

JONATHAN CUTLER  
CURRICULUM VITÆ

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## EXPERIENCE

2012–present	Associate Professor, Montclair State University
2007–2012	Assistant Professor, Montclair State University
2005–2007	Research Assistant Professor, University of Nebraska-Lincoln
Fall 2004	Post-doctoral Research Fellow, Umeå University, Umeå, Sweden
2000–2004	Van Vleet Memorial Doctoral Research Assistant, University of Memphis
1998–2000	Graduate Teaching Assistant, University of Memphis

## EDUCATION

2004	Ph.D., University of Memphis, Memphis, TN Dissertation: <i>Extremal and Algebraic Graph Theory</i> Advisor: Dr. Béla Bollobás
2000	M.Sc., University of Memphis, Memphis, TN Thesis: <i>The Matthews-Sumner Conjecture</i> Advisor: Dr. Richard Schelp
1998	B.A., Carleton College, Northfield, MN

## RESEARCH PAPERS

13. “Extremal graphs for homomorphisms II” with A.J. Radcliffe, to appear in *J. Graph Theory*.
12. “The maximum number of complete subgraphs in a graph with given maximum degree” with A.J. Radcliffe, *J. Combin. Theory Ser. B* **104** (2014), 60-71.
11. “Hypergraph independent sets” with A.J. Radcliffe, *Combin. Probab. Comput.* **22** (2013), 9-20.
10. “Independent sets in graphs with given minimum degree” with J. Alexander<sup>†</sup> and T. Mink<sup>†</sup>, *Electronic J. of Combin.* **19(3)** (2012), #P37.
9. “Extremal problems for independent set enumeration” with A.J. Radcliffe, *Electronic J. Combin.* **18(1)** (2011), #P169.
8. “Extremal graphs for homomorphisms” with A.J. Radcliffe, *J. Graph Theory* **67** (2011), 261-284.
7. “Negative dependence and Srinivasan’s sampling process” with J. Brown Kramer, A.J. Radcliffe, *Combin. Probab. Comput.* **20** (2011), 347-361.
6. “An entropy proof of the Kahn-Lovász theorem” with A.J. Radcliffe, *Electronic J. of Combin.* **18(1)** (2011), #P10.
5. “The interlace polynomial of forests” with C. Anderson\*, A.J. Radcliffe, L. Traldi, *Discrete Math.* **310** (2010), 31-36.
4. “Trees through specified vertices,” *Discrete Math.* **309** (2009), 2749-2754.

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<sup>†</sup>Master’s student

\*Undergraduate student

3. “Unavoidable subgraphs of colored graphs” with B. Montágh. *Discrete Math.* **308** (2008), 4396-4413.
2. “Latin squares with forbidden entries” with L.-D. Öhman. *Electronic J. of Combin.* **13** (2006), #R47.
1. “The interlace polynomial of graphs at  $-1$ ” with P. Balister, B. Bollobás, L. Pebody. *European J. of Combin.* **23** (2002), 761-767.

#### TECHNICAL REPORTS/SURVEYS

2. “Coloring graphs with graphs: a survey,” *Graph Theory Notes N.Y.* **63** (2012), 7-16.
1. “Cycle double covers of graphs with disconnected frames” with R. Häggkvist. Research report 6, 2004, Department of Mathematics, Umeå University.

#### AWARDS

2012	MSU CSAM Outstanding Academic Advising Award
2008-2009	MSU CSAM interdisciplinary grant for “Investigating land use change using cellular automata”
2007	Co-PI on National Sciences Foundation grant for Random Combinatorial Structures conference
2006-2007	Project NExT Fellow (Sepia Dot), MAA and University of Nebraska-Lincoln, sponsors
2000-2004	Van Vleet Memorial Doctoral Research Fellowship
1999	Outstanding Tutor Award, Math Tutoring Center, University of Memphis

#### INVITED LECTURES

October 2013	“Independent sets in graphs with given minimum degree,” Graph Theory and Combinatorics Seminar, University of Illinois at Urbana-Champaign, Urbana, IL
October 2013	“Independent sets in graphs with given minimum degree,” Rutgers Discrete Math Seminar, Rutgers University, New Brunswick, NJ
March 2013	“Extremal problems for homomorphisms,” Graph Theory and Combinatorics Seminar, University of Illinois at Urbana-Champaign, Urbana, IL
February 2013	“Coloring graphs with graphs,” Undergraduate Mathematics Colloquium, Monmouth University, West Long Branch, NJ
September 2012	“Hypergraph independent sets,” AMS Section Meeting, Special Session on New Advances in Graph Theory, Rochester, NY
April 2012	“Coloring graphs with graphs,” Plenary Lecture, Graph Theory Day 63, Fairleigh Dickinson University, Hackensack, NJ
October 2011	“Independent sets in graphs with given minimum degree,” AMS Sectional Meeting, Special Session on Extremal and Probabilistic Combinatorics, Lincoln, NE
July 2011	“Extremal problems related to graph homomorphisms,” Thematic session in Combinatorics, 28th Brazilian Colloquium in Mathematics, Instituto Nacional de Matemática Pura e Aplicada (IMPA), Rio de Janeiro, Brazil
May 2011	“Extremal problems for homomorphisms,” Combinatorial and Additive Number Theory (CANT 2011), CUNY Graduate Center, New York, NY
May 2011	“Extremal problems related to homomorphisms,” AMS Sectional Meeting, Special Session on Probabilistic and Extremal Combinatorics, Las Vegas, NV
March 2011	“Extremal problems related to homomorphisms,” New York Combinatorics Seminar, CUNY Graduate Center, New York, NY
December 2010	“Coloring graphs with graphs,” Discrete Mathematics Seminar, Seton Hall University, South Orange, NJ

November 2010	“Hypergraph independent sets,” AMS Sectional Meeting, Special Session on Graphs and Hypergraphs, South Bend, IN
November 2010	“Coloring graphs with graphs,” Mathematics Department Colloquium, University of Fairfield, Fairfield, CT
October 2010	“Hypergraph independent sets,” Discrete Mathematics Seminar, University of Delaware, Newark, DE
May 2010	“Extremal problems for homomorphisms,” AMS Sectional Meeting, Special Session on Graph Theory, Newark, NJ
May 2009	“Negative dependence and Srinivasan’s sampling process,” 22nd Cumberland Conference on Combinatorics, Graph Theory and Computing, Bowling Green, KY
March 2009	“Extremal problems for counting homomorphisms,” AMS Sectional Meeting, Special Session on Extremal and Probabilistic Combinatorics, Urbana-Champaign, IL
January 2009	“Entropy inequalities,” SIAM Mini-symposium on Graph Theory, AMS-MAA Joint Meetings, Washington, DC
May 2008	“Extremal problems for counting homomorphisms,” International Conference on Interdisciplinary Mathematical and Statistical Techniques, Memphis, TN
April 2008	“The interlace polynomial of graphs,” Mathematics Department Seminar, Lafayette College
October 2007	“Negative dependence and Srinivasan’s sampling process,” AMS Sectional Meeting, Special Session on Extremal and Probabilistic Combinatorics, Chicago, IL
February 2007	“On the number of complete bipartite subgraphs of a graph,” Department of Mathematical Sciences Seminar, Montclair State University
January 2007	“On the number of complete bipartite subgraphs of a graph,” Mathematics Department Colloquium, University of Nebraska–Lincoln
November 2006	“On the number of complete bipartite subgraphs of a graph,” AMS Sectional Meeting, Special Session on Extremal and Probabilistic Combinatorics, Fayetteville, AR
April 2005	“Latin squares with forbidden entries,” AMS Sectional Meeting, Special Session on the Probabilistic Paradigm in Combinatorics, Dover, DE
February 2005	“On the cycle double cover conjecture,” Mathematics Department Colloquium, University of Nebraska–Lincoln
March 2003	“The geodetic number of digraphs,” Mathematics Department Colloquium, Gettysburg College, Gettysburg, PA

## TEACHING EXPERIENCE

MONTCLAIR STATE UNIVERSITY	
Fall 2013	Linear Algebra Foundations of Modern/Abstract Algebra
Spring 2013	Calculus III Topology
Fall 2012	Calculus III Topics for Undergraduates: The Probabilistic Method
Spring 2012	Calculus I Advanced Calculus/Intermediate Analysis I (Graduate)
Fall 2011	Calculus II Graph Theory (Graduate)
Spring 2011	Probability (two sections)
Fall 2010	New Student Experience in the Mathematical Sciences Calculus II (two sections) Applied Combinatorics and Graph Theory
Spring 2010	Calculus I (two sections) Theory of Numbers
Fall 2009	Probability Combinatorial Mathematics (Graduate)
Spring 2009	Contemporary Applied Mathematics for Everyone (two sections)

	Topology
Fall 2008	Contemporary Applied Mathematics for Everyone (two sections)
	Graph Theory (Graduate)
Spring 2008	Calculus I (two sections)
	Development of Mathematics
Fall 2007	Calculus I
	Development of Mathematics

## UNIVERSITY OF NEBRASKA-LINCOLN

Spring 2007	Matrix Theory
Fall 2006	Szemerédi's Regularity Lemma (Graduate)
	Contemporary Mathematics
Spring 2006	Graph Theory (Graduate)
	Elementary Analysis
Fall 2005	Contemporary Mathematics
	Combinatorics (Graduate)
Spring 2005	Analytic Geometry & Calculus III
	Matrix Theory

## UNIVERSITY OF MEMPHIS

2000	Concepts of Algebra/Foundations of Mathematics II, 3 total sections
1999–2000	Concepts of Number/Foundations of Mathematics I, 6 total sections

## PROFESSIONAL SOCIETIES

1999-present	American Mathematical Society
2004-present	Mathematical Association of America