

CURRICULUM VITAE
Károly J. Böröczky

Born: February 10, 1964, Budapest, Hungary

Marital status: Married to Csilla Iharos, one daughter (born in 2000, Csenge), one son (born in 2010, Abel)

e-mail: kboroczky@gmail.com

Affiliation

1992– : Alfréd Rényi Institute of Mathematics, Hungarian Academy of Sciences
Full professor since 2006

2004– : Roland Eötvös University, Budapest
part time position as an associate professor

1989–1992: PhD student at the University of Calgary

1988–1989: Assistant professor, Technical University of Budapest

Degrees, Prizes, Awards

2009: EU IEF Marie Curie Fellowship (visiting professorship) at Universitat Politècnica de Catalunya, BARCELONATECH

2007: Habilitation, Roland Eötvös University, Budapest

2006: Doctor of Mathematical Sciences (Hungarian Academy of Sciences)

2004: Paul Erdős Prize (Hungarian Academy of Sciences)

2001,2005: Bolyai Scholarship of the Hungarian Academy of Sciences

1998: Széchenyi Professorship of the Hungarian Ministry of Education

1995: Scholarship of the Volkswagen Stiftung, half a year at Universität Siegen

1994: Magyary Zoltán Scholarship of the Hungarian Ministry of Education

1993: Candidate degree of the Hungarian Academy of Science

1992: PhD, University of Calgary

1988: Diploma (MSc) Roland Eötvös University, Budapest

Teaching experience

In English:

1996–: Budapest Semesters in Mathematics, Western Maryland College

2005-2009: Central European University, Budapest

2002: Ohio-State University, Columbus, OH, USA, Fall term

1999: Western Washington University, Bellingham, WA, USA, Fall term

1999: University College London, London, England, Winter term

1989–1992: tutoring (also some stand up tutorials) at the University of Calgary

In Hungarian:

1993– : Both undergraduate and graduate courses at Roland Eötvös University, Budapest

1993–1997: First year courses at the University of Economics, Budapest (approx. 100 students)

Meetings organized by Károly Böröczky, Jr.

Intuitive Geometry Conference 7, in Memoriam László Fejes Tóth (Budapest, 2008, with Imre Bárány, Károly Böröczky, Aladár Heppes, János Pach)

Geometry Fest (Budapest, 2007, with Károly Böröczky, Ferenc Fodor, Heiko Harborth and Wlodek Kuperberg)

Workshop on Invariants in Low-dimensional topology (Budapest, 2003, with András Stipsitz and András Szűcs)

Programme in Higher dimensional varieties and Rational points (Budapest, 2001, with János Kollár and Tamás Szamuely)

Summer School on Low Dimensional Topology (Budapest, 1998, with András Stipsitz)

EMS Summer School on Algebraic Geometry (Eger, 1996, with János Kollár)

Workshops on Convexity (Budapest, 1995, 1997, 2003, with Gábor Fejes Tóth)

Scientific visits of at least on month

- Sept, 2009–** UPC, Barcelona, Spain
- 2009:** Université de Paris Est Marne-la-Vallée, France, two months
- 2008:** UPC, Barcelona, Spain, two months
- 2008:** University College London, London, England, two months
- 2007:** University of Pisa, Italy, two months
- 2006:** UPC, Barcelona, Spain, four months
- 2006:** University of Nice, France, two months
- 2002:** Ohio-State University, Columbus, OH, USA, three months
- 1999:** Western Washington University, Bellingham, WA, USA, three months
- 1999:** University College London, London, England, three months
- 1996:** Universität Siegen, Germany, one month
- 1996:** University of Calgary, Canada, one month
- 1995:** Universität Siegen, Germany, 6 months
- 1993:** University of Calgary, Canada, six weeks

Publications

1. K. Böröczky, Jr.: Rectangular convexity of convex domains of constant width. *Geometriae Dedicata*, 34 (1990), 13–84.
2. T. Bisztriczky, K. Böröczky, Jr., H. Harboth and L. Piepmeyer: On the smallest limited snake of unit disks. *Geometriae Dedicata*, 40 (1991), 319–324.
3. K. Böröczky, Jr.: About the mean width of simplices. *Periodica Polytechnica*, 40 (1992), 291–297.
4. K. Böröczky, Jr., N. Sauer and X. Zhu: Inexhaustible homogeneous structures. *Discrete Mathematics*, 115 (1993), 57–63.
5. K. Böröczky, Jr.: About four-ball packings. *Mathematika*, 40 (1993), 226–232.

6. K. Böröczky, Jr.: Some extremal properties of the regular simplex. In: Proceedings of the Conference on Intuitive Geometry, Szeged, (1994), 45–61.
7. K. Böröczky, Jr.: Mean projections and finite packings of convex bodies. *Monatshefte Math.*, 118 (1994), 41–54.
8. K. Böröczky, Jr., M. Henk: Radii and the Sausage Conjecture. *Canadian Mathematical Bulletin*, 38 (1995), 156–166.
9. K. Böröczky, Jr., V. Soltan: Smallest maximal snakes of translates of convex domains. *Geometriae Dedicata*, 54 (1995), 31–44.
10. K. Böröczky, Jr.: Around the Rogers-Shepard inequality. *Mathematica Pannonica*, 7 (1996), 113–130.
11. K. Böröczky, Jr., K. Böröczky: Isoperimetric problems for polytopes with given number of vertices. *Mathematika*, 43 (1996), 237–254.
12. K. Böröczky, Jr., J.M. Wills: Finite sphere packings and critical radii. *Beit. Alg. Geom.*, 38 (1997), 193–211.
13. K. Böröczky, Jr.: Lattice points in large bodies. *Rend. Circ. Mat. Palermo*, 50 (1997), 67–76.
14. K. Böröczky, Jr.: Packings of four and five balls. In: Proceedings of the Conference on Intuitive Geometry, Budapest, (1997), 265–276.
15. K. Böröczky, Jr., U. Schnell: Wulff–shape for non–periodic arrangements. *Letters Math. Phys.*, 45 (1998), 81–94.
16. K. Böröczky, Jr., U. Schnell: Asymptotic shape of finite packings. *Can. Jour. Math.*, 50 (1998), 16–28.
17. K. Böröczky, Jr., U. Schnell: Quasi–Crystals and Wulff–shape. *Disc. Comp. Geom.*, 21 (1999), 421–436.
18. K. Böröczky, Jr., M. Ludwig: Approximation of convex bodies and a momentum lemma for power diagrams. *Monats. Math.*, 127 (1999), 101–110.
19. U. Betke, K. Böröczky, Jr.: Asymptotic formulae for the lattice point enumerator. *Can. Jour. Math.*, 51 (1999), 225–249.
20. K. Böröczky, Jr., W. Neumann, A. Stipsicz (eds): *Low Dimensional Topology*. J. Bolyai Series in Mathematics, Budapest, 1999.

21. K. Böröczky, Jr., M. Henk: Random Projections of Regular Polytopes. *Arch. Math.*, 73 (1999), 465–473.
22. K. Böröczky, Jr.: Polytopal approximation bounding the number of k -faces. *J. Approximation Th.*, 102 (2000), 263–285.
23. K. Böröczky, Jr.: The error of polytopal approximation with respect to the symmetric difference metric and the L_p metric. *Isr. J. Math.*, 117 (2000), 1–28.
24. K. Böröczky, Jr.: Approximation of general smooth convex bodies. *Adv. Math.*, 153 (2000), 325–341.
25. T. Bisztriczky, K. Böröczky, Jr.: Oriented matroid rigidity of multipllices. *Disc. Comp. Geom.*, 24 (2000), 177–184.
26. K. Böröczky, Jr., D.G. Larman, S. Sezgin, C. Zong: On Generalized Kissing Numbers and Blocking Numbers. *Rend. Circ. Mat. Palermo*, 65 (2000), 39–57.
27. K. Böröczky, Jr., U. Schnell, J.M. Wills: Quasicrystals, parametric density and Wulff-shape. In: *Directions in Mathematical Quasicrystals*, eds. M. Baake, R.V. Moody, CRM Monographs Series 13, AMS, 2000, 259–276.
28. K. Böröczky, Jr., G. Wintsche: Sphere packings in the regular crosspolytope. *Ann. Univ. Sci. Budapest. Eötvös Sect. Math.* 43 (2000), 151–157.
29. T. Bisztriczky, K. Böröczky, Jr.: About the centroid body and the ellipsoid of inertia. *Mathematika*, 48 (2001), 1–13.
30. K. Böröczky, Jr.: About the error term for best approximation with respect to the Hausdorff related metrics. *Disc. Comp. Geom.* 25 (2001), 293–309.
31. V. Arhelger, U. Betke and K. Böröczky, Jr.: Large finite lattice packings. *Geometriae Dedicata*, 85 (2001), 157–182.
32. T. Bisztriczky, K. Böröczky, Jr.: On periodically cyclic Gale 4-polytopes. *Disc. Math.*, 241 (2001), 103–118.
33. K. Böröczky, Jr., G. Tardos: The longest segment in the complement of a packing. *Mathematika*, 49 (2002), 45–49.
34. K. Böröczky, Jr.: Discrete point sets in the hyperbolic plane. *Studia Sci. Math. Hung.*, 39 (2002), 21–36.
35. K. Böröczky, Jr., G. Fejes Tóth: Stability of some inequalities for three-polyhedra. *Rend. Circ. Mat. Palermo*, 70 (2002), 93–108.

36. T. Réti, K. Böröczky, Jr.: Topological characterization of 2D finite cellular system. *Materials Science Forum*, 414–415 (2003), 471–482.
37. I. Bárány, K. Böröczky, Jr.: Lattice points on the boundary of the integer hull. In: (A. Bezdek, ed.), *Discrete Geometry*, Marcel Dekker, 2003, 33–48.
38. K. Böröczky, Jr., M.A. Hernández Cifre, G. Salinas Martínez: Optimizing the perimeter and the area for convex sets for prescribed circumradius and inradius. *Monatshefte Math.*, 138 (2003), 95–110.
39. K. Böröczky, Jr., G. Wintsche: Covering the sphere by equal spherical balls. In: *Discrete and Computational Geometry – The Goodman-Pollack Festschrift* (B. Aronov, S. Basu, M. Sharir, J. Pach, eds), *Algorithms and Combinatorics Vol. 25.*, Springer, 237–253, 2003.
40. K. Böröczky, Jr., J. Kollár, T. Szamuely (eds): *Higher Dimensional Varieties and Rational Points*. J. Bolyai Series, Springer-Verlag, 2003.
41. K. Böröczky, Jr.: Finite packing and covering by congruent convex domains. *Disc. Comp. Geom.*, 30 (2003), 185–193.
42. T. Bisztriczky, K. Böröczky, Jr., D.S. Gunderson: Cyclic polytopes, hyperplanes, and codes. *J. Geometry*, 78 (2003), 25–49.
43. K. Böröczky, Jr., M. Reitzner: Approximation of Smooth Convex Bodies by Random Circumscribed Polytopes. *Annals of Applied Prob.*, 14 (2004), 239–273.
44. K. Böröczky, Jr.: *Finite packing and covering*. Cambridge University Press, 2004.
45. T. Réti, K. Böröczky, Jr.: Topological Characterization of Cellular Structures. *Acta Polytechnica Hungarica*, 1 (2004), 59–85.
46. T. Réti, K. Böröczky, Jr.: Topological characterization of finite cellular systems represented by 4-dimensional polytopes, *Materials Science Forum*, 473–474 (2005), 381–388.
47. K. Böröczky, Jr.: Finite coverings in the hyperbolic plane. *Discrete and Computational Geometry*, 33 (2005), 165–180.
48. K. Böröczky, Jr.: The stability of the Rogers-Shephard inequality. *Adv. Math.*, 190 (2005), 47–76.
49. U. Betke, K. Böröczky, Jr.: Finite lattice packings and the Wulff–shape. *Mathematika*, 52 (2005), 17–29.

50. K.J. Böröczky, T. Réti, G. Wintsche: On the combinatorial characterization of quasicrystals. *J. Geometry and Physics*, 57 (2006), 39-52.
51. K.J. Böröczky, J. Pach, G. Tóth: Planar crossing numbers of graphs embeddable in another surface. *International Journal of Foundations of Computer Science*, 17 (2006), 1005-1017.
52. K. Böröczky, K. Böröczky, Jr., G. Wintsche: Typical faces of extremal polytopes with respect to a thin three-dimensional shell. *Periodica Math. Hung.*, 53 (2006), no. 1-2, 83-102.
53. K. Böröczky, Jr., I. Fábián, G. Wintsche: Covering the crosspolytope by equal balls. *Periodica Math. Hung.*, 53 (2006), no. 1-2, 103-113.
54. K.J. Böröczky, I.Z. Ruzsa: Note on an inequality of Wegner. *Disc. Comp. Geom.*, 37 (2007), 245-249.
55. K.J. Böröczky, R. Schneider: Circumscribed Simplices of Minimal Mean Width. *Beit. Alg. Geom.*, 48 (2007), 217-224.
56. K. Böröczky, K. Böröczky, Jr.: Polytopes of minimal volume with respect to a shell - another characterization of the octahedron and the icosahedron. *Disc. Comp. Geom.*, 38 (2007), 231-241.
57. K.J. Böröczky: Polytopal approximation of smooth convex bodies. In: *Konvexgeometrie, Oberwolfach Report No. 56/2006*, 3351-3354, 2007.
58. K. Böröczky, K.J. Böröczky: A stability property of the octahedron and the icosahedron. *Publ. Math. Debrecen*, 71 (2007), 449-466.
59. K.J. Böröczky, P. Tick, G. Wintsche: Typical faces of best approximating three-polytopes. *Beit. Alg. Geom.*, 48 (2007), 521-545.
60. K.J. Böröczky, G. Wintsche: Extremal mean width when covering the one-skeleton. *Bull. LMS*, 39 (2007), 921-928.
61. K.J. Böröczky, Salvador S. Gomis, P. Tick: Volume approximation of smooth convex bodies by three-polytopes of restricted number of edges, *Monatshefte Math.*, 153 (2008), 23-48.
62. K.J. Böröczky, F. Fodor, V. Víg: Approximating 3-dimensional convex bodies by polytopes with a restricted number of edges. *Beit. Alg. Geom.*, 49 (2008), 177-193.
63. K.J. Böröczky, R. Schneider: A characterization of the duality mapping for convex bodies. *Geom. Func. Analysis (GAFA)*, 18 (2008), 657-667.

64. K. Böröczky, K.J. Böröczky, C. Schütt, G. Wintsche: Convex bodies of minimal volume, surface area and mean width with respect to thin shells. *Canadian Journal of Mathematics*, 60 (2008), 3-32.
65. K.J. Böröczky, L.M. Hoffmann, D. Hug: Expectation of mean projections of random polytopes. *Periodica Hungarica*, 57 (2008), 143-164.
66. K.J. Böröczky, F. Fodor, M. Reitzner, V. Víg: Mean width of random polytopes in a reasonably smooth convex body. *Journal of Multivariate Analysis*, 100 (2009), 2287-2295.
67. K. Böröczky, K.J. Böröczky, F. Fodor, H. Harborth, W. Kuperberg (eds): Volume in honour of Ted Bisztriczky. *Canadian Mathematical Bulletin*, vol 52 (2009), no 3.
68. K.J. Böröczky, B. Csikós: Approximation of smooth convex bodies by circumscribed polytopes with respect to the surface area. *Abhandlungen aus dem Mathematischen Seminar der Universität Hamburg*, 79 (2009), 229-264.
69. K.J. Böröczky, R. Schneider: Stable determination of convex bodies from sections. *Studia Sci. Math. Hung.*, 46 (2009), 367-376.
70. K.J. Böröczky: Polytopal approximation of smooth convex bodies. In: *Convex Geometry and its applications*, Oberwolfach Report No. 53/2009, 12-14, 2010.
71. K. Böröczky, Jr.: Valuations and the combinatorial Riemann-Roch theorem. In: *Combinatorial Convex Geometry and Toric Varieties*, (G. Ewald, B. Teissier eds.), Birkhäuser, accepted.
72. K. Böröczky, Jr.: Toric varieties and continued fractions. In: *Combinatorial Convex Geometry and Toric Varieties*. (G. Ewald, B. Teissier eds.), Birkhäuser, accepted.
73. ifj. Böröczky K.: Parkettázások, elhelyezések és fedések a hiperbolikus térben. *Mat. Lapok*, accepted.
74. K.J. Böröczky, B. Csikós: A new version of L. Fejes Tóth's Moment Theorem. *Studia Sci. Hung.*, accepted.
75. K.J. Böröczky: Stability of the Blaschke-Santaló and the affine isoperimetric inequalities. *Advances in Mathematics*, accepted.
76. K.J. Böröczky, R. Schneider: Mean width of circumscribed random polytopes. *CMB*, accepted.
77. K.J. Böröczky, D. Hug: Stability of the inverse Blaschke-Santaló inequality for zonoids. *Adv. Appl. Math.*, 44 (2010), 309-328.

78. K.J. Böröczky, F. Fodor, D. Hug: The mean width of random polytopes circumscribed around a convex body. *Journal of LMS*, accepted.
79. K.M. Ball, K.J. Böröczky: Stability of some versions of the Prékopa-Leindler inequality. *Monatshefte Math.*, accepted.
80. K.M. Ball, K.J. Böröczky: Stability of the Prékopa-Leindler inequality. *Mathematika*, accepted.