

RADMILA SAZDANOVIC

Department of Mathematics, University of Pennsylvania, 209 South 33rd Street Philadelphia, PA 19104

Web: <http://www.math.upenn.edu/~radmilas> ◊ Email: radmilas@math.upenn.edu

ACADEMIC APPOINTMENTS

University of Pennsylvania, Philadelphia Postdoctoral Fellowship Supervisor Robert Ghrist	2010-present
KITP Knotted Fields Program, Santa Barbara Visitor	June 2012
Simons Center for Geometry and Physics, Stony Brook Visiting scholar	June 2010
MSRI Berkeley Postdoctoral Fellowship Special program on Homology Theories of Knots and Links	Spring 2010
Columbia University, New York Visiting Scholar	<i>Fall 2008</i>
Mathematical Institute, Belgrade, Serbia Research Assistant Serbian Academy of Sciences and Arts	2004-2010

EDUCATION

George Washington University, Washington DC PhD in Mathematics, Advisor J.H. Przytycki Categorification of Knot and Graph Polynomials and the Polynomial Ring	<i>2010</i>
George Washington University, Washington DC Master of Arts, Mathematics	<i>2007</i>
Faculty of Mathematics, University of Belgrade Dipl.Mat. (equiv.)	<i>2005</i>

FELLOWSHIPS AND AWARDS

AMS Simons Travel Grant	2012-2014
Simons Center Invitee	June 2011
James H. Taylor Graduate Mathematics Prize George Washington University	2009
Marvin Green Prize George Washington University	2006
Presidential Merit Fellowship George Washington University	2005-2010
Scholarships for a promising generation Scholarship of the Royal Norwegian Embassy in Belgrade	2000

RESEARCH INTERESTS

Low-dimensional topology and applied topology, knot theory, categorification, combinatorics.

PUBLICATIONS

BOOK

Jablan, S., Sazdanović, R., 'LinKnot: Knot Theory by Computer', *World Scientific edition 'Knots and Everything'* **21** (2007) pp.500 ISBN 978-981-277-223-7

PAPERS

- Khovanov, M., Sazdanović, R., Categorifications of orthogonal polynomials, preprint.
- Khovanov, M., Sazdanović, R., Categorifications of the generalized chromatic polynomial, in preparation.
- Przytycki, J., Sazdanović, R., Torsion in Khovanov homology of semi-adequate links, submitted. arXiv:1210.5254
- Khovanov, M., Sazdanović, R., Categorifications of the polynomial ring, submitted. arXiv:1101.0293
- Kauffman, L.H., Jablan, S., Radović, Lj., Sazdanović, R., Reduced Relative Tutte, Kauffman Bracket and Jones Polynomials of Virtual Link Families, *Journal of Knot Theory and Its Ramifications* **22** (4) (2013). arXiv:1106.2785
- Baranovsky, V., Sazdanović, R., Graph homology and graph configuration spaces, *Journal of Homotopy and Related Structures*, Vol 7 (2012), 1–13. <http://www.springerlink.com/content/j25100812q46478p/>
- Jablan, S., Radović, Lj., Sazdanović, R., Zeković, A., Mirror-curves and knot mosaics, *Computers and Mathematics with Applications*, Vol 64, Issue 4, (2012) 527–543.
- Jablan, S., Radović, Lj., Sazdanović, R., Nonplanar graphs derived from Gauss codes of virtual knots and links, *J Math. Chem.* Vol. 49, No. 10 (2011) 2250-2267.
- Jablan, S., Radović, Lj., Sazdanović, R., Knots and Links Derived from Prismatic Graphs, *MATCH Commun. Math. Comput. Chem.* Vol 66 No. 1 (2011) 65–92.
- Jablan, S., Sazdanović, R., Diagram dependent knot invariants and properties, "Introductory Lectures on Knot Theory" "Selected Lectures on Knot Theory and its Applications to Physics and Biology, *World Scientific edition 'Knots and Everything'* **46** (2011) ISBN 978-9814307994
- Jablan, S., Radović, Lj., Sazdanović, R., Pyramidal knots and links and their invariants, *MATCH Commun. Math. Comput. Chem.* Vol 65 No. 3 (2011) 541–580.
- Pabiniak, M., Przytycki, J., Sazdanović, R., On the first group of the chromatic cohomology of graphs, *Geometriae Dedicata*, Vol 140, No. 1 (2009) 19–48, ISSN 0046-5755. arxiv: math.GT/0607326.
- Jablan, S., Sazdanović, R., Braid Family Representatives, *Journal of Knot Theory and Its Ramifications* **17** (7) (2008) 817–833. arxiv: math.GT/0504479
- Jablan, S., Sazdanović, R., Unlinking number and unlinking gap, *Journal of Knot Theory and Its Ramifications* **16** (10) (2007) 1331-1355. arxiv: math/0503270
- Jablan, S., Sazdanović, R., Knots, Links, and Self-avoiding Curves, *Forma*, **22** (1) (2007), 5–13.
- Kapprauff J., Jablan S., Adamson G.W., Sazdanović R., Golden Fields, Generalized Fibonacci Sequences, and Chaotic Matrices, *Forma* **19** (4), (2004) 367–387

SOFTWARE

- LinKnot- Mathematica package** <http://www.mi.sanu.ac.yu/vismath/linknot/index.html>
Jablan, S., Sazdanović, R.
- LinKnot: Knot Theory by Computer** <http://math.ict.edu.rs/>
Jablan, S., Sazdanović, R., Online book with interactive webMathematica LinKnot software
- TESS Tessellations of the Euclidean, Elliptic and Hyperbolic Plane** Sazdanović, R., Sremcević, M.
MathSource, Wolfram research <http://library.wolfram.com/infocenter/MathSource/4540/>
- Making the best out of *Knot Theory* and *LinKnot* combination**
Bar-Natan, D., Morrisson, S., Sazdanović, R.,
<http://katlas.math.toronto.edu/wiki/ConwayNotation>
http://katlas.math.toronto.edu/wiki/Using_the_LinKnot_package

CONFERENCE, COLLOQUIUM AND SEMINAR TALKS

INVITED TALKS

Program for Women in Mathematics, IAS and Princeton University	05/13
Quantum topology and related topics, Nha Thang, Vietnam	05/13
Colloquium, University of South Florida	02/13
Colloquium, University of Iowa	02/13
Colloquium, University of Iowa	02/13
Colloquium, University of Oregon	01/13
Colloquium, North Carolina State University	1/13
Joint Mathematics Meeting San Diego	1/13
Colloquium, University of Massachusetts Amherst	12/12
Special Session on Combinatorial methods in Knot theory	10/12
AMS Southeastern Fall Section Meeting, Tulane University, New Orleans, LA Claremont Colleges Mathematics Colloquium	10/12
KITP Knotted Fields program, University of California, Santa Barbara	06/12
21st Century Geometry, Program for Women in Mathematics, IAS and Princeton University	05/12
2012 Lafayette-Lehigh Geometry-Topology Seminar, Lafayette College	03/12
Deformation theory seminar, University of Pennsylvania	02/12
Joint Mathematics Meeting Boston: AWM Workshop	01/12
Algebra Seminar, Syracuse University	10/11
Topology seminar, University of Miami	08/11
ESF,EMS, and CRM-Pi Conference "Knots and Links: From Form to Function"	07/11
Mathematical Research Center 'Ennio De Giorgi', Pisa, Italy	
Swiss Knots: Knot Theory and Algebra, Lake Thun, Switzerland	05/11
http://katlas.math.toronto.edu/drorbn/dbnvp/SK11.Sazdanovic	
DAAD Center of Excellence for Applications of Mathematics: Symmetry in Science and Arts	05/11
Vrnjacka Banja, Serbia	
AMS Central Section Meeting Special Session on Representations of Algebras, University of Iowa, Iowa City, IA	03/11
Topological Problems in Molecular Biology, Special Session and Lead-in Workshop	03/11
AMS Central Section University of Iowa, Iowa City, IA	
JMM AMS Special Session on "Knots, 3-manifolds and physics" New Orleans, LA	01/11
Topology Seminar, Temple University, Philadelphia, PA	11/10
Graduate student seminar University of Pennsylvania	11/10
Claremont Topology Seminar, Pomona College, Claremont, CA	11/10
Fall Western Section AMS Meeting, Special Session on "Algebraic Structures in Knot Theory"	11/10
Colloquium, Bryn Mawr College, Philadelphia, PA	10/10
Algebra seminar UC Irvine, CA	05/10
Graduate student seminar UC Berkeley, CA	04/10
Postdoctoral Seminar, MSRI, Berkeley, CA	04/10
Colloquium, University of San Francisco, CA	04/10
Advanced School and Conference on Knot Theory and its Applications to Physics and Biology	05/09
International Centre for Theoretical Physics, Trieste, Italy	
DIMACS Workshop on Algorithmic Mathematical Art, Rutgers	05/09
Virtual Topology Seminar	04/09
Joint between: LSU, U Iowa, Rice, GWU, U Miami, UN Omaha, Boise State, Cornell	
Graduate Student Topology and Geometry Conference, Madison, WI	04/09
JMM AMS Special Session on Categorification and Link Homology, GWU Washington, DC	01/09
Special session on Knot and 3-Manifold Invariants	03/08

Spring Southeastern AMS Meeting, Baton Rouge, LA	
Graduate Student Topology Seminar, George Washington University, DC	04/08
The Workshop on Knots and Quantum Computing, University of Texas at Dallas, TX	12/07
Knotting Mathematics and Art	11/07
International Conference in Low Dimensional Topology and Mathematical Art, Tampa, FL	
Special session on "Invariants of Links and 3-manifolds"	08/07
Joint International Meeting between the AMS and the Polish Mathematical Society, Warsaw, Poland	
Link Homology and categorification conference	05/07
RIMS Research Institute for Mathematical Science at Kyoto University, Japan	
JMM AMS Special session on "Knots, 3-Manifolds, and Their Invariants", New Orleans, LA	01/07
Special session on "Quantum Invariants of Knots and 3-Manifolds"	04/06
Spring Eastern Section AMS Meeting, Durham, NH	
Quantum Topology-Hopf Algebra Seminar talk at the University of Illinois at Chicago	01/06
Topology Seminar talks at Indiana University Bloomington	01/06
Knots in Washington XXI, Washington, DC	12/05
Contemporary Geometry and Related Topics, Belgrade, Serbia	07/05

CONFERENCES, WORKSHOPS, AND SUMMER SCHOOLS ATTENDED

2013

WAM IAS Princeton: Combinatorics and Graph Theory * Career Options for Women in Mathematical Sciences, IMA Minneapolis

2012

WAM IAS Princeton: 21st Century Geometry * Algebra and Topology: Methods, Computation, and Science, Edinburgh, Scotland * A Mathematical Celebration of John Milnor, IMA Minneapolis

2011

The Tech Topology Conference, Georgia Institute of Technology, Atlanta, GA * AMS MRC Conference on Computational and Applied Topology in Snowbird * Homological Invariants in Low-Dimensional Topology Workshop, Simons Center for Geometry and Physics

2010

Low-dimensional Topology and Categorification at Stony Brook, Stony Brook, NY * CBMS conference on Quiver Varieties and Crystal Bases of Quantum Affine Algebra, North Carolina State University, Raleigh, NC * MSRI Homology Theories of Knots and Links Program Connections for Women, Introductory Workshop, and Research Workshop

2009

Link Homology, Institut de Mathématiques de Jussieu, Paris, France * Interactions Between Hyperbolic Geometry, Quantum Topology and Number Theory, Columbia University * ICTP Advanced School and Conference on Knot Theory and its Applications to Physics and Biology, Trieste, Italy

2008

MSRI Workshop in Low Dimensional Topology * Workshop in Low Dimensional Topology, Oberwolfach, Germany

2006

PCMI/IAS Graduate Summer School in Low Dimensional Topology IAS/Park City, UT

TEACHING EXPERIENCE

Calculus I	2010, 2012, 2013, University of Pennsylvania
Geometry and Topology	Fall 2012, University of Pennsylvania
Graduate independent study Topics in Knot theory and Khovanov homology	Spring 2012, University of Pennsylvania
Graduate independent study Topics in Categorification	Spring 2012, University of Pennsylvania
Selections in Geometry and Topology: Knot Theory	Fall 2011 University of Pennsylvania
Teaching assistant for Calculus	Fall 2009 George Washington University
Assisted with teaching Mathematical Ideas II	Fall 2009 George Washington University
Assisted with teaching The Dean's Seminar: Geometry of Knots and Graphs: a historical perspective	Fall 2009 George Washington University

PROFESSIONAL SERVICE

CONFERENCES AND SPECIAL SESSIONS CO-ORGANIZED

Special Session on Applied and Computational Algebraic Topology, Spring Eastern Sectional Meeting, GWU, Washington, DC March 17-18, 2012

Special Session on Applied and Computational Algebraic Topology, AMS-MAA Joint Meeting in Boston on January 4-7, 2012

Special Session on Homology Theories for Knots and Skein Modules, Spring Eastern Sectional Meeting Newark, NJ, May 22-23, 2010

Knots in Washington Conferences: XXIX (2009), XXX (May 2010), XXXI (December 2010), XXXII (May 2011), XXXIII (December 2011), XXXIV (March 2012), XXXV (December 2012) George Washington University, DC

DIMACS Workshop on Algorithmic Mathematical Art, Rutgers, NJ, May 2009

First DC Math Graduate Student Meeting, George Washington University, DC, April 2009

COMMITTEE WORK AT THE UNIVERSITY OF PENNSYLVANIA

Graduate students admissions committee 2010-2013

PUMS- Penn Undergraduate Math Club liaison 2011-2013

Graduate Advising Committee 2011-2013

Calculus I Curriculum Committee 2011-2012

Masters thesis defense committee member 2011

REFEREE

Fundamenta Mathematicae * Banach Center Publications

REVIEWER

Mathematical Reviews * Zentralblatt MATH

PROFESSIONAL MEMBERSHIP

American Mathematical Society * Association for Women in Mathematics

OUTREACH

ADMINISTRATION

Co-editor of the book "Experience-centered approach and Visuality in the Education of Mathematics and Physics" Kaposvar University, Kaposvar, (2012) ISBN 978-963-9821-52-1

VOLUNTEER

Interview for Girls Angle Bulletin December 2012

GEMS Girls in Engineering, Mathematics and Science, University of Pennsylvania July 2012
<http://www.upenn.edu/pennnews/news/penn-engineering-s-camp-girls-grows-adds-math-classes>

Julia Robinson Math Festival, Stanford University, May 2010

POPULAR TALKS

Diagrammatics: Art, Language, and Mathematics 2012
Math Art Summit, Royal Flemish Academy of Belgium, Brussels, Belgium

Bridges: Mathematical Connections in Art, Music and Science, Towson University, MD 2012

Joint mathematics Meeting, MAA Session on Arts and Mathematics, Boston, MA 2012

Knotted Math, Wiskunst, Ghent, Belgium 2011

Fun with Triangles, Inscribed Circles, and Angle Bisectors <http://www.girlsangle.org/>
Girls Angle Women in Mathematics Video Series

To Cut or to Knot, DIMACS Workshop on Algorithmic Mathematical Art, Rutgers, NJ, 2009

JOURNAL ARTICLES

Sazdanovic, R. Diagrammatics in Art and Mathematics, *Symmetry* 4, (2012) 285–301.

Jablan S., Sazdanović R.: Discovering symmetry of knots by using program LinKnot, *Symmetry: Art and Science, The Journal of ISIS-Symmetry*, 1-4 (2004) 102–110.

Sazdanović R., Sremcević, M., Hyperbolic Tessellations by tess, *Symmetry: Art and Science* 1-4 (2004) 226–229.

Sarhangi R., Jablan, S., Sazdanović, R., Modularity in Medieval Persian Mosaics: Textual, Empirical, Analytical and Theoretical Considerations, *Bridges: Mathematical Connections in Art, Music and Science*, Conference Proceedings, (2004) 281–293.

Barrallo, J., Sazdanović, R., Computer Sculpture: A Journey Through Mathematics, *Bridges: Mathematical Connections in Art, Music and Science*, Conference Proceedings, (2002) 54.

Sazdanović, R., Sremcević, M., Tessellations of the Euclidean, Elliptic and Hyperbolic Plane, *Symmetry: Art and Science*, 2 (2002) 229–304.

EXHIBITIONS OF MATHEMATICAL ART

PERMANENT: IMA, Minneapolis, Department of Mathematics, UPenn and GWU

Bridges: Mathematical Connections in Art, Music and Science, Towson University, MD 2012

Fisheye View of Mathematics 2012

Burrison Gallery, University of Pennsylvania, Philadelphia * Royal Flemish Academy of Belgium, Brussels, Belgium * ICME Edinburgh, Scotland

Joint Mathematics Meetings: Exhibition of Mathematical Art 2008-2012

Rhythm and Structure: Beyond the Mathematics, Museum of Science and Industry, Tampa 2007