

## Aaron M. Dutle

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CONTACT INFORMATION	Interdisciplinary Mathematics Institute University of South Carolina LeConte College 1523 Greene Street Columbia, SC 29208 USA	Voice: (859) 630-3545 Fax: (803) 777-3783 E-mail: <a href="mailto:dutle@math.sc.edu">dutle@math.sc.edu</a> Web: <a href="http://www.math.sc.edu/~dutle">www.math.sc.edu/~dutle</a>
CURRENT POSITION	University of South Carolina, Interdisciplinary Mathematics Institute Research Assistant Professor Funded through DARPA-AFOSR grant #FA9550-12-1-0405.	
RESEARCH INTERESTS	Graph Theory and Combinatorics. In particular, spectral methods, probabilistic methods, modeling and applications of real-world networks, and computation on massive graphs.	
EDUCATION	Ph.D., Mathematics, May 2012 University of South Carolina, Columbia, South Carolina USA Advisor: Professor Joshua Cooper Dissertation: <i>Spectra of Hypergraphs</i>  M.S., Mathematics, May 2006 Texas A&M University, College Station, Texas USA Advisor: Professor Philip Yasskin  B.A., Mathematics, May 2003 Northern Kentucky University, Highland Heights, Kentucky USA Second Major in Philosophy Minor in Journalism	
PUBLICATIONS	<i>Greedy Galois Games</i> , The American Mathematical Monthly, Volume 120, no. 5, May 2013, Pages 441–451, with Joshua N. Cooper.  <i>Spectra of Uniform Hypergraphs</i> , Linear Algebra and its Applications, Volume 436, Issue 9, 1 May 2012, Pages 3268–3292, with Joshua N. Cooper.  <i>Odometry of Graphs</i> , submitted to Electronic Journal of Combinatorics, with Bill Kay.  <i>On Realizations of a Joint Degree Matrix</i> , submitted to Discrete Applied Mathematics, with Éva Czabarka, Péter Erdős, and István Miklós.  <i>Computing Hypermatrix Spectra with the Poisson Product Formula</i> , submitted to Linear and Multilinear Algebra, with Joshua N. Cooper.  <i>Abelian Groups Yield Many Large Families for the Diamond Problem</i> , submitted to Journal of Combinatorial Theory, Series A, with Éva Czabarka, Travis Johnston, and László Székely.	

TEACHING  
EXPERIENCE

Positions held:

University of South Carolina, Columbia, South Carolina USA

*Research Assistant Professor*, August 2012 to present

*Graduate Teaching Assistant*, August 2007 to May 2012

University of South Carolina Upstate, Spartanburg, South Carolina USA

*Adjunct Instructor*, August 2006 to May 2007

Texas A&M University, College Station, Texas USA

*Graduate Teaching Assistant*, August 2003 to May 2004

Courses taught:

Basic College Mathematics

Calculus I

Calculus II

Calculus for Mgmt. and Soc. Sciences

College Algebra

College Mathematics

Discrete Optimization

Discrete Structures for Comp. Science

Finite Mathematics

Strategies in Problem Solving

INVITED  
PRESENTATIONS

“Constructing Diamond-free Posets with Markov Chains and Groups” (25 min) Partially ordered sets special session, AMS Southeastern Sectional meeting, October 5, 2013.

“Graph Theory in the Information Age” (60 min) Department Colloquium, Northern Kentucky University, September 13, 2013.

“Degree Sequence and Joint Degree Matrix Models” (60 min) Summer School on Network Science, University of South Carolina, May 22, 2013.

“Counting Sub-Hypergraphs and the Characteristic Polynomial” (25 min) Graphs, Hypergraphs and Counting special session, AMS Spring Central Sectional Meeting, University of Iowa, April 27, 2013.

“Realizing Joint Degree Matrices” (25 min) Extremal combinatorics special session, SIAM-SEAS 2013 annual meeting, University of Tennessee Knoxville, March 23, 2013.

AWARDS AND  
HONORS

Travel Award (for 8 students)– Triangle lectures in Combinatorics, 2013 (\$800)

Travel Award (NSF)– 2nd PRIMA Congress, 2013 (\$2000)

Outstanding Graduate Student– University of South Carolina, 2011-2012

Travel Award– 8th Graduate Student Combinatorics Conference, 2012 (\$400)

Fully Funded Participant– Memphis-Budapest Summer School in Combinatorics, 2011

Visitor for 3 weeks– Fields Institute of Mathematics, 2011 (\$2000)

Outstanding Graduate Student (Honorable Mention)– University of South Carolina, 2010-2011

Travel Award– Atlanta Lecture Series in Combinatorics and Graph Theory III, 2011 (\$200)

Travel Award– 7th Graduate Student Combinatorics Conference, 2011 (\$700)

Fully Funded Participant– PIMS Summer School in Probability, 2010

Fully Funded Participant– MSRI Workshop on Toric Varieties, 2009

Outstanding First Year Graduate Student– University of South Carolina, 2007-2008

Outstanding Senior in Mathematics– Northern Kentucky University, 2002

PROFESSIONAL  
SERVICE

Referee Work:

SIAM Journal on Discrete Mathematics (2 articles)  
SIAM Journal on Matrix Analysis and Applications(1 article)  
Linear Algebra and its Applications(1 article)  
Involve (1 article)

Conferences:

Coordinated extra-curricular activities for attendees of the Summer School on Network Science at the University of South Carolina, May 20-31, 2013.

Chaired “Combinatorics and Graph Theory III” session at Joint Mathematics Meetings, Jan 2012.

Service for students:

Organized and secured funding for 8 Graduate Students to attend the Triangle Lectures in Combinatorics at North Carolina State University, Raleigh NC, September 20-21, 2013.

Organized and secured funding for 7 Graduate Students to attend the Graduate Student Combinatorics Conference at the University of Illinois at Urbana-Champaign, October 13-15, 2012.

President of USC SIAM Chapter, May 2011-May 2012.

USC High School Math Contest Proctor, 2008, 2009, 2010.

MEMBERSHIPS

American Mathematical Society.

Society for Industrial and Applied Mathematics.

CONTRIBUTED  
PRESENTATIONS

“Realizations of Joint Degree Matrices” Second PRIMA Congress, Shanghai, China, June 25, 2013.

“Joint Degree Matrices” USC Combinatorics Seminar, February 7, 2013

“Joint Degree Matrices” *series of 2*, USC Combinatorics working group, October 29-November 5, 2012

“Graph Odometry” USC Combinatorics Seminar, September 26, 2012

“The Local Lemma and the Lattice Gas” *series of 2*, USC Combinatorics working group, September 17-24, 2012

“Greedy Galois Games” Graduate Student Combinatorics Conference, University of Illinois, Urbana-Champaign, April 14, 2012.

“Spectra of Hypergraphs” Thesis Defense, University of South Carolina, March 28, 2012.

“Resultants and Sparse Matrices” USC SIAM Student Seminar, Spring 2012.

“Fair Duels, Bad Shots, and Thue-Morse” Combinatorics and Graph Theory III, Joint Mathematics Meetings, Boston, MA, January 5, 2012.

“Dinur’s Proof of the PCP Theorem” *series of 7*, USC Algebra & Logic Seminar, Fall 2011-Spring 2012.

“Spectra of Hypergraphs” Special Session on Extremal and Probabilistic Combinatorics, AMS Central Section Meeting, University of Nebraska-Lincoln, October 16, 2011.

“Greedy Galois Games” USC Combinatorics Seminar, Fall 2011.

“An Introduction to the Graph Homomorphism Order” USC Combinatorics Seminar, Fall 2011.

“Spectra of Hypergraphs” Graduate Student Combinatorics Conference, Pennsylvania State University April 9, 2011.

“Spectra of Hypergraphs” SIAM minisymposium on Graph Theory, Joint Mathematics Meetings, New Orleans, LA, January 9, 2011.

“An Introduction to Spectral Hypergraph Theory” USC Combinatorics Seminar, Fall 2010.

“Graphs with Ambiguous Chromatic Number ” USC Algebra & Logic Seminar, Fall 2010.

“An Introduction to Toric Varieties” USC Student Algebraic Geometry Seminar, Fall 2009.

WORKSHOPS AND  
CONFERENCES  
ATTENDED

Summer School on Network Science, University of South Carolina, May 20-31, 2013.

Memphis-Budapest Summer School in Combinatorics, The Alfréd Rényi Institute of Mathematics, August 7-20, 2011

Workshop on Graph Homomorphisms, The Fields Institute, July 11-15, 2011

Fields Summer School on the Mathematics of Constraint Satisfaction, The Fields Institute, June 26-30, 2011

PIMS Summer School in Probability 2010, University of Washington and Microsoft Research, June 21-July 10, 2010.

Summer Graduate Workshop on Toric Varieties, Mathematical Sciences Research Institute, Berkeley CA, June 2009.

Additionally attended over 25 local, regional, national, and international conferences, including many AMS and SIAM sectional meetings, Joint Mathematics meetings, Atlanta Lectures in Combinatorics and Graph Theory meetings, and many others. Refer to my website for a full listing.

REFERENCES

Prof. Joshua Cooper  
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University of South Carolina  
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Prof. Éva Czabarka  
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