Curriculum vitae
András I. Stipsicz
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Hungarian Academy of Sciences
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Studies	2016 Corresponding Member of the Hungarian Academy of Sciences, Budapest 2006 DSc (Mathematics), Hungarian Academy of Sciences, Budapest 1994 Ph.D. (Mathematics), Rutgers University, New Brunswick, NJ, USA 1989 Diploma (B.A. in Mathematics) Eötvös University, Budapest, Hungary
Thesis	Title: Computations of Donaldson invariants via cut-and-paste techniques Advisors: John Morgan and Ted Petrie.
Positions	2016 (Fall Semester) Visiting Professor, Princeton University, Princeton, NJ 2015 (September) Mittag-Leffler Institute, Stockholm, Sweden 2014- Professor, Central European University, Budapest, Hungary 2013 (February) Max-Planck-Institute, Bonn, Germany 2011–12 Institute for Advanced Study, Princeton, NJ 2011 (May-June) Research Professor, Simons Center, Stony Brook, NY 2010 (March-April) Research Professor, MSRI, Berkeley, CA 2007–08 Visiting Clay Professor, Columbia University, New York, NY 2006- Professor, MTA Rényi Institute of Mathematics 2004–05 Institute for Advanced Study, Princeton, NJ 2002–06 Associate Professor, MTA Rényi Institute of Mathematics 2001–02 Research Mathematician, Princeton University, Princeton, NJ 1997–01 Assistant Professor, Department of Analysis, ELTE TTK, Budapest 1999 (January-July) Visiting Assistant Professor, University of California, Irvine, CA 1997 (April-July) General member, MSRI, Berkeley, CA 1996–98 Magyary Z. Fellowship (given by Hungarian Ministry of Education), Budapest 1995 (May-June) Max-Planck-Institute, Bonn, Germany 1994–96 Visiting Assistant Professor, University of California, Irvine, CA 1990–94 Research Assistant, Rutgers University, NJ 1989–90 Teaching Assistant, ELTE TTK
Fields of interest	Low dimensional topology, gauge theory, Seiberg-Witten and Donaldson theory, Heegaard Floer theory, symplectic and contact topology, Lefschetz fibrations, Stein domains, surface singularities, open book decomposition
Fellowships, awards	Corresponding Member, Hungarian Academy of Sciences, 2016 Akadémiai Díj (Prize of the Hungarian Academy of Sciences), 2014 ERC Advanced Grant LDTBud, 2012-2017 ICM2010 Invited speaker (Topology section), August 2010, Hyderabad, India *Lendület program* recepient (Hungarian Academy of Sciences) Clay Research Fellow (Clay Mathematical Institute) Fall 2007 Rényi Prize (given by the Rényi Institute) 2005 Bolyai J. Fellowship (given by the Hungarian Academy of Sciences) 2002–2005 Alexits Gy. Prize (given by the Hungarian Academy of Sciences) 2000 Széchenyi Professoral Fellowship (Hungarian Ministry of Education) 1999–2002 Eötvös Fellowship (given by the Hungarian Ministry of Education) 2000 Magyary Z. Fellowship, 1996–98 ECM2 Inivited speaker (Topology), July 1996, Budapest, Hungary Alfred P. Sloan Doctoral Fellowship, 1993–94 NSF Fellowship, Regional Geometry Institute, Park City, Utah, 1991, 1994 and 2006 Graduate Assistantship, Rutgers University, NJ 1990–93

Conferences, lectures

Invited speaker on many international conferences, including:

Invited lecturer, Developments in Contact and Symplectic Topology, University of Glasgow, 2016
Invited speaker, Flows, foliations and contact structures, IAS, Princeton, USA, 2015
Invited speaker, Combinatorial link homology theories, braids and contact geometry, ICERM (Brown University), RI, USA, 2014
Invited speaker, Speculation and wild conjectures in low dimensional differential topology, TSIMF, Sanya, China, 2013 ICM2010 Invited speaker (Topology section), August 2010, Hyderabad, India
Holomorphic curves, Stanford (CA) 2008 and 2012
4–manifolds, Oberwolfach (Germany) 2006
Low dimensional topology, Park City (UT, USA) 2006
Symplectic topology Summer School, Muju (Korea) 2005
Holomorphic curves in symplectic geometry, AIM (Stanford, CA, USA) 2003
Symplectic geometry and topology, UCLA (Los Angeles, CA, USA) 2003
Topological methods in complex analysis, Lille (France) 2002
University of Leiden (NL) 2001 and 2012
Low dimensional topology Summer School, Banach Center (Warsaw, Poland), 2001
4-dimensional Topology Conference, Seoul, Korea, 2000
Marston Morse Memorial Lectures, Princeton, NJ, 1999
Gökova Topology Conferences, Gökova, Turkey, 1993–2002
ECM2 (Second European Congress of Mathematicians), Budapest, 1996
Symplectic geometry and topology, Cambridge, UK, 1994

Invited lecturer at many universities, including:

Cambridge University (UK, 2014), Oxford University (UK, 1998, 2014), Columbia University (NY, 2006, 2012), IAS (NJ, 2012), Princeton (NJ, 2006, 2008, 2011), UPenn (PA, 2011), Harvard University (MA, 2008), MIT (MA, 2005, 2008), Purdue University (IN, 2007), Notre Dame (IN, 2005), Yale (CT, 2005), UT Austin (TX, 1997, 2005), University of Minnesota (Minneapolis, MN, 2003, 2013), University of Köln (Germany, 2003) KIAS (Seoul, Korea, 2003), University of Washington (Seattle, WA, USA, 2002) University of Pisa (Italy, 2000, 2002), Trinity College (Dublin, Ireland, 2000) Ecole Polytechnique (Paris, France, 2000) Ludwig Maximilan University (Munich, Germany, 2000), Michigan State University (MI, 1999, 2007, 2011), Warwick University (UK, 1998), University of California (Irvine, CA, 1997), Max-Planck-Institute (Bonn, Germany, 1995), Notre Dame (IN, 1994)

Conferences organized

Low Dimensional Topology Summer School, CEU (Budapest), July 2016
Perspectives in topology and geometry of 4-manifolds, Inter University Center, Dubrovnik (Croatia), June 2016
Stein Manifolds, Contact Structures and Knots, CIRM (Marseille, France), Sept 2015
Mapping class groups, 3- and 4-manifolds, Cluj-Napoca (Romania), July 2015
High dimensional contact geometry and topology, Rnyi Institute (Budapest), Nov 2014
Geometry and topology of smooth 4-manifolds, Max-Planck-Institute (Bonn), June 2013.
CAST Summer School and Conference, Rényi Institute, July 2012 (joint with T. Ekholm)
Topology of Manifolds, Rényi Institute-ELTE TTK, August 2011
3-manifolds and contact topology, Rényi Institute, Sept 2008
Knots, contact structures and foliations, Rényi Institute, Nov 2005
Conference on Topology, Geometry and Physics in honor of J. Morgan's 60th Birthday, Columbia Univ. May 2006 (joint with R. Friedman, D. Gabai, P. Ozsváth and Z. Szabó)
Floer homology, Gauge theory and Low–dimensional topology, Clay Institute Summer School, Budapest, Rényi Inst., June 2004 (joint with D. Ellwood, P. Ozsváth, Z. Szabó)
Invariants in low dimensional topology, Budapest, Rényi Institute, June 2003 (joint with A. Szűcs and K. Böröczky Jr.)
Summer School in Topology, Warsaw (Poland), Banach Center, July 2001 (joint with K. Böröczky Jr.)
Low Dimensional Summer School, Budapest, Rényi Institute, August 1998 (joint with A. Némethi and K. Böröczky Jr.)

Personal

Born April 13, 1966, Budapest, Hungary. Hungarian citizen, married, father of two.

List of Publications

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References

[1] *Knot lattice homology in L-spaces*, J. Knot Theory Ramifications **25** (2016), 1650003
(joint with Peter Ozsváth and Zoltán Szabó)

[2] *The topology of Stein fillable manifolds in high dimensions, II.*, With an appendix by Bernd C. Kellner. Geom. Topol. **19** (2015), no. 5, 2995–3030.
(joint with Jonathan Bowden and Diarmuid Crowley)

[3] *Symplectic 4-manifolds via symplectic surgery on complex surface singularities*, Bull. Korean Math. Soc. **52** (2015), 1213–1223.
(joint with Heesang Park)

[4] *A spectral sequence on lattice homology*, Quantum Topol. 5 (2014), no. 4, 487521.
(joint with Peter Ozsváth and Zoltán Szabó)

[5] *Symplectic 4-manifolds, Stein domains, Seiberg-Witten theory and mapping class groups*, Geom. Topol. Monographs **19**, (2015) 173–200.
(Interactions between low-dimensional topology and mapping class groups, Editors: I. Baykur, J. Etnyre and U. Hamenstädt)

[6] *Surface singularities and rational homology disk smoothings*, Proceedings of the Tshinghua Sanya Mathematics Forum, to appear.

[7] *Knots in lattice homology*, Comm. Math. Helv., **89** (2014), 783–818.
(joint with Peter Ozsváth and Zoltán Szabó)

[8] *On the topology of Stein fillable manifolds in higher dimensions, I*, Proc. London Math. Soc., **109** (2014) 1363–1401.
(joint with Jonathan Bowden and Diarmuid Crowley)

[9] *Smoothings of singularities and symplectic surgery*, Journal of Symplectic Geometry, **12** (2014), 585–597.
(joint with Heesang Park)

[10] *Combinatorial Heegaard Floer homology and sign assignments*, Topology Appl. **166** (2014), 32–65.
(joint with Peter Ozsváth and Zoltán Szabó)

[11] *Contact structures on* $M \times S^2$, Math. Ann. **358** (2014), 351–359.
(joint with Jonathan Bowden and Diarmuid Crowley)

[12] *Loose Legendrians and the plastikstufe*, Geom. Topol. **17** (2013), 1791–1814.
(joint with Emmy Murphy, Klaus Niederkrüger and Olga Plamenevskaya)

[13] *Singular maps on exotic 4-manifold pairs*, Algebr. Geom. Topol. **13** (2013), 1709–1731.
(joint with Boldizsár Kalmár)

[14] *Gluck twist on a certain family of 2-knots*, Michigan Math. Journal **61** (2012), 703–713.
(joint with Daniel Nash)

[15] *Combinatorial Heegaard Floer homology and nice Heegaard diagrams*, Advances in Mathematics **231** (2012), 102–171.
(joint with Peter Ozsváth and Zoltán Szabó)

[16] *Maps on 3-manifolds given by surgery*, Pacific J. Math, **257** (2012), 9–35.
(joint with Boldizsár Kalmár)

[17] *Contact surgery and transverse invariants* Journal of Topology **4** (2011), 817–834. (joint with Paolo Lisca)

[18] *Weighted homogeneous singularities and rational homology disk smoothings*, Amer. J. Math. **133** (2011), 1259–1297. (joint with Mohan Bhupal)

[19] *A combinatorial description of the $U^2 = 0$ version of Heegaard Floer homology*, IMRN, Int. Math. Res. Notices (2011) Vol. **2011**, 5412–5448. (joint with Peter Ozsváth and Zoltán Szabó)

[20] *Contact surgeries and the transverse invariant in knot Floer homology*, J. Inst. Math. Jussieu, **9** (2010), no. 3, 601–632. (joint with Peter Ozsváth)

[21] *Ozsváth–Szabó invariants and 3-dimensional contact topology*, Proceedings of the International Congress of Mathematicians, Hyderabad 2010, vol II, 1159-1178.

[22] *Contact structures on product five-manifolds and fibre sums along circles*, Math. Ann. **348** (2010), 195–210. (joint with Hansjörg Geiges)

[23] *Symplectic surgeries and normal surface singularities*, Algebr. Geom. Topol. **9** (2009) 2203–2223. (joint with David Gay)

[24] *Heegaard Floer invariants of Legendrian knots in contact 3–manifolds*, Journal of the EMS **11** (2009), 1307–1363. (joint with Paolo Lisca, Peter Ozsváth and Zoltán Szabó)

[25] *On the existence of tight contact structures on Seifert fibered 3–manifolds*, Duke Math. J. **148** (2009), 175–209. (joint with Paolo Lisca)

[26] *On invariants for Legendrian knots*, Pacific J. Math. **239** (2009), 157–177. (joint with Vera Vértesi)

[27] *Floer Homology of Singular Knots* J. Topol. **2** (2009), 380–404. (joint with Peter Ozsváth and Zoltán Szabó)

[28] *On the $\overline{\mu}$ invariant of rational surface singularities*, Proc. Amer. Math. Soc, **136** (2008), 3815–3823.

[29] *Rational blowdowns and smoothings of surface singularities*, J. Topol. **1** (2008), 477–517. (joint with Zoltán Szabó and Jonathan Wahl)

[30] *Tight contact structures on the Weeks manifold*, Proceedings of Gökova Geometry-Topology Conference 2007, 82–89, Gökova Geometry/Topology Conference (GGT), Gökova, 2008.

[31] *Ozsváth–Szabó invariants and tight contact three–manifolds III.*, J. Symplectic Topology **5** (2007), 357–384. (joint with Paolo Lisca)

[32] *Symplectic rational blow-down along Seifert fibered 3-manifolds*, Int. Math. Res. Not. 2007 (joint with David Gay)

[33] *Contact Ozsváth–Szabó invariants and Giroux torsion*, Algebr. Geom. Topol. **7** (2007), 1275–1296. (joint with Paolo Lisca)

[34] *Tight contact structures on some small Seifert fibered 3-manifolds*, Amer. J. Math. **129** (2007), 1403–1447. (joint with Paolo Ghiggini and Paolo Lisca)

[35] *Singular fibers in elliptic fibrations on the rational elliptic surface*, Period. Math. Hungar. **54** (2007), 137–162. (joint with Zoltán Szabó and Ágnes Szilárd)

[36] *Ozsváth–Szabó invariants and tight contact 3-manifolds, II.*, J. Differential Geom. **75** (2007), 109-141.
(joint with Paolo Lisca)

[37] *Notes on the contact Ozsváth–Szabó invariants*, Pacific J. Math. **228** (2006), 277–295.
(joint with Paolo Lisca)

[38] *Classification of tight contact structures on small Seifert fibered 3–manifolds with $e_0 \geq 0$*, Proc. Amer. Math. Soc. **134** (2006), 909–916.
(joint with Paolo Ghiggini and Paolo Lisca)

[39] *Small exotic 4–manifolds with $b_2^+ = 3$*, Bull. London Math. Soc. **38** (2006), 501–506.
(joint with Zoltán Szabó)

[40] *Exotic smooth structures on* $\mathbf{CP^2}\#5\overline{\mathbf{CP^2}}$, Math. Res. Lett. **12** (2005), 701–712.
(joint with Jongil Park and Zoltán Szabó)

[41] *An exotic smooth structure on* $\mathbf{CP^2}\#6\overline{\mathbf{CP^2}}$, Geom. Topol. **9** (2005), 813–832.
(joint with Zoltán Szabó)

[42] *Lutz twist and contact surgery*, Asian J. of Math. **9** (2005), 57–64.
(joint with Fan Ding and Hansjörg Geiges)

[43] *Surgery diagrams and open book decompositions of contact 3–manifolds*, Acta Math. Hungar. **108** (2005), 71–86.

[44] *Planar open books and Floer homology*, Int. Math. Res. Not. **2005**, 3385–3401.
(joint with Peter Ozsváth and Zoltán Szabó)

[45] *Ozsváth–Szabó invariants and tight contact three–manifolds I.*, Geom. Topol. **8** (2004), 925–945.
(joint with Paolo Lisca)

[46] *Contact 3-manifolds with infinitely many Stein fillings*, Proc. Amer. Math. Soc. **132** (2004), 1549–1558.
(joint with Burak Ozbagci)

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(joint with Fan Ding and Hansjörg Geiges)

[48] *Seifert fibered contact three–manifolds via surgery*, Algebr. Geom. Topol. **4** (2004), 199–217.
(joint with Paolo Lisca)

[49] *Tight, not semi–fillable contact circle bundles*, Math. Ann. **328** (2004), 285–298.
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[50] *An infinite family of tight, not semi–fillable contact three–manifolds*, Geom. Topol. **7** (2003), 1055–1073.
(joint with Paolo Lisca)

[51] *On the geography of Stein fillings of certain 3–manifolds*, Michigan Math. J. **51** (2003), 327–337.

[52] *The second homology groups of mapping class groups of oriented surfaces*, Math. Proc. Cambridge Philos. Soc. **134** (2003), 479–489.
(joint with Mustafa Kokmaz)

[53] *Commutators, Lefschetz fibrations and the signature of surface bundles*, Topology **41** (2002), 961–977.
(joint with Hisaaki Endo, Mustafa Korkmaz, Dieter Kotschick and Burak Ozbagci)

[54] *Surface bundles with nonvanishing signature*, Acta Math. Hung. **95** (2002), 299–307.

[55] *Gauge theory and Stein fillings of certain 3–manifolds*, Turkish J. Math. **26** (2002), 115–130.

[56] *Minimality of certain normal connected sums*, Turkish J. Math. **26** (2002), 75–80. (joint with Tian-Jun Li)

[57] *Singular fibers in Lefschetz fibrations with $b_2^+ = 1$*, Topology Appl. **117** (2002), 9–21.

[58] *Spin structures on Lefschetz fibrations*, Bull. London Math. Soc. **33** (2001), 466–472.

[59] *Sections of Lefschetz fibrations and Stein fillings*, Turkish J. Math. **25** (2001), 97–101.

[60] *Surface bundles: some interesting examples*, Turkish J. Math. **25** (2001), 61–68. (joint with Jim Bryan and Ron Donagi)

[61] *Indecomposability of certain Lefschetz fibrations*, Proc. Amer. Math. Soc. **129** (2001), 1499–1502.

[62] *Gluing 4-manifolds along* $\Sigma(2, 3, 11)$, Topology Appl. **106** (2000), 293–304. (joint with Zoltán Szabó)

[63] *The geography problem of 4-manifolds with various structures*, Acta Math. Hungar. **87** (2000), 267–287.

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Erratum to: "Chern numbers of certain Lefschetz fibrations", Proc. Amer. Math. Soc. **128** (2000), 2833–2834.

[65] *Noncomplex 4-manifolds with genus-2 Lefschetz fibrations*, Proc. Amer. Math. Soc., **128** (2000), 3125–3128. (joint with Burak Ozbagci)

[66] *On the number of vanishing cycles in a Lefschetz fibration*, Math. Res. Lett. **6** (1999), 449–456.

[67] *Simply connected symplectic 4-manifolds with positive signature*, Turkish Math. J. **23** (1999), 145–150.

[68] *Examples of 4-manifolds without Gompf nuclei*, Acta Math. Hungar. **83** (1998), 107–113.

[69] *Simply connected 4-manifolds near the Bogomolov-Miyaoka-Yau line*, Math. Res. Lett. **5** (1998), 723–730.

[70] *A note on the geography of symplectic manifolds*, Turkish J. Math. **20** (1996), 135–139.

[71] *Elementary computations of Donaldson series*, Turkish J. Math. **19** (1995), 159–166.

[72] *Donaldson series and (-1)-tori*, J. Reine Angew. Math. (Crelle's J.) **465** (1995), 133–144.

[73] *Donaldson invariants of certain symplectic manifolds*, J. Reine Angew. Math. (Crelle's J.) **465** (1995), 1–10.

[74] *Smooth classification of elliptic surfaces with $b_2^+ > 1$*, Duke Math. J. **75** (1994), 1–50. (joint with Zoltán Szabó)

[75] *Classification of complex surfaces*, Turkish J. Math. **18** (1994), 42–53. (joint with Zoltán Szabó)

Books

[76] *Grid homology for knots and links*, Mathematical Surveys and Monographs, **208.** American Mathematical Society, Providence, RI, 2015. x+410 pp. (joint with Peter Ozsváth and Zoltán Szabó)

[77] *Surgery on contact 3–manifolds and Stein surfaces*, Bolyai Society Mathematical Studies, **13**, Springer-Verlag, Berlin; János Bolyai Mathematical Society, Budapest, 2004. (joint with Burak Ozbagci)

[78] *4-manifolds and Kirby calculus*, AMS Graduate Studies in Math., vol. **20** (1999) (joint with Robert Gompf)

[79] *Computation of Donaldson invariants via cut–and–paste techniques*, Ph.D. thesis, Rutgers University, 1994.

Book chapters

[80] *Smoothings of singularities and symplectic topology*, Deformations of surface singularities, 57–97, Bolyai Soc. Math. Stud., **23**, János Bolyai Math. Soc., Budapest, 2013.
(joint with Mohan Bhupal)

[81] *On symplectic caps.* In *Pespectives in Analysis, Geometry and Topology, On the occasion of the 60ties birthday of Oleg Viro* Progress in Mathematics, Birkhauser Editors: Ilia Itenberg, Burglind Joricke, Mikael Passare
(joint with David T. Gay)

[82] *Lefschetz fibrations on 4-manifolds* in: Handbook of Teichmüller theory. Vol. II, 271–296, IRMA Lect. Math. Theor. Phys., **13**, Eur. Math. Soc., Zürich, 2009.
(joint with Mustafa Korkmaz)

[83] *Ozsváth–Szabó invariants and contact surgery*, in *Floer Homology, Gauge Theory and Low–Dimensional Topology*, Clay Mathematics Proceedings, Vol. **5** (2006), 171–181.
(joint with Paolo Lisca)

[84] *Contact surgery and Heegaard Floer theory*, in *Floer Homology, Gauge Theory and Low–Dimensional Topology*, Clay Mathematics Proceedings, Vol. **5** (2006), 143–171.

[85] *Smooth invariants of 4–manifolds*, Lectures by J. Morgan with discussion sessions by A. Stipsicz; Bolyai Soc. Math. Stud. **8**, Low dimensional topology (1999), 95–189.

[86] *Geography of irreducible 4-manifolds*, Progress in Math. **169** (Second European Congress of Mathematicians ECM2) Birkhäuser 1997, 221–233.

[87] *On the vanishing of the third cobordism group* Ω_3^{spin}, Topology and Dynamics, in memory of V.A. Rohlin, Geom. i Topol. 290–302.

[88] *Floer Homology Groups of Certain Algebraic Links*, Proceedings of the Conference on Low Dimensional Topology, Knoxville, TN, 1992, International Press Co., Cambridge, MA, USA, 173–185.
(joint with Zoltán Szabó)

Books edited

[89] *Contact and symplectic topology*, Proceedings of the CAST Summer School
Bolyai Society Mathematical Studies, vol. **26**
(joint with Frédéric Bourgeois and Vincent Colin)

[90] *Floer Homology, Gauge Theory and Low–Dimensional Topology*, Clay Mathematics Proceedings, Vol. **5** 2006.
(joint with David Ellwood, Peter Ozsváth and Zoltán Szabó)

[91] *Low dimensional topology*, Bolyai Társulat, 1999
(joint with Károly Böröczky, Jr. and Walter Neumann)

[92] *Topological Quantum Field Theories and Geometry of Loop spaces*, World Scientific Publishing, 1992
(joint with László Fehér and János Szenthe)

Overview

[93] *Computations of Heegaard Floer homology groups*, Mathematica **52** (2010), 55–74.

[94] *Knot invariants: low dimensional topology and combinatorics*, Jahresber. Deutsch. Math.-Verein. **111** (2009), 179194.

[95] *Négydimenziós sokaságok topológiája — áttekintés (in Hungarian)*, Mat. Lapok **6** (1996), 1–27 (2000)