanan, Y. Manoussakis and D. Stolee, *Partitioning a Graph into Highly Connected Subgraphs*, *J. Graph Theory* **82** (2016), 322-333.
2. A. Brandt, M. Ferrara, M. Kumbhat, S. Loeb, D. Stolee and M. Yancey, *I, F -Partitions of Sparse Graphs*, *European J. Comb.* **57** (2016), 1-12.

3. M. Ferrara, M. Jacobson, F. Pfender and P. Wenger, Graph Saturation in Multipartite Graphs, *J. Combinatorics* **7** (2016), 1-19.
4. J. Diemunsch, M. Ferrara, S. Jahanbekam and J. Shook, Extremal Theorems for Degree Sequence Packing and the 2-Color Discrete Tomography Problem, *SIAM J. Discrete Math.* **29** (2015), 2088-2099.
5. A. Dudek and M. Ferrara, Extensions of Results on Rainbow Hamilton Cycles in Uniform Hypergraphs, *Graphs Comb.* **31** (2015), 577-583.
6. G. Chen, M. Ferrara, Z. Hu, M. Jacobson and H. Liu, Degree Conditions for Spanning Brooms, *J. Graph Theory* **77** (2014), 237-250.
7. A. Busch, M. Ferrara, S. Hartke and M. Jacobson, Ramsey-Type Numbers for Degree Sequences, *Graphs Comb.* **30** (2014), 847-859.
8. J. Diemunsch, M. Ferrara, S. Graffeo and T. Morris, On 2-factors with a bounded number of odd components, *Discrete Math.* **323** (2014), 35-42.
9. M. Ferrara, J. Kim and E. Yeager, Ramsey-minimal Saturation Numbers for Matchings, *Discrete Math.* **322** (2014), 26-30.
10. L. DeBiasio, M. Ferrara and T. Morris, Improved Degree Conditions for 2-factors with k Cycles, *Discrete Math.* **320** (2014), 51-54.
11. S. Behrens, C. Erbes, M. Ferrara, S. Hartke, B. Reiniger, H. Spinoza and C. Tomlinson, New Results on Degree Sequences of Uniform Hypergraphs, *Elec. J. Combin.* **20**(4) (2013), P14, 18pp.
12. R. Li, M. Ferrara, X. Zhang and S. Li, A Fan-type Degree Condition for k -Linked Graphs, *Australasian J. Comb.* **57** (2013), 139-143.
13. M. Ferrara, F. Pfender and M. Jacobson, Degree Conditions for H -Linked Digraphs, *Combin. Probab. Comput.* **22** (2013), 684-699.
14. M. Ferrara, Some Open Problems on Graphic Sequences, *Graph Theory Notes of N.Y.* **64** (2013), 19-25. (*Invited Paper in Honor of Charlie Suffel's 70th Birthday*)
15. M. Ferrara, E. Gethner, S. Hartke, D. Stolee and P. Wenger, List Distinguishing Parameters of Trees, *Discrete Applied Math.* **161** (2013), 864-869.
16. M. Ferrara, C. Magnant and P. Wenger, Conditions for Families of Disjoint k -connected Subgraphs of a Graph, *Discrete Math.* **313** (2013), 760-764.
17. M. Ferrara, S. Gerkhe, R. Gould, C. Magnant and J. Powell, Pancyclicity of 4-connected {claw, generalized bull}-free graphs, *Discrete Math.* **313** (2013), 460-467.
18. M. Ferrara, T. Morris and P. Wenger, Pancyclicity of 4-connected, claw-free, P_{10} -free graphs, *J. Graph Theory*, **71** (2012), 435-447.
19. M. Ferrara, M. Jacobson, K. Milans, C. Tennenhouse and P. Wenger, Saturation Numbers for Families of Graph Subdivisions, *J. Graph Theory*, **71** (2012), 416-434.
20. C. Clemons, J. Cossey, M. Ferrara, S. Forcey, T. Norfolk, G. Obeng, D. Ricciardi and G. Young, When Does Compromise Prevent More Pollution?, *Notices Amer. Math Soc.* **59**(9) (2012), 1223-1234.
21. M. Ferrara, R. Gould, M. Jacobson, F. Pfender, J. Powell and T. Whalen, New Ore-Type Conditions for H -Linked Graphs, *J. Graph Theory* **71** (2012), 69-77.
22. K. Mamidisetty, M. Ferrara and S. Sastry, Systematic Selection of Cluster Heads for Data Collection, *J. Network and Computer Applications* **35** (2012), 1548-1558.
23. J. Diemunsch, M. Ferrara, A. Lo, C. Moffatt, F. Pfender and P. Wenger, Rainbow Matchings of Size $\delta(G)$ in Properly Edge-colored Graphs, *Elec. J. Combin.* **19**(2) (2012), P52, 11pp.
24. A. Busch, M. Ferrara, S. Hartke, M. Jacobson, H. Kaul, and D. West, Packing of Graphic n -tuples, *J. Graph Theory* **70** (2012), 29-39.
25. M. Ferrara, M. Jacobson and J. Powell, Characterizing Degree-Sum Maximal Nonhamiltonian Bipartite Graphs, *Discrete Math.* **312** (2012), 649-651.
26. G. Chen, M. Ferrara, R. Gould, C. Magnant, J. Schmitt, Saturation numbers for families of Ramsey-minimal graphs, *J. Combinatorics* **2** (2011), 435-455.
27. M. Ferrara, B. Flesch and E. Gethner, List-Distinguishing Colorings of Graphs, *Elec. J. Combin.* **18**

- (2011), P161, 17pp.
28. M. Ferrara, A. Harris and M. Jacobson, Hamiltonian Cycles Avoiding Sets of Edges in a Graph, *Australasian J. Comb.* **48** (2010), 191-203.
 29. E. McGough, C. Clemons, M. Ferrara, T. Norfolk and G. Young, A Game-Theoretic Approach to Personnel Decisions in American Football, *J. Quant. Anal. Sports* **6** (2010), Issue 4, Article 1.
 30. M. Ferrara, M. Karonski, R. Gould and F. Pfender, An Iterative Approach to Graph Irregularity Strength, *Discrete Applied Math.* **158** (2010), 1189-1194.
 31. M. Ferrara, C. Magnant and J. Powell, Pan H -Linked Graphs, *Graphs Comb.* **26** (2010), 225-242.
 32. M. Ferrara, A. Harris and M. Jacobson, Cycle Lengths in Hamiltonian Graphs with a Pair of Vertices Having Large Degree Sum, *Graphs Comb.* **26** (2010), 215-223.
 33. M. Ferrara, A. Harris and M. Jacobson, The Game of F -saturator, *Discrete Applied Math.* **158** (2010), 189-197.
 34. M. Ferrara, M. Jacobson, J. Schmitt and M. Siggers, Potentially H -Bigraphic Sequences, *Discuss. Math. Graph Theory*, **29** (2009), 583-596.
 35. M. Ferrara, E. Gethner, C. Lee and P. Wallis, DeBruijn-like Sequences and the Irregular Chromatic Number of Paths and Cycles, *Discrete Math.* **309** (2009), 6074-6080.
 36. R. Faudree, M. Ferrara, R. Gould and M. Jacobson, tK_p -saturated Graphs of Minimum Size, *Discrete Math.* **309** (2009), 5870-5876.
 37. M. Ferrara, J. Gilbert, M. Jacobson and T. Whalen, Irregularity Strength of Digraphs, *Discrete Math.* **309** (2009), 5834-5840.
 38. M. Ferrara, R. Gould, G. Tansey and T. Whalen, Degree-Sum Conditions for Bipartite Graphs to Contain Disjoint Hamiltonian Cycles, *Discrete Math.* **309** (2009), 3811-3820.
 39. M. Ferrara, R. Gould and J. Schmitt, Using Edge-Exchanges to Prove the Erdos-Jacobson-Lehel Conjecture, *Bulletin of the ICA* **56** (2009), 73-80.
 40. M. Ferrara and J. Schmitt, A Lower Bound for Potentially H -Graphic Sequences, *SIAM J. Discrete Math.* **23** (2009), 517-526.
 41. G. Chen, M. Ferrara, R. Gould and J. Schmitt, Graphic Sequences with a Realization Containing a Complete multipartite Subgraph, *Discrete Math.* **308** (2008), 5712-5721.
 42. M. Ferrara, R. Gould, G. Tansey and T. Whalen, On H -Immersion, *J. Graph Theory* **57** (2008), 245-254.
 43. M. Ferrara, R. Gould and S. Hartke, The Structure and Existence of 2-Factors in Iterated Line Graphs, *Discuss. Math. Graph Theory* **27**, no. 3, (2007), 507-526.
 44. A. Busch, M. Ferrara and N. Kahl, Generalizing D -Graphs, *Discrete Applied Math.* **155** (2007), 2487-2495
 45. M. Ferrara, R. Gould and J. Schmitt, Graphic Sequences with a Realization Containing a Friendship Graph, *Ars Comb.* **85** (2007), 161-171.
 46. M. Ferrara, Graphic Sequences with a Realization Containing a Union of Arbitrary Cliques, *Graphs Comb.* **23** (2007), 263-269.
 47. M. Ferrara, R. Gould, G. Tansey and T. Whalen, On H -Linked Graphs, *Graphs Comb.* **22** (2006) 217-224.
 48. M. Ferrara, Y. Kohayakawa and V. Rodl, Distance Graphs on the Integers, *Combin. Probab. Comp.* **14** (2005), 107-131.

Refereed Conference Proceedings:

1. K. Mamidisetty, M. Ghamande, M. Ferrara and S. Sastry, A Domination Approach to Clustering Nodes for Data Aggregation, *Proceedings of the Global Communications Conference (IEEE GLOBECOM)*, 2008, 747-751.
2. M. Ferrara, R. Gould and C. Suffel, Spanning Tree Edge Densities, Proceedings of the Thirty-third Southeastern International Conference on Combinatorics, Graph Theory and Computing (Boca Raton, FL, 2002), *Congr. Numer.* **154** (2002), 155-163.

Book Chapter:

1. M. Ferrara and R. Gould, *H-Linked Graphs*, in *Topics in Structural Graph Theory* (L. Beineke and R. Wilson, eds.), Encyclopedia of Mathematics and its Applications **147**, Cambridge University Press, 2012. (Invited)

Refereed Paper Presentation:

1. *The Impact of Organizing K-12 Outreach on Undergraduate STEM Majors*, AAAS-NSF EnFUSE Conference, April 28, 2016.

Extramural Funding

(Approximately \$3,850,000 in total funding)

STEM Education (Research, Training and Outreach)

1. *STEM Club Leadership for Undergraduate STEM Education, Recruiting and Success (STEM-CLUSTERS)*
Agency: National Science Foundation – DUE (#1504535), IUSE
Amount: \$248,599
Period: July 1, 2015 – June 30, 2017
Role: PI with co-PI's M. Jacobson, R. Rorrer, R. Talbot and B. Wee.
2. *Promoting Success in Early Undergraduate Mathematics through Graduate Teacher Training (PSECM-GTT)*
Agency: National Science Foundation – DUE (#1539602), IUSE
Amount: \$359,860 (Initial Award: \$299,925; Supplement, awarded 2/2016: \$59,935)
Period: July 15, 2015 – July 14, 2018
Role: Co-PI and co-Project Lead with M. Jacobson (PI, Co-Lead), R. Cribari and G. Olson.
3. *Adaptive Pedagogy for Elementary Teachers: Supporting Students' Transition from Elementary to Middle School Mathematics (APT-STEMM)*
Agency: National Science Foundation – DRL (#1503206), DRK-12
Amount: \$2,998,794
Period: July 1, 2015 – June 30, 2019
Role: Co-PI with R. Tzur (PI), H. Johnson, A. Davis and X. Wang.
4. *Julia Robinson Math Festival at CU Denver*
Agency: Julia Robinson Math Festival
Amount: \$4,000
Period: September 2015
Role: Co-PI and co-Lead with D. White (PI)

Mathematics Research

1. *Collaborative Research in Extremal Graph Theory*
Agency: Simons Foundation, Collaboration Grant Program
Amount: \$35,000
Period: September 2016 – August 2021
Role: PI
2. *Collaborative Research in Structural and Extremal Graph Theory*

Agency: Simons Foundation, Collaboration Grant Program (#206692)
Amount: \$35,000
Period: July 2011 – August 2016
Role: PI

Support for the Rocky Mountain – Great Plains Graduate Research Workshop in Combinatorics:

1. *Collaborative Research: Rocky Mountain – Great Plains Graduate Research Workshops in Combinatorics*

Agency: National Science Foundation – DMS (#1604458), Workshop Grant

Amount: \$91,393 (CU Denver share: \$41,220)

Period: May 1, 2016 – April 31, 2019

Role: Lead and CU Denver PI with co-PIs E. Gethner, S. Hartke, F. Pfender and J. Radcliffe (Nebraska). Collaborative between CU Denver, University of Denver, Iowa State University and University of Wyoming.

2. *Careers in industry mini-workshops and the Graduate Research Workshop in Combinatorics: Enhancing doctoral training in mathematics through collaborative research and professional development*

Agency: Institute for Mathematics and its Applications, Workshop Grant

Amount: \$20,000

Period: May 1, 2017 – August 31, 2018

Role: Co-PI with PI L. Hogben and co-PIs from GRWC Organizing Committee.

3. *The 2016 Rocky Mountain – Great Plains Graduate Workshop in Combinatorics*

Agency: National Security Agency, Workshop Grant (H98230-16-1-0018)

Amount: \$11,259

Period: March 1, 2016 – February 28, 2017

Role: Co-PI with T. McAllister (PI, Wyoming), P. Horn (U. Denver), J. Radcliffe (Nebraska) and M. Young (Iowa State).

4. *The 2015 Rocky Mountain – Great Plains Graduate Workshop in Combinatorics,*

Agency: National Science Foundation – DMS (#1500662), Workshop Grant

Amount: \$23,408

Period: April 1, 2015 – March 31, 2016

Role: Co-PI with L. Hogben (PI, Iowa State), D. Stolee (Iowa State), T. McAllister (Wyoming) and P. Horn (U. Denver).

5. *The Rocky Mountain – Great Plains Graduate Workshop in Combinatorics*

Agency: National Science Foundation - DMS (#1427526), Workshop Grant

Amount: \$23,996

Period: May 1, 2014 – May 31, 2015

Role: PI with Co-PI's P. Horn (U. Denver), F. Pfender (CU Denver), J. Williford (Wyoming) and M. Young (Iowa State).

Internal Grants:

1. *New Approaches to Graph Subdivision and Linkage Problems*, University of Akron Faculty Research Grant, \$10,000, Summer 2008.

Pending Proposals:

1. *Collaborative Research: Promoting Success in Early College Mathematics through Graduate Teacher Training – Phase II*, NSF-DUE IUSE, \$2,202,508, July 1, 2017 – June 30, 2021. Co-PI and co-Lead with Michael Jacobson (PI, co-Lead), RaKissa Manzanares and Gary Olson. Collaborative Proposal with Auburn University (Chris Rodger, PI), Iowa State University (Steve Butler, PI) and University of Northern Colorado (Hortensia Soto, PI).

Presentations

External Mathematics Research Talks since 2011:

1. *Ore- and Chvátal-type Degree Conditions for Bootstrap Percolation from Small Sets*, Special Session on Extremal and Computational Graph Theory, AMS Southeastern Section Meeting, North Carolina State University, November 13, 2016. (Invited)
2. *New Results on Packing Graphic Sequences*, Departmental Colloquium, Georgia Southern University, October 24, 2016. (Invited)
3. *New Results on Packing Graphic Sequences*, Departmental Colloquium, University of Central Florida, October 20, 2016. (Invited)
4. *The Stability of the Potential Function*, Special Session on Recent Advances in Graph Theory, 47th Southeastern Conference on Combinatorics, Graph Theory and Computing, Florida Atlantic University, March 8, 2016. (Invited)
5. *I,F-Partitions of Sparse Graphs*, Special Session on Theory and Applications of Graphs, AMS Southeastern Section Meeting, University of Georgia, March 6, 2016. (Invited)
6. *The Stability of the Potential Function*, Special Session on Topics in Graph Theory, Hypergraphs and Set Systems, AMS Central Section Meeting, Loyola University, October 3, 2015. (Invited)
7. *A Chvátal-Type Theorem for Degree Sequence Ramsey Numbers*, Special Session on Recent Advances in Graph and Matroid Theory, AMS Central Section Meeting, Loyola University, October 3, 2015. (Invited)
8. *Realization Problems for Degree Sequences of Graphs and Hypergraphs*, Computational and Applied Math Colloquium, National Institute of Standards and Technology, May 12, 2015. (Invited)
9. *Strong Chromatic Index of Graphs with Bounded Maximum Degree*, Special Session on Extremal and Structural Graph Theory, AMS Western Section Meeting, University of Nevada, Las Vegas, April 18, 2015. (Invited)
10. *Results and Open Problems on the Degree Sequences of Hypergraphs*, Minisymposium on Degree Sequences of Graphs and Hypergraphs, SIAM Discrete Mathematics Meeting, June 19, 2014. (Organizer)
11. *New Results on Colored Saturation Problems*, Special Session on Graph Theory: Structural and Extremal Problems, Joint Mathematics Meetings, January 14, 2014. (Invited)
12. *Colored Saturation Problems*, Graph Theory Seminar, Miami University, November 4, 2013. (Invited)
13. *Realization Problems for Graphic Sequences*, Departmental Colloquium, Iowa State University, October 22, 2013. (Invited)
14. *Some New Results on Colored Saturation Problems*, 26th Cumberland Conference, Middle Tennessee State University, May 25, 2013.
15. *Results and Open Problems on Saturated Graphs of Minimum Size*, Departmental Colloquium, University of Wyoming, March 28, 2013. (Invited)
16. *Some Extremal Problems on Potentially H-Graphic Sequences*, Graph Theory Day 64, Stevens Institute of Technology, January 19, 2013. (Invited)
17. *Some Results and Open Problems on Saturated Graphs of Minimum Size*, Guest Lecture in Readings in Combinatorics (Doctoral Readings Course), University of Illinois Urbana-Champaign, January 16, 2013. (Invited)
18. *Extremal Problems on Potentially H-Graphic Sequences*, Graph Theory and Combinatorics

- Seminar, University of Illinois Urbana-Champaign, January 15, 2013. (Invited)
19. *Some Extremal Problems on Degree Sequences*, Discrete Mathematics Seminar, University of Nebraska – Lincoln, January 8, 2013. (Invited)
 20. *New Degree Conditions for H-Linked Graphs and Digraphs*, Discrete Mathematics Seminar, Rochester Institute of Technology, December 18, 2012. (Invited)
 21. *On the Asymptotics of the Potential Function*, AMS Eastern Section Meeting, Rochester Institute of Technology, September 22, 2012. (Invited)
 22. *Pancyclicity of 4-connected, Claw-free, P_{10} -free graphs*, International Conference on Cycles in Graphs, Vanderbilt University, June 2, 2012. (Invited)
 23. *Degree Conditions for H-Linked Digraphs*, Atlanta Lecture Series IV, Georgia State University, November 6, 2011. (Invited)
 24. *New Degree Conditions for H-Linked Graphs and Digraphs*, Guest Lecture, Structural Graph Theory (Doctoral Topics Course), University of Nebraska-Lincoln, October 26, 2011. (Invited)
 25. *Pancyclicity of 4-connected, Claw-free Graphs*, Special Session on Extremal and Probabilistic Combinatorics, AMS Central Section Meeting, University of Nebraska-Lincoln, October 15, 2011. (Invited)
 26. *A Walk Through (Some of) Extremal Graph Theory*, Mathematical Sciences Department Colloquium, Georgia Southern University, September 22, 2011. (Invited)
 27. *Saturation Numbers for Families of Ramsey-minimal Graphs*, 2011 Wuhan International Graph Theory Workshop, Central China Normal University, Wuhan, China, June 2, 2011. (Invited)
 28. *Problems and Results on Packing Degree Sequences*, 2011 Wuhan International Graph Theory Workshop, Central China Normal University, Wuhan, China, June 3, 2011. (Invited)
 29. *Saturation Numbers for Families of Graph Subdivisions*, Special Session on Extremal Combinatorics, AMS Western Section Meeting, University of Nevada – Las Vegas, May 1st, 2011. (Invited)
 30. *List-Distinguishing Colorings of Graphs*, Combinatorics Session, MAA Rocky Mountain Section Meeting, University of Colorado Boulder, April 8th, 2011.
 31. *Saturation Numbers for Families of Ramsey-Minimal Graphs*, Discrete Mathematics Seminar, University of Nebraska-Lincoln, February 8th, 2011. (Invited)
 32. *Degree Sequence Variants of Some Classical Problems*, Mathematics Colloquium, Illinois Institute of Technology, Chicago, IL, January 24th, 2011. (Invited)
 33. *Degree Sum Conditions for H-Linked Graphs*, SIAM Minisymposium on Graph Theory, Joint Mathematics Meetings, New Orleans, LA, January 9, 2011. (Organizer)

External Education Research, Outreach and Programmatic Talks:

1. *A Comprehensive Program for Graduate Teacher Training*, Departmental Seminar, University of Central Florida, October 18, 2016. (Invited)
2. *A Comprehensive Program for Graduate Teacher Training*, Departmental Colloquium, Iowa State University, September 15, 2016. (Invited)
3. *The Impact of Organizing K-12 Outreach on Undergraduate STEM Majors*, Special Session on Classroom Innovations, Joint MAA Intermountain and Rocky Mountain Sectional Meeting, Colorado Mesa University, April 9, 2016. (Invited)
4. *The Rocky Mountain – Great Plains Graduate Research Workshop in Combinatorics – An Overview*, AMS Special Session on Research from the 2014 and 2015 Rocky Mountain – Great Plains Graduate Research Workshop in Combinatorics, Joint Mathematics Meetings, Seattle, WA, January 6, 2016. (Organizer)
5. *Building Relationships with K-12 Partners*, Project NExT Panel on Outreach, Joint Mathematics Meetings, Seattle, WA, January 8, 2016. (Invited)

Posters Presented:

1. *The Impact of Organizing K-12 Outreach on Undergraduate STEM Majors*, SENCER/Campus Compact High Impact Practices in STEM Regional Conference, University of Denver, June 9-10,

2016.

Teaching

Courses Taught

University of Colorado Denver

- Math 1111 – FYS: The Mathematics of Sports, Games and Gambling, *Fall 2010, Fall 2012, Fall 2014*
(Course Developer)
Math 2411 – Calculus II, *Spring 2010*
Math 2830 – Introductory Statistics, *Fall 2006*
Math 3000 – Introduction to Abstract Math, *Fall 2011, Spring 2007, 2011 – 2014, 2016.*
Math 3195 – Differential Equations and Linear Algebra, *Fall 2005, Spring 2006*
Math 3200 – Differential Equations, *Spring 2006*
Math 4015 – Capstone Course for Secondary Teachers, *Fall 2011-13*
(Course Developer)
Math 4408 – Applied Graph Theory, *Fall 2005*
Math 4409 – Applied Combinatorics, *Spring 2007, Spring 2013.*
Math 5008 – Discrete Math: Counting the Possibilities, *Summer 2006-07, Summer 2009*
(Course Co-Developer)
Math 6404 – Applied Graph Theory, *Fall 2009, Fall 2015*
Math 7023 – Topics in Extremal Graph Theory, *Fall 2006*
Math 7405 – Advanced Graph Theory, *Spring 2010, Spring 2012*
Math 7410 – Combinatorial Structures, *Spring 2015.*
Math 7823 – The Probabilistic Method in Combinatorics, *Fall 2010* (Course Developer)

The University of Akron

- Math 3450:415/515 – Combinatorics and Graph Theory, *Fall 2008*
Math 3450:636 – Advanced Combinatorics and Graph Theory, *Spring 2008, Spring 2009*
Math 3450:208 – Introduction to Discrete Mathematics, *Fall 2007, Fall 2008*
Math 3450:115 – Calculus I, *Spring 2008*

Emory University

- Math 116 – Calculus with Life Science Applications II, *Spring 2003, Spring 2004*
Math 115 – Calculus with Life Science Applications I, *Fall 2002, Fall 2003*
Math 109 – Games and Graphs, *Fall 2001, Spring 2002*
Emory PREP program, *Summer(s) 2002-2005*
- Developed and taught a general mathematics course for gifted college-bound minority students from the Atlanta area.

Stevens Institute of Technology

- MA 112 – Matrix Algebra with Computers, *Summer 2000*

Student Supervision and Mentoring

Doctoral Dissertations Directed:

1. Nathan Graber, *expected Spring 2019.*
2. Jennifer Diemunsch, “Three Problems in Structural and Extremal Graph Theory”, Currently Assistant Professor, St. Vincent College. Graduated Spring 2015. (Awarded **Outstanding CLAS Ph.D. Student**, *Spring 2015*).
3. Timothy Morris, “Cycles in Graphs”, Currently Assistant Professor, California State University – Sacramento, Graduated Spring 2014.

4. Catherine Erbes, "Extremal Problems for Degree Sequences", Currently Assistant Professor, Hiram College, Graduated Spring 2014.

Postdoctoral Researchers Supervised

1. Sogol Jahanbekam, *2013-Present*. Current Position: Assistant Professor at Rochester Institute of Technology.
2. Paul Wenger, *2010-2012*. Current Position: Assistant Professor at Rochester Institute of Technology.

Masters Theses Co-Directed:

1. *Perceived Quality and Brand Loyalty in One-to-one Marketing*, Sandra Addo (co-directed with G. Young, C. Clemons, T. Norfolk), The University of Akron, *completed Summer 2009*.
2. *A Game-Theoretic Approach to Quantitative Analysis in Football*, Erin McGough (co-directed with G. Young, C. Clemons, T. Norfolk), The University of Akron, *completed Summer 2009*.

Masters Projects Directed:

1. *The Impact of a TA Mentoring Program on Peer Mentors*, Robert Pearson (co-directed with R. Manzanares), *Spring 2016*.
2. *Poset Methods for Graphic Sequences*, Kapil Nepal, University of Colorado Denver, *Spring 2014*.
3. *Iterative Methods in the Secondary Classroom*, Andrea Nye. University of Colorado Denver, *Spring 2014*.
4. *Rainbow Matchings in Properly Edge-Colored Graphs*, Jennifer Diemunsch, University of Colorado Denver, *Spring 2012*. (Awarded **Outstanding CLAS M.S. Student**, Spring 2012)
5. *Introducing Discrete Mathematics in the 6-12 Curriculum*, Amineh Abdel-Qader, The University of Akron, *Summer 2009*.
6. *Some Irregular Graph Theory*. Jennifer Zakotnik. The University of Colorado Denver. *Spring 2007*

Undergraduate Research/Honors Projects Directed/Co-Directed:

1. *Saturation Numbers for Ramsey-Minimal Graphs* (Undergraduate Honors Project), Brent Moran (**Summa Cum Laude**) and Matthew Mowery (**Magna Cum Laude**), CU Denver, *Academic Years 2013-15*.
2. *Competitive Graph Coloring on Trees* (Undergraduate Honors Project), Lisa Beatty (**Magna Cum Laude**), Chris Fricks (**Cum Laude**) and Dan Kamis (**Cum Laude**), CU Denver, *Spring 2012*.
3. *Environmental Controls Using a Game-Theoretic Approach* (Undergraduate Honors Project), Danielle Ricciardi, (co- directed with G. Young, C. Clemons, T. Norfolk), The University of Akron, *Spring 2009*.
4. *The Game of Go on Graphs*, Geoff Ehrmann and Adam Martinez, The University of Akron, *Academic Year 2008-2009*.
5. *Irregular Chromatic Numbers of Graphs*. Christine Lee, CU Denver, *Academic Year 2006-2007*.
6. *Spacing Numbers of Trees*. Casey Moffat, Zachary Richards, Jennifer Ward (**Summa Cum Laude**) and Robert Torres, CU Denver, *Spring 2006*.

Undergraduate Honors Project Committees:

1. Melanie Bloch, Fall 2013 (Presentation of Summer REU Research).
2. Monica Blomker, *Polya's Enumeration Theorem*, Spring 2012 (Advisor: Mike Jacobson).

Doctoral Committees Served On (Excluding Advisees):

1. Eric Sullivan, CU Denver, *2016 - present*.
2. Luke Nelsen, CU Denver, *2016 - present*.
3. Sumbal Azeem, CU Denver, (Ph.D. in Mathematics Education), *2015 - present*.

4. Brent Thomas, CU Denver, completed 2016.
5. Axel Brandt, CU Denver, completed 2016.
6. Philip DeOrsey, CU Denver, completed 2015.
7. Timothy LeSaulnier, University of Illinois Urbana-Champaign, completed 2013.
8. Shilpa DasGupta, CU Denver, completed 2012.
9. Breeann Flesch, CU Denver, completed 2011.
10. Craig Tennenhouse, CU Denver, completed 2010.
11. John Weigand, CU Denver, completed 2007.

Comprehensive Exam Committees Served On (Excluding Doctoral Committees Above):

1. Casey Moffatt, CU Denver, 2013.
2. Deborah Arangno, CU Denver, 2012.
3. Samantha Graffeo, CU Denver, 2011.
4. Hank Turowski, CU Denver, 2010.

M.S. Thesis Committees Served On (Not Including Advisees):

1. David Banks-Richardson, CU Denver (M.S. in Integrative Biology), *anticipated Spring 2017*.
2. Peter Hornbein, CU Denver (M.S. in Mathematics Education), 2015.
3. Zachary Mantey, CU Denver (M.S. in Computer Science), 2015.
4. Richard Lambert, CU Denver (M.S. in Mathematics Education), 2014.
5. Husein Al-khulaif, CU Denver (M.S. in Computer Science), 2013.
6. Leslie Hamilton, CU Denver (M.S. in Mathematics Education), 2013-14.
7. Roqyah Alalqam, CU Denver (M.S. in Computer Science), 2012.

M.S. Project Committees Served On (Not Including Advisees):

1. Duong Than, CU Denver, 2016.
2. Mark Mueller, University of Colorado Denver, 2011.

Graduate Student Professional Development

- Co-Lead (w/Mike Jacobson, RaKissa Manzanares and Gary Olson), Mathematical and Statistical Sciences TA Training Program. [Supported by NSF Grant #1539602, 2015 – 2018]
- Lead Organizer, Rocky Mountain - Great Plains Graduate Research Workshop in Combinatorics, 2014 – present. [Supported by NSF Grants #1427526, 1500662, 1604458, and NSA Grant H98230-16-1-0018, along with funding from several other sources, 2014-18]
- Instructor and Co-Developer (w/ Inge Wefes, Laurel Hartley, Mitch Handelsman and Alleluia Rutebemberwa), CU Denver teacher training workshop for Graduate Students and Postdocs in the biomedical sciences, 2015-present.
- Communication Mentor, UCD GK-12 Program, *Academic Year 2013-14*.
- Invited Faculty Mentor, Research Experiences for Graduate Students (REGS) program, University of Illinois, *Summers 2012-13*.

Teaching in the Community:

- Creator/Coordinator, *Math on My Mind*, UCD Departmental Middle/High School Mathematics Outreach Program, 2009 – present.
- Faculty Lead, CU Denver *Community STEM Clubs* Program, 2014-present. [Supported by NSF 2Grant #1539602, 2015 – 2017]
- Co-Organizer (w/Brandy Wiegers and Diana White), Julia Robinson Math Festival (1st JRMF in Colorado, 325 attendees from grades 5-8).
- Co-Organizer (w/ Elizabeth Tarbutton), Hill Campus of Arts and Sciences “Pi Day Festival”, *March 14, 2015*. Approximately 75 attendees for a collection of STEM-themed presentations,

competitions and activities.

Educational Presentations for K-12 Students at Schools, CU Denver and in the Community Since 2014 (213 sessions total since 2007):

1. *Panelist, RMNP PBL Presentations* (3 panels, 7th grade), December 1, 2016.
2. *Linear Lasers*, (4 Sessions, 8-10th Grade), York International School, September 28, 2016.
3. *Greedy Pig – Risk and Reward*, (1 Session, 11-12th Grade), CU Denver Preview Day, September 9, 2016.
4. *Ricochet Robots and Zendo*, (2 Sessions, 4-8th Grade), Northern Colorado Math Circle, University of Northern Colorado, June 2, 2016.
5. *Extremal Graph Theory: Math on the Edge*, (1 Session, 11-12th grade), East High School, AP Computer Science Course, May 6, 2016.
6. *An Introduction to Ramsey Theory*, (1 Session, 9-12th Grade), East High School Math Club, May 6, 2016.
7. *What Do Mathematicians Do, Anyway?*, (1 Session, 6th Grade), CU Denver Campus Visit, April 11, 2016.
8. *Greedy Pig – Risk and Reward*, (1 Session, 12th Grade), CU Denver Preview Day, February 26, 2016.
9. *Relating Volume to Height in “Interesting” Containers*, (1 Session, 7-8th Grade), Altona Middle School, January 27, 2016.
10. *Greedy Pig*, Prospect Valley Elementary Girls’ STEM Club (1 Session, 3-5th Grade), December 10, 2015.
11. *Mathematical Games*, Foundations Academy (1 Session, 8th Grade), December 9, 2015.
12. *Linear Lasers and Surface Area, Volume and the Heart Rate of Mammals*, (3 Sessions, 9-10th Grade), York International School, September 22, 2015.
13. *Relating Volume to Height in “Interesting” Containers*, (1 Session, Elementary/Middle School Math Circle), York International School, July 1, 2015.
14. *Infinity*, (1 Session, 6-8th Grade), Hill Campus of Arts and Sciences, May 18, 2015.
15. *Kakuro and Team Tic-Tac-Toe*, (6 Sessions, 9-12th Grade, 1 Session 5-8th Math Circle), York International School, April 13, 2015.
10. *Zendo and Ricochet Robots*, (1 Session, 6-8th Grade), Parker Core Knowledge Charter School, March 16, 2015.
11. *Aliens, Cocktail Parties and Big Money!*, (1 Presentation), Hill Campus of Arts and Sciences Pi Day Festival, March 14, 2015.
12. *Zendo, Kakuro and the Taxman Game*, (4 Sessions, 5-8th Grade), Bromley East Charter School, February 20, 2015.
13. *Strategy and Risk*, (1 Session, 11-12th Grade), CU Denver Accepted Students’ Preview Day, February 13, 2015.
14. *Games for Problem Solving, Pattern Recognition and Critical Thinking*, (2 Sessions, 11-12th grade), Global Leadership Academy, January 21, 2015.
15. *Greedy Pig*, (2 Sessions, 3rd Grade), Thornton Elementary, January 8, 2015.
16. *Take Away Games*, (2 Sessions, 2nd Grade), Teller Elementary, December 12, 2014.
17. *Zendo*, (2 Sessions, 9-12th Grade), Englewood Student Support Center, November 18, 2014.
18. *Linear Lasers*, (6 Sessions, 9-12th Grade), York International School, October 28, 2014.
19. *Greedy Pig*, (1 Session, UCD Campus Visit), October 17, 2014.
20. *Greedy Pig*, (1 Session, CU Denver Preview Day), September 26, 2014.
21. *Planar Graphs on the Torus*, (1 Session, Middle School Math Circle), York International School, June 26, 2014.
22. *Ricochet Robots and SET*, (5 Sessions, 8-12th Grade), York International School, May 22, 2014.
23. *Greedy Pig*, (1 Session, Colorado History Day), May 3, 2014.

24. *Greedy Pig*, (1 Session, UCD Campus Visit), April 18, 2014.
25. *Surface Area, Volume and Heart Rate, Mathematical Zendo*, (4 Sessions, 9-12th Grade), York International School, March 21, 2014.
26. *Greedy Pig*, Parker Core Knowledge Academy (1 Session, Middle School Math Club), March 17, 2014.
27. *Leadership and Strategy*, Jeffco Voice (2 Sessions, UCD Campus Visit), February 28, 2014.
28. *Career Speed Dating*, Arvada High School Career Day, February 27, 2014.
29. *Greedy Pig*, Greeley Dream Team (1 Session, UCD Campus Visit, 10-12th grade), February 14, 2014.
30. *Zombies!, Mastermind and Kakuro*, Bromley East Charter School, (3 Sessions, 5-8th grade), January 24, 2014.
31. *Partitions of Integers*, York International School, (1 Session, High School Mathematics Honor Society), January 8, 2014.
32. *Surface Area, Volume and Heart Rate, Monty Hall*, York International School, (6 Sessions, 9-12th grade), January 8, 2014.

Teacher Professional Development:

- Co-Organizer. AdPed Summer Institute – 5 Day workshop centered on preparing elementary teachers (grades 3-5) to utilize student adaptive pedagogy in their classrooms, with a focus on multiplicative and fractional reasoning, *Summer 2016*.
- Mentor: UCD Research Experience for Teachers (RET) - Combinatorial Games Research Group, *Summers 2010-2011*.
- Co-organizer, Project AMP Workshop (Univ. of Akron) – Designed and taught 4 days of an 8-day distance-learning workshop for secondary teachers throughout Ohio, *Spring 2009*.

Teacher PD Workshops Led Since 2011 (20 Total Since 2009):

1. *The Blind Professor: Breaking the Symmetries of a Graph*, Northern Colorado Math Teachers' Circle, University of Northern Colorado, February 22, 2016.
2. *The Blind Professor: Breaking the Symmetries of a Graph*, Rocky Mountain Math Teachers' Circle, Saturday Workshop, November 7, 2015.
3. *Sum Products and Fermi Problems*, Rocky Mountain Math Teacher's Circle, Summer Workshop (1 Day), August 1, 2015.
4. *Mathematical Zendo*, Rocky Mountain Math Teacher's Circle, Saturday Workshop, November 1, 2014.
5. *Combinatorial Games*, Rocky Mountain Math Teacher's Circle, Summer Workshop (1 Day), July 9, 2014.
6. *Finite Automata – When is Regular Not So Much So?*, Rocky Mountain Math Teacher's Circle, Saturday workshop, October 5th, 2013.
7. *Estimation*, Rocky Mountain Math Teachers' Circle, Saturday workshop, October 6, 2012.
8. *Mathematical Zendo and Ricochet Robots*, Rocky Mountain Math Teachers' Circle, Saturday workshop, February 12, 2012.
9. *Probability and Counting*, Professional Development Workshop, Brighton High School, February 10, 2012.

Professional Service

Service to the Mathematical Community

Referee for *J. Comb. Theory Ser. B*, *Combinatorics*, *Probability and Computing*, *European J. of Combinatorics*, *J. of Graph Theory*, *SIAM J. Discrete Math*, *Electronic J. Combinatorics*, *Graphs and Combinatorics*, *Discrete Math*, *Discrete Applied Math*, *Canadian Math. Bulletin*, *JAMC*, *DMAA*, *Utilitas*

Math., JCMCC, AKCE Journal of Graphs and Combinatorics, JCISS.

Author of 16 Reviews for AMS *Mathematical Reviews*.

Workshops and Conferences Organized:

1. *The Rocky Mountain – Great Plains Graduate Research Workshop in Combinatorics*, (Co-lead organizer), held annually from Summer 2014. Funded by NSF-DMS Workshop Grants #1604458 (Collaborative; Lead PI), #1500662 (co-PI), #1427526 (PI) and NSA Grant H98230-16-1-0018 (co-PI), and grants from the IMA, Elsevier, ILAS and The Combinatorics Foundation.
2. *Westfest – Doug West is 60!* (co-organized with Stephen Hartke and Hemanshu Kaul), Institute of Mathematics and its Applications, June 20-21, 2014.
3. *Rocky Mountain Path and Cycle Workshop* (co-organized with Mike Jacobson), University of Colorado Denver, July 11-12, 2009.

Conference Sessions Organized:

1. *Special Session on Extremal Graph Theory* (co-organized with Stephen Hartke, Mike Jacobson and Florian Pender), AMS Western Section Meeting, University of Denver, October 8-9, 2016.
2. *AMS Special Session on Research from the 2014 and 2015 Rocky Mountain – Great Plains Graduate Research Workshop in Combinatorics* (co-organized with Leslie Hogben, Paul Horn and Derrick Stolee), Joint Mathematics Meetings, Seattle, WA, January 6, 2016.
3. *Minisymposium on Degree Sequences of Graphs and Hypergraphs*, SIAM Discrete Mathematics Meeting, Minneapolis, MN, June 16-19, 2014.
4. *Special Session on Extremal Graph Theory* (co-organized with Stephen Hartke and Mike Jacobson), AMS Western Section Meeting, University of Colorado Boulder, April 13-14, 2013.
5. *Special Session on Extremal Graph Theory* (co-organized with Arthur Busch), AMS Eastern Section Meeting, University of Akron, Akron, OH, October 21-22, 2012.
6. *SIAM Minisymposium on Graph Theory* (co-organized with Stephen Hartke), Joint Mathematics Meetings, New Orleans, LA, January 6-9, 2011.
7. *Special Session on Graph Theory* (co-organized with Arthur Busch and Nathan Kahl), AMS Eastern Section Meeting, NJIT, Newark, NJ, May 22-23, 2010.
8. *Paths, Cycles and Other Structures in Graphs* (co-organized with Mike Jacobson), SIAM National Meeting, Denver CO, July 10, 2009.
9. *Degree Sequences of Graphs and Digraphs*, Minisymposium, CanaDAM 2009, University of Montreal, May 27, 2009.

Other Service to the Mathematical Community

- *NSF Panel Reviewer*, 2013, 2014, 2015 (2x), 2016.
- *Invited Peer Reviewer*, South African National Research Foundation, Fall 2011, Fall 2013. Fall 2015.
- *Proposal Reviewer*, 2012 Initiation into Research Funding Competition, FONDECYT (Chile), Summer 2012.

Service at University of Colorado Denver

Departmental Service

Leadership:

- Graduate Program Director, Department of Mathematical and Statistical Sciences, University of Colorado Denver, *Fall 2013-Summer 2016*.
- Executive Committee, Department of Mathematical and Statistical Sciences, University of Colorado Denver, *Fall 2012- Summer 2016*.

Major Committee Appointments:

- Graduate Studies Committee, Department of Mathematical and Statistical Sciences, University of Colorado Denver, *Fall 2011-Summer 2016*.
- Undergraduate Studies Committee, Department of Mathematical and Statistical Sciences, University of Colorado Denver, *Academic years 2006 – 2007, 2009 – 2011*.
 1. Recruiting Coordinator: *AY 2009 – 2010*.
 2. Co-Coordinator: major undergraduate curriculum redesign, *Summer – Fall 2010*.
- Departmental Merit Committee, *Spring 2010, Spring 2013, Spring 2017 (Chair)*.

Student Advising and Seminar Coordination:

- Advisor, University of Colorado Denver Math Club, *Fall 2009-Spring 2013*.
- Advisor of 10-20 undergraduate math majors/year and “frontline advisor” handling unscheduled and unassigned major/minor advising, including regular advising of ICB students and mathematics education students, *2009 – 2015*.
- Organizer, Discrete Mathematics Seminar, University of Colorado Denver, *2009 – 2015*.
- Co-Organizer, Graph Theory Seminar, University of Colorado Denver, *Fall 2009-Present*.
- Organizer, University of Colorado Denver Classroom Technology Lecture Series, *Fall 2006*.
- Co-Organizer, University of Colorado Denver Graduate Combinatorics Seminar, *Fall 2006*.

Search Committees:

- Search Committee, Assistant Professor – Statistics, *Academic Year 2015-16*.
- Chair, Search Committee, Assistant Professor – Statistics, *Academic Year 2014-15*.
- Search Committee, Program Assistant, *Summer 2014, Summer 2012*.
- Chair, Search Committee, Assistant Professor – Combinatorial Optimization and Applied Combinatorics, *Academic Year 2013-14*.
- Search Committee, Visiting Assistant Professor (2 positions), *Spring and Summer 2013*.
- Search Committee, Administrative Assistant, *Summer-Fall 2013*.
- Search Committee, Assistant Professor – Statistics, *Academic Year 2012-13*.
- Search Committee, Assistant Professor – Graph Theory, *Academic Year 2011-12*.
- Search Committee, CU-Succeed (Dual Enrollment) Assessment Coordinator, *Fall 2010*.

Other Departmental Service:

- Graduate School Recruiting Fair, Joint Mathematics Meeting, *2013 – 2015*.
- Departmental Representative, New Teacher Expo, *Fall 2011*.
- Departmental Representative, UCD Major Fair, *Spring 2011, Fall 2011*.
- Course Captain, Math 2830 (Introductory Statistics), *Fall 2006*.
- Departmental Representative, UCD Open House, *Fall 2009, Spring 2010, Spring 2011*.

College and University Service

- Chancellor’s Action Group on K-12 Pipeline to CU Denver, *Fall 2016 – present*.
- Dean’s Advisory Committee, College of Liberal Arts and Sciences (Second-level Tenure and Promotion Committee), *Fall 2013 – Spring 2015*.
- Graduate Dean Search Committee, *Academic Year 2014-15*.
- Director of Financial Aid Search Committee, *Spring 2016*.
- North Classroom Renovation Working Group, *Academic Year 2015-16*.
- CLAS Committee on Graduate Program Funding, *2015*.
- CLAS and UCD Campus Teaching Award Committees, *Spring 2013, 2014*.

Community Service

- Creator and Coordinator, *Math on My Mind* community outreach program.
- Faculty Lead, *Community STEM Clubs* program, currently funded by NSF-DUE IUSE #1504535, from July 1, 2015.
- Organizing Committee and Fair STEM Activities Coordinator, Cardel Homes Denver Metro Regional Science Fair.
 - *Served as a liaison between CU Denver and the Science Fair Committee and organized approximately 50 volunteers to carry out hands-on activities, demonstrations and tours for 450+ science fair participants. 2016 – present.*
- Led over 200 outreach sessions for K-12 students.
- Led 20 teacher professional development workshops.
- Judge, Denver Metro Regional Science Fair, *Spring 2011*.

Memberships

American Mathematical Society
Mathematical Association of America
National Council of Teachers of Mathematics