

Mark R. O'Brien

CONTACT INFORMATION	Science and engineering offices Department of Mathematics, Statistics, and Computer Science University of Illinois at Chicago Chicago, IL 60609 USA	<i>Cell:</i> (781) 724-2798 <i>Office:</i> (617) 627-5728 <i>E-mail:</i> mobrie06@math.uic.edu <i>Webpage:</i> www.markrobrien.com/
RESEARCH INTERESTS	Geometric group theory, algebraic topology, group theory	
EMPLOYMENT	University of Illinois at Chicago , Chicago, Illinois USA Research assistant professor, September 2008–Current	
EDUCATION	Tufts University , Medford, Massachusetts USA Ph.D., Mathematics graduation date: May 2008. <ul style="list-style-type: none">• Dissertation Topic: “Right-Angled Coxeter Group Actions on CAT(0) spaces”• Advisor: Kim Ruane Lycoming College , Williamsport, Pennsylvania USA B.A., Physics, Astronomy, Minor, Math Jan, 2003	
HONORS AND AWARDS	$\Phi\nu\sigma\iota\kappa\alpha$ award for senior with highest scholastic average	Awarded 2003
	QED award for departmental service,	Awarded 2003
	The Benjamin C. Conner Prize in Mathematics for the graduating student who has done outstanding work in mathematics	Awarded 2003
	Graduated Magna Cum Laude from Lycoming College	Awarded 2003
TEACHING EXPERIENCE	Taught math 210, calculus III, to University of Illinois at Chicago undergraduates. Responsible for grading exams and presenting and preparing all lectures. Fall 2009	
	Taught math 180, calculus I, to University of Illinois at Chicago undergraduates. Responsible for grading exams and presenting and preparing all lectures. Fall 2008, Fall 2008	
	Taught math 11, calculus I, to Tufts University undergraduates. Responsible for grading exams and presenting and preparing all lectures. Fall 2005	
	Taught math 12, calculus II, to Tufts University undergraduates. Responsible for grading exams and presenting and preparing all lectures. Fall 2006, Spring 2006, Fall 2007	
	Was teaching assistant for a large number of undergraduate courses in physics, math, and astronomy. These courses include introduction to physics, introduction to astronomy, calculus I, calculus II (spring 2000 - fall 2002), calculus III, linear algebra, abstract algebra I and II (fall 2004, spring 2005, spring 2006), and symmetry (spring 2004). Fall 2000 - present	

PAPERS IN
PREPARATION

“When does a universal Coxeter group have a strict fundamental domain?”

“Geometric insight into rigidity and the automorphism group of a right-angled Coxeter group.”

“Right-angled Coxeter group actions on $CAT(0)$ spaces” (thesis)

“Actions of right-angled Coxeter groups on two dimensional $CAT(0)$ spaces”

SOME
PRESENTATIONS ON
RESEARCH

Review of summer research, Purdue University, West Lafayette, IN **August 2, 2001**

Review of summer research at the annual American Association of Physics Teachers (AAPT) in Philadelphia, PA **January 20, 2002**

Review of summer research, University of Florida, Gainesville, FL **August 3, 2002**

Lectures in Geometric Group Theory and Topology seminar at Tufts University on Braid Theory, Croke and Kleiner’s example of a $CAT(0)$ group without a well defined boundary, and thesis research

Lectures in Geometry and Dynamics seminar at the University of Illinois at Chicago on research involving right-angled Coxeter groups

Speaker at The Spring Topology and Dynamics Conference in Milwaukee, Wisconsin, USA speaking on Coxeter group actions on $CAT(0)$ spaces **March 13-15, 2008**

PROFESSIONAL
EXPERIENCE

Participated in the Research Experience for Undergraduates 2001 program at Purdue University, High Energy Astrophysics research for Professor Wei Cui, searching for quasi periodic oscillations in the pulsar Sax J1808.4-3658, West Lafayette, Indiana **May 27, 2001 – August 4, 2001**

Participated in the Research Experience for Undergraduates 2001 program at Purdue University, Astrophysics research for Professor Stephen Durbin, measuring the cosmic microwave background, West Lafayette, Indiana **May 27, 2001 – August 4, 2001**

Participated in the Research Experience for Undergraduates 2002 program at the University of Florida, theoretical condensed matter research for Professor Kevin Ingersent, creating a computer model to simulate the effects of randomness on ferromagnetism in a manganese doped gallium arsenide diluted magnetic semiconductor, Gainesville, Florida **May 27, 2002 – August 4, 2002**