Ryan R. Martin

Curriculum Vitae

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Employment Publications Talks Teaching Service Awards

Research Extremal graph theory; extremal poset theory; probabilistic combinatorics.

Education

Rutgers University Ph.D.in Mathematics, October 2000
Adviser: Prof. Endre Szemerédi.
Dissertation: *On graph packing, induced subgraphs and intersecting hypergraphs*

University of Delaware B.S., Summa cum laude, June 1995
Major: Mathematical Sciences; minor: Computer and Information Sciences.
Degree with Distinction, Thesis advisers: Felix Lazebnik, Wenbo Li.
Thesis title: *Minimum expected time of random walks on rooted trees*

Employment History

Dates	Title	Location
2014 - present	Professor	Iowa State University
2009 - 2014	Associate Professor	Iowa State University
2003 - 2009	Assistant Professor	Iowa State University
2000 - 2003	Zeev Nehari Visiting Asst. Professor	Carnegie Mellon University
1995 - 2000	Graduate/Teaching Assistant	Rutgers University

Editor-in-Chief ORDER: A journal on the theory of ordered sets and its applications, published by Springer, January 2016-Present.

Selected Financial Support

Deutscher Akademischer Austauschdienst (DAAD), Program 57442043, Karlsruhe Institute of Technology, January 2020 to April 2020 (6,450 €).

Fulbright scholar, Alfréd Rényi Institute for Mathematics and Budapest Semesters in Mathematics, September 2019 to December 2019 ($12,300 + 520,000 HUF).

National Science Foundation (NSF) Grant

- (Co-PI, with PI L. Hogben and co-PIs B. Lidický, H. Schenck, M. Young): RTG: Combinatorics, Computation and Applications at ISU (DMS-1839918), May 2019 to May 2024 ($1,500,000, 0% share).
- (Co-PI, with PI M. Axenovich): Extremal Problems on Hereditary Properties and Partitions of Combinatorial Structures (DMS-0901008), August 2009 to July 2012 ($174,993, 50% share).

Simons Foundation: Collaboration Grants for Mathematicians:

- Extremal combinatorics on graphs and posets (#709641), 2020-2025 ($42,000).
- Extremal Tiling and Density Problems in Graphs and Hypergraphs (#353292), 2015-2020 ($35,000).

National Security Agency (NSA) Grants (PI):

- H98230-13-1-0226: 2012 to 2014 (Standard Grant, $57,266).
- H98230-08-1-0015: 2008 to 2010 (Young Investigator Grant, $30,000).
- H98230-05-1-0257: 2005 to 2007 (Young Investigator Grant, $30,000).

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Publications

In Acrobat Reader, click the title to see the paper or [arXiv] to read the preprint.

Submitted Publications:

[58] R.R. Martin and A.W.N. Riasanovsky, On the edit distance function of the random graph, submitted. (33pp.) [arXiv]

[57] M. Axenovich and R.R. Martin, Splits with forbidden subgraphs, submitted. (12pp.) [arXiv]

[56] D. Ghosh, E. Győri, R.R. Martin, A. Paulos, and C. Xiao, Planar Turán number of the 6-cycle, submitted. (27pp.) [arXiv]

[55] D. Ghosh, E. Győri, R.R. Martin, A. Paulos, N. Salia, C. Xiao, and O. Zamora, The maximum number of paths of length four in a planar graph, submitted. (9pp.) [arXiv]

[54] B. Keszegh, N. Lemons, R.R. Martin, D. Pálvölgyi, and B. Patkós, Induced and non-induced poset saturation problems, submitted. (25pp.) [arXiv]

Publications to appear:

[53] A. Blumenthal, B. Lidický, R.R. Martin, S. Norin, F. Pfender, and J. Volec, Counterexamples to a conjecture of Harris on Hall ratio, *SIAM J. Discrete Math.*, to appear. (11pp.) [arXiv]

Journal Publications:

[52] R.R. Martin, H.C. Smith, and S. Walker, Improved bounds for induced poset saturation, *Electron. J. Combin.*, **27**(2) (2020), Research Paper P2.31. (9pp.) [arXiv]

[51] J. Kim, R.R. Martin, T. Masařík, W. Shull, H.C. Smith, A. Uzzell, and Z. Wang, On difference graphs and the local dimension of posets, *European J. Combin.* **86** (2020), Article 103074. DOI:10.1016/j.ejc.2019.103074 [arXiv]

[50] M. Dairyko, M. Ferrara, B. Lidický, R.R. Martin, F. Pfender, and A. Uzzell, Ore and Chvátal-type degree conditions for bootstrap percolation from small sets, *J. Graph Theory* **94**(2) (2020), 252–266. DOI:10.1002/jgt.22517 [arXiv]

[49] A. Bernshteyn, O. Khormali, R.R. Martin, J. Rollin, D. Rorabaugh, S. Shan, and A. Uzzell, Regular colorings and factors of regular graphs, *Discuss. Math. Graph Theory*, **40**(3) (2020), 795–806. DOI:10.7151/dmgt.2149 [arXiv]

[48] R.R. Martin, A. Methuku, A. Uzzell, and S. Walker, A simple proof for a forbidden subposet problem, *Electron. J. Combin.*, **27**(1) (2020), Research Paper P1.31. (9pp.) [arXiv]

[47] Zh. Berikkyzy, R.R. Martin, and C. Peck, On the edit distance of powers of cycles, *Discrete Math.* **342**(10) (2019), 2804–2817. DOI:10.1016/j.disc.2018.09.018 [arXiv]

[46] M. Axenovich, J. Goldwasser, R. Hansen, B. Lidický, R.R. Martin, D. Offner, J. Talbot, and M. Young, Polychromatic colorings on the integers, *Integers* **19** (2019), Research Paper A18. (17pp.) [arXiv]

[45] C. Erbes, M. Ferrara, R.R. Martin, and P. Wenger, On the approximate shape of degree sequences that are not potentially H-graphic, *J. Comb.* **10**(2) (2019), 339–363. DOI:10.4310/JOC.2019.v10.n2.a9 [arXiv]

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Publications (cont.)

Journal Publications (cont.):

[44] J. Goldwasser, B. Lidický, R.R. Martin, D. Offner, J. Talbot, and M. Young, Polychromatic colorings on the hypercube, *J. Comb.* **9**(4) (2018), 631–657. DOI:10.4310/JOC.2018.v9.n4.a4 [arXiv]

[43] C. Erbes, M. Ferrara, R.R. Martin, and P. Wenger, Stability of the potential function, *SIAM J. Discrete Math.* **32**(3) (2018), 2313–2331. DOI:10.1137/16M1109643 [Journal Copy] [arXiv]

[42] K. Hogenson, R.R. Martin, and Y. Zhao, Tiling tripartite graphs with 3-colorable graphs: The extreme case, *Graphs Combin.* **34**(5) (2018), 1049–1075. DOI:10.1007/s00373-018-1929-1 [Journal Copy] [arXiv]

[41] M. Axenovich, J. Goldwasser, R. Hansen, B. Lidický, R.R. Martin, D. Offner, J. Talbot, and M. Young, Polychromatic colorings of complete graphs with respect to 1-,2-factors and Hamiltonian cycles, *J. Graph Theory*, **87**(4) (2018), 660-671. DOI:10.1002/jgt.22180 [Journal Copy] [arXiv]

[40] M. Ferrara, B. Kay, L. Kramer, R.R. Martin, B. Reiniger, H. Smith, and E. Sullivan, The saturation number of induced subposets of the Boolean lattice, *Discrete Math.*, **340**(10) (2017), 2479–2487. DOI:10.1016/j.disc.2017.06.010 [Journal Copy] [arXiv]

[39] R.R. Martin, R. Mycroft, and J. Skokan, An asymptotic multipartite Kühn-Osthus theorem, *SIAM J. Discrete Math.*, **31**(3) (2017), 1498–1513. DOI:10.1137/16M1070621 [Journal Copy] [arXiv]

[38] R.R. Martin and J. Skokan, Asymptotic multipartite version of the Alon-Yuster theorem, *J. Combin. Theory Ser. B*, **127** (2017), 32–52. DOI:10.1016/j.jctb.2017.05.004 [Journal Copy] [arXiv]

[37] R.R. Martin and S. Walker, A note on the size of N-free families, *European J. Math.* **3**(2) (2017), 429–432. DOI:10.1007/s40879-017-0139-3 [Journal Copy] [arXiv]

[36] J. Balogh, B. Csaba, R.R. Martin, and A. Pluhár, On the path separation number of graphs, *Discrete Appl. Math.* **213** (2016), 26–33. DOI:10.1016/j.dam.2016.05.022 [Journal Copy] [arXiv]

[35] S. Butler, C. Erickson, L. Hogben, K. Hogenson, L. Kramer, R.L. Kramer, J.C.-H. Lin, R.R. Martin, D. Stolee, N. Warnberg, and M. Young, Rainbow arithmetic progressions, *J. Comb.* **7**(4) (2016), 595–626. DOI:10.4310/JOC.2016.v7.n4.a3 [Journal Copy] [arXiv]

[34] R.R. Martin, On the computation of edit distance functions, *Discrete Math.* **338**(2) (2015), 291–305. DOI:10.1016/j.disc.2014.09.005 [Journal Copy] [arXiv]

[33] R.R. Martin and T. McKay, On the edit distance from $K_{2,t}$-free graphs, *J. Graph Theory* **77**(2) (2014), 117–143. DOI:10.1002/jgt.21777 [Journal Copy] [arXiv extended version]

[32] M. Axenovich, R.R. Martin, and T. Ueckerdt, Twins in graphs, *European J. Combin.* **39** (2014), 188–197. DOI:10.1016/j.ejc.2014.01.007 [Journal Copy] [arXiv]

[31] R.R. Martin, The edit distance function and symmetrization, *Electron. J. Combin.* **20**(3) (2013), Research Paper 26. (25pp.) [Journal Copy] [arXiv]

[30] L. Kramer, R.R. Martin, and M. Young, On diamond-free subposets of the Boolean lattice, *J. Combin. Theory Ser. A* **120**(3) (2013), 545–560. DOI:10.1016/j.jcta.2012.11.002 [Journal Copy] [arXiv]

[29] R.R. Martin and J. Smith, Induced saturation number, *Discrete Math.* **312**(21) (2012), 3096–3106. DOI:10.1016/j.disc.2012.06.015 [Journal Copy] [arXiv]

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Publications (cont.)

Journal Publications (cont.):

[28] M. Axenovich, J. Manske, and R.R. Martin, Q_2-free families in the Boolean lattice, *Order* **29**(1) (2012), 177–191. DOI:10.1007/s11083-012-9263-3 [Journal Copy] [arXiv]

[27] M. Axenovich and R.R. Martin, Multicolor and directed edit distance, *J. Comb.* **2**(4) (2011), 525–556. DOI:10.4310/JOC.2011.v2.n4.a4 [Journal Copy] [arXiv]

[26] A. Csernenszky, R.R. Martin, and A. Pluhár, On the complexity of Chooser-Picker positional games, *Integers* **11** (2011), Research Paper G2. (16pp.) DOI:10.1515/integ.2011.113 [Journal Copy] [arXiv]

[25] R.R. Martin and B. Stanton, Lower bounds for identifying codes in some infinite grids, *Electron. J. Combin.* **17**(1) (2010), Research Paper 122. (16pp.) [Journal Copy] [arXiv]

[24] T. Hall, L. Hogben, R.R. Martin, and B. Shader, Expected values of parameters associated with the minimum rank of a graph, *Linear Algebra Appl.* **433**(1) (2010), 101–117. DOI:10.1016/j.laa.2010.01.036 [Journal Copy] [arXiv]

[23] R.R. Martin and Y. Zhao, Tiling tripartite graphs with 3-colorable graphs, *Electron. J. Combin.* **16**(1) (2009), Research Paper 109. (16pp.) [Journal Copy] [arXiv]

[22] J. Balogh, R.R. Martin, and A. Pluhár, The diameter game, *Random Structures Algorithms* **35**(3) (2009), 369–389. DOI:10.1002/rsa.20280 [Journal Copy] [arXiv]

[21] J. Balogh and R.R. Martin, On Avoider-Enforcer games, *SIAM J. Discrete Math.* **23**(2) (2009), 901–908. DOI:10.1137/080721716 [Journal Copy] [arXiv]

[20] M. Axenovich, A. Kézdy, and R.R. Martin, On the editing distance of graphs, *J. Graph Theory* **58**(2) (2008), 123–138. DOI:10.1002/jgt.20296 [Journal Copy] [arXiv]

[19] J. Balogh and R.R. Martin, Edit distance and its computation, *Electron. J. Combin.* **15**(1) (2008), Research Paper 20. (27pp.) [Journal Copy] [arXiv]

[18] M. Axenovich and R.R. Martin, Avoiding rainbow induced subgraphs in vertex-colorings, *Electron. J. Combin.* **15**(1) (2008), Research Paper 12. (23pp.) [Journal Copy] [arXiv]

[17] R.R. Martin and E. Szemerédi, Quadripartite version of the Hajnal-Szemerédi theorem, *Discrete Math.* **308**(19) (2008), 4337–4360. DOI:10.1016/j.disc.2007.08.019 [Journal Copy]

[16] M. Axenovich and R.R. Martin, On weighted Ramsey numbers, *Australas. J. Combin.* **38** (2007), 179–194. [Journal Copy] [arXiv]

[15] A. Frieze, R.R. Martin, J. Moncel, M. Ruszinkó, and C. Smyth, Codes identifying sets of vertices in random networks, *Discrete Math.* **307**(10) (2007), 1094–1107. DOI: 10.1016/j.disc.2006.07.041 [Journal Copy]

[14] T. Bohman, A. Frieze, R.R. Martin, M. Ruszinkó, and C. Smyth, On randomly generated intersecting hypergraphs II, *Random Structures Algorithms* **30**(1) (2007), 17–34. DOI:10.1002/rsa.20152 [Journal Copy] [arXiv]

[13] M. Axenovich and R.R. Martin, Sub-Ramsey numbers for arithmetic progressions, *Graphs Combin.* **22**(3) (2006), 297–309. DOI:10.1007/s00373-006-0663-2 [Journal Copy] [arXiv]

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Publications (cont.)

Journal publications (cont.):

[12] M. Axenovich and R.R. Martin, A note on short cycles in a hypercube, *Discrete Math.* **306**(18) (2006), 2212–2218. DOI:10.1016/j.disc.2006.05.008 [Journal Copy] [arXiv]

[11] M. Axenovich and R.R. Martin, On the strong chromatic number of graphs, *SIAM J. Discrete Math.* **20**(3) (2006), 741–747. DOI:10.1137/050633056 [Journal Copy] [arXiv]

[10] M. Axenovich and R.R. Martin, Avoiding patterns in matrices via a small number of changes, *SIAM J. Discrete Math.*, **20**(1) (2006), 49–54. DOI:10.1137/S0895480104445150 [Journal Copy] [arXiv]

[9] R.R. Martin, A note on a conjecture of Gyárfás, *Ars Combin.* **79** (2006), 311–317. [arXiv]

[8] T. Bohman, A. Frieze, M. Krivelevich, and R.R. Martin, Adding random edges to dense graphs, *Random Structures Algorithms* **24**(2) (2004), 105–117. DOI:10.1002/rsa.10112 [Journal Copy] [arXiv]

[7] A. Frieze, M. Krivelevich, and R.R. Martin, The emergence of a giant component in random subgraphs of pseudo-random graphs, *Random Structures Algorithms* **24**(1) (2004), 42–50. DOI:10.1002/rsa.10100 [Journal Copy] [arXiv]

[6] T. Bohman, C. Cooper, A. Frieze, R.R. Martin, and M. Ruszinkó, On randomly generated intersecting hypergraphs, *Electron. J. Combin.* **10** (2003), Research Paper 29. (10pp.) [Journal Copy] [arXiv]

[5] T. Bohman and R.R. Martin, A note on G-intersecting families, *Discrete Math.* **260** (2003), no. 1-3, 183–188. DOI:10.1016/s0012-365x(02)00761-6 [Journal Copy] [arXiv]

[4] T. Bohman, A. Frieze, and R.R. Martin, How many random edges make a dense graph hamiltonian?, *Random Structures Algorithms* **22**(1) (2003), 33–42. DOI:10.1007/bf02579348 [Journal Copy] [arXiv]

[3] Cs. Magyar and R.R. Martin, Tripartite version of the Corrádi-Hajnal theorem, *Discrete Math.* **254** (2002), no. 1-3, 289–308. DOI:10.1016/S0012-365X(01)00373-9 [Journal Copy] [arXiv]

[2] F. Lazebnik, W. Li, and R.R. Martin, Random walks on rooted trees, *Bull. Inst. Combin. Appl.* **22** (1998), 59–66. [PrePrint]

[1] J. Benashski, R.R. Martin, J. Moore, and L. Traldi, On the β-invariant for graphs, Proceedings of the Twenty-sixth Southeastern International Conference on Combinatorics, Graph Theory and Computing (Boca Raton, FL, 1995). *Congr. Numer.* **109** (1995), 211–221. [PrePrint]

Book Chapter:

- R.R. Martin, The edit distance in graphs: methods, results and generalizations, *Recent Trends in Combinatorics*, 31–62, IMA Vol. Math. Appl., **159**, *Springer, Cham*, 2016. DOI:10.1007/978-3-319-24298-9_2 [Chapter Copy] [PrePrint] [ERRATA]

Ryan R. Martin
Talks & Conferences

In Acrobat Reader, click the title to see the talk slides if available.

Invited Talks

"On difference graphs and the local dimension of posets," Discrete Mathematics Seminar, Karlsruhe Institute of Technology, Karlsruhe, Germany, February 06, 2020.

"Induced saturation in posets," Discrete Mathematics Seminar, Karlsruhe Institute of Technology, Karlsruhe, Germany, January 23, 2020.

"Diamond-free families and flag algebras," Extremal Set Systems Seminar, Rényi Institute for Mathematics, Budapest, Hungary, December 12, 2019.

"On difference graphs and the local dimension of posets," Combinatorics Seminar, Bolyai Institute, University of Szeged, Szeged, Hungary, November 15, 2019.

"Introduction to the edit distance in graphs," Colloquium Lecture, Budapest Semesters in Mathematics, Budapest, Hungary, November 14, 2019.

"Extremal functions and symmetrization," Special Session on Graph Theory, AMS Fall Western Joint Sectional Meeting (#1153), Riverside, CA, November 09, 2019.

"Extremal poset theory," Colloquium Lecture, Budapest Semesters in Mathematics, Budapest, Hungary, October 03, 2019.

"The edit distance in graphs," Combinatorics Seminar, Rényi Institute for Mathematics, Budapest, Hungary, October 03, 2019.

"Induced saturation in posets," Extremal Set Systems Seminar, Rényi Institute for Mathematics, Budapest, Hungary, September 26, 2019.

"On difference graphs and the local dimension of posets," Combinatorial Number Theory Seminar, University of California, Riverside, Riverside, CA, May 29, 2019.

"The edit distance function for graphs," Discrete Mathematics Seminar, University of Delaware, Newark, DE, May 14, 2019.

"Introduction to the edit distance on graphs," Department of Mathematics & Statistics Colloquium, University of South Florida, Tampa, FL, March 29, 2019.

"Recent progress on the edit distance in graphs," Special Session on Recent Trends in Algebraic Graph Theory, AMS Spring Central and Western Joint Sectional Meeting (#1147), Honolulu, HI, March 23, 2019.

"On difference graphs and the local dimension of posets," Special Session on Graph Theory, AMS Fall Eastern Sectional Meeting (#1141), Newark, DE, September 29, 2018.

"On difference graphs and the local dimension of posets," First Southwestern German Workshop on Graph Theory, Thomashof, near Karlsruhe, Germany, August 28, 2018.

"On difference graphs and the local dimension of posets," The Structure of Families of Finite Sets, 2018 SIAM Conference on Discrete Mathematics (DM18), Denver, CO, June 07, 2018.

"The edit distance on graphs: Part I, Part II, and Part III," 5th Lake Michigan Workshop on Combinatorics and Graph Theory, Notre Dame University, South Bend, IN, April 22, 2018.

"The saturation number of induced subposets of the Boolean lattice," Seminar, Karlsruhe Institute of Technology, Karlsruhe, Germany, June 22, 2017.

"The saturation number of induced subposets of the Boolean lattice," Seminar on Combinatorics, Games and Optimisation, London School of Economics, London, England, UK, June 15, 2017.

Invited Talks (cont.)

"The saturation number of induced subposets of the Boolean lattice," Special Session on Extremal Problems in Graphs, Hypergraphs and Other Combinatorial Structures, AMS Spring Central Sectional Meeting (#1127), Bloomington, IN, April 02, 2017.

"Methods in computing the edit distance function," Combinatorics seminar, Department of Mathematics, University of South Carolina, Columbia, SC, February 17, 2017.

"Introduction to the edit distance in graphs," Superseminar, Department of Mathematics, University of South Carolina, Columbia, SC, February 16, 2017.

"An asymptotic multipartite Kühn-Osthus theorem," Special Session on Graphs, Hypergraphs, and Set Systems, AMS Fall Southeastern Sectional Meeting (#1124), Raleigh, NC, November 13, 2016.

"An asymptotic multipartite Kühn-Osthus theorem," Special Session on Extremal Combinatorics, AMS Fall Central Sectional Meeting (#1123), Minneapolis, MN, October 29, 2016.

"An asymptotic multipartite Kühn-Osthus theorem," Special Session on New Developments in Graphs and Hypergraphs, AMS Fall Eastern Sectional Meeting (#1121), Brunswick, ME, September 24, 2016.

"The edit distance of powers of cycles," Minisymposium on Extremal Combinatorics, 2016 SIAM Conference on Discrete Mathematics (DM16), Atlanta, GA, June 06, 2016.

"The edit distance of powers of cycles," Seminar, Department of Combinatorics and Optimization, University of Waterloo, Waterloo, ON, Canada, May 03, 2016.

"The edit distance of powers of cycles," Special Session on Probabilistic and Extremal Combinatorics, AMS Spring Central Sectional Meeting (#1120), Fargo, ND, April 16, 2016.

"Rainbow arithmetic progressions," Graph Theory and Combinatorics Seminar, Department of Mathematics, University of Illinois at Urbana-Champaign, Urbana, IL, March 07, 2016.

"The small world problem: Six degrees of graph theory," Mathematics Seminar, University of Wisconsin-La Crosse, Lacrosse, WI, November 23, 2015.

"The edit distance of powers of cycles," Special Session on Probabilistic Combinatorics, AMS Fall Southeastern Sectional Meeting (#1113), Memphis, TN, October 18, 2015.

"Diamonds are forever," Connections in Discrete Mathematics: A celebration of the work of Ron Graham, Vancouver, BC, Canada, June 17, 2015.

"Recent progress on Diamond-Free families," Seminar on Discrete Mathematics and Game Theory, London School of Economics and Political Science, London, UK, May 15, 2015.

"Recent progress on Diamond-Free families," Combinatorics Seminar, University of Birmingham, Birmingham, UK, May 11, 2015.

"Diamonds are forever," Special Session on Extremal and Structural Graph Theory, AMS Spring Western Sectional Meeting (#1105), Las Vegas, NV, April 19, 2015.

"A new upper bound for the size of diamond-free families," Combinatorics Seminar, Emory University, Atlanta, GA, March 23, 2015.

"Recent progress on diamond-free families (revised title)," Special Session on Extremal Graph Theory: Hypergraphs, Directed Graphs, and Other Generalizations, AMS Spring Central Sectional Meeting (#1108), East Lansing, MI, March 15, 2015.

Invited Talks (cont.)

"On the edit distance in graphs," IMA Annual Program Seminar, Thematic Year on Discrete Structures, Institute for Mathematics and its Applications, Minneapolis, MN, December 04, 2014.

"Recent progress on diamond-free families," Special Session on Recent Developments in Graph Theory and Hypergraph Theory, AMS Fall Southeastern Sectional Meeting (#1105), Greensboro, NC, November 08, 2014.

"Recent progress on diamond-free families," Special Session on Problem Solving in Extremal Combinatorics and Combinatorial Geometry, AMS Fall Central Sectional Meeting (#1102), Eau Claire, WI, September 20, 2014.

"Recent progress on diamond-free families," Posets Minisymposium, 2014 SIAM Conference on Discrete Mathematics (DM14), Minneapolis, MN, June 16, 2014.

"Multipartite version of the Alon-Yuster theorem," Discrete Mathematics Seminar, University of Delaware, Newark, DE, November 26, 2013.

"Multipartite version of the Alon-Yuster theorem," Atlanta Lecture Series X, Emory University, Atlanta, GA, November 02, 2013.

"Diamond-free families of the Boolean lattice," Special Session on Partially Ordered Sets, AMS Fall Southeastern Sectional Meeting (#1092), Louisville, KY, October 05, 2013.

"Multipartite version of the Alon-Yuster theorem," Seminar, University of Szeged, Szeged, Hungary, July 08, 2013.

"Recent results on the edit distance in graphs," Seminar on Discrete Mathematics and Game Theory, London School of Economics and Political Science, London, England, UK, June 27, 2013.

"Multipartite version of the Alon-Yuster theorem," Combinatorics Seminar, University of Birmingham, Birmingham, England, UK, June 24, 2013.

"Diamond-free families of the Boolean lattice," Discrete Mathematics Seminar, University of Delaware, Newark, DE, March 19, 2013.

"Diamond-free families of the Boolean lattice," Special Session on Extremal Graph Theory, AMS Fall Central Sectional Meeting (#1084), Akron, OH, October 21, 2012.

"Diamond-free families of the Boolean lattice," Combinatorics Parallel Session, International Conference on Advances in Interdisciplinary Statistics and Combinatorics, Greensboro, NC, October 07, 2012.

"Multicolor and directed edit distance," Graph Coloring Minisymposium, 2012 SIAM Conference on Discrete Mathematics (DM12), Halifax, Nova Scotia, Canada, June 20, 2012.

"Multipartite version of the Alon-Yuster theorem," Extremal Graph Theory Minisymposium, 2012 SIAM Conference on Discrete Mathematics (DM12), Halifax, Nova Scotia, Canada, June 20, 2012.

"Forbidden posets, the Boolean lattice and flag algebras," Informatics Colloquium, Department of Informatics, Karlsruhe Institut für Technologie, Karlsruhe, Germany, May 22, 2012.

"Forbidden posets, the Boolean lattice and flag algebras," Combinatorics and Game Theory Seminar, Department of Mathematics, London School of Economics and Political Science, London, England, UK, May 18, 2012.

Invited Talks (cont.)

"Induced Saturation Number," Discrete Mathematics Seminar, Department of Mathematical and Statistical Sciences, University of Colorado-Denver, Denver, CO, April 09, 2012.

"On diamond-free subposets of the Boolean lattice," Algebra and Logic Seminar, Department of Mathematics, University of South Carolina, Columbia, SC, March 16, 2012.

"The small world problem: Six degrees of graph theory," MATH/CS Colloquium, Department of Mathematics and Computer Science, The Citadel, Charleston, SC, March 13, 2012.

"On the edit distance from $K_{2,t}$-free graphs," Special Session on Extremal and Probabilistic Combinatorics, AMS Central Sectional Meeting (#1074), Lincoln, NE, October 15, 2011.

"Induced saturation number," Special Session on Extremal Combinatorics, AMS Fall Southeastern Sectional Meeting (#1073), Winston-Salem, NC, September 25, 2011.

"Recent results on the edit distance of graphs," Seminar, Department of Mathematics, University of British Columbia, Vancouver, BC, Canada, July 26, 2011.

"Induced saturation number," Special Session on Extremal Combinatorics, AMS Spring Western Sectional Meeting (#1071), Las Vegas, NV, May 01, 2011.

"Recent results on the edit distance of graphs," Discrete Mathematics Seminar, Department of Mathematics, University of South Carolina, Columbia, SC, March 16, 2011.

"Expected value of the minimum rank of a graph," Seminar class talk, Department of Mathematics, University of Illinois at Urbana-Champaign, Urbana, IL, November 10, 2010.

"Q_2-free families in the Boolean lattice," Graph Theory and Combinatorics Seminar, Department of Mathematics, University of Illinois at Urbana-Champaign, Urbana, IL, November 09, 2010.

"Recent results on the edit distance of graphs," Special Section on Graph Theory, Fall AMS Southeastern Sectional Meeting (#1065), Richmond, VA, November 06, 2010.

"Vertex identifying codes in infinite grids," Discrete Mathematics Seminar, Department of Mathematics, Virginia Commonwealth University, Richmond, VA, November 04, 2010.

"The small world problem: Six degrees of graph theory," Joint Mathematics Colloquium, Millersville University/Franklin & Marshall College, Lancaster, PA, November 02, 2010.

"Recent results on the edit distance of graphs," Combinatorics Seminar, Department of Pure Mathematics and Mathematical Statistics, University of Cambridge, Cambridge, England, UK, October 14, 2010.

"Recent results on the edit distance of graphs," Seminar on Discrete Mathematics and Game Theory, Department of Mathematics, London School of Economics and Political Science, London, England, UK, October 07, 2010.

"Vertex identifying codes in infinite grids," Discrete Geometry and Combinatorics Seminar, Department of Mathematics, University College London, London, England, UK, October 06, 2010.

"Recent results on the edit distance of graphs," Combinatorics Seminar, School of Mathematics, University of Birmingham, Birmingham, England, UK, October 04, 2010.

"Q_2-free families in the Boolean lattice," Combinatorics Seminar, School of Mathematical Sciences, Queen Mary College, University of London, London, England, UK, October 01, 2010.

Invited Talks (cont.)

"Recent results on the edit distance of graphs," Discrete Mathematics Seminar, Department of Mathematics, University of Nebraska – Lincoln, Lincoln, NE, August 31, 2010.

"Computing the edit distance function," Extremal Graph Theory Minisymposium, 2010 SIAM Conference on Discrete Mathematics (DM10), Austin, TX, June 17, 2010.

"The small world problem: Six degrees of graph theory," Research Seminar, Mathematics, Statistics, and Computer Science Department, St. Olaf College, Northfield, MN, May 04, 2010.

"Tiling in Multipartite Graphs," SIAM Minisymposium on Graph Theory, 2010 Joint Mathematics Meetings (#1056), San Francisco, CA, January 15, 2010.

"Tiling in Multipartite Graphs," Discrete Math Seminar, Texas State University, San Marcos, TX, November 13, 2009.

"The small world problem: Six degrees of graph theory," Convocation Series, Illinois College, Jacksonville, IL, September 07, 2009.

"Expected value of the minimum rank of a graph," Graph Theory and Combinatorics Seminar, Department of Mathematics, University of Illinois at Urbana-Champaign, Urbana, IL, May 19, 2009.

"On Avoider-Enforcer games," 33rd SIAM Southeastern-Atlantic Section Conference, Columbia, SC, April 04, 2009.

"On Avoider-Enforcer games," Special Session on Probabilistic and Extremal Combinatorics, AMS Central Section Meeting (#1047), Urbana, IL, March 28, 2009.

"The small world problem: Six degrees of graph theory," Department of Mathematics and Computer Science Seminar, Central College, Pella, IA, November 18, 2008.

"The small world problem: Six degrees of graph theory," Department of Mathematics and Computer Science Seminar, Macalester College, St. Paul, MN, November 11, 2008.

"On the edit distance function," International Conference on Interdisciplinary Mathematical and Statistical Techniques, University of Memphis, Memphis, TN, May 18, 2008.

"Tiling in multipartite graphs," ACO (Algorithms, Combinatorics and Optimization) Seminar, Carnegie Mellon University, Pittsburgh, PA, May 01, 2008.

"Tiling in multipartite graphs," Graph Theory and Combinatorics Seminar, Department of Mathematics, University of Illinois at Urbana-Champaign, Urbana, IL, April 29, 2008.

"The edit distance function," Special Session on Graph Theory, AMS Central Section Meeting (#1038), Bloomington, IN, April 06, 2008.

"Computing edit distance," Applied mathematics seminar, Department of Applied Mathematics, Illinois Institute of Technology, Chicago, IL, November 20, 2007.

"The edit distance in graphs," Applied mathematics colloquium, Department of Applied Mathematics, Illinois Institute of Technology, Chicago, IL, November 19, 2007.

"The edit distance in graphs," Special Session on Extremal and Probabilistic Combinatorics, AMS Central Section Meeting (#1030), Chicago, IL, October 06, 2007.

"On the edit distance in graphs," Discrete Mathematics and Algebra Seminar, Department of Mathematical Sciences, University of Delaware, Newark, DE, May 11, 2007.

Invited Talks (cont.)

"The diameter game," Miniworkshop: Positional Games, 0715c, Mathematisches Forschungsinstitut Oberwolfach, Germany, April 08-14, 2007.

"The diameter game," Special Session on Graph Theory, AMS Central Section Meeting (#1025), Oxford, OH, March 17, 2007.

"The diameter game," Special Session on Extremal and Probabilistic Combinatorics, AMS Southeastern Section Meeting (#1022), Fayetteville, AR, November 04, 2006.

"On the editing distance in graphs," Combinatorics Seminar, University of Illinois at Urbana-Champaign, Urbana, IL, January 24, 2006.

"Vertex identifying codes and the random graph," Computer Science Department Colloquium, Iowa City, IA, November 04, 2005.

"Vertex identifying codes and the random graph," Discrete Mathematics and Algebra Seminar, Department of Mathematical Sciences, University of Delaware, Newark, DE, May 15, 2005.

"Online intersecting hypergraphs," Mathematics Seminar, Department of Mathematics, Statistics and Computer Science, University of Illinois at Chicago, Chicago, IL, March 16, 2005.

"Six degrees of graph theory: Kevin Bacon, Paul Erdős, William McKinley and me," Mathematics Seminar, Central College, February 01, 2005.

"It's raining hyperedges: Online intersecting hypergraphs beyond the threshold," Special Session on Extremal Combinatorics, AMS Central Section Meeting (#1001), Evanston, IL, October 23, 2004.

"On the editing distance in graphs," Mathematics seminar, Department of Mathematics, Statistics and Computer Science, University of Illinois at Chicago, Chicago, IL, March 17, 2004.

"The regularity lemma, the blow-up lemma and a conjecture of Corrádi and Hajnal," Discrete Mathematics and Algebra Seminar, Department of Mathematical Sciences, University of Delaware, Newark, DE, May 1999.

Ryan R. Martin

Talks & Conferences (cont.)

Invited Workshops

Workshop on Order and Geometry, Gułtowy Palace near Poznań, Poland, September 19-23, 2016.

Institute for Mathematics and its Applications (IMA) Thematic Year on Discrete Structures, (Scholar in-residence September 01, 2014-May 15, 2015.)

- Probabilistic and Extremal Combinatorics [Invited Participant], September 08-12, 2014.
- Additive and Analytic Combinatorics, September 29-October 03, 2014.
- Geometric and Enumerative Combinatorics, November 10-14, 2014.
- Convexity and Optimization: Theory and Applications, February 23-27, 2015.
- The Power of Randomness in Computation, March 16-20, 2015.
- Information Theory and Concentration Phenomena, April 13-17, 2015.
- Analytical Tools in Probability and Applications, April 27-May 01, 2015.

Polychromatic Colorings of the Hypercube at Institute for Computational and Experimental Research in Mathematics (ICERM), Providence, RI, March 26-30, 2014.

NIMbios workshop on Animal Social Networks, Knoxville, TN, March 06-08, 2014.

Theory and Applications of Matrices Described by Patterns, Banff International Research Station (BIRS) workshop, Banff, Alberta, Canada, January 31-February 05, 2010.

Visits and Research Activity

Graduate Research Workshop in Combinatorics, Ames, IA, May 21-June 01, 2018.

Graduate Research Workshop in Combinatorics, Denver, CO, July 18-22, 2017.

Poset Saturation: Followup workshop, Denver, CO, June 10-16, 2016.

Graduate Research Workshop in Combinatorics, Laramie, WY, July 25-29, 2016.

Polychromatic Colorings of the Hypercube: Followup workshop, Ames, IA, September 14-18, 2015.

Graduate Research Workshop in Combinatorics, Ames, IA, June 01-12, 2015.

Graduate Research Workshop in Combinatorics, Denver, CO, August 05-09, 2014.

Conferences Organized

ILAS 2017: Connections, 2017 Meeting of the International Linear Algebra Society, Ames, IA, July 24-28, 2017. Local organizing committee.

Special Session on Discrete Structures: Analysis and Applications (IMA Reunion), American Mathematical Society (AMS) Central Section Meeting (#1123), Minneapolis, MN, October 28-30, 2016. Co-organized with L. Hogben and E. Werner.

Special Session on Extremal Combinatorics, American Mathematical Society (AMS) Central Section Meeting (#1090), Ames, IA, April 27-28, 2013. Co-organized with S. Butler. Also on local organizing committee.

MIdwestern GrapH TheorY (MIGHTY) LIII, Ames, IA, September 21-22, 2012. Co-organized with S. Butler and M. Young.

Special Session on Extremal Combinatorics, American Mathematical Society (AMS) Western Section Meeting (#1071), Las Vegas, NV, April 31-May 1, 2011. Co-organized with J. Balogh.

Special Session on Probabilistic and Extremal Combinatorics, American Mathematical Society (AMS) Central Section Meeting (#1058), St. Paul, MN, April 10-11, 2010. Co-organized with M. Axenovich.

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Talks & Conferences (cont.)

Contributed Talks

"An asymptotic multipartite Kühn-Osthus theorem," Algebraic and Extremal Graph Theory, University of Delaware, Newark, DE, August 08, 2017.

"Expected value of the minimum rank of a graph," 22nd Cumberland Conference on Combinatorics, Graph Theory and Computing, Western Kentucky University, Bowling Green, KY, May 21, 2009.

"On the edit distance function for graphs," Fete of Combinatorics and Computer Science, Organized by the Rényi Institute, Keszthely, Hungary, August 12, 2008.

"The edit distance in graphs," (Your Regular) Workshop on Extremal Graphs and Hypergraphs, Carnegie Mellon University, Pittsburgh, PA, May 05, 2007.

"Recent results on packing problems in multipartite graphs," Horizons of Combinatorics, Balatonalmádi, Hungary, July 19, 2006.

"Vertex identifying codes and the random graph," MIdwestern GrapH TheorY (MIGHTY) XLII, Marion, OH, April 29, 2006.

"Vertex identifying codes and the random graph," Mathematical Association of America (MAA)-Iowa conference, Ames, IA, April 07, 2006.

"The editing distance in graphs," Rocky Mountain Discrete Mathematics Days, Laramie, WY, August 02, 2005.

"Vertex identifying codes and the random graph," WaterMellon conference, Pittsburgh, PA, May 21, 2005.

"Vertex identifying codes and the random graph," Brualdi-fest, Madison, WI, April 30, 2005.

"Six degrees of graph theory: Kevin Bacon, Paul Erdős, William McKinley and me," Mathematical Association of America (MAA)-Iowa conference, Pella, IA, April 17, 2004.

"On the editing distance in graphs," Conference on extremal combinatorics honoring 200 years of Peter Frankl, Zoltán Füredi, Ervin Győri and János Pach, Rényi Institute, Budapest, Hungary, April 05, 2004.

"You've got Erdős-Ko-Radó: Intersecting hypergraphs online," MIdwestern GrapH TheorY (MIGHTY) XXXVII, Valparaiso, IN, September 20, 2003.

"Antiramsey Numbers," AMS Central Section Meeting (#985), Bloomington, IN, April 05, 2003.

"How many random edges make a dense graph Hamiltonian?," 2012 SIAM Conference on Discrete Mathematics, San Diego, CA, August 14, 2002.

"On the β-invariant for graphs," Southeastern International Conference on Combinatorics, Graph Theory and Computing, Boca Raton, FL, March 1995.

Ryan R. Martin

Talks & Conferences (cont.)

Other Conferences Attended

Mostly Manitoba, Michigan and Minnesota Combinatorics Graduate Students workshop: MMMM 2018, Iowa State University, Ames, IA, September 8-9, 2018.

ILAS 2017: Connections, 2017 Meeting of the International Linear Algebra Society, Iowa State University, Ames, IA, July 24-28, 2017.

2015 Meeting of the Iowa Section of the Mathematical Association of America (MAA), Graceland University, Lamoni, IA, October 03, 2015.

2015 Colloquia in Combinatorics, Queen Mary, University of London and London School of Economics and Political Science, London, UK, May 13-14, 2015.

Erdős Centennial, Rényi Institute, Budapest, Hungary, July 1-5, 2013.

2013 Colloquia in Combinatorics, Queen Mary, University of London and London School of Economics and Political Science, London, UK, May 16-17, 2013.

EXCILL 2: EXtremal Combinatorics at ILLinois, University of Illinois at Urbana-Champaign, Urbana, IL, March 16-18, 2013.

Third Abel Conference: A Mathematical Celebration of Endre Szemerédi, Institute for Mathematics and its Applications, Minneapolis, MN, November 29-December 01, 2012.

AMS Central Section Meeting (#1069), University of Iowa, Iowa City, IA, March 18-20, 2011.

Szemerédi70: A conference in honor of the 70th birthday of Endre Szemerédi, Organized by the Rényi Institute and held at the Gólyavár at Eötvös Lóránd University, Budapest, Hungary, August 02-06, 2010.

Building Bridges: A conference on mathematics and computer science in honor of Laci Lovász, Partially organized by the Rényi Institute and held at the Gólyavár at Eötvös Lóránd University, Budapest, Hungary, August 05-09, 2008.

New Directions in Algorithms, Combinatorics and Optimization, Georgia Institute of Technology, Atlanta, GA, May 05-09, 2008.

Random Combinatorial Structures, University of Nebraska-Lincoln, Lincoln, NE, April 20-22, 2007.

EXCILL: EXtremal Combinatorics at ILLinois, University of Illinois at Urbana-Champaign, Urbana, IL, November 18-20, 2006.

Horizons of Combinatorics (Summer School), Rényi Institute, Budapest, Hungary, July 10-14, 2006.

FriezeFest, Carnegie Mellon University, Pittsburgh, PA, October 21-22, 2005.

Paul Erdős and his Mathematics, Rényi Institute, Hungarian Academy of Sciences, Budapest, Hungary, July 1999.

Teaching-learning conference, Rutgers University, New Brunswick, NJ, January 1998.

Selected Long-Term Visitors

Dániel Gerbner, Abhishek Methuku, and Andrew Uzzell, November 20-28, 2017.

Heather Smith, March 28-31, 2017.

Xavier Pérez-Giménez, February 08-10, 2017.

Richard Mycroft, March 08-18, 2014.

Jozef Skokan, April 26-May 02, 2013.

Seminar Talks

"The local dimension of posets and a probabilistic construction," **ISU** Probability Seminar, December 04, 2017.

"An asymptotic multipartite Kühn-Osthus theorem," **ISU** Discrete Mathematics Seminar, October 25, 2017.

"Diamonds are forever," **ISU** Discrete Mathematics Seminar, January 26, 2015.

"Path separation number in graphs," **ISU** MECS Interdisciplinary Seminar, February 24, 2014.

"Can a Venn diagram be made with 4 circles?," Π M E Math Club talk, **ISU**, February 23, 2014.

"Vertex-identifying codes in graphs," **ISU** MECS Interdisciplinary Seminar, February 17, 2014.

"Matrix version of Szemerédi's regularity lemma," **ISU** Discrete Mathematics Seminar, April 09, 2013.

"More on vertex identifying codes and related parameters," **ISU** Discrete Mathematics Seminar, February 07, 2012.

"Vertex identifying codes and random graphs," Electrical and Computer Engineering Department Faculty Seminar, February 06, 2012.

"Fractional version of the multipartite Hajnal-Szemerédi theorem," **ISU** Discrete Mathematics Seminar, November 08, 2011.

"Random partitions of regular pairs," **ISU** Probability Seminar, November 07, 2011.

"Using localization to compute edit distance II," **ISU** Discrete Mathematics Seminar, January 25, 2011.

"Using localization to compute edit distance I," **ISU** Discrete Mathematics Seminar, January 18, 2011.

"On the structure of almost all graphs in a hereditary property," **ISU** Probability Seminar, December 06, 2010.

"Entropy and counting," **ISU** Discrete Mathematics Seminar, April 13, 2010.

"The entropy method and the number of independent sets in a regular graph," **ISU** Discrete Mathematics Seminar, March 23, 2010.

"The Hoffman-Singleton theorem," **ISU** Discrete Mathematics Seminar, January 19, 2010.

"Tiling on multipartite graphs," **ISU** Discrete Mathematics Seminar, September 01, 2009.

"On the minimum rank of graphs," **ISU** Discrete Mathematics Seminar, April 14, 2009.

"On Avoider-Enforcer games," **ISU** Discrete Mathematics Seminar, March 31, 2009.

"The edit distance in graphs," **ISU** Mathematics Department Colloquium, October 27, 2008.

"Counting the number of regions formed by circles in the plane," Π M E Math Club talk, **ISU**, October 19, 2008.

"The vertex Ramsey problem," **ISU** Discrete Mathematics Seminar, February 19, 2008.

Seminar Talks (cont.)

"The edit distance in graphs," **ISU** Graduate Student Seminar, October 19, 2007.

"Edit distance in graphs: Colored regularity graphs," **ISU** discrete math seminar, October 02, 2007.

"Some intriguing open problems regarding positional games," **ISU** discrete math seminar, April 17, 2007.

"Beauty is rare: The Hoffman-Singleton theorem," **ISU** discrete math seminar, February 06, 2007.

"The diameter game," **ISU** Discrete Mathematics Seminar, November 14, 2006.

"Generalized tic-tac-toe: Introduction to Positional Games and probabilistic intuition," **ISU** Discrete Mathematics Seminar, November 07, 2006.

"Introduction to expander graphs," **ISU** Discrete Mathematics Seminar, April 17, 2006.

"Smoothed analysis of graphs," **ISU** Discrete Mathematics Seminar, March 20, 2006.

"On the editing distance in graphs," **ISU** discrete math seminar, March 10, 2006.

"An application of Szemerédi's regularity lemma," **ISU** discrete math seminar, November 01 & 08, 2005.

"The small world problem and so much more! $6^{6^{6^{\cdot^{\cdot^{\cdot}}}}}$ degrees of graph theory," **ISU** Graduate Student Seminar, October 19, 2005.

"The small world problem: Kevin Bacon, Paul Erdős, William McKinley, and me – 5 degrees of graph theory, **ISU** Summer Seminar Series (Related to the REU), July 14, 2005.

"Identification codes and superimposed codes," **ISU** Discrete Mathematics Seminar, February 10 & 17, 2005.

"Report on the extremal combinatorics session of the Central Section Meeting of the AMS," **ISU** Discrete Math/Theory of Computing Seminar, October 29, 2004 (with M. Axenovich, A. Wangsness).

"Vertex identification codes in graphs," **ISU** Discrete Math/Theory of Computing Seminar, October 15, 2004.

"Six degrees of graph theory: Kevin Bacon, Paul Erdős, William McKinley and me," **ISU** Graduate Student Seminar, October 06, 2004.

"Online intersecting hypergraphs II," **ISU** Discrete Math/Theory of Computing Seminar, August 27, 2004.

"On the editing distance in graphs, part II," **ISU** Discrete Math/Theory of Computing Seminar, February 06, 2004.

"You've got Erdős-Ko-Radó: Intersecting hypergraphs online," **ISU** Combinatorics/Algebra Seminar, November 10, 2003.

"Report from the 37th Midwestern Graph Theory Conference," **ISU** Combinatorics/Algebra Seminar, September 29, 2003 (with M. Axenovich).

"Six degrees of graph theory: Kevin Bacon, Paul Erdős, William McKinley and me," **CMU** mathematics undergraduate seminar, February, 2003.

"The regularity lemma," **CMU** Mathematics Colloquium, March 2002.

"The Shannon capacity and Ramsey theory," **RU** Graduate Student Seminar, December 1998.

Ryan R. Martin
Courses Taught

	Semester and Year	Course #: Course Title	Total Enrollment
ISU:	F 2020	M566: Discrete Optimization	–
	S 2020	On Leave: (FPDA, DAAD) Karlsruhe Institute of Technology	
	F 2019	On Leave: (FPDA, Fulbright) Alfred Rényi Institute of Mathematics	
	S 2019	M606: Enumerative Combinatorics and Partially Ordered Sets	5
	F 2018	M304: Introductory Combinatorics	18
		M317 B: Linear Algebra	20
	S 2018	M606: Enumerative Combinatorics and Partially Ordered Sets	8
	F 2017	M317 B: Linear Algebra	19
		M317 C: Linear Algebra	21
	S 2017	M606: Enumerative Combinatorics and Partially Ordered Sets	16
	F 2016	M165 29: Calculus I	33
		M304: Introductory Combinatorics	17
	S 2016	M608: Extremal Graph Theory	6
	F 2015	M166 15-26: Calculus II	290
		M492: Undergraduate Seminar	14
	S 2015	On Leave: Institute for Mathematics and its Applications (IMA)	
	F 2014	On Leave: Institute for Mathematics and its Applications (IMA)	
	S 2014	M492: Undergraduate Seminar	22
		M608: Extremal Graph Theory	6
	F 2013	M166 B1-D2: Calculus II	167
	S 2013	M166 A-F,D1-H1,J1: Calculus II	336
	F 2012	M166 F1-F4,G1-G4,J1-J4: Calculus II	177
		M566X: Discrete Optimization	7
	S 2012	M608: Extremal Graph Theory	6
	F 2011	M166 G: Calculus II	317
		M166 B: Calculus II	188
	S 2011	M606: Enumerative Combinatorics and Partially Ordered Sets	6
	F 2010	On Leave: Sabbatical (FPDA)	
	S 2010	M608X: Extremal Graph Theory	7
	F 2009	M265 H: Calculus III	189
		M301 A: Abstract Algebra	14

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Courses Taught (cont.)

	Semester and Year	Course #: Course Title	Total Enrollment
ISU:	S 2009	M606: Enumerative Combinatorics and Partially Ordered Sets	7
	F 2008	M165 H: Calculus I	192
		M301 C: Abstract Algebra	9
	S 2008	M608X: Extremal Graph Theory	9
	F 2007	M265 F1: Calculus III	38
		M304: Introductory Combinatorics	13
	S 2007	M606: Enumerative Combinatorics and Partially Ordered Sets	10
	F 2006	M165 A: Calculus I	189
		M165 H: Calculus I	184
	S 2006	M690I: Extremal Graph Theory	6
	F 2005	M265 B: Calculus III	181
		M301 C: Abstract Algebra	18
	S 2005	M301 B: Abstract Algebra	23
	F 2004	M304: Introductory Combinatorics	22
		M307 A: Matrix Algebra	34
	S 2004	M317 A: Linear Algebra	22
	F 2003	M165 A8: Calculus I	39

	Semester and Year	Course #: Course Title
CMU:	S 2003	M484: Graph Theory
	F 2002	M801: Extremal Graph Theory
	S 2002	M484: Graph Theory
	F 2001	M301: Combinatorial Analysis
	S 2001	M257: Models and Methods for Optimization
	F 2000	M115: Differential Calculus
		M106: Topics in Precalculus
RU:	Sum 1999	M373: Numerical Analysis I
	Sum 1998	M477: Probability Theory I
	Sum 1997	M152: Calculus II Math/Physics

Courses taught as teaching assistant

	Semester and Year	Course #: Course Title
RU:	S 2000	M244: Diff Eqs/Engr & Physic
	F 1999	M251: Multivariable Calc
	S 1999	M244: Diff Eqs/Engr & Physic
	F 1998	M152: Calculus II Math/Physics
	S 1998	M154: Intensive Calc II
	F 1997	M153: Intensive Calc I
	S 1997	M135: Calculus I
	F 1996	M251: Multivariable Calc

Ryan R. Martin
Service: Professional & Institutional

Refereeing & Reviewing

Referee for papers:

- *Ars Combin.*: 2015
- *Bull. Iranian Math. Soc.*: 2009
- *Canad. Math. Bull.*: 2009
- *Combin. Probab. Comput.*: 2018, 2015
- *Discrete Appl. Math.*: 2013, 2012, 2007 (2)
- *Discrete Math.*: 2019, 2018, 2014, 2013, 2012, 2010 (2), 2008, 2005, 2004 (Special Volume), 2003
- *Discrete Math. Theor. Comput. Sci.*: 2010
- *Discuss. Math. Graph Theory*: 2018, 2016
- *Discrete Optim.*: 2011
- *Electron. J. Combin.*: 2020, 2015, 2014, 2012, 2010 (3), 2009, 2007, 2003
- *European J. Combin.*: 2016
- *Graphs Combin.*: 2020, 2014 (2), 2013
- *IEEE Transactions on Information Theory*: 2007
- *Internat. J. Found. Comput. Sci.*: 2020, 2019,
- *Indian J. Pure Appl. Math.*: 2013
- *J. Appl. Math. Comput.*: 2008, 2006
- *J. Comb.*: 2014
- *J. Combin. Theory Ser. A*: 2016, 2010, 2008
- *J. Combin. Theory Ser. B*: 2014, 2011, 2009
- *J. Graph Theory*: 2020, 2008, 2007
- LATIN '08: the 8$^{\text{th}}$ Latin American Theoretical Informatics Symposium: 2007 (2)
- *Order*: 2015
- *Random Structures Algorithms*: 2019, 2013, 2011, 2010, 2008, 2007, 2006, 2005, 2004
- *SIAM J. Discrete Math.*: 2015, 2014

External reviewer for promotion:

- Professor: 2019, 2018, 2017.
- Associate Professor: 2019, 2017, 2016 (4), 2015, 2014 (2), 2012.
- Mid-tenure review: 2017, 2014.

Reviewer for grant proposals:

- Canadian National Sciences and Engineering Research Council (NSERC) grant proposal: 2012.
- American Mathematical Society-National Security Agency (AMS-NSA) grant proposal: 2016 (2), 2013 (2), 2011, 2010.

External reviewer for Ph.D. dissertations:

- Michael Szestopalow, University of Waterloo, Canada, May 2016.
- Miguel Raggi, University of British Columbia, Canada, July 2011.
- (Pre-examiner) Ville Junnila, University of Turku, Finland, December 2010.
- SASTRA University, Tamilnadu, India, September 2010.

Reviewer for book proposals:

- Cambridge University Press, 2018
- Wiley Interscience, 2014.

Ryan R. Martin

Service: Professional & Institutional (cont.)

Professional Service

Invited to be member, 2016 Pólya prize committee, Society for Industrial and Applied Mathematics (SIAM). Recused.

Vice Chair of the SIAM Activity Group on Discrete Mathematics, 2012-2013.

Moderator and Webmaster for DM-Net, the forum of the SIAM Activity Group on Discrete Mathematics, 2006-2011. Over 900 subscribers.

Graduated Students

Ph.D.: Shanise Walker, Mathematics Department, March 27, 2018.
Dissertation title: "Problems in extremal graphs and poset theory"

Ph.D.: Zhanar Berikkyzy, Mathematics Department, May 02, 2016.
Dissertation title: "The edit distance function: Forbidding induced powers of cycles and other questions"

Ph.D.: Kirsten Hogenson, Mathematics Department, April 12, 2016.
Dissertation title: "Random and deterministic versions of extremal poset problems"

Ph.D.: Lucas Kramer, Mathematics Department, April 09, 2014.
Dissertation title: "On diamond-free subposets of the Boolean lattice: An application of flag algebras"

M.S.: Chelsea (Sackett) Peck, Mathematics Department, March 11, 2013.
Thesis title: "On the edit distance from a cycle- and squared cycle-free graph"

Ph.D.: Jason Smith, Mathematics Department, March 28, 2012.
Dissertation title: "Induced Saturation Number"

Ph.D.: Tracy McKay, Mathematics Department, March 27, 2012.
Dissertation title: "The edit distance function for graphs: an exploration of the case of forbidden induced $K_{2,t}$ and other questions"

Ph.D.: Brendon Stanton, Mathematics Department, April 07, 2011.
Dissertation title: "On Vertex Identifying Codes For Infinite Lattices"

M.S.: Laura Walters, Mathematics Department, April 16, 2008.
Creative Component title: "Investigation of the use of finite frame theory in cryptography"

M.S.: Eric Hansen, Mathematics Department, April 30, 2007.
Creative Component title: "Analysis of the singular value decomposition in data hiding"

M.S.: Chad Brewbaker, Computer Science Department November 15, 2005
(Co-major Profs.: R.R.M., David Fernández-Baca).
Thesis title: "Lonesum $(0,1)$-matrices and poly-Bernoulli numbers of negative index"

Current Students

Ph.D. student: Alex Neal Riasanovsky, Mathematics Department, Spring 2022 exp.

Postdoc Mentorship

Chris Cox, Mathematics Department, 2020-Present.

Faculty Mentorship

Bernard Lidický, Mathematics Department, 2014-2015.

Steve Butler, Mathematics Department, 2011-2012.

Ryan R. Martin

Service: Professional & Institutional (cont.)

College/Univ. Service, ISU

University Faculty Review Board, 2017-Present
University Research Awards Committee, 2016.

Departmental Service, ISU

Discrete Mathematics Qualifying Exam Committee:

- June 2020-Present.
- June 2016-May 2017. Chair.

Local Organizing Committee for the 2017 ILAS Meeting, November 2013-August 2017.
Untenured Faculty Review and Evaluation Committee, September 2011-September 2014.
Discrete Math Seminar co-organizer, September 2004-May 2014.
Local Organizing Committee for the 2013 AMS Spring Central Section Meeting, January 2011-May 2013.
Calculus Textbook Selection Committee, October 2012-March 2013.
MIdwestern GrapH TheorY (MIGHTY) LIII Organizing Committee, March 2011-October 2012.
Graduate Committee, September 2005-September 2011 (on leave, Fall 2010). Chair, September 2007-September 2009.
Strategic Planning Committee, January 2009-April 2011.
Awards Committee, September 2003-May 2005.

Search Committees:

- Department Chair Search Committee, May 2016-February 2017.
- Department Chair Nomination Committee (chair), April 2016-May 2016.
- Discrete Math Faculty (chair), September 2013-March 2014.
- Ad-hoc Faculty, March 2013.
- Pre-calculus Coordinator, January 2012-April 2012.
- Tenure-track, September 2009-December 2009. Cancelled.

Faculty Review Teams:

- Promotion to Associate Term Faculty: September 2020-Present.
- Promotion to Prof.: Steve Butler, April 2019-November 2019.
- Promotion to Prof.: Eric Weber, June 2018-November 2018.
- Promotion to Assoc. Prof.: Bernard Lidický, June 2017-November 2017. Chair.
- 3 yr. review: Bernard Lidický, October 2016-March 2017. Chair.
- Promotion to Assoc. Prof.: Steve Butler, September 2015-January 2016. Chair.
- 3 yr. review: Derrick Stolee, October 2015-December 2015. Chair, cancelled.
- 3 yr. review: Tathagata Basak & Steve Butler, October 2013-April 2014.

Ph. D. committees:

- Diego Rojas (Mathematics, Major Prof.: T. McNicholl)
- Kyle Murphy (Mathematics, Major Prof.: B. Lidický)
- Nate Benjamin (Mathematics, Major Prof.: S.-Y. Song)
- Seyed-Vahid Sanei-Mehri (Computer Engineering, Major Prof.: S. Tirthapura)
- Ted Tranel (Mathematics, Major Prof.: S.-Y. Song)
- Lei Liu (Computer Science, Major Prof.: D. Fernández-Baca)

Departmental Service, ISU (cont.)

Ph. D. committees (cont.):

- Ghazaleh Parvini, May 26, 2020 (Computer Science, Major Prof.: D. Fernández-Baca)
- Isaac Wass, April 13, 2020 (Mathematics, Major Prof.: S. Butler)
- Yun Deng, April 02, 2020 (Computer Science, Major Prof.: D. Fernández-Baca)
- Joshua Carlson, April 12, 2019 (Mathematics, Major Prof.: L. Hogben)
- Emelie Curl, April 11, 2019 (Mathematics, Major Prof.: M. Young)
- Kacy Messerschmidt, April 24, 2018 (Mathematics, Major Prof.: B. Lidický)
- Robert Lazar, November 15, 2017 (Mathematics, Major Prof.: S.-Y. Song)
- Kevin Moss, March 30, 2017 (Mathematics, Major Profs.: S. Butler and B. Lidický)
- Debasis Mandal, October 09, 2015 (Computer Science, Major Prof.: P. Aduri)
- Kevin Palmowski, October 05, 2015 (Applied Mathematics, Major Prof.: L. Hogben)
- Craig Erickson, February 19, 2014 (Mathematics, Major Prof.: L. Hogben)
- Steven Osborne, November 21, 2013 (Mathematics, Major Profs.: S. Butler and L. Hogben)
- Ruchi Chaudhari, February 20, 2013 (Computer Science, Major Prof.: D. Fernández-Baca)
- Geoff Tims, December 14, 2012 (Mathematics, Major Prof.: L. Hogben)
- Devin Bickner, April 03, 2012 (Mathematics, Major Prof.: S. Willson)
- Michelle Lastrina, March 29, 2012 (Mathematics, Major Prof.: M. Axenovich)
- JiHyeok Choi, April 13, 2011 (Mathematics, Major Prof.: M. Axenovich)
- Cuizhu Shi, April 01, 2011 (Electrical Engineering, Major Prof.: A. Ramamoorthy)
- Darren Row, March 30, 2011 (Mathematics, Major Prof.: L. Hogben)
- Yeon-Jung Seo, November 16, 2010 (Mathematics, Major Prof.: H. Levine)
- Jacob Manske, May 03, 2010 (Mathematics, Major Prof.: M. Axenovich)
- Ahmet Alturk, July 15, 2009 (Mathematics, Major Prof.: F. Keinert)
- Xiaofang Guo, July 10, 2009 (Co-major: Condensed Matter Physics & Applied Mathematics, Co-Major Profs.: J. Evans, A. Travesset)
- Jess Campbell, February 24, 2005 (Mathematics, Major Prof.: D. Ashlock)

Master's committees:

- Gabrielle Angeloro (Mathematics, Major Prof.: M. Catanzaro)
- Xingyu Tong, July 12, 2018 (Mathematics, Major Prof.: J.D.H. Smith)
- Kelsey Uherka, May 10, 2013 (Mathematics, Major Prof.: S. Butler)
- Nick Pappas, July 13, 2012 (Computer Science, Major Prof.: O. Eulenstein)
- Rich McBride, July 16, 2009 (Mathematics, Major Prof.: M. Axenovich)
- Jonathan Wrolstad, March 25, 2009 (INFAS, Major Prof.: C. Bergman)
- Michael Yeboah, July 14, 2005 (Economics, Major Prof.: E.K. Choi)
- Ricky Brooks, July 09, 2004 (School Mathematics, Co-Major Profs.: H. (Johnston) Bolles and I. Hentzel)

Other graduate student committees: Luke Paben, Doug Ray, Tim Zick.

Departmental Service, ISU (cont.)

First-year faculty mentor to graduate students:

- 2020-2021: Enrique Gomez-Leos
- 2017-2018: Elizabeth Sprangel
- 2016-2017: Alex Neal-Riasanovsky
- 2011-2012: Zhanar Berikkyzy, Steven Noren, Kelsey Uherka
- 2009-2010: Craig Erickson, Richard Troll

Preparing Future Faculty Advisee: Elizabeth Kleiman, Mathematics Department and Computer Science Department, 2006-2007.

Departmental Service, CMU

Master's Dissertation committees:

- Benjamin Kane, May 03, 2002 (Major Prof.: Tom Bohman)
- Abhyudaya Agrawal, Apr. 19, 2001 (Major Prof.: Alan Frieze)

Miscellaneous

Institute for Mathematics and Its Applications (IMA) Principal Investigators meeting, Minneapolis, MN, June 12, 2009.

Coordinated student and faculty travel to meetings:

- EXtremal Combinatorics at ILLinois 2 (EXCILL 2), Urbana, IL, March 2013. (Obtained student funding from conference.)
- AMS Central Section Meeting (#1069), Iowa City, IA, March 18-20, 2011.
- SIAM Conference on Discrete Mathematics (DM10), Austin, TX, June 14-17, 2010. (Obtained student funding from conference.)
- AMS Central Section Meeting (#1058), St. Paul, MN, April 10-11, 2010.
- AMS Central Section Meeting (#1047), Urbana-Champaign, IL, March 27-29, 2009.
- Random Combinatorial Structures, Lincoln, NE, April 2007. (Obtained student funding from conference.)
- EXtremal Combinatorics at ILLinois (EXCILL), Urbana, IL, November 2006. (Obtained student funding from conference.)
- AMS Central Sectional Meeting (#1001), Evanston, IL, October 2004.

ARML high school mathematics competition:

Head grader: UNLV site, 2011.

Grader and assistant to the Director of Development: UNLV site, 2007-2013, 2019; U. of Iowa site, 2004-2006; Penn State site, 2003.

Ryan R. Martin
Support & Recognition

Awards

Vinograde Award for Excellence in Advising, Mathematics Graduate Student Organization, Iowa State University, 2016.

Exemplary Faculty Mentor (Steve Butler, nominator), Iowa State University, 2014.

Mid-Career Achievement in Research, College of Liberal Arts & Sciences, 2013.

Recognized for mentorship by 'Student Scholar and Leader' Matthew Burmeister, Iowa State University, 2009.

Center for DIscrete MAthematics and Computer Science (DIMACS) Graduate Award, 1999: NSF grant CCR 91-19999.

Rutgers University Mathematics Department TA Teaching Award, 1999.

Excellence Fellowship, Rutgers University, 1995-1996.

Certificate of Special Merit: Outstanding accomplishment in mathematical sciences, University of Delaware, 1995.

William D. Clark Prize for Excellence in Mathematics, University of Delaware, 1995.

Stephen J. Wolfe Memorial Award (Outstanding Junior Mathematics Major), University of Delaware, 1994.

Additional Financial Support

Institute for Mathematics and its Applications (IMA) Thematic Year on Discrete Structures: August 2014-May 2015 (Participation support, $42,922).

National Security Agency (NSA) Grants (PI):

- Graph Tiling and Hereditary Properties (H98230-13-1-0226), December 2012 to December 2014 (Standard Grant, $57,266).
- Extremal Graph Theory and Applications in Computer Science (H98230-08-1-0015), April 2008 to March 2010 (Young Investigator Grant, $30,000).
- Extremal and Probabilistic Graph Theory (H98230-05-1-0257), July 2005 to June 2007 (Young Investigator Grant, $30,000).

Conference funding for MIGHTY LIII, September 21-22, 2012:

- NSA Conference Grant, H-98230-12-1-0292 (Co-PI, with PI S. Butler and co-PI M. Young) ($5900).
- NSF Conference Grant, DMS-1238712 (Co-PI, with PI S. Butler and co-PI M. Young) ($9000).
- IMA Conference Grant (Co-PI, with PI M. Young and co-PI S. Butler) ($4000).

Mathematics Department Faculty Development Award, (ISU internal) Spring 2010, Spring 2011, Spring 2012, Spring 2013.

Faculty Professional Development Assignment, (ISU internal) Fall 2010.

Foreign Travel Grant (ISU internal), April 2007 ($542), May 2015 ($936).

US Junior Oberwolfach Fellow, April 2007 (€400).

Liberal Arts and Sciences Small Grant (ISU internal), May 2005 ($500).

Clay Mathematics Institute (CMI) Liftoff Fellow, June - August 2000.

Eugene DuPont Distinguished Memorial Scholarship, University of Delaware, 1991-1995.

Memberships

American Mathematical Society (AMS), 1995-present.

Society of Industrial and Applied Mathematics (SIAM), 2000-2003; 2010-present.

SIAM Discrete Mathematics Activity Group Vice-Chair, 2012-2013.