

Ryan C. Blair

CONTACT INFORMATION

Department of Mathematics
David Rittenhouse Lab
209 South 33rd Street
Philadelphia, PA 19104-6395

Voice: (805) 895-8978
Fax: (215) 573-4063
E-mail: ryblair@math.upenn.edu
WWW: <http://www.math.upenn.edu/~ryblair>

RESEARCH INTERESTS

Low-Dimensional Topology and Knot Theory

EDUCATION

University of California, Santa Barbara

Ph.D. Mathematics, June 2010

- Dissertation Topic: “Bridge Number and Conway Products”
- Advisor: Martin Scharlemann

M.A., Mathematics, June 2006

University of California, San Diego

B.A., Mathematics, June 2004

EMPLOYMENT

University of Pennsylvania

Post-doctoral lecturer, 2010-Present

GRANTS AND HONORS

Good Teaching Award for Math 240, Penn Math Department	2012
AIM SQuaREs Grant for “Applications of Thin Position to Uniqueness Problems”	2011-2013
Good Teaching Award for Math 500, Penn Math Department	2011
NSF-JSPS Fellowship to study at Nara Women’s University with T. Kobayashi	Summer 2009
Graduate Student Teaching Award, UCSB Math Department	2009
UCSB Doctoral Scholars Fellowship	2004-2008
Raymond L. Wilder Award for Outstanding Achievement in Mathematics	2005

PUBLICATIONS

Alternating Augmentations of Links.

Journal of Knot Theory and its Ramifications, **18**: 67-73, 2009.

Bridge Number and Conway Products.

Algebraic & Geometric Topology **10**: 789-823 (electronic), 2010.

Companions of the Unknot and Width Additivity. (with M. Tomova)

Journal of Knot Theory and its Ramifications, **20**: 497-511, 2011.

A Decomposition Theorem for Higher Rank Coxeter Groups. (with R. Ottman)

ArXiv:1007.3755 To appear in Communications in Algebra.

Width is Not Additive. (with M. Tomova)

ArXiv:1005.1359 To appear in Geometry & Topology

Bridge Number and Tangle Products

Arxiv:1108.5640 To appear in Algebraic & Geometric Topology

SUBMITTED PAPERS *High Distance Bridge Surfaces.* (with M. Tomova and M. Yoshizawa)
Arxiv:1203.4294

Bridge distance, Heegaard genus, and Exceptional Surgeries. (with M. Campisi, J. Johnson, S. Taylor, M. Tomova)
Arxiv:1209.0197

Genus Bounds Bridge Number for High Distance Knots (with M. Campisi, J. Johnson, S. Taylor, M. Tomova)
ArXiv:1211.4787

PAPERS IN PREPARATION *Complexity Bounds for Knot Diagrams Via Essential Surfaces* (with D. Futer and M. Tomova)
Preprint available

Distance Two Knots (with M. Campisi, J. Johnson, S. Taylor, M. Tomova)
Preprint available

Thin Knots with Compressible Thin Levels (with A. Zupan)

On the Structure of String Link Monoids (with R. Koytcheff and J. Burke)

TEACHING
EXPERIENCE

University of Pennsylvania, Lecturer

- 3-Manifolds and branched coverings [graduate independent study] Fall 2012
- The Geometry of Knots and 3-Manifolds [graduate independent study] Spring 2012
- 3-Manifolds [graduate] Spring 2013
- Calculus I Spring 2013
- Point-set Topology Fall 2011
- Calculus III Spring 2011, Spring 2012, Fall 2012
- Differential Topology [graduate] Fall 2010
- Introduction to Calculus Fall 2010, Fall 2011

University of California, Santa Barbara, Teaching Associate

- Differential Equations and Linear Algebra, First Course Summer 2006, Summer 2008
 - Summer Transitional Enrichment Program Summer 2006
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INVITED TALKS

CSU Long Beach Colloquium February 2013
George Mason University Colloquium February 2013
Washington and Lee University Colloquium February 2013
Sam Houston State University Colloquium February 2013
University of Iowa Colloquium January 2013
University of Iowa Graduate Student Talk January 2013
Williams College Colloquium December 2012
Knots in Washington XXXV December 2012
Five Part Lecture Series in the Philadelphia Area Contact / Topology Seminar November 2012
UT Austin, Topology Seminar April 2012
Brown University, Topology Seminar April 2012

Columbia University, Geometric Topology Seminar	March 2012
UPenn, NSO Preceptorial on “The Mathematics of Shoelaces”	September 2011, September 2012
Penn Undergraduate Mathematics Society Lecture Series	April 2011
AMS Sectional on Geometry and Applications of 3-Manifolds, Worcester, MA	April 2011
Temple University, Geometry-Topology Seminar	March 2011
AMS Sectional Meeting on Thin Position, University of Iowa, Iowa City, IA	March 2011
CUNY Graduate Center, Geometry and Topology Seminar	March 2011
Knots in Washington XXXI	December 2010
Haverford, Colloquim	September 2010
University of Pennsylvania, Geometry and Topology Seminar	September 2010
University of Arkansas, Colloquim	November 2009
University of Arkansas, Topology Seminar	November 2009
CSU Channel Islands, Colloquim	October 2009.
JSPS Summer Program Closing Ceremonies, Tokyo, Japan	August 2009
Nara Women’s University, Topology Seminar	August 2009
Nara Women’s University, Five Part Lecture Series	June-July 2009
Bradley University, Colloquim	November 2008
University of Iowa, Topology Seminar	November 2008
Mathematics Research Communities on <i>Teichmüller Theory</i>	June 2008
Claremont Colleges, Topology Seminar	March 2008
CSU Channel Islands, Colloquim	November 2006

SELECTED TALKS

The Summer Topology and its Applications Conference, Mankato, MN	July 2012
UPenn Graduate Student Pizza Seminar	January 2012
Temple University, Topology and Geometry Seminar	October 2011
Nara Women’s University, Topology Seminar	July 2009
Informal Session of the International Georgia Topology Conference	May 2009
California Student Opportunity Program <i>I am going to college</i> lecture series	April 2008
UCSB, Topology Seminar	March 2007
UCSB, Topology Seminar	October 2006
UCSD, Quantum Topology in Dimension Four Seminar	June 2004

CONFERENCES
ATTENDED

Knots in Washington XXXV	2012
The Summer Topology and its Applications Conference, Mankato, MN	2012
Redbud Topology Conference, Stillwater, OK	2012
26th Annual Geometry Festival, Philadelphia, PA	2011
AMS Special Session on Geometry and Applications of 3-Manifolds, Worcester, MA	2011
AMS Special Session on Thin Position, Iowa City, Iowa	2011
Knots in Washington XXXI	2010
William Jaco 70th Birthday Conference, Stillwater, OK	2010
Simplicial Complexes Arising in Low-Dimensional Topology, Tokyo, Japan	2009
Georgia International Topology Conference	2009
Joint Mathematics Meetings	2009
Mathematics Research Communities program, Snowbird, Utah	2008
AMS Special Session, Claremont, CA	2008
Joint Mathematics Meetings	2008

SERVICE

Severed as Referee for: Algebraic and Geometric Topology.	
Coorganizer of the Summer Topology and its Applications Conference, Mankato, MN	2012
Graduate Admissions Committee at UPenn	2012
Calculus III Curriculum Committee at UPenn	2012
Putnam Exam Committee at UPenn	2011
1880 Prize Exam Committee at UPenn	2011
Coorganizer of the Temple University Topology and Geometry Seminar	2011
Coorganizer of the 26th Annual Geometry Festival at UPenn	2011
Math Major Advising Committee at UPenn	2010, 2011, 2012
Graduate Advising Committee at UPenn	2010, 2011, 2012
Organizer of the Graduate Student Topology Seminar at UCSB	2007