Michael E. Young

CONTACT INFORMATION	Department of Mathematics Iowa State University 396 Carver Hall Ames, IA 50011 USA (515) 294-1752	928 NE Kamies Ln Ankeny, IA 50021 myoung@iastate.edu www.math.iastate.edu/myoung (904) 707-4467

EDUCATION

Carnegie Mellon University Pittsburgh, PA

Ph.D.	Mathematical Sciences	2008
M.S.	Mathematical Sciences	2005

University of Florida Gainesville, FL

B.S.	Mathematics	2003

DISSERTATION

Title: *Triangle Problems in Extremal Graph Theory*
Area: Extremal Graph Theory, Ramsey Theory, Combinatorics
Advisors: James Cummings and John Mackey

RESEARCH INTERESTS

Combinatorics, Extremal Graph Theory, Ramsey Theory, Algebraic Graph Theory, Zero Forcing, Combinatorial Matrix Theory

EMPLOYMENT

Iowa State University

Alliance Postdoctoral Fellowship	2011-Pres
Post-Doc	2010-2011

Smith College

Mellon Post-Doctoral Fellow	2008-2010

Carnegie Mellon University

Instructor	2006-2008
Teaching Assistant	2003-2007
Supplemental Instruction Administrator	2006-2008

University of Florida

Teaching Assistant	2002

AWARDS

Alliance for Building Faculty Diversity Postdoctoral Fellowship

Mellon Postdoctoral Fellowship

PUBLICATIONS

Appeared \ Accepted

1. L. Kramer, R. Martin, and M. Young. *On diamond-free subposets of the Boolean lattice.* to appear in Journal of Combinatorial Theory, Series B(2012).

2. M. Catral, A. Cepek, L. Hogben, M. Huynh, K. Lazebnik, T. Peters, and M. Young. *Zero forcing number, maximum nullity, and path cover number of subdivided graphs.* to appear in Electronic Journal of Linear Algebra (2012).

3. D. Burgarth, D. D'Alessandro, L. Hogben, S. Severini, and M. Young. *Zero forcing, linear and quantum controllability for systems evolving on networks.* to appear in IEEE Transactions on Automatic Control (2012).

4. L. Hogben, M. Huynh, N. Kingsley, S. Meyer, S. Walker, M. Young. *Propagation time for zero forcing on a graph.* Discrete Applied Mathematics, 160:1994-2005, (2012).

5. R. Haas and M. Young. *The anti-ramsey number of a perfect matching.* Discrete Mathematics, 312:933-937, (2012).

6. J. Cummings and M. Young. *Graphs containing a K_3 are 3-uncommon.* Journal of Combinatorics, 2:1-14, (2011).

7. s-m. belcastro and M. Young. *1-factor covers of regular graphs.* Discrete Applied Mathematics, 159:281-287, (2011).

8. G. Mazzuoccolo and M. Young. *Graphs of arbitrary excessive class.* Discrete Mathematics, 311:32-37, (2011).

9. M. Albertson, J. Pach, and M. Young. *Disjoint Homometric Sets in Graphs.* Ars Math. Contemp. 4:1-4 (2011).

Submitted

10. M. Beck, D. Blado, J. Crawford, T. Jean-Lois, and M. Young. *On weak chromatic polynomials of mixed graphs.* (2012)

11. J. Cummings, D. Král, F. Pfender, K. Sperfeld, A. Treglown, and M. Young. *Monochromatic triangles in three-coloured graphs.* (2012).

12. S. Butler and M. Young. *Throttling zero forcing propagation speed.* (2012).

13. L. Ozkahya and M. Young. *Anti-ramsey number of matchings in hypergraphs.* (2011).

14. D. Burgarth, V. Giovannetti, L. Hogben, S. Severini, and M. Young. *Logic circuits from zero forcing.* (2011).

15. J. Ekstrand, C. Erickson, H.T. Hall, D. Hay, L. Hogben, R. Johnson, N. Kingsley, S. Osborne, T. Peters, J. Roat, A. Ross, D. Row, N. Warnberg, and M. Young. *Positive semidefinite zero forcing number.* (2011).

In Preparation

- S. Butler, M. Lastrina, and M. Young. *On sum-list coloring.*
- A. Berliner, M. Catral, L. Hogben, M. Huynh, K. Lied, and M. Young. *Minimum rank, maximum nullity, and zero forcing number of simple digraphs.*
- M. Beck, E. Meza, B. Nevarez, A. Shine, and M. Young. *The chromatic polynomials of signed versions of the Petersen graph and small complete graphs.*

GRANTS

IMA Conference Grant (PI, with co-PI Steve Butler and co-PI Ryan Martin): MIGHTY LIII, September 21-22, 2012. ($4000)

NSF Conference Grant, DMS-1238712 (Co-PI, with PI Steve Butler and co-PI Ryan Martin): MIGHTY LIII, September 21-22, 2012. ($9000)

NSA Conference Grant, (Co-PI, with PI Steve Butler and co-PI Ryan Martin): MIGHTY LIII, September 21-22, 2012. ($5900)

Invited Talks

Matrices and Graph Theory Minisymposium, 18th ILAS Conference. Providence, RI, June 3-7, 2013.

Special Session on Zero Forcing, Maximum Nullity/Minimum Rank, and Colin de Verdiere Graph Parameters, AMS Central Sectional Meeting, Iowa State University, Ames, IA , April 27-28, 2013.

Special Session on Extremal Graph Theory, AMS Western Sectional Meeting, University of Colorado Boulder, Boulder, CO, April 13-14, 2013.

"On Ramsey Multiplicities of Graphs Containing Triangles." Ramsey Theory Minisymposium, SIAM Conference on Discrete Mathematics, Dalhousie University, Halifax, NS Canada, June 21, 2012. (Supported by SIAM Postdoc/Early Career Travel Award)

"Zero Forcing Number and Maximum Nullity of Subdivided Graphs." Special Session on Matrices and Graphs, Joint Mathematics Meetings, Boston,MA, Januaray 7, 2012.

"Anti-Ramsey number of matchings in hypergraphs." Special Session on Extremal and Probabilistic Combinatorics, AMS Central Sectional Meeting, University of Nebraska-Lincoln, Lincoln, NE, October 15, 2011.

"Zero Forcing Sets with Applications." Combinatorial Matrix Theory Minisymposium, 17th ILAS Conference Pure and Applied Linear Algebra: The New Generation, Braunschweig, Germany, August 25, 2011.

"Graphs containing triangles are not 3-common." Special Session on Graph Theory, AMS Central Sectional Meeting, University of Iowa, Iowa City, IA, March 20, 2011.

"Graphs of arbitrary excessive class." NAM Granville-Brown-Haynes Session of Presentations by Recent Doctoral Recipients in the Mathematical Sciences, Joint Mathematics Meetings, New Orleans, LA, January 8, 2011.

"Graphs of arbitrary excessive class." CoNE Revisited "Celebrating the Inspirations of Michael O. Albertson", Smith College, Northampton, MA, March 26-28, 2010.

"Disjoint Homometric Sets in Graphs." CAARMS 15 (Conference for African-American Researchers in the Mathematical Sciences), Rice University, Houston, TX, June 26, 2009.

Contributed Talks

"Disjoint Homometric Sets in Graphs." Convexity and Metric Graph Theory Minisymposium, CanaDAM 2011, University of Victoria, Victoria, BC, June 1, 2011.

Conferences and Sessions Organized

BIRS Focused Research Group (FRG) propsed, *Minimum Rank, Maximum Nullity, and Zero Forcing of Graphs*, Banff International Research Station, Banff, AB Canada, 2013.

AIM SQuaRE (Structured Quartet Research Ensembles), *Exponential Domination*, American Institute of Mathematics, Palo Alto, CA, July 14-20, 2012.

Coorganizer for MIGHTY LIII (MIdwestern GrapH Theory), Iowa State University, Ames, IA, September 21-22, 2012.

Coorganizer for AMS Central Sectional *Special Session on Graph Theory*, University of Iowa, Iowa City, IA, March 18-20, 2011.

Invited Participant

Research experiences for undergraduate faculty, American Institute of Mathematics (AIM), Palo Alto, CA, July 18-22, 2011.

Algebraic Graph Theory Workshop, Banff International Research Station (BIRS), Banff,AB Canada, April 24-29, 2011.

2010 NSF-CBMS Regional Conference "The Mutually Beneficial Relationship of Matrices and Graphs.", Iowa State University, Ames, IA, July 12-16, 2010.

National Security Agency (NSA) 5th Invitational Mathematics Meeting, Baltimore, MD, November 2008.

Other Conferences Attended

NAM Undergraduate MATHFest XXII, Morgan State University, Baltimore, MA, November 8-10, 2012.

Sixth Annual Iowa Mathematical Field of Dreams Conference, Arizona State University, Tempe, AZ, Nov 2-4, 2012.

2012 SACNAS National Conference "Science, Technology, and Diversity for a Healthy World", Seattle, WA, October 11-14, 2012.

Forty-Third Southeastern International Conference on Combinatorics, Graph Theory, and Computing, Florida Atlantic University, Boca Raton, FL, March 5-9, 2012.

XXVII Interuniversity Seminar on Research in the Mathematical Sciences (SIDIM), University of Puerto Rico at Mayagüez, Mayagüez, PR, March 2-3, 2012.

2011 SACNAS National Conference "Empowering Innovation and Synergy Through Diversity", San Jose, CA, October 27-30, 2011.

NAM Undergraduate MATHFest XXI, Dillard University, New Orleans, LA, November 3-5, 2011.

Iowa Summer Research Symposium, University of Iowa, Iowa City, IA, July 27-28, 2011.

CAARMS 16 (Conference for African-American Researchers in the Mathematical Sciences), Baltimore, MD, June 15-18, 2010.

Topics in Graphs and Hypergraphs, Institute for Pure and Applied Mathematics (IPAM), Los Angeles, CA, November 2-6, 2009.

NAM Undergraduate MATHFest XIX, University of District of Columbia, Washington, DC, November 12-14, 2009.

Joint Mathematics Meeting, San Diego, CA, 2008.

NAM Undergraduate MATHFest XVII, Spelman College, Atlanta, GA, November 8-10, 2007.

CAARMS 13, University of Massachusetts-Boston, Boston, MA, June 19-22, 2007.

NAM Undergraduate MATHFest XVI, Howard University, Washington, DC, November 9-11, 2006.

CAARMS 12, University of North Carolina-Chapel Hill, Chapel Hill, NC, June 20-23, 2006.

CAARMS 11, IPAM, Los Angeles, CA, June 21-25, 2005.

NAM Undergraduate MATHFest XIV, Morehouse College, Atlanta, GA, October 7-9, 2005.

UNDERGRADUATE RESEARCH

Postdoc for MSRI-UP REU (Summer 2012)

Faculty Mentor for Iowa State University REU (Summer 2011)

Attended AIM Research Experience for Undergraduate Faculty Workshop (Summer 2011)

Advised a Senior Honor Thesis for a graduating senior at Smith College (2009-10)

Advised a research group of postbacs for Smith College's Center for Women in Mathematics. (Fall of 2009)

TAed for Carnegie Mellon's Center for Nonlinear Analysis REU

	Institution	Course	Sections	Class Size
COURSES TAUGHT	Iowa State	Graduate Graph Theory	1	10
	University	Graph Theory	1	8
		Calculus I	1	30
		Calculus I (lecture)	1	200
		Calculus II	1	30
		Calculus II (lecture)	1	380
	Smith College	Discrete Mathematics	1	20
		Extremal Combinatorics	1	12
		Graph Theory	1	15
		Calculus II	1	25
	Carnegie Mellon	Calculus II	1	20
		Discrete Mathematics (TA)	1	20
		Introduction to Mathematical Software (TA)	2	20
		Concepts of Mathematics (TA)	6	30
		Calculus II (TA)	4	30
	Summer Programs			
	CNA REU	MAPLE Lab (TA)	4	12
	The Pennsylvania Governor's School for the Sciences	Discrete Mathematics	1	100
	The Summer Academy for Mathematics and Science	The Analysis of Games	3	24

SERVICE

Reviewer for AMS Mathematical Reviews

Referee for The Australasian Journal of Combinatorics and Journal of Graph Theory

Recruiter of graduate students to Iowa State

Recruiter and advisor of postbacs students to Smith College's Center for Women in Mathematics

Contributor to Smith College Problem of the week

Supplemental Instruction Supervisor at Carnegie Mellon's Academic Development

Instructor for Summer programs for high school students at Carnegie Mellon

DIVERSITY

Created and coordinate the Mathematicians Of Color Alliance (MOCA), a mentoring group amongst the underrepresented undergraduate and graduate students in mathematics at Iowa State

Mentor underrepresented undergraduate, graduate, and REU students at Iowa State University and Smith College.

Member of NAM and SACNAS

Regularly attend conferences with diversity initiatives: CAARMS, NAM Mathfest, SACNAS

Member of the 2012 Staff for the MSRI-UP summer REU.

Recruit underrepresented graduate students for Iowa State and Carnegie Mellon University

Instructed and mentored students in one of Carnegie Mellon's Summer Programs for Diversity