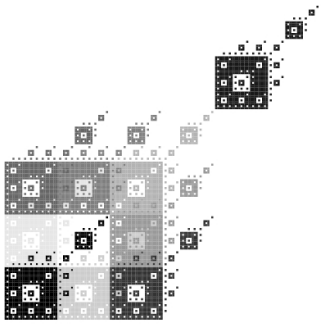

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352-294-2339

Research Interests

combinatorics
discrete geometry
graph theory
fractal geometry

Positions

University of Florida

Professor (1992-2022)
UF Term Professor (2018-2021)
Associate Professor (1986-1992)
Assistant Professor (1981-1986)

Visiting positions

San Francisco State University (2022)

Australian National University
(2009, 2011, 2013, 2014)

Institute for Fundamental Science, Massy University, New Zealand (2005)

Fulbright Professor, Dokuz Eylul University, Turkey (1999-2000)

Universitat Kaiserslautern, Germany (1995)

Fulbright Professor, Makerere University University, Kampala, Uganda (1993-94)

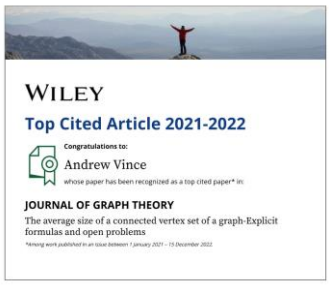
Fulbright Professor, Chancellor College, Zomba, Malawi (1989-1990)

Education

B.S.	Stanford University
M.A.	Harvard University
Ph.D.	University of Michigan

Grants and Awards

Wiley – Top Cited Article 2021-2022 Journal of Graph Theory



AMS-NSF Travel Award for ICM 2022 (ICM changed to virtual due to the war in the Ukraine)

Paul R. Halmos - Lester R. Ford Award, granted by the Mathematical Association of America (2018)

University of Florida Term Professorship (2018-2021)

Simons Foundation Grant, Iterated Function Systems, $35,000 (2014-2022)

Developments in Fractal Geometry, Bulletin of Mathematical Sciences, Springer, $5000 (2013)

MSRVP Grant from the Australian government, Mathematical Sciences Institute of the Australian National University (2012)

National Science Foundation, Theory, Algorithms, Software, for Predicting Geometric Entropy-driven Virus Assembly, using Multiscale Configuration Space Atlasing and Combinatorial Enumeration, Co-PI, $420,000 (2011-2014)

Computational Biology Working Group Seed Grant, UF, Tractable computational models for intuitive analysis and design of biomolecular configurations: leveraging multiscale geometry, symmetry and combinatorial constraints (2010)

Faculty Enhancement Opportunity Award, Research in Fractal Geometry, Mathematical Sciences Institute, National Australian University, 2009

Fulbright Scholar Awards (1999-2000, 1993-94, 1989-90)

Research Initiation Projects Grant, College of Liberal Arts and Science (1999

Teaching Initiative Program Award, University of Florida (1995)

University of Florida Research Development Award, Quasiperiodicity (1995)

NATO participation grant, Advanced Study Institute on the Mathematics of Long-Range Aperiodic Order, Fields Institute, Canada (1995)

National Science Foundation Geometry Institute Grant (1993)

Division of Sponsored Research Award, University of Florida, Computation in Combinatorics and Graph Theory (1991)

Outstanding Achievement and Performance Award, awarded by the Florida Legislature (1990)

National Science Foundation participation grant, Joint Summer Research Conference on Graphs and Algorithms (1987)

American Mathematical Society participation grant, Summer Research Conference in Combinatorics and Algebra (1983)

Division of Sponsored Research Award, University of Florida (1981-1982)

Organizations

American Mathematical Society

Editorial Boards

Editorial Board of Journal of Applied Nonlinear Science

Editor of Advances in Systems Modeling and ICT Applications, Vol. II, Fountain Publishers, 2006

Reviewing and Refereeing

Frequent contributor to Mathematical Reviews (193 reviews)

Referee for mathematics journals including:

Aequationes Mathematicae, Annals of Combinatorics, Arabian Journal for Science and Engineering, Ars Combinatoria, The Computer Journal, Ars Mathematica Contemporanea, Australasian Journal of Combinatorics, Combinatorica, Constructive Approximation, Discrete Applied Mathematics, Discrete and Computational Geometry, Discrete Mathematics, Electronic Journal of Combinatorics, European Journal of Combinatorics, Fractals, Graphs and Combinatorics, Journal of Algebra, Journal of Algebraic Combinatorics, Journal of Combinatorial Mathematics and Combinatorial Computing, Journal of Combinatorial Theory A & B, Journal of Fractal Geometry, Journal of Geometry, Journal of Geometric Analysis, Journal of Graph Theory, Journal of Mathematical Imaging and Vision, Journal of Random Structures, Mathematica Slovaca, Mathematics Magazine, Mathematics of Computation, Monatshefte fur die Mathematik, Rocky Mountain Journal of Mathematics, Proceedings of the American Mathematical Society, Proceedings of the London Mathematical Society, SIAM Journal on Discrete Mathematics, Soochow Journal of Mathematics, and Topology and its Applications, Project reviews for the King Fahd University of Petroleum & Minerals

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Lectures at Meetings & Colloquia

1979 - Michigan Graph Theory Symposium, University of Michigan, *Degree sequences of graphs*

1981 - University of Florida Mathematics Colloquium, *Combinatorial maps*

1982 - Thirteenth Southeastern Conference on Combinatorics, Graph Theory and Computing, Florida Atlantic University

1982 - Silver Jubilee Conference on Combinatorics, University of Waterloo, *Combinatorial generalization of the regular polytopes*

1983 - Fourteenth Southeastern Conference on Combinatorics, Graph Theory and Computing, Florida Atlantic University, *Generalization of the cycle matroid of a graph*

1984 - Fifteenth Southeastern Conference on Combinatorics, Graph Theory and Computing, Louisiana State University, *Coverings of regular maps*

1984 - NATO Advanced Study Institute on Graphs and Order, participant

1985 - Sixteenth Southeastern Conference on Combinatorics, Graph Theory and Computing, Florida Atlantic University, *Balanced graphs and random graphs*

1985 - The Third International Conference on Combinatorial Mathematics, New York Academy of Sciences, *Balanced extensions of graphs*

1986 - Wright State University, Mathematics Colloquium, *Colored graphs and PL-topology*, First Japan Conference on Graph Theory and Applications, Hakone, Japan, *Crystallizations*, 1986

1986 - First China-USA International Conference on Graph Theory and its applications, Jinan, Peoples Republic of China, *Recognizing the 3-sphere*

1986 International Congress of Mathematicians, University of California, Berkeley, participant

1987 - American Mathematical Society Joint Summer Research Conference in the Mathematical Sciences, Graphs and Algorithms, University of Colorado, *A conjecture in combinatorial group theory*

1988 - Fourth SIAM Conference on Discrete Mathematics, San Francisco, California, *Scheduling periodic events*

1988 - Second Vermont Workshop on Combinatorics, Bolton Valley, Vermont, *Elementary divisors of graphs and matroids*

1989 - Twentieth Southeastern Conference on Combinatorics, Graph Theory and Computing, Florida Atlantic University, A *new graph chromatic number*

1989 - Northern Arizona University, Mathematics Colloquium, *A recent technique in topological graph theory*

1989 - Second China-U.S.A. International Conference in Graph Theory, Combinatorics, Algorithms and Applications, San Francisco, *Discrete Jordan curve theorems*

1990 - Seventh Symposium of the Southern African Mathematical Sciences Association, Chancellor College, University of Malawi, *A new look at classical results in topological graph theory*

1991 - Workshop on Algebraic and Topological Methods in Graph Theory, Bled, Yugoslavia, *Tiling by aggregate*

1993 - Twenty Fourth Southeastern Conference on Combinatorics, Florida Atlantic University, *Rep-tiling Euclidean space*

1993 - N.S.F. Regional Geometry Institute, Smith College, MA

1993 - International Conference on Combinatorics, Keszthely, Hungary, *Radix representation and rep-tiling*

1994 - Makerere University, Uganda, Mathematics Colloquium, *Tiling the plane*

1995 - Universitat Kaiserslautern, Germany, Seminars on *Topological Graph Theory*

1995 - Third Slovenian International Conference on Graph Theory, Bled, Slovenia, *Non-returning paths on surfaces*

1996 - MSRI Workshop on Enumeration and Partially Ordered Sets, Berkeley, CA, *Coxeter matroids*

1997 - MSRI Workshop on Enumerative Combinatorics, Berkeley, CA

1997 - European Science Foundation Research Conference on Algebra and Discrete Mathematics, San Feliu de Guixols, Spain, *Isohedral polyomino tiling of the plane*

1998 - Oberwolfach Research Institute Workshop on Aperiodicity, Germany, *Self-affine tiling*,

1998 - Symmetry in Graphs, Maps and Compexes, SIGMAC 98 Workshop, Northern Arizona University, *Coxeter matroids and the greedy algorithm*

1999 - AMS Special Session on Geometric and Algebraic Combinatorics, Gainesville, FL., Organizer, 1999

2000- Algebra Days International Conference, Antalya, Turkey, *Digit Tiling*

2000 - Seminars on Tiling, Dobuz Eylul University, Turkey

2001 - 7th International Workshop on Algorithms and Data Structures, Brown University

2003 - Emory University, *Integrity of a Cubic Graph*

2005 - Institute of Fundamental Sciences, Massey University, New Zealand, *Talks on Tiling*

2006 - The 2nd Annual International Conference on Sustainable ICT Capacity in Developing Countries, Kampala, Uganda, *Indexing a Discrete Global Grid*

2007,2008 - Member of the Program Committee and the Computer Science Committee of the 3rd and 4th International Conference of Computing and ICT Research, Kampala

2008 - Adam Mickiewicz University, Poznan, Poland, *Solutions to Two Open Problems on Trees*, Colloquium

2008 - Building Bridges - An International Conference on Mathematics and Computer Science, Budapest, Hungary, session chair2008 - Fete of Combinatorics and Computer Science - An International Conference on Combinatorics and Computer Science, Budapest, Hungary, *Two Problems on Trees*

2008 - SAMSI (Statistical and Applied Mathematical Sciences Institute) Workshop on Algebraic Methods in Systems Biology and Statistics, *Combinatorial Aspects of Viral Assembly*

2009 - Mathematical Sciences Institute Colloquia, Australian National University, Canberra, Australia, two talks: *Tiling Euclidean Space* and *Fractal Tiling*

2010 - Emory University Colloquium, *Enumerating Tree Orbits*

2010 - Eighth Joint International Meeting of the AMS and the Sociedad Matematica Mexicana, University of California, Berkeley, *Viral Capsid Assembly*

2010 - West Virginia University Colloquium, *Recent Results on Tiling*

2011 - American Mathematical Society – Special Session on Applied Combinatorics, Georgia Southern University, Statesboro, GA, *Enumerating Assembly tree Orbits*

2011 - Mathematical Sciences Institute Colloquia, Australian National University, Canberra, Australia, *Affine, Mobius, and Projective Iterated Function Systems*

2011 - Australian National University, Fractal Geometry Seminar, *The Eigenvalue Problem for an Iterated Function System*

2012 - SIAM Conference on Discrete Mathematics, Dalhousie University, Canada, *Binary Sequences and Fractals*

2013 - Joint AMS-MAA Mathematics Meeting, San Diego, CA, *The Number of Ways to Assemble a Graph*

2014 - Conference on Bijective and Algebraic Combinatorics, University of Florida, *A Combinatorial Characterization of Binary Positional Number Systems*

2014 - SIAM International Conference on Discrete Mathematics, Minneapolis, *A Combinatorial Characterization of Binary Positional Number Systems*

2014 - Mathematical Sciences Institue, Australian National University, Three talks on *Tilings from an Iterated Function System.*

2014 - New Directions in Fractal Geometry, Australian National University, Kiola, Australia, *Global Addressing, Continuations, and the Fractal Manifold*.

2015 - Advances in Combinatorial and Geometric Rigidity, Banff International Research Station for Mathematival Innovation and Discovery, *An Upper Bound on the Rank of the Rigidity Matrix*.

2015 - AMS Special Session on Fractal Geometry and Dynamical Systems, University of Memphis, TN, *The Eigenvalue Problem for Iterated Function Systems.*

2016 - 47th Southeastern International Conference on Combinatorics, Graph Theory and Computing, Florida Atlantic University, *Connected Partitions of a Graph.*

2016 - Fractal Geometry and Complex Dimensions, Cal-Poly, San Luis Obispo, CA, *Self-Similar Polygonal Tiling*.

2016 - Canadian Mathematical Society Winter Meeting, Niagara Falls, *Fractal Transformations.*

2017 - The Second Malta Conference on Graph Theory and Combinatorics, Qawra, Malta, *The Combinatorics of Self-Similar Polygonal Tiling.*

2017 - American Mathematical Society Special Session on Fractal Geometry, Dynamical Systems, and their Applications, University of Central Florida, *Fractal Transformations and Global Fractal Addressing.*

2018 - Graphs, Groups and More, University of Primorska, Koper, Slovenia, *Connected Sets and Partitions of a Graph.*

2018 - Discrete Math Days, University of Seville, Spain, *GIFS Self-Similar Polygonal Tiling.*

2018 - MAA Mathfest, Denver, Co., *Fractal Tiling Puzzles*.

2018 - AMS Special Session on Dynamical Systems and Fractal Geometry, San Francisco State University, *When does an Iterated Function System Have an Attractor.*

2019 - CanaDAM - The Canadian Discrete and Algorithmic Mathematics Conference, Vancouver, British Columbia, Canada, *The Combinatorial Construction of Self-Similar Tilings*.

2019 - Chaos 2019 –12th Chaotic Modeling and Simulation, Chania, Crete, Greece, *The Attractor of an Iterated Function System.*

2019 – AMS Special Session on Fractal Geometry and Dynamical Systems, University of Florida, *Tilings from Graph Directed Iterated Function Systems.*

2021 - CanaDAM – The Canadian Discrete and Algorithmic Mathematics Conference, Winnipeg, Manitoba, Canada, *The average size of a connected vertex set of a graph*.

2022 – JMM2022, virtual, *The path achieves the mínimum average size of a connected induced subgraph of a graph.*

2022 – Colloquium, San Francisco State University, *Tiling*.

Publications

1. Problems, Amer. Math. Monthly, including # 10843, # 6647, #E3139, # 6617, #1520.
2. The *Fibonacci sequence modulo n*, The Fibonacci Quarterly **16** (1978), 403-408.
3. (with F. Harary) Graphical completions of a sequence, Siam. J. Appl. Math. **38** (1980), 402.
4. *Period of a linear recurrence*, Acta Arithmetica **39** (1981), 303-311.
5. *Locally homogeneous graphs from groups*, J. Graph Theory **5** (1981), 417-422.
6. (with F. Harary and D. Worley) *A point-symmetric graph that is nowhere reversible*, Siam. J. Alg. Discrete Methods 3 (1982), 285-287.
7. *An algebraic theory of graph factorization*, Discrete Math. **46** (1982), 211-213.
8. *Combinatorial maps*, J. Comb. Theory B **34** (1983), 1-21.
9. *Regular combinatorial maps*, J. Comb. Theory B **35** (1983), 256-277.
10. *Generalization of the cycle matroid of a graph*, Congressus Numerantium **40** (1983), 399-407.
11. *Graphic matroids, shellability and the Poincare conjecture*, Geometriae Dedicata **14** (1983), 303-314.
12. *Combinatorial classification of the regular Polytopes* in *Progress in Graph Theory*, J. Bondy and W.R. Murty, eds., Academic Press (1984), 487-497.
13. *Flag transitive maps,* Congressus Numerantium **45** (1984), 235-250.
14. A non-shellable 3-sphere, European J. of Combinatorics **6** (1985), 91-100.
15. (with M. Wachs) A *shellable poset that is not lexicographically shellable,* Combinatorica **5** (1985), 257-260.
16. (with A. Rucinski) *Balanced graphs and the problem of subgraphs of a random graph,* Congressus Numerantium **49** (1985), 181-190.
17. (with D. Wilson) *A convexity preserving Peano curve*, Houston J. of Math. **12** (1986), 295-304.
18. (with A. Rucinski) *Strongly balanced graphs and random graphs*, J. Graph Theory **10** (1986), 251-264.
19. (with A. Rucinski) *Balanced extensions of graphs and hypergraphs*, Combinatorica **3** (1988), 285-297.
20. *N-graphs*, Discrete Math. **72** (1988), 367-380.

21. *Star chromatic number,* J. of Graph Theory **4** (1988), 551-559.

22. (with A. Rucinski) *Balanced extension of graphs*, Combinatorial Mathematics, *Annals of the New York Academy of Sciences* **355** (1989), 247-251.

23. *Recognizing the 3-sphere*, Annals of the New York Academy of Sciences, Graph Theory and its Applications: East and West, Proceedings of the First China-USA International Graph Theory Conference **576** (1989), 571-583.

24. (with C. Little) *Discrete Jordan curve theorems*, J. Combinatorial Theory B **47** (1989), 251-261.

25. *Graphs and group presentations,* Contemporary Mathematics, Graphs and Algorithms **89** (1989), 167-185.

26. *Scheduling periodic events,* Discrete Applied Math. **25** (1989), 299-310.

27. *A rearrangement inequality*, Amer. Math. Monthly **97** (1990), 319-323.

28. (with A. Hobbs) *Minimum solutions of matroids under iterated closure and dual closure*, Congressus Numerantum **74** (1990), 124-132.

29. *Modular chromatic number,* Congressus Numerantum **74** (1990), 11-14.

30. (with C. Little) *Embedding schemes and the Jordan curve theorem,* Topics in Combinatorics and Graph Theory - Essays in Honour of Gerhard Ringel (1990), 479-489.

31. *Elementary divisions of graphs and matroids,* European J. Combinatorics **12** (1991), 445-453.

32. (with S. Wilson*) Dyck's map* $(3,7)_8$ *is a counterexample to a clique covering conjecture*, J. Combinatorial Theory B **54** (1992), 157-160.

33. *Classification of closed surfaces using colored graphs,* Graphs and Combinatorics **9** (1993), 75-84.

34. (with A. Rucinski) *The solution to an extremal problem on balanced extensions of graphs*, J. Graph Theory **17** (1993), 417-431.

35. Replicating tessellation, SIAM J. on Disc. Math. **3** (1993), 501-521.

36. (with D. Cao) The spectral radius of a planar graph, Lin. Alg. and its Applications **187** (1993), 251-257.

37. (with Y. Yang) *A new counting formula and its application to edge reconstruction*, Congressus Numerantium **98** (1993), 213-221.

38. *Radix representation and rep-tiling*, Congressus Numerantium **98** (1993), 199-212.

39. *Fermat's last theorem proved*, Uganda Math. Soc. Newsletter (3) **1** (1993), 8.

40. (with D. Wilson and W. Kitto) *An isomorphism between the p-adic integers and a ring associated with a tiling of n-space by permutohedra* Discrete Applied Math. **52** (1994), 39-51.

41. *A counterexample in geometry*, Uganda Math. Soc. Newsletter (4) **1** (1994), 4-5.

42. *Map duality and generalizations,* Ars Combinatoria **39** (1995), 211-229.

43. *Rep-tiling Euclidean space,* Aequationes Math. **50** (1995), 191-213.

44. (with Y. Yang*)* *Reconstruction of the set of branches of a graph,* Graphs and Combinatorics **12** (1996), 69-80.

45. (with J. Hutchinson and T. Shermer) On representations of some thickness-two graphs Extended Abstract, Lecture Notes in Computer Science \# 1027, F. Brandenburg ed., Springer-Verlag, 1996, 324-332

46. (with H. Pulapaka) *Non revisiting paths on surfaces,* J. Discrete and Computational Geometry **15** (1996), 353-357.

47. *Periodicity, quasiperiodicity and Bieberbach's theorem on crystallographic groups*, Amer. Math. Monthly **104** (1997), 27-35.

48. (with D. Cao, V. Chavtal and A. Hoffman) *Variations on a theorem of Ryser,* Linear Algebra and its Applications **260** (1997), 215-222.

49. (with V. Ssembatya) *Mathematics in Uganda,* Mathematical Intelligencer **19** (1997), 27-32.

50. (with J.A. Bondy) *Cycles in a graph whose lengths differ by one or two*, J. Graph Theory, **27** (1998), 11-15.

51. (with H. Pulapaka) *Non-returning paths on surfaces of low genus,* Discrete Math., **182** (1998), 267-277.

52. (with V. Serganova and A. Zelevinsky) *A geometric characterization of Coxeter matroids*, Annals of Combinatorics, **1** (1998), 173-181.

53. (with A. Borovik, I.M. Gelfand and N. White) *The lattice of flats and the flag matroid polytope,* Annals of Combinatorics, **1** (1998), 17-26.

54. *Self-replicating tilings and their boundary,* J. Discrete and Computational Geometry, **21** (1999), 463-476.

55. (with K. Keating) *Isohedral polyomino tiling of the plane*, J. Discrete and Computational Geometry,**21** (1999), 615-630.

56. (with J. Hutchinson and T. Shermer) *Representations of thickness 2 graphs,* Computational Geometry: Theory and Applications, **13** (1999), 161-171.

57. (with A. Borovik) *An adjacency criterion for Coxeter matroids*, J. Alg. Combinatorics, **9** (1999), 271-280.

58. *The greedy algorithm and Coxeter matroids,* J. Alg. Combinatorics **11,** (2000), 155-178.

59. (with P. Duvall and J. Keesling) *The Hausdorff dimension of the boundary of a self-similar tile,* J. London Math. Soc. **61** (2000), 748-760.

60. *Digit tiling of Euclidean space*, Directions in Mathematical Quasicrystals, M. Baake, R. Moody, eds. (2000), 329-370.

61. (with N. White) *Orthogonal matroids*, J. Alg. Combinatorics **13 (**2001), 295-315.

62. *Geometric algorithms for a field portable navigation system*, Technical report for Portal Data Networks Corp. (2001), 1-21.

63. *A framework for the greedy algorithm*, Discrete Appl. Math **121** (2002), 247-260.

64 (with M. Atici) *Geodesics in graphs, an extremal set problem and perfect hash families*, Graphs and Combinatorics **18** (2002), 403-413.

65. *The separation index of a graph*, J. Graph Theory **18** (2002), 53-61.

66. *Graph recurrence*, Europ. J. Combinatorics **24** (2003), 15-32.

67. *Maps*, Handbook of Graph Theory, Gross and Yellen, editors, CRC Press, Boca Raton (2004), 696-721.

68. *The integrity of a cubic graph*, Discrete Appl. Math.**140** (2004), 223-239.

69. (with D. Kazanci) *A property of normal tilings.* Amer. Math. Monthly, **111** (2004), 813-816.

70. *The PYXIS radix system*, Technical report for the PYXIS Innovation, Inc. (2005), 1-17.

71. *An Algorithm for addition of PYXIS Indices*, Technical report for the PYXIS Innovation, Inc. (2005), 1-10.

72. *Conversion between PYXIS and Cartesian Indices*, Technical report for the PYXIS Innovation, Inc. (2005), 1-9.

73. *PYXIS Geometry*, Technical report for the PYXIS Innovation, Inc. (2005), 1-5.

74. *A labeling of the truncated icosahedron*, Technical report for the PYXIS Innovation, Inc. (2005), 1-2.

75. *Moving along a great circle on the sphere*, Technical report for the PYXIS Innovation, Inc. (2005), 1.

76. *Discrete lines on the PYXIS sphere* Technical report for the PYXIS Innovation, Inc. (2005), 1-5.

77. *Transformations on the PYXIS Sphere*, Technical report for the PYXIS Innovation, Inc. (2005), 1-19.

78. *Non-existence of a group structure a discrete set of points on the sphere*, Technical report for the PYXIS Innovation, Inc. (2005), 1-2.

79. *Minimal sampling resolution*, Technical report for the PYXIS Innovation, Inc. (2005), 1-2.

80. *Transition between PYXIS tiles*, Technical report for the PYXIS Innovation, Inc. 2005,1-4.

81. *An overview of PYXIS*, Technical report for the PYXIS Innovation, Inc. (2005), 1-16.

82. *Fast Fourier Transform for PYXIS*, Technical report for the PYXIS Innovation, Inc. (2005), 1-26.

83. *Indexing the aperture 3 hexagonal discrete global grid,* J. Visual Communication and Image Representation **17** (2006), 1227-1236.

84. *Indexing a discrete global grid*, in Special Topics in Computing and ICT Research, Advances in Systems Modelling and ICT Applications, Fountain Publishers,
J. Kizza, A. Vince, J. Aisbett, T. Wanyama, editors (2006).

85. (with C. Little) *Parity versions of 2-connectedness,* Electronic J. Combinatorics **13** (2006).

86. *Discrete lines and wandering paths,* SIAM J. on Discrete Math. **21** (2007), 647-661.

87. (with X. Zheng) *Computing the discrete Fourier transform on a hexagonal lattice*, Jour. Math. Imaging and Vision **28** (2007), 125-133.

88. (with H. Wang) *Infinitely many trees have non-Sperner subtree poset,* Order **24** (2008), 133-138.

89. *A simplex contained in a sphere,* J. of Geometry, **89** (2008), 169-178.

90. (with X. Zheng) *Arithmetic and Fourier transform for the PYXIS multi-resolution digital Earth model*, International J. Digital Earth, **2** (2009), 59-79.

91. (with H. Wang) *The average order of a subtree of a tree*, J. Combinatorial Theory B **100** (2010), 161-170.

92. (with R. Atkins, M. Barnsley and D. Wilson) *A characterization of hyperbolic affine iterated function systems*, Topology Proceedings, **36** (2010), 1-23.

93. (with M. Bona, M. Sitharam) *Tree orbits under permutation group action: algorithm, enumeration and application to viral assembly,* Bull. Math. Biology, **73** (2011), 726-753.

94. (with M. Barnsley) *The chaos game on a general iterated function system*, Ergodic Theory and Dynamical System, **31** (2011), 1073-1079.

95. (with M. Barnsley) *The eigenvalue problem for linear and affine iterated function systems*, Linear Algebra and its Applications, **435** (2011), 3124-3138.

96. (with M. Barnsley) *Real projective iterated function systems*, J. Geometric Analysis, **22** (2012), 1137-1172.

97. (with M. Bona) *The number of ways to assemble a graph,* Electronic J. Combinatorics, **9** (2012) #P54, 1-18.

98. *Mobius iterated function systems*, Trans. Amer. Math. Soc., **365** (2013), 491-509.

99. (with M. Barnsley) *Fractal homeomorphisms for bi-affine iterated functions systems*, International J. Applied Nonlinear Science, **1** (2013), 3-19.

100. (with M. Barnsley) *The Conley attractors of an iterated function system*, Bull. Aus. Math. Soc., **88**, (2013), 267-279.

101. (with M. Barnsley) *Developments in Fractal Geometry*, Bull. Math. Sci., **3** (2013), 299-348.

102. (with M. Barnsley) *Fractal Continuation*, Constructive Approximation, **38** (2013), 311-337.

103. (with M. Barnsley and B. Harding) *The entropy of a special overlapping dynamical system*, Ergodic Theory and Dynamical Systems, **34** (2014), 483-500.

104. *A combinatorial approach to binary positional number systems*, Acta Math. Hungar., **143** (2014), 138-158.

105. (with M. Barnsley) *Fractal tiling from iterated function systems*, Discrete Comput. Geom., **51** (2014), 729-752.

106. (with T. Samuel and N. Snigireva), *Embedding the symbolic dynamics of Lorenz maps*, Math. Proc. Cambridge Phil. Soc., **156** (2014), 105-119.

107. (with M. Barnsley and W. Steiner), *Critical itineraries of maps with constant slope and one*

discontinuity, Math. Proc. Cambridge Phil. Soc.,**157** (2014), 547- 565.

108. (with M. Barnsley), *Fast basins and branched fractal manifolds of attractors of iterated function systems,* SIGMA, **11** (2015), dx.doi.org/10.3842/SIGMA.2015.084.

109. (with M. Barnsley, B. Harding, and P. Viswanathan), *Approximation of rough functions*, J. Approx. Theory, **209** (2016), 23-43.

110. (with M. Sitharam, M. Wang, and M. Bona), *Symmetry in sphere-based assembly configuration spaces*, Symmetry, **8** (2016) doi:10.3390/sym8010005.

111. (with C. Bandt, M. Barnsley, and M. Hegland), *Old wine in fractal bottles I: orthogonal expansions on self-referential spaces via fractal transformations,* Chaos, Solitons & Fractals, **91** (2016), 478-489.

112. *Counting connected sets and connected partitions of a graph,* Australasian J. Combin., **67** (2017), 281-293.

113. (with M. Barnsley), *Self-similar polygonal tiling*, Amer. Math. Monthly, **124** (2017), 905-921.

114. *Global fractal transformations and global addressing,* J. Fractal Geom., **5** (2018), 387-418.

115. *Aparallel digraphs and splicing machines*, Disc. Math., **341** (2018), 2883-2893.

116. (with M. Barnsley), *Self-similar polygonal tiling, a combinatorial construction,* Electronic Notes in Discrete Math. **68** (2018), 5-10.

117. (with M. Barnsley), *Self-similar tilings of fractal blow-ups*, Contemp. Math., Horizons of Fractal Geometry and Complex Dimensions, eds. R. G. Niemeyer, E. P. J. Pearse, J. A. Rock and T. Samuel, **731** (2019), 41-62.

118. *Thresholds for one-parameter families of iterated function systems*, Nonlinearity, **33** (2020), 6541-6563.

119. (with M. Barnsley), *Tilings from graph directed iterated function systems,* Geom. Dedicata, **212** (2021), 299-324.

120. *The average size of a connected vertex set of a graph – explicit formulas and open problems,* J. Graph Theory, **97** (2021), 82-103.

121. *A lower bound on the average size of a connected vertex set of a graph*, J. Combin. Theory B, **152** (2022), 153-170.

122. *The average size of a connected vertex set of a k-connected graph*, Discrete Math., **344** (2021).

123. (with K. Lesniak, N. Snigireva, P. Strobin), *Transition phenomena for the attractor of an iterated function system*, Nonlinearity, **35** (2022), 5396-5426.

124. (with L. Barnsley and M. Barnsley, *Distortion reversal in aperiodic tilings*, submitted.

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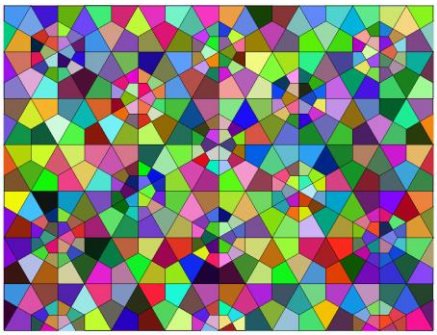
126. (with K. Lesniak, N. Snigireva, P. Strobin), *Highly non-contractive iterated function systems on Euclidean space can have an attractor,* submitted.

127. *A combinatorial approach to self-rep tilings of Euclidean space,* submitted.



The figure on page 1 is an example of a digit tile (see [59]). The plane can be tiled by non-overlaping copies translated to the integer lattice.

The figure on the left is an example of a self-similar polygonal tiling (see [112]). It is not periodic but is quasiperiodic.