

# DERRICK STOLEE

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## Education

- Ph.D. University of Nebraska–Lincoln May 2012 Mathematics & Computer Science  
*Advisors:* Stephen G. Hartke and N. V. Vinodchandran  
*Dissertation:* Combinatorics Using Computational Methods
- M.S. University of Nebraska–Lincoln December 2008 Mathematics
- B.S. University of Nebraska–Lincoln May 2007 Mathematics & Computer Science  
*Jeffrey S. Raikes School of Computer Science and Management; graduated with Honors*

## Appointments

- Assistant Professor 2013–Present  
Iowa State University, Department of Mathematics and Department of Computer Science
- J. L. Doob Research Assistant Professor 2012–2013  
University of Illinois at Urbana-Champaign, Department of Mathematics

## Publications

*All publication information also available in the Google Scholar citations page for Derrick Stolee.*

### To Appear

- V. Borozan, M. Ferrara, S. Fujita, M. Furuya, Y. Manoussakis, Narayanan N, and D. Stolee, Partitioning a graph into highly connected subgraphs, to appear in *Journal of Graph Theory*.
- C. Cox, D. Stolee, Ordered Ramsey numbers of loose paths and matchings, *Discrete Mathematics*.
- I. Choi, B. Lidický, and D. Stolee, On Choosability with Separation of Planar Graphs with Forbidden Cycles, *Journal of Graph Theory*.

### Published

- K. G. Milans, D. Stolee, and D. B. West, Ordered Ramsey Theory and Track Representations of Graphs, *Journal of Combinatorics*, 6(4) (2015) 445–456.
- D. Stolee, Automorphism Groups and Adversarial Vertex Deletions, *Australasian Journal of Combinatorics* 60(1) (2014), pp. 27–34.
- B. Garvin, D. Stolee, R. Tewari, and N. V. Vinodchandran, ReachFewL = ReachUL, *Computational Complexity* 23(1) (2014), pp. 85–98. Conference version in *COCOON 2011*.
- S. G. Hartke and D. Stolee, A linear programming approach to the Manickam-Miklós-Singhi Conjecture, *European Journal of Combinatorics* 36 (2014) 53–70.
- S. G. Hartke, D. Stolee, D. B. West, and M. Yancey, On extremal graphs with a given number of perfect matchings, *Journal of Graph Theory* 73(4) (2013) 449–468.
- M. Ferrara, E. Gethner, S. G. Hartke, D. Stolee, and P. S. Wenger, List Distinguishing Parameters of Trees, *Discrete Applied Mathematics* 161, (2013) 864–869.
- S. G. Hartke and D. Stolee, Uniquely  $K_r$ -saturated graphs, *Electronic Journal of Combinatorics* 19(4), P6, (2012) 40 pages.

*Published Journal Articles (continued)*

P. Anand, H. Escudro, R. Gera, S. G. Hartke, and D. Stolee, On the hardness of recognizing triangular line graphs, *Discrete Mathematics* 312, (2012) 2627–2638.

S. G. Hartke, H. Kolb, J. Nishikawa, and D. Stolee, Automorphism groups of a graph and a vertex-deleted subgraph, *Electronic Journal of Combinatorics* 17(1), (2010) R134.

**Refereed Conference Proceedings**

D. Stolee and N. V. Vinodchandran, Space-efficient algorithms for reachability in surface-embedded graphs, *27th IEEE Conference on Computational Complexity*, (2012) 326–333.

B. Garvin, R. Tewari, D. Stolee, and N. V. Vinodchandran, ReachFewL = ReachUL, *17th International Computing & Combinatorics Conference*, (2011) 252–258.

D. Stolee, C. Bourke and N. V. Vinodchandran, A log-space algorithm for reachability in acyclic planar digraphs with few sources, *25th IEEE Conference on Computational Complexity*, (2010) 131–138.

**Submitted Articles**

A. Brandt, M. Ferrara, M. Kumbhat, S. Loeb, D. Stolee, M. Yancey, I,F-Partitions of Sparse Graphs, submitted.

J. Diemunsch, N. Graber, L. Kramer, V. Larsen, L. M. Nelsen, L. L. Nelsen, D. Sigler, D. Stolee, C. Suer, Color-blind index in graphs of very low degree, submitted.

P. DeOrsey, J. Diemunsch, M. Ferrara, N. Graber, S. G. Harke, S. Jahanebkam, B. Lidický, L. Nelsen, D. Stolee, E. Sullivan, On the strong chromatic index of sparse graphs, submitted.

J. M. Carraher, D. Galvin, S. G. Hartke, A. J. Radcliffe, D. Stolee, On the independence ratio of distance graphs, submitted.

M. Ferrara, E. Gethner, S. G. Hartke, D. Stolee, P. S. Wenger, Extending Precolorings to Distinguish Group Actions, submitted.

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, submitted.

**Submitted Conference Articles**

D. Stolee, Automated Discharging Arguments for Density Problems in Grids, submitted.

**Funding**

2015 Rocky Mountain - Great Plains Graduate Research Workshop in Combinatorics (co-PI), National Science Foundation (DMS – Combinatorics, Infrastructure), \$23,408 / 1yr. Active May 2015–April 2016.

*GRWC 2015 was a 2-week workshop for graduate students to collaborate intensely on research problems in combinatorics. The organizing committee consists of faculty from five institutions, and the location rotates annually.*

Mathematical Sciences Sponsorship Fund (PI), Elsevier, \$5,000 / 1yr. Active June 2015.

*Funds supported international students to visit GRWC 2015.*

ILAS Lectureship for Non-ILAS Conferences (PI), International Linear Algebra Society, \$1,000 / 1yr. Active June 2015.

*Funds supported Franklin Kenter to visit GRWC 2015 as an ILAS Lecturer.*

## Awards and Honors

Presidential Fellowship, University of Nebraska, 2011.

*University dissertation fellowship. Four awards per year.*

Grace Chisholm Young and William Henry Young Award, UNL Mathematics Department, 2010.

*Department award for excellence in research by a graduate student. Awarded once per year.*

Othmer Fellowship, University of Nebraska, 2008.

*University fellowship for recruiting exceptional scholars seeking terminal degrees.*

## Teaching Experience

COMS 635X: Computational Combinatorics. Spring 2016

*Students will read research papers and lecture notes written by the instructor. Notes will be posted to public blog.*

MATH 166: Calculus II. Fall 2015

Textbook: *Thomas' Calculus, Early Transcendentals* by Weir.

COMS 330: Discrete Computational Structures. Spring 2015

Textbook: *Discrete Mathematics and its Applications* by Rosen.

MATH 207: Matrices & Linear Algebra. Fall 2014

Textbook: *Elementary Linear Algebra* by Larson.

COMS 229: Advanced Programming Techniques. Spring 2014

Textbooks: *The C Programming Language* by Kernighan & Richie; *The C++ Programming Language* by Stroustrup.

MATH 566: Discrete Optimization. Fall 2013

Textbook: *Combinatorial Optimization* by Cook, Cunningham, Pulleyblank, & Schrijver.

MATH 482: Linear Optimization. (University of Illinois) Spring 2013

Textbook: *Combinatorial Optimization: Algorithms and Complexity* by Papadimitriou & Steiglitz.

MATH 412: Graph Theory. (University of Illinois) Fall 2012 & Spring 2013

Textbook: *Introduction to Graph Theory* by West.

CSCE 424/824: Computational Complexity. (University of Nebraska) Spring 2012

Textbook: *Computational Complexity* by Arora & Barak.

MATH 102: Trigonometry. (University of Nebraska) Summer 2011

Textbook: *Contemporary Trigonometry: A Graphing Approach* by Hungerford.

## Select Presentations

*A full list of all presentations is available on my website.*

I,F-Partitions of Sparse Graphs, *AMS Special Session on Topics in Graph Theory, Hypergraphs and Set Systems*, AMS Central Section Meeting, Chicago, IL (10/04/2015).

On independent sets in Cayley graphs over  $\mathbb{Z}$ , *AMS Special Session on Trends in Graph Theory AMS/MAA Joint Meetings*, Baltimore, MD (01/18/2014).

What experiences matter on your resumé? *MAA-Young Mathematicians' Network Panel Discussion AMS/MAA Joint Meetings*, Baltimore, MD (01/15/2014).

A linear programming approach to the Manickam-Miklós-Singhi Conjecture. *Mathematics Colloquium*, Rochester Institute of Technology, Rochester, NY (11/07/2013).

A linear programming approach to the Manickam-Miklós-Singhi Conjecture, *AMS Special Session on Partially Ordered Sets*, AMS Southeastern Sectional Meeting, Louisville, KY (10/05/2013).

A Branch-and-Cut Strategy for the Manickam-Miklós-Singhi Conjecture, *AMS Special Session on Graph Theory*, AMS Southeastern Sectional Meeting, Oxford, MS, (03/03/2013).

Distinguishing Extension Number, *AMS Special Session on Extremal Graph Theory*, AMS Central Sectional Meeting, Akron, OH, (10/20/2012).

Ordered Ramsey Theory and Track Representations of Graphs, *AMS Special Session on New Advances in Graph Theory*, AMS Eastern Sectional Meeting, Rochester, NY, (09/22/2012).

Uniquely  $K_r$ -saturated graphs, *AMS Special Session on Recent Trends in Graph Theory*, AMS/MAA Joint Meetings, Boston, MA, (01/06/2012).

## Advising

Ph.D. Student: Kevin Moss (current).

M.S. Student: Christopher Cox (May 2015; Carnegie Mellon University for Ph.D.)

Undergraduate: Daniel Geiselhart (2015).

As Committee Member: 3 Ph.D. and 3 M.S.

## Professional Practice Responsibilities

Organizing Committee member for the *Rocky Mountain-Great Plains Graduate Research Workshop 2015* at *Iowa State University*, Ames, IA, June 1–12, 2015.

Co-Organized (with Bernard Lidický) the *AMS Special Session on Extremal and Structural Graph Theory* at the *AMS Western Sectional Meeting*, Las Vegas, NV, April 18–19, 2015.

Organizing Committee member for the *Rocky Mountain-Great Plains Graduate Research Workshop* at *University of Denver* and *University of Colorado Denver*, Denver, CO, July 29–August 8, 2014.

Referee for *European Journal of Combinatorics*, *the Electronic Journal of Combinatorics*, *Discrete Applied Mathematics*, *Discrete Mathematics*, *ACM Transactions on Computation Theory*, *Central European Journal of Mathematics*, and *Ars Combinatoria* for a total of 12 reviews.

MathSciNet Mathematical Reviews (Reviewer Number 92682) for a total of 9 reviews.

## Institutional Service

Organizer, Discrete Mathematics Working Seminar, August 2014–May 2015.

Organizer, Discrete Mathematics Seminar, August 2014–Current.

Participant, Discrete Mathematics Working Seminar, August 2014–May 2015.

Member, Computer Science Graduate Committee, July 2014–Current.

Co-Organizer, Information & Complexity Theory Seminar, April 2014–August 2014.

Member, Computer Science Undergraduate Retention Committee, August 2013–June 2014.

Member, Mathematics Colloquium Committee, August 2013–Current.

## Online Artifacts

*Computational Combinatorics* (Blog) <http://computationalcombinatorics.wordpress.com/>

YouTube Feed for Mathematical Videos (31 videos) <https://www.youtube.com/user/stoleemath>

Mathematics Software (9 projects) <http://orion.math.iastate.edu/dstolee/software.htm>