

ALISON M. MARR

School Address

Department of Math & CS
Southwestern University
Georgetown, TX 78626
Office Phone: (512) 863-1496

Email address: marra@southwestern.edu

Website: <http://www.southwestern.edu/~marra>

EDUCATION

Doctor of Philosophy, Mathematics
Southern Illinois University, Carbondale, IL May 2007

- Advisor: W.D. Wallis
- Area of Specialization: Graph Theory
- Dissertation: *Labelings of Directed Graphs*

Master of Science, Mathematics
Texas A&M University, College Station, TX May 2004

Bachelor of Arts, Honors Diploma, Mathematics
Murray State University, Murray, KY GPA 3.90 Major GPA 4.0 May 2002

- Studied abroad Regensburg, Germany Fall 1999
- Minor in Computer Science
- Completed honors thesis: *An Algebra of Kinship Study of the Cherokee Tribe*

TEACHING EXPERIENCES

Southwestern University August 2007-Present
Assistant Professor, Georgetown, TX

- Taught three sections of Math 113-Introduction to Statistics
- Taught nine sections of Math 154-Calculus I
- Taught three sections of Math 254-Calculus II
- Taught four sections of Math 683/4-Algebraic Structures I
- Taught two sections of Math 693/4-Algebraic Structures II
- Taught three sections of FYS-Wheels and Deals: A Survey of Television Game Shows
- Taught one section of Putnam Power Hour
- Taught a special topics math course on Combinatorics and Graph Theory
- Taught an independent study on Graph Labeling to one student
- Taught an independent study on Mathematical Puzzles to one student
- Taught an independent study, Putnam Power Hour, to one student

Summer 2011 and 2012

STEPS Summer Program: Math Instructor, Georgetown, TX

- Taught 12-14 high school students various topics in mathematics for about 12 days over the summer.

Summer 2011

V2S2 Summer Program: Math Instructor, Georgetown, TX

- Taught 16 high school students various topics in mathematics for 4 days over the summer.

Summer 2010

V2S2 Summer Program: Math Instructor, Georgetown, TX

- Taught 16 high school students various topics in mathematics for 10 days over the summer.
- Helped students create short poster presentations about the mathematics they learned.

Southern Illinois University
Graduate Assistant, Carbondale, IL

Summer 2004-Spring 2006

- Taught two sections of Math 107-Intermediate Algebra.
- Taught two sections of Math 140-Business Calculus.
- Tutored a variety of undergraduate mathematics courses in the tutoring lab.
- Graded papers for a variety of undergraduate mathematics courses.

John A. Logan Community College
Term Faculty Member, Carterville, IL

Summer 2005, Spring 2006

- Taught three sections of Math 108-College Algebra.

Texas A&M University
Teacher's Assistant, College Station, TX

Fall 2003-Spring 2004

- Ran Maple labs and recitations for MATH 151 and 152, Engineering Calculus I and II.

Murray State University
Teacher's Assistant, Murray, KY

Fall 2001/Spring 2002

- Helped in a Math 100 Developmental Mathematics class by grading papers, helping students in class, and running labs for all Math 100 classes.

Murray State University
Math Tutor, Murray, KY

1998-2002

- Volunteered 5 hours per week tutoring all levels of mathematics.

RESEARCH EXPERIENCES

American Institute of Mathematics

June 2012

Research Experiences for Undergraduate Faculty, Providence, RI

- Worked with a small group of undergraduate faculty on research problems appropriate for undergraduate students.
- Gave presentation at the end of workshop on our findings.
- Plan to continue collaboration and publish our findings.

Department of Defense
Graduate Math Program, Ft. Meade, MD

Summer 2006

Bryn Mawr College
EDGE Summer Program, Bryn Mawr, PA

Summer 2002

- Participated in 5-week summer program sponsored by the NSF for women going into graduate studies in mathematics.

Oklahoma Weather Center
Research Experience for Undergraduates, Norman, OK

Summer 2001

- Did 10 weeks of research in the field of meteorology at the National Severe Storms Laboratory. At end of program, wrote paper and presented my findings to researchers in the field.

PUBLICATIONS

1. *Magic Graphs* with W.D. Wallis. Second Edition. Birkhauser, Boston. 2012.
2. "Minimal Pancyclic Graphs." with J.C. George and W.D. Wallis. To appear in *Journal of Combinatorial Mathematics and Combinatorial Computing*.

3. "Some Families of Fixed Points for the Eccentric Digraph Operator." with R.T. Denman and B. M. Anthony. *Journal of Combinatorial Mathematics and Combinatorial Computing*. **78** (2011).
4. "Magic Vertex Labelings of Directed Graphs." *International Journal of Mathematics and Computer Science* **4**, no. 2, (2009).
5. "Bimagic Labelings." with N.C.K. Phillips and W.D. Wallis. *AKCE International Journal of Graphs and Combinatorics* **6**, no. 1, (2009).
6. "Magic Directed Graphs." with Gary Bloom and W.D. Wallis. *Journal of Combinatorial Mathematics and Combinatorial Computing* **65** (2008).
7. "Graceful Labelings of Directed Graphs." *Journal of Combinatorial Mathematics and Combinatorial Computing* **66** (2008).
8. "Closed Neighborhood Anti-Sperner Graphs" with J.P. McSorley, T. D. Porter, and W.D. Wallis. *Australasian Journal of Combinatorics* **38** (2007).
9. "On Relatively Prime Graphs" with Amy Collins and Arthur M. Hobbs. *Congressus Numerantium* **164** (2003).

GRANTS

1. Unfunded: National Science Foundation
 - Requested funding for CombinaTexas 2012 hosted at Southwestern University November 2011
 - Joint proposal with four colleagues from three other Texas universities
2. Unfunded: National Security Agency
 - Requested funding for CombinaTexas 2012 hosted at Southwestern University November 2011
 - Joint proposal with Barbara Anthony and Rick Denman
3. Unfunded: Sam Taylor Fellowship Award
 - Requested funding for CombinaMusic: A Math and Music Concert August 2011
4. Received: Mellon Integrated Scholarly Community Grant March 2010
 - Joint proposal with Michael Kamen and Stephen Marble
 - Work on project entitled "Enhancing the Conceptual Mathematics Knowledge of Elementary School Teachers."
 - Worked with Bill Burden Elementary School's 16 math teachers over the 2010-2011 academic year. Included leading afternoon math content sessions and helping with three lesson studies.
5. Received: Competitive Faculty Funds March 2009
 - Used funds to travel to last Project NExT workshop in Portland, OR in August 2009.
6. Received: Faculty-Student Projects February 2009
 - Worked with SU Junior, Sarah Stern, in Summer 2009 on a research problem involving labelings of directed graphs.
7. Received: Pi Mu Epsilon Lectureship Grant February 2009
 - Submitted w/ SU Junior, Marisa Mauldin. Provides funds for member of PME national council to visit SU's campus.
8. Received: Faculty Travel Award May 2008
9. Submitted: HP Technology for Teaching Grant February 2008
 - Joint proposal with R. Burks, F. Futamura, B. Owens, K. Richards and E. Russell
 - Would supply Southwestern University with 20 Tablet PCs, supporting equipment, and \$20,000.
10. Received: Cullen Faculty Development Program February 2008
 - Conducted research on Magic Vertex Graphs in the Summer/Fall 2008.
 - Submitted paper "Magic Vertex Labelings of Directed Graphs."

CONFERENCE PARTICIPATION

International Workshop on Graph Labeling

- Contributed Talk “Magic type labelings of directed graphs” July 2012
- Contributed Talk “Some new results on labelings of directed graphs” October 2010

R.L. Moore Conference

- Attended Conference June 2012
- Attended Conference and Presenter on the “New Users of IBL” Panel June 2010
- Attended Conference and ACS Workshop on Inquiry Based Learning July 2009

CombinaTexas

- Chaired organizing committee, attended conference April 2012
- Attended conference April 2011
- Contributed Talk “A new type of magic labeling for digraphs” April 2010
- Attended conference April 2004
- Attended conference April 2003

Joint Meetings of the AMS and MAA

- Attended conference and judged undergraduate poster session January 2012
- Attended conference and judged undergraduate poster session January 2011
- Organized Project NExT panel and judged undergrad poster session January 2009
- AWM Workshop presenter “Graceful Labelings Meet Directed Graphs” January 2008
- Contributed Talk “Magic Labeling of Directed Graphs” January 2007
- Attended conference January 2006
- Attended conference January 2003

Mid-West Conference on Combinatorics, Cryptography and Computing

- Invited address “The Best Magic (Directed Graph) Show in Vegas” October 2011
- Contributed talk “Some Families of Fixed Points for the Eccentric Digraph Operator” October 2009
- Contributed talk “Magic vertex labelings of directed graphs” October 2008
- Attended conference October 2007
- Contributed talk “Graceful labelings of directed graphs” October 2006

MathFest

- Contributed talk “Wheels and Deals: An FYS on Television Game Shows” August 2011
- Attended Conference August 2009
- Attended Conference August 2008

MAA Texas Section Spring Meeting

- Attended conference with 11 students April 2011
- Attended conference April 2010
- Attended conference April 2009
- Contributed Talk “Labelings of Directed Graphs” April 2008

Attended 22nd Cumberland Conference on Combinatorics, Graph Theory, and Computing May 2009

ACS Summer Teaching and Learning Workshop June 2008

AMS Spring South Sectional Meeting

- Special Session on Graph Theory “Properties of closed neighborhood anti-Sperner graphs” April 2005

AMS Spring Central Sectional Meeting

- Special Session on Graph Theory “Closed neighborhood anti-Sperner graphs” March 2005

Kentucky Section MAA Spring Conference

- Contributed Talk “An Algebra of Kinship Study of the Cherokee Tribe” April 2002
- Contributed Talk “Games and Graphs” April 2001

Southern Regional Honors Conference

- Contributed Talk “Squaring the Circle...Literally” March 2002
- Contributed Talk with Audra Jennings and Tom Cecil March 2001
- Contributed Talk with Audra Jennings and Tom Cecil March 1999

OTHER PRESENTATIONS

North Louisiana Teachers’ Circle

- Ran problem session on magic squares and graph theory for 30 middle school teachers April 2012

Mathematics Teachers’ Circle of Austin

- “Magical Problems on Magic Squares and Magic Graphs” February 2011

El Dorado High School

- Gave presentation on math and game shows to 4 high school math classes March 2010

University of Dallas Mathematics Colloquium

- “A Magical Mystery Tour of Magic Labelings” October 2009

EDGE Summer Program

- Joint invited speaker for the EDGE 2009 Banquet in Atlanta, GA June 2009

Southwestern University Math Club

- Gave short talk on the mathematics of poker November 2011
- Gave short talk on the mathematics of SET September 2010
- Organized “Critical Points” talk for math majors August 2010
- Participated in talks given by department members on their research November 2008

Texas A&M University Algebra and Combinatorics Seminar

- “A Magical Tour of Various Magic-Type Labelings” October 2008

Southwestern University Math and Computer Science Seminar

- “Something full of grace, followed by some real magic” October 2007

SIU Combinatorics Seminar

- “Labelings of directed graphs” August 2006
- “Graceful directed graphs” March 2006
- “Closed neighborhood anti-Sperner graphs” April 2005
- “On constant weight TSP labelings in K_n ” February 2005

Guest lecture in abstract algebra class at Murray State University

- “Good times with groups and graphs” March 2005

COMMITTEE WORK

- QEP Committee Member Summer 2011-present
- Student Affairs Council Member Fall 2008-Fall 2011
- Awards Committee Member Fall 2008-Spring 2011
- Member of Quantitative Literacy and Numeracy QEP mini-proposal writing team December 2010

DEPARTMENTAL SERVICE

- Departmental representative for Awards Ceremony on Family Day 2010/2011/2012
- Departmental representative for Sophomore Spotlight program February 2010
- Co-Sponsor of Pi Mu Epsilon and MAA Math Club 2007-Present
- Member of Computer Science Search Committee Spring 2008

PANELS AND CLASSROOM SIMULATIONS

- Member of Parent Orientation Panel August 2011
- Member of Family Days Panel on the Liberal Arts March 2011/September 2011
- Member of panel during new faculty orientation Fall 2011
- Gave talk on “Wheels and Deals” as part of Development Office Retreat January 2011
- Offered “Wheels and Deals” as part of Classes Without Quizzes during Homecoming November 2010
- Simulated “Wheels and Deals” FYS as part of Board of Visitors meeting September 2010
- Panel member, Accepted Senior Day Spring 2008

OTHER

- Participated in two pre-advising days Summer 2012
- Served Late Night Breakfast Fall 2011
- Academic Advisor to total of 9 students Fall 2008-Present
- Attended FYS Reunion as part of Sophomore Spotlight March 2010/2011
- Offered “Wheels and Deals” as part of Classes Without Quizzes on Family Day February 2010
- Participated in Peer Teaching Network Fall 2007
- Member of Southwestern Wind Ensemble 2008-Present

PROFESSIONAL SERVICE

- Reviewed paper for *Utilitas Mathematica* Summer 2011
- Reviewed paper for *Ars Combinatoria* Spring 2009
- AWM Digitalizing Task Force, Chair 2008-2010
- Co-organized Project NExT session at Joint Mathematics Meetings January 2009

TECHNICAL SKILLS

- Programming experience in C++ and Maple.
- Knowledge of HTML, LaTeX, MATLAB, Mathematica, and TI-83/TI-84.
- Taught a course using Course Compass and SMART Board technology.

PROFESSIONAL MEMBERSHIPS

- American Mathematical Society
- Association of Women in Mathematics
- Mathematical Association of America

HONORS AND AWARDS

Finalist for Southwestern University Teaching Award	Spring 2011
Selected as a National Project NExT Fellow	June 2008
Texas Section NExT Fellow	Fall 2007
Dissertation Research Award Fellowship	2006-2007
John M. H.Olmsted Outstanding Ph.D. Teaching Assistant	Spring 2006
NSF VIGRE Fellow, Texas A&M University	2002-2003
Received Outstanding Honors Program Graduate and Honors Diploma Recipient	Spring 2002
Gamma Beta Phi Leadership Award	Spring 2002
Named to Who's Who of American College Students	Spring 2002
Mathematics Leadership Award	Spring 2002
Received Max G. Carmen Senior Scholarship/Award	Spring 2001
Named to the National Dean's List	Spring 2000
Received Max G. Carmen Junior Scholarship/Award	Spring 2000
Named to Dean's List all 8 semesters at MSU	Fall 1998-Spring 2002
Kentucky Governor's Scholar	1997