

Curriculum Vitae

John R. Schmitt
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December 5, 2022

Employment:

Middlebury College, Middlebury, VT

Professor, July 2017 –

Associate Professor, July 2012 — June 2017,

Assistant Professor, July 2008 — June 2012.

Visiting Assistant Professor, July 2005 — June 2008.

Education:

Ph.D. in Mathematics, Emory University, 2005

Advisor – R. Gould, Thesis – On potentially P -graphic degree sequences and saturated graphs

M.S. in Mathematics, University of Vermont, 1998

B.A. in Mathematics, *cum laude* and Honors Program, Providence College, RI, 1994

Junior year at Homerton College, Cambridge University

Research Interests:

Combinatorics Extremal combinatorics, the polynomial method, additive combinatorics, design theory

Graph theory Saturated graphs of minimum size, Turán-type problems, degree sequences, graph pebbling

Visiting Appointments:

Karl Franzens Universität, Graz, Austria: *Fulbright-NAWI Graz Visiting Professor in the Natural Sciences*, February 2022 – July 2022.

Carnegie Mellon University, Pittsburgh, PA: *Visiting Assistant Professor*, July 2009 — June 2011. (As a result of NSF Grant no. DMS 0758057.)

Institute for Pure and Applied Mathematics, University of California Los Angeles, CA: *Fellow in Combinatorics: Methods and Applications in Mathematics and Computer Science*, September 2009 — December 2009.

Grants:

- Fulbright U.S. Scholar Award to Graz, Austria for “Delivering a New Master Key to Open Long-locked Doors: Polynomial Method for Combinatorial Problems”, February–July 2022.
- Presidential International Conference and Research Fund, Middlebury College, November 2019. For travel to Casa Matemática, Oaxaca, Mexico.
- Ada Howe Kent Fund, Middlebury College, 2016-2017, “The Polynomial Method”, for travel to an international workshop at Hebrew University of Jerusalem (December 2016).
- Presidential International Conference and Research Fund, Middlebury College, 2015-2016. For travel to Graz, Austria.
- Presidential International Conference and Research Fund, Middlebury College, 2014-2015. For travel to Budapest, Hungary.
- National Security Agency Mathematical Sciences Program Conference Grant for Discrete Mathematics Days of the Northeast, September 2014 – June 2015. PI - Rosa Orellana, Steering Committee: Seth Chaiken, Karen Collins, Sergi Elizalde, Jo Ellis-Monaghan, Bill Martin, Lauren Rose, John Schmitt, Julianna Tymoczko.
- National Security Agency Mathematical Sciences Program Conference Grant for Discrete Mathematics Days of the Northeast, July 2012 – June 2014. PI - Rosa Orellana, Steering Committee: Elizabeth Beazley, Seth Chaiken, Karen Collins, Sergi Elizalde, Jo Ellis-Monaghan, Bill Martin, Lauren Rose, John Schmitt.
- National Security Agency Mathematical Sciences Program Young Investigator’s Award for “Desirable realizations of degree sequences via the Joint Degree-Matrix Theorem”. Dec. 2009 — Dec. 2011. Grant no. H98230-10-1-0173.
- National Science Foundation Research Opportunity Award for collaborative work with Oleg Pikhurko (PI) of Carnegie Mellon University on “Turán Problem for Graphs and Hypergraphs”. July 2009 — July 2011. Grant no. DMS 0758057.
- Supervised work of Daniel Crow who was awarded Middlebury College’s Nelson R. Easton ’41 Research Fellowship, for “Constructing Realistic Complex Networks Given Degree Sequences and Specific Imposed Conditions”. Summer 2009
- Ada Howe Kent Fund, Middlebury College, 2009-2010, “Combinatorics and Extremal Graph Theory”.
- Vermont Experimental Program to Stimulate Competitive Research (VT-EPSCoR) Award, Summer 2008, “Constructing Cost-efficient Networks for the Transportation of Scarce and Consumable Resources”.
- Undergraduate Collaborative Research Fund, Middlebury College
 1. Summer 2021, “Saturated graphs of minimum size” - to support undergraduates Toby Weed (’23) and Ariel Silver (’21)
 2. Academic Year 2020–21 “Saturated graphs of minimum size” - to support undergraduates Bryan Currie (’22)

3. Summer 2020, “Saturated graphs of minimum size” - to support undergraduates Bryan Currie ('22) and Seamus Turco ('22)
4. Academic Year 2019–20, ”Buratti’s Conjecture” - to support undergraduates Tommaso Moncao ('20)
5. Summer 2019, “Buratti’s Conjecture” - to support undergraduates Tommaso Moncao ('20) and Chris Hauptfeld ('21)
6. Summer 2018, “Zero-sum Theory in Combinatorics” - to support undergraduates Kevin Collins ('20) and Jonathan Perlman ('19)
7. Spring 2015, “Distinct Partial Sums in Cyclic Groups” - to support undergraduates Tom Dobrow ('16) and Shrif Nada ('16)
8. Summer 2011, “Problems in Extremal Graph Theory” - to support undergraduate Alec Cooper ('13), contributing to publication [14]
9. Summer 2009, “Problems in Extremal Graph Theory” - to support undergraduate Ying (Daisy) Zhuo, '12.
10. Summer 2008, “Constructing Cost-efficient Networks for the Transportation of Scarce and Consumable Resources” - to support undergraduate Angelo Fu, '10.
11. Spring 2007, “Saturated graphs of minimum size” - to support undergraduate Sarri Al-Nashashibi, '08.

Peer-reviewed Journal Publications:

1. *A Constructive Upper Bound for Cycle Saturated Graphs of Minimum Size*, (with R. Gould, T. Luczak), *Electronic Journal of Combinatorics* **13** (2006) R29, 19pp.
2. *Minimum Degree and the Minimum Size of K_2^t -saturated graphs*, (with R. Gould), *Discrete Mathematics*, **307** (2007) 9-10, 1108–1114.
3. *Graphic Sequences with a Realization Containing a Friendship Graph*, (with M. Ferrara, R. Gould), *Ars Combinatoria*, **85** (2007), 161–171.
4. *A note on minimum $K_{2,3}$ -saturated graphs*, (with O. Pikhurko), *Australasian Journal of Combinatorics* **40** (2008), 211–215.
5. *Degree Sum Conditions in Graph Pebbling*, (with undergraduate student A. Blasiak), *Australasian Journal of Combinatorics* **42** (2008), 83–90.
6. *Graphic Sequences with a Realization Containing a Complete Multipartite Subgraph*, (with Guantao Chen, M. Ferrara, R. Gould), *Discrete Mathematics* **308** (2008) 23, 5712–5721.
7. *Graphic Sequences with a Realization Containing a Generalized Friendship Graph*, (with Gang Chen, J. Yin), *Discrete Mathematics* **308** (2008) 24, 6226–6232.
8. *Using Edge Exchanges to Prove the Erdős-Jacobson-Lehel Conjecture*, (with M. Ferrara, R. Gould), *Bulletin of the Institute of Combinatorics and its Applications* **56** (2009), 73–80.
9. *Potentially H -Bigraphic Sequences*, (with M. Ferrara, M. Jacobson, M. Siggers), *Discussiones Mathematicae Graph Theory* **29** (2009), 583–596.

10. *A General Lower Bound for Potentially H-Graphic Degree Sequences*, (with M. Ferrara), SIAM Journal on Discrete Mathematics **23** (2009) 1, 517–526.
11. *A survey of minimum saturated graphs*, (with J. Faudree and R. Faudree), Electronic Journal of Combinatorics **18** (2011), #DS19 (Version 1), 36pp. (See Version 2 below.)
12. *Saturation numbers for families of ramsey-minimal graphs*, (with Guantao Chen, M. Ferrara, R. Gould, C. Magnant), Journal of Combinatorics **2** (2011), 435–456.
13. *On the size and structure of graphs with a constant number of 1-factors*, (with A. Dudek), Discrete Mathematics **312** (2012), 1807–1811.
14. *Martin Gardner’s minimum no-three-in-a-line problem*, (with undergraduate student A. Cooper, O. Pikhurko, and G. Warrington), American Mathematical Monthly, **121** (2014), no. 3, 213–221.
15. *Warning’s Second Theorem with Restricted Variables*, (with P. L. Clark and A. Forrow), Combinatorica, **37** (2017) 3, 397–417.
16. *On zeros of a polynomial in a finite grid: the Alon-Füredi bound*, (with A. Bishnoi, P.L. Clark and A. Potukuchi), Combinatorics, Probability and Computing **27** (2018), 310–333.
17. *Distinct partial sums in cyclic groups: Polynomial method and constructive approaches*, (with J. Hicks and M. Ollis), Journal of Combinatorial Designs **27** (2019) 6, 369–385.
18. *New Methods to Attack the Buratti-Horak-Rosa Conjecture*, (with M. Ollis, A. Pasotti, and M. Pellegrini), Discrete Mathematics **344** (2021) 9.
19. *A survey of minimum saturated graphs*, (with undergraduate student B. Currie, J. Faudree and R. Faudree), Electronic Journal of Combinatorics (2021), #DS19 (Version 2), 98pp.
20. *Higher Degree Davenport Constants over Finite Commutative Rings*, (with B. Girard and Y. Caro), Integers: Electronic Journal of Combinatorial Number Theory **21** (2021), A120.
21. *Growable Realizations: Another Approach to the Buratti-Horak-Rosa Conjecture*, (with M. Ollis, A. Pasotti, and M. Pellegrini), Ars Mathematica Contemporanea **22** (2022), #4.04.
22. *Higher Degree Erdős-Ginzburg-Ziv Constants*, (with Y. Caro), Integers: Electronic Journal of Combinatorial Number Theory **22** (2022), A102.

Extended Abstracts:

An Erdős-Stone Type Conjecture, (with M. Ferrara), Electronic Notes in Discrete Mathematics (Proceedings of 6th Czech-Slovak Symposium, Prague) **28** (2006) 131-135.

On the Alon-Füredi bound, (with A. Bishnoi, P.L. Clark and A. Potukuchi), Electronic Notes in Discrete Mathematics (Proceedings of Discrete Mathematics Days, Barcelona 2016), Vol 54, October 2016, 57-62.

Courses Taught:

at Middlebury College (x) denotes x sections of a course

- Calculus I, F'08, S'09
- Calculus II, F'05 (2), F'06 (2), F'07 (2), S'08, S'11 (2), S'12 (2), S'13, F'13, F'16
- Introductory Statistics, S'06 (2)
- Linear Algebra, S'07 (2), F'08 (2), F'11 (2), S'13, S'14 (2), F'14, S'17(2), F'17, S'20, F'20(2), F'21
- Multivariable Calculus, F'07, F'12, F'13, F'14, S'18, F'18 (2), F'19, S'21
- Graph Theory, S'06, S'08, F'11, S'14, F'17, F'19, S'21
- Combinatorics, F'06, S'09, F'10, F'12, S'15, S'18, S'20, F'21
- The Mathematical Gardner (a first-year seminar), F'10, F'16
- The Combinatorial Gardner (a winter-term course), W'13
- Combinatorial Games and Puzzles (a winter-term course), W'06, W'08, W'11
- Senior Seminar, F'10, S'15
- The Polynomial Method (a senior seminar), S'17, F'18, F'20

at Karl Franzens Universität, Graz, Austria

- Grundthemen Number Theory: Additive Combinatorics, with a focus on the Polynomial Method, Sommersemester 2022

at Emory University

- Business Calculus, S'02, F'02, S'03
- Calculus I, F'01
- Calculus II, F'03
- Introductory Probability and Statistics, S'04
- Linear Algebra with Applications, F'04

at University of Vermont

- Calculus I, F'96, S'97, F'98 (2)

Relevant Prior Experience:

Emory University, Atlanta, GA: *Dean's Teaching Fellow*, September 2004 — June 2005. Responsible for teaching Linear Algebra with Applications.

Emory University, Atlanta, GA: *Graduate Teaching Associate (Assistant)*, September 2001 — August 2004 (September 2000 — August 2001). Responsible for teaching one undergraduate course each semester, including Calculus I, Calculus II, Business Calculus, and Probability and Statistics.

The Maret School, Washington, DC: *Teacher and Coach*, September 1998 — June 2000. Responsible for teaching four courses of high school mathematics, including AP Calculus, and coaching cross country and track and field.

University of Vermont, Burlington, VT: *Graduate Teaching Fellow*, September 1996 — May 1998. Taught Pre-Calculus and Calculus.

Phillips Academy, Andover, MA: *Faculty*, Summer 1997.

Presentations given:

- Combinatorial Constructions Workshop, U. Zagreb, Croatia, “Higher degree Davenport constants over finite commutative rings”, June 2022.
- Algebra and Number Theory Research Group Seminar, U. Graz, Austria, “Higher degree Davenport constants over finite commutative rings”, May 2022. (Invited)
- Institute of Algebra Seminar, Johannes Kepler University (U. Linz), Austria “The polynomial method is for combinatorial problems”, May 2022. (Invited)
- Algebra and Number Theory Research Group Seminar, U. Graz, Austria, “Additive Combinatorics and Polynomial Methods”, March 2022. (Invited)
- Combinatorial Designs and Codes, Satellite event of the 8th European Congress of Mathematics, on-line, July 2021, “New methods to attack the Buratti-Horak-Rosa Conjecture”.
- 52nd Southeastern International Conference on Combinatorics, Graph Theory and Computing, on-line, March 2021, “New methods to attack the Buratti-Horak-Rosa Conjecture”.
- U. Vermont Combinatorics Seminar, Burlington, VT, February 2020, “A combinatorial problem given to us by Dan Archdeacon”.(Invited)
- Zero-Sum Ramsey Theory: Graphs, Sequences and More Workshop at Casa Matemática, Oaxaca, Mexico, November 2019, “Counting weighted zero-sum subsequences with the polynomial method”. (Invited)
- 9th Slovenian International Conference on Graph Theory, Bled, Slovenia, June 2019, “Distinct Partial Sums in Cyclic Groups”.
- Carleton Finite Fields Workshop, Carleton University, Ottawa, Canada, May 2019, “Distinct Partial Sums in Cyclic Groups”.
- 50th Southeastern International Conference on Combinatorics, Graph Theory, and Computing, Florida Atlantic University, March 2019, “Distinct Partial Sums in Cyclic Groups”.
- Colby College Mathematics Seminar, February 2019, “Martin Gardner’s No-3-in-line Problem”. (Invited)
- Summer Combinatorics in Vermont (at St. Michael’s College), July 2018, “Distinct Partial Sums in Cyclic Groups”.
- SIAM Conference on Discrete Mathematics (Mini-symposium on Graph Pebbling) , Denver, CO, June 2018, “On Some Questions Regarding Class 0 Graphs”.(Invited)

- Combinatorial and Additive Number Theory Workshop, CUNY Graduate Center, New York City, May 2018, “Distinct Partial Sums in Cyclic Groups”.
- George Mason University, Combinatorics, Algebra and Geometry Seminar, Fairfax, VA, October 2016, “On Zeros of a Polynomial in a Finite Grid: the Alon-Füredi Bound”. (Invited)
- American Mathematical Society Sectional Meeting (Special Session on New Developments in Graphs and Hypergraphs), Brunswick, ME, September 2016, “Chevalley-Waring Meets Hypergraphs: Counting Sub-hypergraphs with Union Cardinality 0 Modulo q ”. (Invited)
- SIAM Conference on Discrete Mathematics, Atlanta, GA, June 2016, “On Zeros of a Polynomial in a Finite Grid: the Alon-Füredi Bound”.
- Atlanta Lecture Series in Combinatorics and Graph Theory, Georgia State University, April 2016, “Martin Gardner’s No-3-in-line Problem”. (Invited)
- Combinatorial and Additive Number Theory, Karl-Franzens-Universität - University of Graz (Austria), January 2016, “On Zeros of a Polynomial in a Finite Grid: the Alon-Füredi Bound”.
- Topology et al. Seminar, Wesleyan University, October 2015, “Two tools from the polynomial method toolkit”. (Invited)
- Summer Combinatorics in Vermont (at St. Michael’s College), July 2015, “Counting sub-hypergraphs with union cardinality 0 (mod q)”.(Invited)
- 12th International Conference on Finite Fields and Their Applications (Saratoga Springs, NY), July 2015, “Warning’s Second Theorem with restricted variables”.
- Virginia Commonwealth University, Pebblefest, March 2015, “On a Conjecture of Benjamin Girard”. (Invited)
- University of Georgia, Number Theory Seminar, February 2015, “Warning’s Second Theorem with restricted variables”. (Invited)
- University at Albany, Mathematics Colloquium, January 2015, “Warning’s Second Theorem with restricted variables”. (Invited)
- University of Vermont / St. Michael’s College Discrete Mathematics Seminar, December 2014, “A lower bound on the number of common roots of a polynomial system”. (Invited)
- Institute for Mathematics and its Applications (at the University of Minnesota), Minneapolis, MN, poster presentation “Warning’s Second Theorem with restricted variables”, September 2014. (Invited)
- Summit:240 Conference at Eötvös University, Budapest, Hungary, “Warning’s Second Theorem with restricted variables”, July 2014. (Invited)
- Karl-Franzens-Universität - University of Graz (Austria), Algebra and Number Theory Seminar, “Warning’s Second Theorem with restricted variables”, July 2014. (Invited)
- SIAM Conference on Discrete Mathematics, Minisymposium on Design Theory, Minneapolis, MN, June 2014, (Invited) “Approaching the minimum number of clues Sudoku problem via the polynomial method”.

- Summer Combinatorics in Vermont at St. Michael's College, July 2013 "Approaching the minimum number of clues Sudoku problem via the polynomial method".
- M.I.T. Combinatorics Seminar, February 2013 (Invited) *and*
Dartmouth College Combinatorics Seminar, February 2013, (Invited) *and*
Combinatorics: Methods and Applications in Mathematics and Computer Science, Institute for Pure and Applied Mathematics, UCLA, June 2012, (Invited) *and*
University of Vermont / St. Michael's College Discrete Mathematics Seminar, November 2011, (Invited) *and*
Middlebury College Mathematics Seminar, September 2011, "Martin Gardner's No-3-in-line Problem".
- Combinatorics: Methods and Applications in Mathematics and Computer Science, Institute for Pure and Applied Mathematics, UCLA, June 2011, "On sparse graphs with low pebbling number". (Invited)
- Algorithms, Combinatorics & Optimization Seminar, Carnegie Mellon U., March 2011 (Invited) *and*
42nd Southeastern International Conference on Combinatorics, Graph Theory, and Computing, Florida Atlantic University, March 2011 *and*
U. of Vermont / St. Michael's College Discrete Mathematics Seminar, October 2010 (Invited) *and*
8th French Combinatorial Conference, University of Paris Sud, June 2010 *and*
Society of Industrial and Applied Mathematics Discrete Mathematics Conference, Minisymposium on Extremal Graph Theory, Austin, TX, June 2010, (Invited) "An extremal problem for a constant number of 1-factors".
- Middlebury College Mathematics Seminar, September 2010, "Friendships and Dorm Assignments".
- American Mathematical Society Sectional Meeting, Newark, NJ, May 2010, (Invited) *and*
University of Colorado Denver, Discrete Mathematics Seminar, April 2010, (Invited) *and*
University of Vermont / St. Michael's College Discrete Mathematics Seminar, March 2010, (Invited) *and* Institute for Pure and Applied Mathematics at UCLA, Lake Arrowhead, CA, December 2009 (Invited), "Minimum saturated graphs and ramsey graphs".
- Dartmouth College Combinatorics Seminar, February 2010, (Invited) *and*
Arizona State University, Discrete Mathematics Seminar, March 2009, (Invited) *and*
University of Vermont / St. Michael's College Discrete Mathematics Seminar, November 2008, (Invited) "The generalized degree sequence problem".
- British Combinatorics Conference, St. Andrew's, Scotland, UK, July 2009, "Graph pebbling in sparse graphs".
- Discrete Mathematics Day of the Northeast, Burlington, VT, June 2009, (Invited) *and*
Dartmouth College Combinatorics Seminar, October 2008, (Invited) "A dual to the Turán problem".
- VT EPSCOR Annual State Meeting, June 2011, (Invited) *and*
VT EPSCOR Annual State Meeting, March 2010, (Invited) *and*

VT EPSCoR Annual State Meeting, June 2009, (Invited) poster presentation of “Constructing Cost-Efficient Networks for the Transportation of Scarce and Consumable Resources”.

- 2nd Canadian Discrete and Algorithmic Mathematics Conference, Montreal, Canada, May 2009, “A Lower Bound for Potentially H -Graphic Sequences”.
- American Mathematical Society Sectional Meeting, Urbana-Champaign, Illinois, March 2009, “Potentially H -bigraphic degree sequences”.
- Governor’s Institute in Mathematical Sciences, University of Vermont
 - “Instant Insanity”, June 2021. (Invited)
 - “How to Beat your Friends at the Dots-and-Boxes Game”, June 2020 (given virtually due to COVID-19). (Invited)
 - Finite Projective Geometry, June 2018. (Invited)
 - “The Game of SET”, June 2016. (Invited)
 - (3 lectures) “Hexaflexagons”, “Tower of Hanoi”, and “Measuring Water”, June 2015. (Invited)
 - “How to Beat your Friends at the Dots-and-Boxes Game”, June 2014. (Invited)
 - “The Calculus of Finite Differences: Pancakes, Donuts and Cheesecake”, June 2012. (Invited)
 - “Instant Insanity”, June 2010. (Invited)
 - “The game of hex”, June 2009. (Invited)
 - “How to Beat your Friends at the Dots-and-Boxes Game”, June 2008. (Invited)
- SIAM Conference on Discrete Mathematics, Burlington, VT, June 2008, “Minimum Size of a Graph of Given Diameter”.
- AMS-MAA Joint Meetings, San Diego, CA, Jan. 2008 and Summer Combinatorics in Vermont Conference, St. Michael’s College, July 2008, “Degree Sum Conditions in Graph Pebbling”.
- 21st British Combinatorial Conference, Reading, UK, July 2007, “Minimum Size of Bipartite-Saturated Graphs”.
- 20th Cumberland Conference, Atlanta, GA, May 2007, “Sum Degree of No Class”.
- University of Vermont Mathematics Colloquium, April 2007, “Extremal Problems on Bipartite Graphs”. (Invited)
- Middlebury College Mathematics Seminar, March 2007, “Erdős, an Extreme Character”.
- University of Colorado, Denver, Discrete Mathematics Seminar, September 2006, “Recent Results and Open Problems on Saturated Graphs of Minimum Size”. (Invited)
- Horizons of Combinatorics, Lake Balaton, Hungary, July 2006, “On a Relationship of Two Extremal Functions”. (Support from the European Mathematical Society.)
- 6th Czech-Slovak International Symposium on Combinatorics, Graph Theory, Algorithms and Applications, Prague, Czech Republic, July 2006, “An Erdős-Stone Type Conjecture”. (Partial support from DIMATIA of Charles University.)

- SIAM Conference on Discrete Mathematics, Victoria, Canada, June 2006, “A Lower Bound on Potentially F -Graphic Degree Sequences”.
- Middlebury College Mathematics Seminar, October 2005, “The Efficiency of the Bicycle Wheel”.
- University of Vermont / St. Michael’s College Discrete Mathematics Seminar, October 2005, “The Minimum Size of Saturated Graphs”. (Invited)
- Workshop on Extremal Graph Theory, Carnegie Mellon University, May 2005, “Cycle-saturated graphs of minimum size”. (Invited)
- University of Vermont/ St. Michael’s College Discrete Mathematics Seminar, April 2005, “On a Problem in Extremal Graph Theory”. (Invited)
- 36th Southeastern Intl. Conference on Comb., Graph Theory, Computing, Boca Raton, FL, March 2005, “ K_2^t -saturated graphs of minimum size”.
- AMS-MAA Joint Meetings, Atlanta, GA, Jan. 2005.
- Emory Mathematics Graduate Student Seminar, Atlanta, GA, June 2003, “Degree Sequences”.
- Workshop on Extremal Graph Theory, Csopak, Hungary, June 2003, “Potentially K_s^t -Graphic Degree Sequences”.

Professional Activities and Service:

- *Local Organizer*, Discrete Mathematics Days of Northeast (a one day conference), Middlebury, VT, September 2014, September 2012 and September 2007
- *Secretary*, Society for Industrial and Applied Mathematics Activity Group on Discrete Mathematics, January 2010 – December 2011
- *Referee*, Moscow Journal of Combinatorics and Number Theory; Journal of Graph Theory; Discrete Mathematics; Discrete Applied Mathematics; Discussiones Mathematicae Graph Theory; Designs, Codes and Cryptography; Electronic Journal of Combinatorics; European Journal of Combinatorics; Australasian Journal of Combinatorics; Graphs and Combinatorics; International Journal of Combinatorics; Involve: a journal of mathematics; Journal of Combinatorial Mathematics and Combinatorial Computing; Acta Mathematica Sinica, English Series.
- *Reviewer*, Mathematical Reviews Database
- *Reviewer*, zbMATH Open
- *Host*, Middlebury College’s Friends of International Students Program, 2006–2014, 2016–.
- *Founder, President* of Emory University Society of Industrial and Applied Mathematics (SIAM) Student Chapter, September 2003 — May 2005
- *Organizer*, Emory Mathematics Graduate Student Seminar, 2001 – 2003

- *Graduate Student Representative*, Emory Student Health Insurance Advisory Committee, 2002 – 2005
- *Volunteer Cross Country Coach*, U. Vermont, Fall 1996 – 97

College Service

- Spiritual Life Advisory Board, 2019 – 2020
- Faculty Resource Committee, 2017 – 2020
- Committee on Assessment, an *ad hoc* committee of the Educational Affairs Committee, 2016 – 2017
- Taskforce on Priorities and Resources, 2014 – 2015
- Admissions and Financial Aid Advisory Committee, 2011– 2014
- Curriculum Committee, 2008 – 2009
- New Faculty Mentor Program, 2010 – 2013, 2016 – 2017, 2018– 2019

Awards:

- 2016 Perkins Award for Excellence in Teaching, Middlebury College
- Nominated for Student Government Association Marjorie Lamberti Faculty Appreciation Award, Spring 2013
- 2008 Perkins Award for Excellence in Teaching, Middlebury College
- Marshall Hall, Jr., Award (Mathematics Department of Emory University Teaching Award), April 2004
- Dean’s Teaching Fellowship, Emory University, 2004-2005
- “Excellence in Teaching”, U. Vermont Mathematics Dept., March 1998
- Nominated Graduate Teaching Fellow of the Year, U. Vermont, March 1998
- Junior Year Abroad, Cambridge University, Homerton College, 1992-1993
- Graduate of Liberal Arts Honors Program, Providence College
- Academic All-Big East, 1992
- Member of Pi Mu Epsilon

Undergraduate Theses Directed:

- Seamus Turco, “An Application of Combinatorial Nullstellensatz for finding the List-Distinguishing Number”, Summer 2021

- Molly Colwell, “On Proving Snevily’s Conjecture: Third Proof’s the Charm”, Fall 2020
- Tobie Gumener, “Lucky and Lucky Choice Numbers of Graphs”, Fall 2020
- Chris Hauptfeld, “Every Nontrivial Graph of Maximum Degree 4 is 4-Weight Choosable”, Fall 2020
- Carl Langaker, “Calculating the Neighbor Sum Distinguishing Chromatic Index of Sparse Graphs Using Noga Alon’s Combinatorial Nullstellensatz”, Fall 2020
- Graham Rainsby, “Applying the Combinatorial Nullstellensatz to Frame Hertz and Picouleau’s Conjecture”, Fall 2020
- Henry Cutting, “A Linear Extension of the Erdős-Heilbronn Conjecture”, Fall 2018
- Sadie Dutton, “Proofs of the Combinatorial Nullstellensatz”, Fall 2018
- Jiguang Li, “The Chevalley-Waring Theorem: Its Proofs, Generalizations, and Applications”, Fall 2018
- Zihan Selena Ling, “Generalization of Combinatorial Nullstellensatz: Coefficient Formula and its Applications”, Fall 2018
- David McDaniel, “Instances of Snevily’s Conjecture and Selected Extensions”, Fall 2018
- Jonathan Perlman, “Applications of the Polynomial Method in Zero-Sum Combinatorics”, Fall 2018
- Christina Puccinelli, “A Journey Along the Number Line: The Grasshopper Problem”, Fall 2018
- Cole Sutton, “The Footprint Bound and its Applications”, Fall 2018
- Yasmeen Byrnes, “The Couples Seating Problem and its Generalizations”, Spring 2017
- Gabriel Doble, “Two Ways to Color Inside the (Vertices Connected by the) Lines: Algebraic and Combinatorial Approaches to Graph Colorability”, Spring 2017
- Shannia Fu, “Comparing Proofs of the Coefficient Formula in the Context of the Combinatorial Nullstellensatz”, Spring 2017
- Josh Nislick, “Extending the Combinatorial Nullstellensatz with Multiplicity and Puncturing”, Spring 2017
- Sirawit (Blink) Woramongkhon, “Progress on improving the lower bound of the No-Four-On-a-Circle Problem”, Spring 2017 – winner of departmental thesis prize
- Wentao Yu, “Additive Number Theory with the Polynomial Method”, Spring 2017
- Grace Woroch, “Proofs and Applications of the Cauchy-Davenport Theorem”, Spring 2017
- Hannah Tiberend, “List Coloring: Algebraic and Combinatorial Approaches”, Spring 2015
- David Park, “Applying Algebra to Combinatorics through the Chevalley-Waring Theorem”, Spring 2015

- Prottoy Akbar, “Bounds on the Size of Percolating Sets in Bootstrap Percolation”, Spring 2013. Supported in part by a Middlebury College / Mellon Foundation Research Grant.
- Samuel Murray, “A Game of Queens”, Spring 2013
- Aden Farrow, “Alon’s Combinatorial Nullstellensatz and the Polynomial Method”, Fall 2012 – co-winner of departmental thesis prize
- Erik Fendik, “Sperner’s Lemma Applied to the Rental Harmony Problem”, Fall 2012
- Michael Graham, “Random Graphs: Connectivity, Growth Phases, and Thresholds”, Spring 2012
- Dirk van Duym, “Solving the Stable Marriage Problem: The Gale-Shapley Algorithm and Some Extensions”, Fall 2011
- Donovan Dickson, “Sperner’s Theorem, Intersecting-Set-Pair Systems and Applications in Extremal Graph Theory ”, Spring 2011
- Kimberly Ammons, “Brooks’ Graph Coloring Theorem and Some of its Extensions”, Spring 2011
- Benjamin Liang, “The Probabilistic Method in Combinatorial Applications”, Fall 2008
- Benjamin Molberger, “Combinatorial Game Theory: Choosing the Right Move”, Fall 2008
- Sarri Al-Nashashibi, “Coding Theory and the Pathological Liar Game”, Fall 2007
- Anna Blasiak, “Graph Pebbling”, Fall 2006 – winner of departmental thesis prize
- Benjamin Rowe, “Consequences of the Axiom of Choice”, Spring 2006
- Timothy Bahls, “A Variation of Multi-Color Ramsey Numbers”, Fall 2005
- Anthony Santolupo, “On the Minimum Size of Q_2 -Saturated Hypercubes”, Fall 2005 (Note: a conjecture in Tony’s thesis has now been resolved in the negative, see arxiv.org/abs/1406.1766.)