CURRICULUM VITAE
Kenneth S. Brown

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Education

- A.B., 1967, Stanford

- Ph.D., 1971, M.I.T.

Employment history

- Assistant Professor, Cornell, 1971–1976

- Associate Professor, Cornell, 1976–1981

- Professor, Cornell, 1981–2014

- Professor Emeritus, Cornell, 2014–

- Chair, Cornell Mathematics Department, 2002–2006

- Director, Cornell Summer Mathematics Institute, 2009

- Visitor, IHES (France) and ETH (Zürich), 1977–1978

- Member, MSRI (Berkeley), 1988–1989

- Visiting professor, University of Hong Kong, June 1999

Honors and selected lectures

- Invited series of three lectures at 1977 Durham conference on homological techniques in group theory

- Invited 45 minute address at 1978 ICM, Helsinki

- Member of committee to select algebra speakers for 1982 ICM

- Clark teaching award, Cornell, 1987

- Invited hour address at the AMS meeting in College Park, April 1988

- Invited series of five lectures on buildings at the Workshop on Group Theory From a Geometrical Viewpoint, International Centre for Theoretical Physics, Trieste, April 1990

- Invited series of eight lectures on buildings in A. Borel's program on Lie groups, Hong Kong University, June 1999

- Auslander lectures, Northeastern University, October 2003

- Cornell Mathematics Department Senior Faculty teaching award, 2008

- Conference in my honor, Approaches to Group Theory, October 9–11, 2010 (`http://www.math.cornell.edu/~approachtogroups/`). Related article in Cornell Chronicle (`http://www.news.cornell.edu/stories/Oct10/KenBrownProfile.html`).

- Fellow of the American Mathematical Society, January 2013–

Research grants National Science Foundation grants for summer research in mathematics, 1972–1993 (funded by Topology) and 1999–2003 (funded jointly by Topology and Probability).

Theses supervised

1. Kenneth N. Moss, Homology of the special linear group of the ring of integers localized away from a prime, 1979.

2. Isabel Beichl, Computations in group cohomology for finite groups, 1981.

3. Bruce Ikenaga, Homological dimension and Farrell cohomology, 1982.

4. David Webb, Grothendieck groups of dihedral and quaternion group rings, 1983.

5. Melanie Stein, Groups of piecewise linear homeomorphisms, 1991.

6. John Meier, Endomorphisms of negatively curved polygonal groups, 1992.

7. Susan Hermiller, Rewriting systems for Coxeter groups, 1992.

8. Vee Ming Lew, The semistability at infinity for multiple extension groups, 1993.

9. Chow Ying Lee, Matroids and random walks, 1999.

10. Swapneel Mahajan, Shuffles, shellings and projections, 2002.

11. James Belk, Thompson's group F, 2004.

12. Russ Woodroofe, Shelling the coset poset, 2005.

13. Franco Saliola, The face semigroup algebra of a hyperplane arrangement, 2006.

14. Jason Bode, Isoperimetric constants and self-avoiding walks and polygons on hyperbolic Coxeter groups, 2007.

15. Francesco Matucci (jointly advised with Martin Kassabov), Algorithms and classification in groups of piecewise-linear homeomorphisms, 2008.

16. Denise Dawson, Complete reducibility in Euclidean twin buildings, 2011.

Publications

1. Herbert Abels and Kenneth S. Brown, *Finiteness properties of solvable S-arithmetic groups: an example*, J. Pure Appl. Algebra **44** (1987), no. 1-3, 77–83.

2. Peter Abramenko and Kenneth S. Brown, *Transitivity properties for group actions on buildings*, J. Group Theory **10** (2007), no. 3, 267–277.

3. _____, *Buildings: Theory and applications*, Graduate Texts in Mathematics, vol. 248, Springer, New York, 2008.

4. _____, *Automorphisms of non-spherical buildings have unbounded displacement*, Innov. Incidence Geom. **10** (2009), 1–13.

5. James M. Belk and Kenneth S. Brown, *Forest diagrams for elements of Thompson's group F*, Internat. J. Algebra Comput. **15** (2005), no. 5-6, 815–850.

6. Louis J. Billera, Kenneth S. Brown, and Persi Diaconis, *Random walks and plane arrangements in three dimensions*, Amer. Math. Monthly **106** (1999), no. 6, 502–524.

7. Kenneth S. Brown, *Abstract homotopy theory and generalized sheaf cohomology*, Trans. Amer. Math. Soc. **186** (1973), 419–458.

8. _____, *Euler characteristics of discrete groups and G-spaces*, Invent. Math. **27** (1974), 229–264.

9. _____, *Euler characteristics of groups: the p-fractional part*, Invent. Math. **29** (1975), no. 1, 1–5.

10. _____, *Homological criteria for finiteness*, Comment. Math. Helv. **50** (1975), 129–135.

11. _____, *High dimensional cohomology of discrete groups*, Proc. Nat. Acad. Sci. U. S. A. **73** (1976), no. 6, 1795–1797.

12. _____, *Groups of virtually finite dimension*, Homological group theory (Proc. Sympos., Durham, 1977), London Math. Soc. Lecture Note Ser., vol. 36, Cambridge Univ. Press, Cambridge, 1979, pp. 27–70.

13. _____, *Cohomology of infinite groups*, Proceedings of the International Congress of Mathematicians (Helsinki, 1978) (Helsinki), Acad. Sci. Fennica, 1980, pp. 285–290.

14. _____, *Complete Euler characteristics and fixed-point theory*, J. Pure Appl. Algebra **24** (1982), no. 2, 103–121.

15. _____, *Presentations for groups acting on simply-connected complexes*, J. Pure Appl. Algebra **32** (1984), no. 1, 1–10.

16. _____, *Finiteness properties of groups*, J. Pure Appl. Algebra **44** (1987), no. 1-3, 45–75.

17. _____, *Trees, valuations, and the Bieri-Neumann-Strebel invariant*, Invent. Math. **90** (1987), no. 3, 479–504.

18. _____, *Five lectures on buildings*, Group theory from a geometrical viewpoint (Trieste, 1990), World Sci. Publishing, River Edge, NJ, 1991, pp. 254–295.

19. _____, *The geometry of finitely presented infinite simple groups*, Algorithms and classification in combinatorial group theory (Berkeley, CA, 1989), Math. Sci. Res. Inst. Publ., vol. 23, Springer, New York, 1992, pp. 121–136.

20. _____, *The geometry of rewriting systems: a proof of the Anick-Groves-Squier theorem*, Algorithms and classification in combinatorial group theory (Berkeley, CA, 1989), Math. Sci. Res. Inst. Publ., vol. 23, Springer, New York, 1992, pp. 137–163.

21. _____, *Cohomology of groups*, Springer-Verlag, New York, 1994, Corrected reprint of the 1982 original.

22. _____, *Buildings*, Springer-Verlag, New York, 1998, Reprint of the 1989 original.

23. _____, *The coset poset and probabilistic zeta function of a finite group*, J. Algebra **225** (2000), no. 2, 989–1012.

24. _____, *Semigroups, rings, and Markov chains*, J. Theoret. Probab. **13** (2000), no. 3, 871–938.

25. _____, *Thompson calculator*, software available at `http://www.math.cornell.edu/~kbrown/index.html#thompson`, 2002.

26. _____, *WHAT IS. . . a building*, Notices Amer. Math. Soc. **49** (2002), no. 10, 1244–1245.

27. _____, *Semigroup and ring theoretical methods in probability*, Representations of finite dimensional algebras and related topics in Lie theory and geometry, Fields Inst. Commun., vol. 40, Amer. Math. Soc., Providence, RI, 2004, pp. 3–26.

28. _____, *Review of* The structure of spherical buildings *by Richard M. Weiss*, Bull. Amer. Math. Soc. (N.S.) **42** (2005), no. 3, 395–400.

29. _____, *The homology of Richard Thompson's group F*, Topological and asymptotic aspects of group theory, Contemp. Math., vol. 394, Amer. Math. Soc., Providence, RI, 2006, pp. 47–59.

30. _____, *Lectures on the cohomology of groups*, Cohomology of groups and algebraic *K*-theory, Adv. Lect. Math. (ALM), vol. 12, Int. Press, Somerville, MA, 2010, pp. 131–166.

31. _____, *The Todd–Coxeter procedure*, software available at `http://www.math.cornell.edu/~kbrown/toddcox`, 2011–2013.

32. Kenneth S. Brown and Persi Diaconis, *Random walks and hyperplane arrangements*, Ann. Probab. **26** (1998), no. 4, 1813–1854.

33. Kenneth S. Brown and Emmanuel Dror, *The Artin-Rees property and homology*, Israel J. Math. **22** (1975), no. 2, 93–109.

34. Kenneth S. Brown and Ross Geoghegan, *FP_∞ groups and HNN extensions*, Bull. Amer. Math. Soc. (N.S.) **9** (1983), no. 2, 227–229.

35. _____, *An infinite-dimensional torsion-free FP_∞ group*, Invent. Math. **77** (1984), no. 2, 367–381.

36. _____, *Cohomology with free coefficients of the fundamental group of a graph of groups*, Comment. Math. Helv. **60** (1985), no. 1, 31–45.

37. Kenneth S. Brown and Stephen M. Gersten, *Algebraic K-theory as generalized sheaf cohomology*, Algebraic K-theory, I: Higher K-theories (Proc. Conf., Battelle Memorial Inst., Seattle, Wash., 1972), Lecture Notes in Math., vol. 341, Springer, Berlin, 1973, pp. 266–292.

38. Kenneth S. Brown and Peter J. Kahn, *Homotopy dimension and simple cohomological dimension of spaces*, Comment. Math. Helv. **52** (1977), no. 1, 111–127.

39. Kenneth S. Brown and John Meier, *Improper actions and higher connectivity at infinity*, Comment. Math. Helv. **75** (2000), no. 1, 171–188.

40. Kenneth S. Brown and Jacques Thévenaz, *A generalization of Sylow's third theorem*, J. Algebra **115** (1988), no. 2, 414–430.

Conferences organized

- Aspherical complexes (with F. T. Farrell and F. Raymond), AMS Joint Summer Research Conference, Bowdoin, July 1984.

- Topological methods in group theory (with R. Bieri and K. Gruenberg), Oberwolfach, June 1986.

- Combinatorial group theory and geometry (with S. M. Gersten, and J. R. Stallings), special year at MSRI, Berkeley, 1988–89.

- Topological methods in group theory (with R. Bieri and K. Gruenberg), Oberwolfach, October 1989.

- Topological methods in group theory (with R. Bieri), Oberwolfach, 1992

- Geometry of arithmetic groups (with M. Bestvina, M. Kassabov, and T. Riley), AMS special session, Cornell, September 2011.