

Amy T. DeCelles

Curriculum Vitae

Contact Information

Goshen College
1700 South Main Street
Goshen, Indiana 46526
574-535-7310
adecelles@goshen.edu
<http://people.goshen.edu/~adecelles/>

Education

- 2009-2011 University of Minnesota, Mathematics PhD, May 2011
Thesis advisor: Paul Garrett
Dissertation title: *Automorphic Partial Differential Equations and Spectral Theory with Applications to Number Theory*
- 2005-2009 University of Minnesota, Mathematics, MS, April 2009
- 2001-2005 University of Chicago, Mathematics, BS, June 2005

Awards and Distinctions

- Doctoral Dissertation Fellowship, 2010-2011
- NSF-funded summer research assistantships, 2008-2010
- Evelyn R. Garbe Scholarship for Women in Mathematics, 2003-2005
- (University of Chicago) *cum laude*, Phi Beta Kappa

Research Interests

Automorphic forms, number theory, representation theory. I am particularly interested in number theoretic applications of the automorphic spectral theory of higher rank groups, the long term goal being to extract asymptotics with error terms, hoping to obtain subconvex bounds, for automorphic L-functions from spectral identities involving integral moments of L-functions.

Research Experience

- Summers 2008-2010 Research assistant for Professor Paul Garrett, University of Minnesota
- Summer 2005 REU SUNY-Potsdam, with Professor Joel Foisy, graph theory and knot theory
- Summers 2001-2004 Research assistant for Professor Craig Lent, University of Notre Dame:
developed a tool for simulating the behavior of quantum cellular automata (QCA) arrays of molecules as an electric field varies with time and wrote Flash code to generate movies from the output data
- Summer 2000 Research assistant, QuarkNet project, University of Notre Dame:
assembled fiber waveguides for use in the DZero detector at Fermilab

Publications

- “An exact formula relating lattice points in symmetric spaces to the automorphic spectrum,” Amy DeCelles, to appear, *Illinois J. Math.*
- “On graphs for which every planar immersion lifts to a knotted spatial embedding,” Amy DeCelles, Joel Foisy, Chad Versace, Alice Wilson. *Involve* 1 (2008), no. 2, 145–158.

Talks and Presentations

- “Pythagorean Triples and Fermat’s Last Theorem,” Amy DeCelles. Goshen College Science Speakers Series, Goshen, IN, May 2011.
- Invited lecture. “Automorphic Spectral Theory and Number Theoretic Applications,” Amy DeCelles. Reed College Mathematics Colloquium, Portland, OR, October 2010.
- “Spectral identities and exact formulas for counting lattice points in symmetric spaces,” Amy DeCelles. Midwest Number Theory Conference for Graduate Students, University of Wisconsin–Madison, November 2009; National Science Foundation sponsored.
- “Relative trace formulas for $GL(3)$, an alternate prescription for spectral identities,” Amy DeCelles. Report from AIM Workshop on $GL(3)$, University of Minnesota, November 2008.
- “Intrinsically linkable graphs,” Amy DeCelles and Alice Wilson. Joint presentation at MathFest, the annual meeting of the Mathematical Association of America, Providence, RI, August 2004.

Teaching Experience

2011-2012	Assistant Professor of Mathematics, Goshen College
August 2010	Facilitator: practice teaching sessions for new teaching assistants, University of Minnesota
Spring 2010	Lecturer: Precalculus II, University of Minnesota
Fall 2009	Lecturer: College Algebra and Probability, University of Minnesota
2007-2009	Development of course materials: generated supplementary course materials for introductory calculus, University of Minnesota
Summer 2006	Advising: evaluated and advised incoming students regarding math placement, University of Minnesota
2005-2009	Discussion section leader for various classes including Calculus I-II, University of Minnesota
2001-2005	Assistant teacher: instructed elementary school reading, writing, and math groups in Chicago and South Bend public schools