

Curriculum Vitae

ÁGNES E. SZENDREI

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Research Interests:

Algebra, combinatorics, logic

Degrees:

Doctor of Mathematical Sciences, Hungarian Academy of Sciences, 1993
Doctoral degree, Hungarian Academy of Sciences, 1982

Professional Experience:

University of Colorado

2005–present Full professor
2003–2005 Associate professor

University of Szeged

1993–2003 Full professor
1984–1993 Associate professor
1982–1984 Assistant professor

Visiting positions:

University of Szeged, Hungary, 2010
University of Hawaii, Honolulu, U.S.A., 2006
University of Louisville, U.S.A., 1999–2000

Research visits:

University of Hawaii, Honolulu, U.S.A., 2018
Johannes Kepler University, Linz, Austria, 2014
Fields Institute, Toronto, Canada, 1996
Technische Universität Darmstadt, Germany, 1989–90, 1994
Université de Montréal, Canada, 1980–81

Awards:

Farkas Bolyai Award, Hungarian Academy of Sciences, 2000

A national award given by the Hungarian Academy of Sciences for excellence in research, teaching and service.

Széchenyi Professorial Fellowship, Hungarian Ministry of Education, 1997–2000

A fellowship for research and teaching awarded to selected university professors by the Hungarian Ministry of Education.

Mathematical Research Award of the Hungarian Academy of Sciences, 1994

A national research award given by the Hungarian Academy of Sciences for outstanding research in mathematics.

Paul Erdős Mathematical Award, Hungarian Academy of Sciences, 1991

The national research award given by the Hungarian Academy of Sciences for outstanding research in mathematics by a mathematician under age 40.

Humboldt Fellowship, Germany, 1989–90, 1994

A research fellowship awarded by the Humboldt Foundation (Bonn, Germany).

Kiváló Munkáért (Award for Excellence), Ministry of Education, 1983

A national award given by the Hungarian Ministry of Education for outstanding work in the field of education.

NSERC Research Fellowship, Canada, 1980–81

A research fellowship awarded by the Natural Sciences and Engineering Research Council of Canada.

Ring of the Republic, President of Hungary, 1979

The Hungarian President's award for scholarship. This award is a gold ring, presented by the President of Hungary, to the top scholar completing his or her studies at a Hungarian university.

Géza Grünwald Award, János Bolyai Mathematical Society, 1978

The national research award given by the János Bolyai Mathematical Society for outstanding research in mathematics by a person under age 30.

National Medal for Outstanding Studies, Ministry of Education, 1977

The national scholarship award given by the Hungarian Ministry of Education for outstanding performance by a university student.

Kató Rényi Award, János Bolyai Mathematical Society, 1975

The national research award given by the János Bolyai Mathematical Society for outstanding research in mathematics by an undergraduate.

Publications:

Authors are listed in alphabetical order.

RESEARCH MONOGRAPH:

1. Á. Szendrei, *Clones in Universal Algebra*, Séminaire de Mathématiques Supérieures, vol. 99., Les Presses de l'Université de Montréal, Montréal, 1986; 166 pages.

CHAPTER IN RESEARCH MONOGRAPH (SOLICITED):

1. Á. Szendrei, *A survey of clones closed under conjugation*, Galois Connections and Applications, edited by K. Denecke, M. Erné, S. L. Wismath, Kluwer, 2004; pp. 297–343.

PEER REVIEWED RESEARCH PAPERS:

1. Á. Szendrei, Idempotent reducts of abelian groups, *Acta Sci. Math. (Szeged)* **38** (1976), 171–182.
2. Á. Szendrei, The operation ISKP on classes of algebras, *Algebra Universalis* **6** (1976), 349–353.
3. Á. Szendrei, On affine modules, *Contributions to Universal Algebra* (Proc. Conf. Szeged, 1975), Colloq. Math. Soc. J. Bolyai, vol. 17, North-Holland, Amsterdam, New York, Oxford, 1977; pp. 457–464.
4. Á. Szendrei, On the arity of affine modules, *Colloq. Math.* **38** (1977), 1–4.
5. Á. Szendrei, Torsion theories in affine categories, *Acta Math. Acad. Sci. Hungar.* **30** (1977), 351–369.
6. Á. Szendrei, On the idempotent reducts of modules. I, *Universal Algebra* (Proc. Conf. Esztergom, 1977), Colloq. Math. Soc. J. Bolyai, vol. 29, North-Holland, Amsterdam, New York, Oxford, 1982; pp. 753–767.
7. Á. Szendrei, On the idempotent reducts of modules. II, *Universal Algebra* (Proc. Conf. Esztergom, 1977), Colloq. Math. Soc. J. Bolyai, vol. 29, North-Holland, Amsterdam, New York, Oxford, 1982; pp. 769–780.
8. Á. Szendrei, On modules in which idempotent reducts form a chain, *Colloq. Math.* **40** (1979), 191–196.
9. Á. Szendrei, On closed sets of linear operations over a finite set of square-free cardinality, *Elektron. Információsverarb. Kybernet.* **14** (1978), 547–559.
10. Á. Szendrei, Identities satisfied by convex linear forms, *Algebra Universalis* **12** (1981), 103–122.

11. Á. Szendrei, Identities in idempotent affine algebras, *Algebra Universalis* **12** (1981), 172–199.
12. Á. Szendrei, A new proof of the McKenzie–Gumm Theorem, *Algebra Universalis* **13** (1981), 133–135.
13. Á. Szendrei, On weakly commuting operations, *Contributions of General Algebra* (Proc. Klagenfurt Conf., 1978), Verlag Johannes Heyn, Klagenfurt, 1979; pp. 373–380.
14. L. Szabó, Á. Szendrei, Almost all algebras with triply transitive automorphism groups are functionally complete, *Acta Sci. Math. (Szeged)* **41** (1979), 391–402.
15. Á. Szendrei, On closed classes of quasilinear functions, *Czechoslovak Math. J.* **30** (105) (1980), 498–509.
16. P. P. Pálffy, L. Szabó, Á. Szendrei, Algebras with doubly transitive automorphism groups, *Finite Algebra and Multiple-Valued Logic* (Proc. Conf. Szeged, 1979), Colloq. Math. Soc. J. Bolyai, vol. 28, North-Holland, Amsterdam, New York, Oxford, 1981; pp. 521–535.
17. Á. Szendrei, Clones of linear operations on finite sets, *Finite Algebra and Multiple-Valued Logic* (Proc. Conf. Szeged, 1979), Colloq. Math. Soc. J. Bolyai, vol. 28, North-Holland, Amsterdam, New York, Oxford, 1981; pp. 693–738.
18. G. Pollák, Á. Szendrei, Independent basis for the identities of entropic groupoids, *Comment. Math. Univ. Carolinae* **22** (1981), 71–85.
19. L. Szabó, Á. Szendrei, Shupecki-type criteria for quasilinear functions over a finite dimensional vector space, *Elektron. Informationsverarb. Kybernet.* **17** (1981), 601–611.
20. P. P. Pálffy, L. Szabó, Á. Szendrei, Automorphism groups and functional completeness, *Algebra Universalis* **15** (1982), 385–400.
21. I. G. Rosenberg, Á. Szendrei, Degrees of clones and relations, *Houston J. Math.* **9** (1983), 545–580.
22. Á. Szendrei, Algebras of prime cardinality with a cyclic automorphism, *Arch. Math. (Basel)* **39** (1982), 417–427.
23. Á. Szendrei, Short maximal chains in the lattice of clones over a finite set, *Math. Nachr.* **110** (1983), 43–58.
24. Á. Szendrei, Demi-primal algebras, *Algebra Universalis* **18** (1984), 117–128.
25. E. Fried, L. Szabó, Á. Szendrei, Algebras with p -uniform principal congruences, *Studia Sci. Math. Hungar.* **16** (1981), 229–235 (appeared in 1983).
26. I. G. Rosenberg, Á. Szendrei, Submaximal clones with a prime order automorphism, *Acta Sci. Math. (Szeged)* **49** (1985), 29–48.
27. P. P. Pálffy, Á. Szendrei, Unary polynomials in algebras. II, *Contributions to General Algebra 2* (Proc. Klagenfurt Conf., 1982), Verlag Hölder–Pichler–Tempsky, Wien and Verlag Teubner, Stuttgart, 1983; pp. 273–290.
28. Á. Szendrei, Demi-primal algebras with a single operation, *Lectures in Universal Algebra* (Proc. Conf. Szeged, 1983), Colloq. Math. Soc. J. Bolyai, vol. 43, North-Holland, Amsterdam, New York, Oxford, 1986; pp. 509–531.
29. Á. Szendrei, Locally para-primal algebras, *Contributions to General Algebra 5* (Proc. Salzburg Conf., 1986), Verlag Hölder–Pichler–Tempsky, Wien and Verlag Teubner, Stuttgart, 1987; pp. 367–399.
30. Á. Szendrei, Idempotent algebras with restrictions on subalgebras, *Acta Sci. Math. (Szeged)* **51** (1987), 251–268.
31. Á. Szendrei, Every idempotent plain algebra generates a minimal variety, *Algebra Universalis* **25** (1988), 36–39.
32. Á. Szendrei, Symmetric algebras, *Contributions to General Algebra 6*, Verlag Hölder–Pichler–Tempsky, Wien and Verlag Teubner, Stuttgart, 1989; pp. 259–280.
33. T. Bajusz, G. McNulty, Á. Szendrei, Lyndon’s groupoid is not inherently nonfinitely based, *Algebra Universalis* **27** (1990), 254–260.
34. Á. Szendrei, The primal algebra characterization theorem revisited, *Algebra Universalis* **29** (1992), 41–60.

35. Á. Szendrei, Simple surjective algebras having no proper subalgebras, *J. Austral. Math. Soc. Ser. A* **48** (1990), 434–454.
36. Á. Szendrei, A classification of strictly simple algebras with trivial subalgebras, *Demonstr. Math.* **24** (1991), 149–173.
37. Á. Szendrei, A survey on strictly simple algebras and minimal varieties, *Universal Algebra and Quasi-group Theory* (edited by A. Romanowska, J. D. H. Smith), Research and Exposition in Mathematics, vol. 19, Heldermann Verlag, Berlin, 1992; pp. 209–239.
38. Á. Szendrei, Simple Abelian algebras, *J. Algebra* **151** (1992), 408–424.
39. Á. Szendrei, Term minimal algebras, *Algebra Universalis* **32** (1994), 439–477.
40. J. Berman, E. W. Kiss, P. Pröhle, Á. Szendrei, On the set of types of a finitely generated variety, *Discrete Math.* **112** (1993), 1–20.
41. Á. Szendrei, A completeness criterion for semi-affine algebras, in: *Proceedings of the 22nd International Symposium on Multiple-Valued Logic* (May 27–29, 1992, Sendai, Japan), IEEE Computer Society Press, Los Alamitos, California, U.S.A., 1992; pp. 314–319.
42. Á. Szendrei, Nonfinitely based finite groupoids generating minimal varieties, *Acta Sci. Math. (Szeged)* **57** (1993), 593–600.
43. Á. Szendrei, Maximal non-affine reducts of simple affine algebras, *Algebra Universalis* **34** (1995), 144–174.
44. Á. Szendrei, Strongly Abelian minimal varieties, *Acta Sci. Math. (Szeged)* **59** (1994), 25–42.
45. K. A. Kearnes, Á. Szendrei, A characterization of minimal locally finite varieties, *Trans. Amer. Math. Soc.* **349** (1997), no. 5, 1749–1768.
46. Á. Szendrei, Expansions of minimal varieties, *Acta Sci. Math. (Szeged)* **60** (1995), 659–679.
47. Á. Szendrei, Nearly-idempotent plain algebras are indeed nearly idempotent plain algebras, *Math. Slovaca* **46** (1996), 391–403.
48. K. A. Kearnes, Á. Szendrei, Self-rectangulating varieties of type **5**, *Internat. J. Algebra Comput.* **7** (1997), 511–540.
49. K. A. Kearnes, Á. Szendrei, The relationship between two commutators, *Internat. J. Algebra Comput.* **8** (1998), 497–531.
50. K. A. Kearnes, Á. Szendrei, Projectivity and isomorphism of strictly simple algebras, *Algebra Universalis* **39** (1998), 45–56.
51. K. A. Kearnes, Á. Szendrei, The classification of commutative minimal clones, *Discussiones Math.* **19** (1999), 147–178.
52. Á. Szendrei, Modules in general algebra, *Contributions to General Algebra 10* (Proc. Klagenfurt Conf., 1997), Verlag Johannes Heyn, Klagenfurt, 1998; pp. 41–53.
53. K. A. Kearnes, Á. Szendrei, The residual character of strictly simple term minimal algebras, *Algebra Universalis* **42** (1999), 269–292.
54. G. Czédli, R. Halaš, K. A. Kearnes, P. P. Pálffy, Á. Szendrei, The join of two minimal clones and the meet of two maximal clones, *Algebra Universalis* **45** (2001), 161–178.
55. K. A. Kearnes, Á. Szendrei, Collapsing permutation groups, *Algebra Universalis* **45** (2001), 35–51.
56. K. A. Kearnes, E. W. Kiss, Á. Szendrei, R. D. Willard, Chief factor sizes in finitely generated varieties, *Canad. J. Math.* **54** (2002), 736–756.
57. K. A. Kearnes, Á. Szendrei, J. Wood, Generating singular transformations, *Semigroup Forum* **63** (2001), 441–448. with
58. K. A. Kearnes, Á. Szendrei, Groups with identical subgroup lattices in all powers, *J. Group Theory* **7** (2004), 385–402.
59. K. A. Kearnes, Á. Szendrei, Clones of finite groups, *Algebra Universalis* **54** (2005), 23–52.
60. K. A. Kearnes, Á. Szendrei, Clones closed under conjugation I. Clones with constants, *Internat. J. Algebra Comput.* **18** (2008), 7–58.

61. K. A. Kearnes, J. Shaw, Á. Szendrei, Clones of 2-step nilpotent groups, *Algebra Universalis* **59** (2008), 491–512.
62. E. Lehtonen, Á. Szendrei, Equivalence of operations with respect to discriminator clones, *Discrete Math.* **309** (2009), 673–685.
63. K. A. Kearnes, Á. Szendrei, Clones of algebras with parallelogram terms, *Internat. J. Algebra Comput.* **22** (2012), no. 1, 1250005, 30 pp.
64. E. Lehtonen, Á. Szendrei, Clones with finitely many relative \mathcal{R} -classes, *Algebra Universalis* **65** (2011), 109–159.
65. E. Lehtonen, Á. Szendrei, The submaximal clones on the three-element set with finitely many relative \mathcal{R} -classes, *Discussiones Mathematicae, General Algebra and Applications* **30** (2010), 7–33.
66. M. Behrisch, M. Couceiro, K. A. Kearnes, E. Lehtonen, Á. Szendrei, Commuting polynomial operations of distributive lattices, *Order* **29** (2012), 245–269. accepted for publication. (Published ‘Online First’ in 2011.)
67. T. Dent, K. A. Kearnes, Á. Szendrei, An easy test for congruence modularity, *Algebra Universalis* **67** (2012), no. 4, 375–392.
68. E. Lehtonen, Á. Szendrei, Partial orders induced by quasilinear clones, in: *Contributions to General Algebra 20*, (Proceedings of the Conference AAA81 held in Salzburg, Austria, February 3-6, 2011) (Edited by J. Czermak, G. Dorfer, G. Eigenthaler, W. B. Miller, J. Schoissengeier), Verlag Johannes Heyn, Klagenfurt, 2012; pp. 51–83. (ISBN: 978-3-7084-0447-9)
69. Á. Szendrei, Rosenberg-type completeness criteria for subclones of Slupecki’s clone, in: *ISMVL 2012* (Proceedings of the 42nd International Symposium on Multiple-Valued Logic held in Victoria, BC, Canada, May 14–16, 2012), (Edited by D. M. Miller and V. C. Gaudet) IEEE 2012; pp. 349–354. (ISBN 978-1-4673-0908-0)
70. K. A. Kearnes, Á. Szendrei, R. Willard, A finite basis theorem for difference-term varieties with a finite residual bound, *Trans. Amer. Math. Soc.* **368** (2016), 2115–2143.
71. K. A. Kearnes, E. W. Kiss, Á. Szendrei, Growth rates of algebras I: Pointed cube terms, *J. Austral. Math. Soc.* **101** (2016), 56–94.
72. K. A. Kearnes, E. W. Kiss, Á. Szendrei, Growth rates of algebras II: Wiegold dichotomy, *Internat. J. Algebra Comput.* **25** (2015), no. 4, 555–566.
73. K. A. Kearnes, E. W. Kiss, Á. Szendrei, Growth rates of algebras III: Finite solvable algebras, *Algebra Universalis* **76** (2016), 199–222.
74. K. A. Kearnes, Á. Szendrei, Dualizable algebras with parallelogram terms, *Algebra Universalis*, **76** (2016), 497–539.
75. K. A. Kearnes, E. W. Kiss, Á. Szendrei, Varieties whose finitely generated members are free, *Algebra Universalis*, **79**, no. 3, (2018), article 3, 17 pp.
76. K. A. Kearnes, Á. Szendrei, R. Willard, Simpler Maltsev conditions for (weak) difference terms in locally finite varieties, *Algebra Universalis*, **78** (2017), 555–561.
77. K. A. Kearnes, Á. Szendrei, Cube term blockers without finiteness, *Algebra Universalis*, **78** (2017), 437–459.
78. A. Bulatov, P. Mayr, Á. Szendrei, The Subpower Membership Problem for Finite Algebras with Cube Terms, *Logical Methods in Computer Science* **15** (2019), issue 1, pp. 11:1-11:48.
79. C. Bergman, Á. Szendrei, Random Models of Idempotent Linear Maltsev Conditions. I. Idempriality, *Algebra Universalis*, **81** (2020), article no. 9. (published online February 3, 2020)
80. P. N. Anh, K. A. Kearnes, Á. Szendrei, Commutative Rings Whose Principal Ideals Have Unique Generators, in: *Advances in Rings, Modules and Factorizations* (Proceedings of the Conference on Rings and Factorizations, February 19–23, 2018, Graz), (Edited by Facchini A., Fontana M., Geroldinger A., Olberding B.), Springer Proceedings in Mathematics & Statistics, vol 321. Springer, Cham; pp. 1–9.
81. K. A. Kearnes, Á. Szendrei, Is supernilpotence super nilpotence?, *Algebra Universalis*, **81** (2020), article no. 3.

82. K. A. Kearnes, E. W. Kiss, and Á. Szendrei, Minimal abelian varieties of algebras I, *Internat. J. Algebra Comput.*, Online ready (Nov 2020).
83. K. A. Kearnes, C. Meredith, and Á. Szendrei, Neutrabelian algebras, *Algebra Universalis*, **82** (2021), article no. 13.

CONFERENCE PROCEEDINGS EDITED:

1. *Lectures in universal algebra*. Edited by L. Szabó and Á. Szendrei. Colloquia Mathematica Societatis János Bolyai, vol. 43, North-Holland Publishing Co., Amsterdam; János Bolyai Mathematical Society, Budapest, 1986. 655 pp.
2. Proceedings of the Conference for PhD Students in Mathematics held at the University of Szeged, Hungary, June 29 – July 2, 2010. the 3rd International Conference on Boolean Algebra, Edited by Gábor P. Nagy, Gyula Pap, and Ágnes Szendrei. *Period. Math. Hungar.* **63**, no. 2, 2011.
3. *BLAST 2010*, Proceedings of the 3rd International Conference on Boolean Algebra, Lattice Theory, Universal Algebra, Set Theory and Set-Theoretical Topology, held in Boulder, CO, June 2–6, 2010. Edited by J. Harding, B. Kastermans, K. A. Kearnes, J. D. Monk, and A. Szendrei. *Order* **29**, no. 2, 2012.

TEXTBOOKS:

1. G. Czédli, Á. Szendrei, M. B. Szendrei, *Problems and Solutions in Abstract Algebra* (in Hungarian), Tankönyvkiadó, Budapest, 1985, 1988; JATE Press, Szeged, 1993, 1998; 504 pages. Polygon, Szeged, 2005; viii+512 pages (currently in the 5th edition).
2. Á. Szendrei, *Discrete Mathematics* (in Hungarian), Polygon, Szeged, 1994, 1996, 1998, 2000, 2002, 2004, 2006, 2009, 2013, 2017; xi + 380 pages (currently in the 10th edition).
3. G. Czédli, Á. Szendrei, *Geometric Constructibility* (in Hungarian), Polygon, Szeged, 1997; ix + 329 pages.