

# Ryan Martin

## Publications & Talks

---

IN ACROBAT READER, CLICK THE TITLE TO SEE THE PAPER OR [PREPRINT] TO READ THE PREPRINT.

IF HYPERLINKS DO NOT WORK, EMAIL ME (RYMARTIN@IASTATE.EDU) FOR PREPRINTS.

### Submitted publications:

- [24] T. Hall, L. Hogben, R. Martin and B. Shader, Expected values of parameters associated with the minimum rank of a graph, submitted to *Linear Algebra Appl.*, 17pp. [PrePrint]
- [23] R. Martin and Y. Zhao, Tiling tripartite graphs with 3-colorable graphs, submitted to *Electron. J. Combin.*, 39pp. [PrePrint]

### Publications to appear:

- [22] J. Balogh, R. Martin and A. Pluhár, The diameter game, accepted to *Random Structures Algorithms*, 17pp. [PrePrint]

### Journal publications:

- [21] J. Balogh and R. Martin, On Avoider-Enforcer games, *SIAM J. Discrete Math.* **23**(2) (2009), pp. 901–908. [PrePrint]
- [20] M. Axenovich, A. Kézdy and R. Martin, On the editing distance of graphs, *J. Graph Theory* **58**(2) (2008), pp. 123–138. [PrePrint]
- [19] J. Balogh and R. Martin, Edit distance and its computation, *Electron. J. Combin.* **15**(1) (2008), Research Paper 20, 27pp. (electronic). [PrePrint]
- [18] M. Axenovich and R. Martin, Avoiding rainbow induced subgraphs in vertex-colorings, *Electron. J. Combin.* **15**(1) (2008), Research Paper 12, 23pp. (electronic). [PrePrint]
- [17] R. Martin and E. Szemerédi, Quadripartite version of the Hajnal-Szemerédi Theorem, *Discrete Math.* **308**(19) (2008), 4337–4360. [OffPrint]
- [16] M. Axenovich and R. Martin, On weighted Ramsey numbers, *Australas. J. Combin.* **38** (2007), 179–194. [PrePrint]
- [15] A. Frieze, R. Martin, J. Moncel, M. Ruszinkó and C. Smyth, Codes identifying sets of vertices in random networks, *Discrete Math.* **307**(10) (2007), 1094–1107. [PrePrint]
- [14] T. Bohman, A. Frieze, R. Martin, M. Ruszinkó and C. Smyth, On randomly generated intersecting hypergraphs II, *Random Structures Algorithms* **30**(1) (2007), 17–34. [PrePrint]
- [13] M. Axenovich and R. Martin, Sub-Ramsey numbers for arithmetic progressions, *Graphs Combin.* **22**(3) (2006), 297–309. [PrePrint]
- [12] M. Axenovich and R. Martin, A note on short cycles in a hypercube, *Discrete Math.* **306**(18) (2006), 2212–2218. [PrePrint]
- [11] M. Axenovich and R. Martin, Avoiding patterns in matrices via a small number of changes, *SIAM J. Discrete Math.*, **20**(1) (2006), 49–54. [PrePrint]
- [10] M. Axenovich and R. Martin, On the strong chromatic number, *SIAM J. Discrete Math.* **20**(3) (2006), 741–747. [PrePrint]
- [9] R. Martin, A note on a conjecture of Gyárfás, *Ars Combin.* **79** (2006), 311–317. [PrePrint]

# Ryan Martin

---

## Publications (cont.)

### Journal publications (cont.):

- [8] T. Bohman, A. Frieze, M. Krivelevich and R. Martin, Adding random edges to dense graphs, *Random Structures Algorithms* **24**(2) (2004), 105–117. [PrePrint]
- [7] A. Frieze, M. Krivelevich and R. Martin, The emergence of a giant component in random subgraphs of pseudo-random graphs, *Random Structures Algorithms* **24**(1) (2004), 42–50. [PrePrint]
- [6] T. Bohman, C. Cooper, A. Frieze, R. Martin and M. Ruzinkó, On randomly generated intersecting hypergraphs, *Electron. J. Combin.* **10** (2003), Research Paper 29, 10pp. (electronic). [PrePrint]
- [5] T. Bohman and R. Martin, A note on  $G$ -intersecting families, *Discrete Math.* **260** (2003), no. 1-3, 183–188. [PrePrint]
- [4] T. Bohman, A. Frieze and R. Martin, How many random edges make a dense graph hamiltonian?, *Random Structures Algorithms* **22**(1) (2003), 33–42. [PrePrint]
- [3] Cs. Magyar and R. Martin, Tripartite version of the Corrádi-Hajnal theorem, *Discrete Math.* **254** (2002), no. 1-3, 289–308. [PrePrint]
- [2] F. Lazebnik, W. Li and R. Martin, Random walks on rooted trees, *Bull. Inst. Combin. Appl.* **22** (1998), 59–66. [PrePrint]

### Refereed conference proceedings:

- [1] J. Benashski, R. Martin, J. Moore and L. Traldi, On the  $\beta$ -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]

### Extended Abstracts:

- R. Martin (based on joint work with J. Balogh and A. Pluhár), The diameter game (extended abstract), for *Oberwolfach Reports*. [PrePrint]
- A. Frieze, R. Martin, J. Moncel, M. Ruzinkó and C. Smyth, Identifying codes in random networks (extended abstract), *Proceedings of the 2005 IEEE International Symposium on Information Theory (Adelaide, Australia, 2005)* (2005), 1461–1467. [PrePrint]
- R. Martin (based on joint work with Cs. Magyar), Tripartite version of the Corrádi-Hajnal Theorem (extended abstract), *Paul Erdős and his mathematics (Budapest, 1999)*, 166–168, *János Bolyai Math. Soc., Budapest*, 1999.

### Dissertations:

- On graph packing, induced subgraphs and intersecting hypergraphs, Ph. D. dissertation, Rutgers University, October 2000, 159pp. [Thesis]
- Minimum expected time of random walks on rooted trees, Senior thesis, University of Delaware, May 1995, 63pp.

# Ryan Martin

---

## Publications (cont.)

### In preparation:

- Tiling tripartite graphs with 3-colorable graphs: The extreme case, with Y. Zhao
- Edit distance - estimation and localization
- On the sizes of  $Q_2$ -free families, with M. Axenovich and J. Manske
- Computing the edit distance function for several hereditary properties, with T. McKay
- New vertex-identifying code bounds for regular graphs, with B. Stanton
- On unit disk graphs, with H. Kaul.

Publications are available by links on this document or at my website.  
<http://www.math.iastate.edu/rymartin/pubs.pdf>

# Ryan Martin

---

## Conferences and Talks

- Invited Talks**
- “Tiling in Multipartite Graphs,” SIAM Minisymposium on Graph Theory, 2010 Joint 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 7, 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 4, 2009.
  - “On Avoider-Enforcer games,” 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 1, 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,” AMS Central Section Meeting (#1038), Bloomington, IN, April 6, 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,” AMS Central Section Meeting (#1030), Chicago, IL, October 5-6, 2007.
  - “On the edit distance in graphs,” Discrete mathematics and algebra seminar, University of Delaware, Department of mathematical sciences, Newark, DE, May 11, 2007.
  - “The diameter game,” Miniworkshop: Positional Games, 0715c, Mathematisches Forschungsinstitut Oberwolfach, Germany, April 8-14, 2007.
  - “The diameter game,” AMS Central Section Meeting (#1025), Oxford, OH, March 16-17, 2007.

# Ryan Martin

---

## Conferences and Talks (cont.)

### Invited Talks (cont.)

- “Vertex identifying codes and the random graph,” Computer Science department colloquium, Iowa City, IA, November 4, 2005.
- “Vertex identifying codes and the random graph,” Discrete mathematics and algebra seminar, University of Delaware, Department of mathematical sciences, 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,” Central College mathematics seminar, February 1, 2005.
  
- “It’s raining hyperedges: Online intersecting hypergraphs beyond the threshold,” AMS Central Section Meeting (#1001), Evanston, IL, October 23-24, 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, University of Delaware, Department of mathematical sciences, Newark, DE, May 1999.

**Contributed  
Talks**

- “Expected value of the minimum rank of a graph,” 22nd Cumberland conference on Combinatorics, Graph Theory and Computing, 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, Pittsburgh, PA, May 5, 2007.
- “Recent results on packing problems in multipartite graphs,” Horizons of Combinatorics, Balatonalmádi, Hungary, July 19, 2006.
- “Vertex identifying codes and the random graph,” MIGHTY XLII, Marion, OH, April 29, 2006.
- “Vertex identifying codes and the random graph,” MAA-Iowa conference, Ames, IA, April 7, 2006.
- “The editing distance in graphs,” Rocky mountain discrete mathematics days, Laramie, WY, August 2, 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,” MAA-Iowa conference, 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 5, 2004.

# Ryan Martin

---

## Conferences and Talks (cont.)

### Contributed Talks (cont.)

- “You’ve got Erdős-Ko-Radó: Intersecting hypergraphs online,” MIGHTY XXXVII, Valparaiso, IN, September 20, 2003.
- “Antiramsey Numbers,” AMS Central Section Meeting (#985), Bloomington, IN, April 5, 2003.
- “How many random edges make a dense graph Hamiltonian?,” SIAM Conference on Discrete Mathematics, San Diego, CA, August 14, 2002.
- “On the  $\beta$ -invariant for graphs,” Southeastern International Conference on Combinatorics, Graph Theory and Computing, Boca Raton, FL, March 1995.

### Seminar Talks

- “On Avoider-Enforcer games,” ISU discrete math seminar, Ames, IA, March 31, 2009.
- “The edit distance in graphs,” ISU Mathematics department colloquium, Ames, IA, October 27, 2008.
- “Counting the number of regions formed by circles in the plane,” Pi Mu Epsilon Seminar, ISU, October 19, 2008.
- “The vertex Ramsey problem,” ISU discrete math seminar, Ames, IA, February 19, 2008.
- “The edit distance in graphs,” ISU graduate student seminar, Ames, IA, October 19, 2007.
- “Edit distance in graphs: Colored regularity graphs,” ISU discrete math seminar, Ames, IA, October 2, 2007.
- “Some intriguing open problems regarding positional games,” ISU discrete math seminar, Ames, IA, April 17, 2007.
- “Beauty is rare: The Hoffman-Singleton theorem,” ISU discrete math seminar, Ames, IA, February 6, 2007.
- “The diameter game,” ISU discrete math seminar, Ames, IA, November 14, 2006.
- “Generalized tic-tac-toe: Introduction to Positional Games and probabilistic intuition,” ISU discrete math seminar, Ames, IA, November 7, 2006.
- “Introduction to expander graphs,” ISU discrete math seminar, Ames, IA, April 17, 2006.
- “Smoothed analysis of graphs,” ISU discrete math seminar, Ames, IA, March 20, 2006.
- “On the editing distance in graphs,” ISU discrete math seminar, Ames, IA, March 10, 2006.
- “An application of Szemerédi’s regularity lemma,” ISU discrete math seminar, Ames, IA, November 1 & 8, 2005.
- “The small world problem and so much more!  $6^{6^{6^{\dots}}}$  degrees of graph theory,” ISU graduate student seminar, Ames, IA, 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), Ames, IA, July 14, 2005.
- “Identification codes and superimposed codes,” ISU discrete math seminar, Ames, IA, Feb. 10 & 17, 2005.

# Ryan Martin

---

## Conferences and Talks (cont.)

- Seminar Talks (cont.)**
- “Report on the extremal combinatorics session of the Central Section Meeting of the AMS,” **ISU** discrete math/theory of computing seminar, Ames, IA, October 29, 2004 (with M. Axenovich, A. Wangsness).
  - “Vertex identification codes in graphs,” **ISU** discrete math/theory of computing seminar, Ames, IA, October 15, 2004.
  - “Six degrees of graph theory: Kevin Bacon, Paul Erdős, William McKinley and me,” **ISU** graduate student seminar, Ames, IA, October 6, 2004.
  - “Online intersecting hypergraphs II,” **ISU** discrete math/theory of computing seminar, Ames, IA, August 27, 2004.
  - “On the editing distance in graphs, part II,” **ISU** discrete math/theory of computing seminar, Ames, IA, February 6, 2004.
  
  - “You’ve got Erdős-Ko-Radó: Intersecting hypergraphs online,” **ISU** combinatorics/algebra seminar, Ames, IA, November 10, 2003.
  - “Report from the 37th Midwestern Graph Theory Conference,” **ISU** combinatorics/algebra seminar, Ames, IA, September 29, 2003 (with M. Axenovich).
  - “Six degrees of graph theory: Kevin Bacon, Paul Erdős, William McKinley and me,” **CMU** mathematics undergraduate seminar, Pittsburgh, PA, February, 2003.
  
  - “The regularity lemma,” **CMU** mathematics colloquium, Pittsburgh, PA, March 2002.
  
  - “The Shannon capacity and Ramsey theory,” **RU** graduate student seminar, Piscataway, NJ, December 1998.
- Job Interview Talks**
- “The regularity lemma and applications”
    - University of Alabama in Huntsville, Huntsville, AL, March 2003.
    - Iowa State University, Ames, IA, March 2003.
    - University of Delaware, Newark, DE, February 2003.
    - Louisville University, Louisville, KY, February 2003.

---

## Conferences and Talks (cont.)

**Other  
Conferences  
Attended**

- Theory and Applications of Matrices Described by Patterns, Banff International Research Station (BIRS) workshop, Banff, Alberta, Canada, January 31-February 5, 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 5-9, 2008.
- New Directions in Algorithms, Combinatorics and Optimization, Georgia Institute of Technology, Atlanta, GA, May 5-9, 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.

Some talks are written in Prosper and are available by links on this document or at my website.  
<http://www.math.iastate.edu/rymartin/pubs.pdf>