Vera Vértesi

University of Strasbourg – IRMA
7 rue René Descartes,
67084 Strasbourg
FRANCE

Email: vertesi@unistra.fr
http://www-irma.u-strasbg.fr/~vertesi
Phone: +49 163 9234290

RESEARCH INTERESTS

three and four manifolds, contact geometry, knots, tangles, Heegaard Floer homology

POSITIONS

Sep, 2014–present	**Le Centre National de la Recherche Scientifique** **CNRS – IRMA, University of Strasbourg** Researcher (CR2)
Oct, 2012–Aug, 2014	**Le Centre National de la Recherche Scientifique** **CNRS – Laboratoire Jean Leray, University of Nantes** Researcher (CR2)
Aug, 2010–Sep, 2012	**Massachusetts Institute of Technology**, Cambridge CLE Moore Instructor
Aug, 2009–May, 2010	**The Mathematical Sciences Research Institute**, Berkeley Postdoc
Feb, 2009–Aug, 2009	**Alfréd Rényi Mathematical Institute**, Budapest Young Researcher (Postdoc)

EDUCATION

Sep, 2005–June, 2009	**Eötvös Loránd University (ELTE)**, Budapest Ph.D. student in Mathematics *Advisors*: Prof. András Stipsicz and Prof. Csaba Szabó *Thesis title*: Legedrian and transverse knots in the light of Heegaard Floer homology
Sep, 2000–May, 2005	**Eötvös Loránd University (ELTE)**, Budapest Diploma in Mathematics, summa cum laude *Advisor*: Prof. Csaba Szabó *Thesis title*: Complexity of Checking Identities in 0-simple Semigroups
Sep, 1996–May, 2000	**Fazekas Mihály Secondary School**, Budapest Special Program in Mathematics

PUBLICATIONS

A self-pairing theorem for tangle Floer homology (with I. Petkova)
Algebraic & Geometric Topology, 16:2127–2141, 2016

Combinatorial tangle Floer homology (with I. Petkova)
Geometry & Topology, to appear, arXiv:1410.2161

On the equivalence of Legendrian and transverse invariants in knot Floer homology (with J. Baldwin, D.S. Vela-Vick) *Geometry & Topology*, 17:905–924, 2013

Legendrian representations of Twist Knots (with J. Etnyre and L. Ng)
Journal of the European Mathematical Society, 15:969–995, 2013

The equivalence problem over finite rings. (with Cs. Szabó)
International Journal of Algebra and Computation, 21:449–457, 2011

Knots and smooth 3–manifolds – Heegaard Floer homology. (in Hungarian)
Matematikai Lapok, Új sorozat , 17:35–73, 2011.

On invariants for legendrian knots. (with A. Stipsicz)
Pacific Journal of Mathematics, Vol.239 1:157–177, 2009.

Transversely nonsimple knots.
Algebraic & Geometric Topology, 8:1481–1498, 2008.

Checking identities over finite 0-simple semigroups. (in Hungarian)
Matematikai Lapok, Új sorozat , 13:54–75, 2008.

The membership problem in finite flat hypergraph algebras. (with G. Kun)
International Journal of Algebra and Computation,17:449–459, 2007.

The complexity of the identity checking problem in 0-simple semigroups. (in Russian, with S. Pletseva) *Journal of Ural State University*, 43:72–103, 2006.

The complexity of checking identities for finite matrix rings. (with Cs. Szabó)
Algebra Universalis, 51:439–445, 2004.

The complexity of the word-problem for finite matrix rings. (with Cs. Szabó)
Proceedings of the American Mathematical Society, 132:3689–3695, 2004.

Preprints

Quantum $gl(1|1)$ and tangle Floer homology (with A.P. Ellis and I. Petkova)
submitted, arXiv:1510.03483

An introduction to tangle Floer homology (with I. Petkova)
submitted, arXiv:1604.08430

Legendrian satellites (with J. Etnyre), submitted, arXiv:1608.05695

GRANTS

Principal Investigator

2011–2015 **NSF**: Contact manifolds and Heegaard Floer homology (126.256 USD)

Participant

2016–2020 **ANR**: Quantum topology and contact geometry (61.000 EUR)
2010–2014 **OTKA**: Topology of Manifolds (33.705.000 HUF)
2009–2013 **OTKA**: Complexity and Algebra (13.200.000 HUF)
2007–2010 **OTKA**: Discrete and Continuos (59.900.000 HUF)
2007–2009 **OTKA**: Singularities and Holomorph geometry (20.000.000 HUF)

HONORS AND AWARDS

2014 **Prime d'Excellence Scientifique**, 3 year grant of the CNRS
2011 **American Women in Mathematics** travel grant
2008 **Eötvös Fellowship** of the Hungarian Ministry of Education
research fellowship to spend at a foreign research institution
2005 **Pro Scientia Golden Medal Award**, *awarded every two years to 45 "young scientists with exceptional research achievements"*
Excellent student Award, Eötvös Loránd University
2004 **Rényi Kató Award** of Bolyai János Mathematical Society
"for young mathematicians with extraordinary academic results"

TEACHING EXPERIENCES

Graduate

2016 **Lecturer, Legendrian knots**, CEU Summer University, Budapest
week long program in low dimensional topology
2009 **Reading seminar on bordered Floer Homology**
Alfréd Rényi Mathematical Institute, Budapest
2009 **Seminar on higher dimensional open books**, MSRI, Berkley, CA, USA
2009 **Problem session** on Summer Graduate Workshop:
Symplectic and Contact Geometry and Topology, MSRI, Berkley, CA, USA
2008 **Mini course on Heegaard Floer homology**
Cape Town University, South Africa

Undergraduate

2012 **Lecturer, Introduction to Topology**, MIT
2011–2012 **Teaching Assistant, Multivariable Calculus with Theory**, MIT
2010 **Course Administrator, Linear Algebra**, MIT
2009 **Teaching Assistant, Introduction to Topology**
Eötvös Loránd University, Budapest
2002, 2007 **Teaching Assistant, Linear Algebra and Geometry**
Eötvös Loránd University, Budapest
2003–2004 **Teaching Assistant, Galois Theory**, Budapest Semester of Mathematics
2003–2004 **Teaching Assistant, Number Theory**, Budapest Semester of Mathematics
2001–2005 **Teaching Assistant, Introduction to Computer Science**
Budapest University of Technology and Economics

Children

2014 **Camp Euclid**, online summer research camp for 10-19 years old children
2013, 2014 **Fête de la Science**, a day of mathematical activities for 10-16 years old children
Strasbourg and Nantes
2012 **Math Circle** for 8-10 years old children
Graham Parks and School, Cambridge, MA, USA
2011 5 minute video for **Girls' Angle** Women in Mathematics Video Series
2009–2010 talks on various **Math circles** in Berkeley, San Francisco and Boston
1997–1999 **Problem Solving Seminar**, for 12-14 years old children
Fazekas Mihály Secondary School, Budapest

STUDENT SUPERVISION

2016–present	Viktoria Földházi, (unofficial) graduate student, ELTE
2012	Raaez Lorgat, undergraduate research oportunity, MIT

CONFERENCE ORGANISATION

2012 **AMS special session on Symplectic and Contact Geometry**

INVITED TALKS AT CONFERENCES

Sep, 2016	**1 and half day for 2-categories and 3-manifolds**, Montpellier, France
Sep, 2016	**British Topology Meeting**, Glasgow, Scotland
Jun, 2016	**SMF 2016 : Premier Congrès de la Société Mathématique de France** Tours, France
Sep, 2013	**British Topology Meeting**, Aberdeen, Scotland
Dec, 2012	**Symplectic and Low Dimensional Topologies in Interaction** Simons Center, Stony Brook, USA
May, 2012	**Georgia Topology Conference**, Athens, USA
Sep, 2011	**AWM 40 Years and Counting**, Providence, USA
Jul, 2011	**GESTA 2011**, Castro Urdiales, Spain
Mar, 2011	**AMS Sectional meeting**, Statesboro, USA
Jul, 2010	**7th Bolyai-Lobachevsky-Gauss conference**, Cluj-Napoca, Romania
May, 2010	**Knots, Contact Geometry and Floer Homology** University of Tokyo, Japan
Jan, 2010	**Introductory Workshop: Homology Theories of Knots and Links** MSRI, Berkeley, USA
Jan, 2010	**Connections for Women: Homology Theories of Knots and Links** MSRI, Berkeley, USA
Sep, 2009	**AIM Workshop: Legendrian and transverse knots**, Palo Alto, USA
May, 2008	**2008 Program for Women in Mathematics**, IAS, Princeton, USA
Jul, 2007	**Conference on Universal Algebra and Lattice Theory** Szeged, Hungary, *plenary speaker*
July, 2005	**Conference on Universal Algebra and Lattice Theory** Szeged, Hungary
Sep, 2004	**Summer School on General Algebra and Ordered Sets**, Malá Morávka, Czech Republic
Jul, 2004	**Logic Colloquium 2004**, Torino, Italy
May, 2004	**International Algebraic Conference**, Moscow, Russia
Aug, 2003	**Novi Sad Algebraic Conference**, Novi Sad, Serbia
Jul, 2002	**Conference on Universal Algebra and Lattice Theory** Szeged, Hungary

SEMINAR TALKS

2016 Université Pierre et Marie Curie (Paris 6), Paris 7, University of Regensburg
2015 University of Cambridge, Mittag–Leffler Institute, University of Heidelberg
2014 University of Heidelberg, Université de Strasbourg, Alfréd Rényi Mathematical Institute, Hungarian Academy of Science
2013 Symplectix (Université Paris-Sud 11), University of California Santa Barbara, Université Joseph Fourier (Grenoble), Alfréd Rényi Mathematical Institute
2012 IST Austria, Université Catholique de Louvain, Université de Rennes, Université de Nantes
2011 Princeton University, University of Pennsylvania, Philadelphia, Harvard University, Université de Nantes, University of Southern California, University of Georgia
2010 Boston College, University of Massachusetts, Amherst, MIT, Georgia Institute of Technology, University of Southern California, Alfréd Rényi Mathematical Institute
2009 Mathematical Sciences Research Institute (Berkeley), Georgia Institute of Technology, Alfréd Rényi Mathematical Institute
2008 Georgia Institute of Technology, Alfréd Rényi Mathematical Institute, Columbia University, Duke University, University of Georgia, Eötvös Loránd University
2007 Eötvös Loránd University
2006 Eötvös Loránd University
2005 ETH Zürich
2004 University of Novi Sad
2003 Alfréd Rényi Mathematical Institute, Attila József University (Szeged)

ACADEMIC VISITS

Oct–Nov, 2015	**Institute Mittag–Leffler**, Djursholm, Sweden
Apr–May, 2014	**Alfréd Rényi Mathematical Institute**, Budapest, Hungary
Feb, 2014	**AIM–SQUARE meeting**, Palo Alto, CA, USA
Jan–Febr, 2014	**University of Santa Barbara**, Santa Barbara, CA, USA
Jul–Aug, 2013	**University of Santa Barbara**, Santa Barbara, CA, USA
May, 2013	**Simons Center for Geometry and Physics**, Stony Brook, NY, USA
Apr, 2013	**University of Santa Barbara**, Santa Barbara, CA, USA
Jan–Feb, 2013	**University of Santa Barbara**, Santa Barbara, CA, USA
Jul, 2012	**Rényi Institute**, Budapest, Hungary
Sep–Dec, 2011	**Institute for Advanced Studies**, Princeton, NJ, USA
May, 2009	**University of Cape Town**, Cape Town, South Africa
Sep–Oct, 2008	**Georgia Institute of Technology**, Atlanta, GA, USA
Oct, 2007–May, 2008	**Columbia University**, New York, NY, USA
Sep–Oct, 2007	**University of Cape Town**, Cape Town, South Africa
Oct 2005–Mar, 2006	**Swiss Federal Institute of Technology (ETH)**, Zurich, Switzerland
Oct–Nov, 2004	**CEEPUS Scholarship**, Babes-Bolyai University, Cluj, Romania

PERSONAL

I was born on 13 April 1982, Budapest, Hungary. I am married. My daughter, Sophie, was born in March 2015. I love biking, hiking and snowboarding.

October, 2016