

**Publications:**  
**(undergraduate authors indicated by a \* and graduate students by a \*\*)**

**A. Research Publications**

1. "The Borel-Cantelli lemmas and their relation to limit superior and limit inferior of sets", published July 9, 2020, DOI: 10.5772/intechopen.93121
2. "Generalizations of the No-Three-in-a-Line Problem," *Geombinatorics* **29**, 21–23, 2019 (with Dustin LaFollette\*).
3. "Graph Universal Cycles of Combinatorial Objects", submitted to *Advances in Applied Mathematics*, (with Amelia Cantwell, Juliann Geraci, and Cristobal Padilla)
4. "Threshold Progressions in a Variety of Covering and Packing Contexts," submitted to *Journal of Combinatorics* (with Thomas Grubb\*, Kyutae (Paul) Han\*, and Bill Kay\*\*).
5. "Covering Arrays for Equivalence Classes of Words," *Journal of Combinatorial Designs* **27**, 506–521, 2019 (with Joshua Cassels\*).
6. "Expected Number of Distinct Subsequences in Randomly Generated Binary Strings," *Discrete Math and Theoretical Computer Science*, Paper 10, 10 pages, 2018 (with Yonah Biers-Ariel\* and Elizabeth Kelley\*).
7. "Finite Representability of Integers as 2-Sums," *Integers: Electr. J. Comb. Number Theory*, **18B**, PaperA3, 12 pages, 2017 (with Zach Higgins\* and Zoe Koch\*).
8. "Universal Cycles of Restricted Words," *Journal of Combinatorial Mathematics and Combinatorial Computing*, **106**, 153–173, 2018, (with Kaeli Gardner\*).
9. "Some Results on Superpatterns for Preferential Arrangements," *Advances in Applied Mathematics* **81**, 202–211, 2016 (with Yonah Biers-Ariel\* and Yiguang Zhang\*).
10. "On the Longest Common Pattern Contained in Two or More Random Permutations," *Journal of Combinatorics* **7**, 531–541, 2016 (with Michael Earnest\* and Yevgeniy Rudoy\*).
11. "Poisson Approximations for the Number of  $kl$ -Scans," In: Glaz J., Koutras M. (eds) *Handbook of Scan Statistics*. Springer, New York, NY, 2018, 8 pages (with Katherine Grzesik\* and Heather Shappell\*).
12. "The Total Acquisition Number of the Randomly Weighted Path," *Discussiones Mathematicae, Graph Theory* **37**, 919–934, 2017 (with Elizabeth Kelley\*, Emily Kurtz\*, Pawel Pralat, and Yiguang Zhang\*).
13. "Telescoping Sums, Permutations, and First Occurrence Distributions," *The Mathematical Scientist* **41**, 75–83, 2016 (with Jie Hao\*\*).
14. "Preferential Arrangement Superpatterns," *Electronic Notes in Discrete Mathematics* **54**, 9–14, 2016 (with Yonah Biers-Ariel\* and Yiguang Zhang\*).
15. "Bounds on the Maximum Number of Minimum Dominating Sets," *Discrete Mathematics* **339**, 1537–1542, 2016, (with Samuel Connolly\*, Zachary Gabor\*, Bill Kay\*\*, and Tom Kelly\*).
16. "Waiting Time Distribution for the Emergence of Superpatterns," *Methodology and Computing in Applied Probability*, **18**, 517–528, 2016 (with Martha Liendo\*\*).
17. "Distribution of the Maximum and Minimum of a Random Number of Bounded Random Variables," *Open Journal of Statistics* **6**, 274–285, 2016, (with Jie Hao\*\*).
18. "Universal and Overlap Cycles for Posets, Words, and Juggling Patterns," *Graphs and Combinatorics*, **32**, 1013–1025, 2016, (with Adam King\*, Amanda Laubmeier\*, and Kai Orans\*).
19. "The Number of Seymour Vertices in Random Tournaments and Digraphs," *Graphs and Combinatorics* **32**, 1805–1816, 2016, (with Zach Cohn\*, Elizabeth Harkness\*, and Yiguang Zhang\*.)
20. "Universal Cycles for 2- and 3-Partitions of  $[n]$ ," *Congressus Numerantium* **225**, 181-188, 2015, (with Amanda Elks\* and Steven McInturff\*).

21. "The Location of the First Ascent in a 123-Avoiding Permutation," *Integers: Electronic Journal of Combinatorial Number Theory* **15**, Paper # A13, 2015 (with Samuel Connolly\* and Zachary Gabor\*).
22. "Universal and Near-Universal Cycles of Set Partitions," *Electronic J. Combinatorics*, Paper P4.48, 15 pages, 2015 (with Zach Higgins\*, Elizabeth Kelley\*, and Bertilla Sieben\*).
23. "Sharp Concentration of Hitting Size for Random Set Systems," *Graphs and Combinatorics* **31**, 638–648, 2015 (with Jessie Jamieson\*, Will Jamieson\*, and Lucia Petito\*.)
24. "Covering Array Bounds Using Analytical Techniques," *Congressus Numerantium* **222**, 65–73, 2015, (with Ruyue (Julia) Yuan\* and Zoe Koch\*).
25. "Logarithmic Representability of Integers as  $k$ -Sums," *Integers: Electronic Journal of Combinatorial Number Theory* **15A**, Article #A5, 2015 (with Samuel Gutekunst\*, Vince Lyzinski\*\*, and Yan Zhuang\*.)
26. "Contributions to the Theory of de Bruijn Cycles," *Integers: Electronic Journal of Combinatorial Number Theory* **14A**, Article #A2, 2014, (with Andre Campbell\*\* and Bill Kay\*\*).
27. "Size-maximal symmetric difference-free families of subsets of  $[n]$ ," *Graphs and Combinatorics*, **30**, 101–108, 2014 (with Travis Buck\*\*).
28. "Pattern Avoidance in Ordered Set Partitions," *Annals of Combinatorics* **18**, 429–445, 2014, (with Adam Goyt, Jennifer Herdan\*, and Lara Pudwell).
29. "Universal Cycles of Complementary Classes," *Congressus Numerantium*, **216**, 33–38, 2014 (with Beverly Tomlinson\* and Michele Champlin\*).
30. "Maximum Number of Minimum Dominating and Minimum Total Dominating Sets," *Utilitas Mathematica* **94**, 269–274, 2014, (with Jessie Jamieson\* and William Jamieson\*).
31. " $t$ -covering Arrays Generated by a Tiling Probability Model," *Congressus Numerantium*, **218**, 111–116, 2013, (with Michael Donders\*).
32. "Shattering Thresholds for Random Systems of Sets, Words, and Permutations," *Pure Mathematics and Applications* **24**, 125–142, 2013, (with Samantha Pinella\* and Yan Zhuang\*).
33. "Covering  $n$ -Permutations with  $(n+1)$ -Permutations," *Electronic Journal of Combinatorics*, Paper P6, 13 pages, 2013 (with Bill Kay\*\*, Kathryn Hawley\* and Taylor Allison\*).
34. "Sharp threshold asymptotics for the emergence of additive bases," *Integers: Electronic Journal of Combinatorial Number Theory*, Paper A14, 2013, 17 pages (with Changmou Lim\*, Nicholas Triantafillou\*, and Vince Lyzinski\*\*).
35. "Omnibus sequences, coupon collection, and missing word counts," *Methodology and Computing in Applied Probability* **15**, 363–378, 2013, (with Sunil Abraham\*, Greg Brockman\*, and Stephanie Sapp\*.)
36. "On Universal Cycles for new classes of combinatorial structures," *SIAM J. Discrete Math.*, **25**, 1832–1842, 2011 (with Antonio Blanca\*).
37. "Binary consecutive covering arrays," *Annals of the Institute of Statistical Mathematics* **63**, 559–584, 2011, (with Markos Koutras and Fotis Milienos\*\*).
38. Planar  $\alpha$ -overlap graphs," *Congressus Numerantium* **210**, 57--59 (2011), (with Rick Norwood and Debra Knisley.)
39. "Competition between discrete random variables, with applications to occupancy problems," *J. Statistical Planning and Inference* **140**, 2204–2212, 2010, (with D. Betsy Sinclair\* and Julia Eaton\*).
40. "Universal Cycles of Classes of Restricted Words," *Discrete Mathematics*, **310**, 3303–3309, 2010 (with Arielle Leitner\*).
41. "Consecutive covering arrays and a new randomness test," *Journal of Statistical Planning and Inference* **140**, 1292–1305, 2010, (with Markos Koutras and Fotis Milienos\*\*).
42. "On  $\alpha$ -overlap graphs," *Congressus Numerantium* **204**, 161--171 (2010), (with Rick Norwood and Debra Knisley.)
43. "The lexicographical first occurrence of a I-II-III pattern," *Lecture Notes of the London Mathematical Society* **376**, 213–219, 2010 (with Torey Burton\* and Brett Kindle\*).

44. "Partial covering arrays and a generalized Erdős-Ko-Rado property," *J. Combinatorial Designs*, **18**, 155-166, 2010 (with Patricia Carey\*).
45. "Threshold and complexity results for the cover pebbling game," *Discrete Mathematics* **309**, 3609-3624, 2009 (with Nathaniel Watson\* and Carl Yerger\*).
46. "Improved Pebbling Bounds," *Discrete Mathematics* **308**, 2301—2306, 2008. (With Melody Chan\*).
47. "Distribution of the total happiness level under a random matching," *Congressus Numerantium* **192**, 151—160, 2008, (with Hamilton Scott\* and Jennifer Woodell\*).
48. "Universal cycles of discrete functions," *Congressus Numerantium* **189**, 121—128, 2008 (with Britni LaBounty-Lay\* and Ashley Bechel\*).
49. "Domination cover pebbling: graph families," *Journal of Combinatorial Mathematics and Combinatorial Computing*, **64**, 255-271, 2008. (With James Gardner\*, Alberto Teguia\*\*, Annalies Vuong\*, Nathaniel Watson\*, and Carl Yerger\*).
50. "Probabilistic extensions of the Erdős-Ko-Rado theorem," *Methodology and Computing in Applied Probability*, **8**, 357—371, 2006. (with Anna Celaya\* and Mandy Schleifer\*).
51. "Sierpinski gasket graphs and some of their properties," *Australasian Journal of Combinatorics*, **35**, 181--192, 2006. (With Alberto Teguia\*\*).
52. "Cover pebbling thresholds for the complete graph," *Electronic Notes in Discrete Mathematics*, **22**, 301—304, 2005. (With Nathaniel Watson\* and Carl Yerger\*).
53. "An improved upper bound for the pebbling threshold of the  $n$ -path," *Discrete Mathematics* **275**, 367—373, 2004 (with Adam Wierman\*, Julia Salzman\*, and Michael Jablonski\*).
54. "Even  $2 \times 2$  Submatrices of a Random Zero-One Matrix," *Graphs and Combinatorics* **20**, 457 – 466, 2004 (with Joseph Johnson\*).
55. "Euler's formula and random geometric graphs," *The Mathematical Scientist* **27**, 8—15, 2002 (with Jacob Benfield\*).
56. "On the domination number of a random graph," *Electronic Journal of Combinatorics* **8**, Paper R37, 13 pages, 2001 (with Ben Wieland\*).
57. "Cliques and independent neighbor sets in random graphs," *Congressus Numerantium* **153**, 113-128, 2001 (with Dan Ramras\* and Sam Greenberg\*).
58. "Contributions to the problem of Zarankiewicz," *Journal of Statistical Planning and Inference* **95**, 197—208, 2001 (with Heidi Graziano\*).
59. "Near-matches and successions in random permutations," *Congressus Numerantium* **135**, 159--170, 1999 (with Papa Sissokho\*\*).
60. "Random Sidon sequences," *Journal of Number Theory* **75**, 7--22, 1999 (with Svante Janson, Nick Locantore\*, and Rebecca Rapoport\*).
61. "On the size of a random sphere of influence graph," *Advances in Applied Probability* **31**, 596—609, 1999, (with Tae Chalker\*, Pawel Hitczenko, Josh Radcliff\* and Otto Ruehr).
62. "Random sphere of influence graphs in the  $L^p$  metrics," *Congressus Numerantium* **134**, 175--188, 1999 (with Spencer Slade\*\*).
63. "Improved upper bounds for the reliability of  $d$ -dimensional consecutive  $k$ -out-of- $n:F$  systems," *Naval Research Logistics* **45**, 219--230, 1998 (with Laura Potter\* and Jessica Sklar\*).
64. "Generalized  $k$ -matches," *Statistics and Probability Letters* **38**, 167--175, 1998 (with Chris McLaren\* and Jonathan Herzog\*).
65. "Beyond the method of bounded differences," in *Microsurveys in Discrete Probability*, David Aldous and Jim Propp, eds., pp. 43--58, DIMACS Series in Discrete Mathematics and Theoretical Computer Science **41**, American Mathematical Society, Providence, 1998, (with Pawel Hitczenko).
66. "Sign-balanced covering matrices," *Discrete Mathematics* **190**, 79--93, 1998 (with Laura Potter\* and Erik Sandquist\*).

67. "Computational aspects of a new test for multinomial probabilities," in *Dimension Reduction, Computational Complexity, and Information*, Sanford Weisberg, ed., pp. 169–173, Computing science and Statistics **30**, Interface Foundation of North America, Fairfax Station, 1998, (with Matt Gregas\*).
68. "If rooks could kill: vertex degrees in random bipartite graphs," in *Proceedings of the 8th Quadrennial International Conference on Graph Theory 2*, 445--450, New Issues Press 1998 (With Ben Lamorte\* and Jessica Sklar\*).
69. "Threshold functions for the bipartite Turán property," *Electronic Journal of Combinatorics* **4**, Paper R-18, 15 pages, 1997 (with Ben Lamorte\* and Erik Sandquist\*).
70. "Imperfections in random tournaments," *Combinatorics, Probability and Computing* **6**, 1--16, 1997 (with Andrew Barbour and Jinghua Qian\*\*).
71. "Formulæ and recursions for the joint distribution of success runs of several different lengths," *The Annals of the Institute of Statistical Mathematics* **49**, 141--153, 1997 (with Robert Weishaar\* and Stavros Papastavridis).
72. "Palindromes in random letter generation: Poisson approximations, rates of growth, and Erdős-Rényi laws," *Athens Conference on Applied Probability and Time Series, Volume 1: Applied Probability*, C. Heyde, Yu V. Prohorov, R. Pyke, and S.T. Rachev, eds., pp. 99--115, Lecture Notes in Statistics **114**, Springer Verlag, New York, 1996 (with Debashis Ghosh\*).
73. " $t$ -covering arrays: upper bounds and Poisson approximations," *Combinatorics, Probability and Computing* **5**, 105-118, 1996 (with Daphne Skipper\* and Rachel Sunley\*).
74. "Random covering designs," *Journal of Combinatorial Theory, Series A* **75**, 85--98, 1996 (with Svante Janson).
75. "General upper bounds for covering numbers," *Ars Combinatoria* **42**, 211--221, 1996 (with Sandra Thompson\* and Eric Vigoda\*).
76. "Compound Poisson approximations for word patterns under Markovian hypotheses," *Journal of Applied Probability* **32**, 877-892, 1995 (with Mark Geske\*, Andrew Schaffner\*, Allison Skolnick\* and Garrick Wallstrom\*).
77. "Reliability analysis of a software redundancy system," *Interstat* **1**, June 1995 (with Nicholas Locantore\* and Gomathi Sadhasivan\*\*).
78. "The asymptotic lower bound on the diagonal Ramsey numbers: A closer look," in *Discrete Probability and Algorithms*, D. Aldous, P. Diaconis, J. Spencer and J. M. Steele, eds., pp. 81-94, *IMA Volumes in Mathematics and its Applications* **72**, Springer Verlag, New York, 1995 (with Daphne Skipper\* and Rachel Sunley\*).
79. "Runs of superimposed Poisson processes," in *Runs and Patterns in Probability*, A. Godbole and S. Papastavridis, eds., pp. 263-286, *Mathematics and its Applications* **283**, Kluwer, Boston, 1994 (with Hao Zhang\*\*).
80. "Exact and approximate hypercube reliabilities," in *Runs and Patterns in Probability*, A. Godbole and S. Papastavridis, eds., pp. 163-172, *Mathematics and its Applications* **283**, Kluwer, Boston, 1994 (with Sanjay Khunger\*\* and Esther Ososanya).
81. "A Poisson approximation for the number of  $k$ -matches," *Statistics and Probability Letters* **21**, 1-8, 1994 (with Patrick Burghardt\* and Amy Prengaman\*).
82. "Discriminating between sequences of Bernoulli and Markov-Bernoulli trials," *Communications in Statistics A* **23**, 2787-2814, 1994 (with Sharyn Campbell\* and Stephanie Schaller\*).
83. "Improved Poisson approximations for word patterns," *Advances in Applied Probability* **25**, 334-347, 1993 (with Andrew Schaffner\*).
84. "Approximate reliabilities of  $m$ -consecutive- $k$ -out-of- $n$ : failure systems," *Statistica Sinica* **3**, 321-327, 1993.

85. "A new exact runs test for randomness," in *Computing Science and Statistics*, C. Page and R. LePage, eds., pp. 281-285, Springer Verlag, New York, 1992 (with Marilyn A. Agin\*\*).
86. "The exact and asymptotic distribution of overlapping success runs," *Communications in Statistics A* **21**, 953-967, 1992.
87. "Exact and approximate runs distributions," *Communications in Statistics A* **21**, 2151-2167, 1992 (with Michelle Gornowicz\*).
88. "Self-normalized bounded laws of the iterated logarithm in Banach spaces," in *Probability in Banach Spaces 8*, Progress in Probability **30**, Richard Dudley, Marjorie Hahn and James Kuelbs, eds., pp. 292-303, Birkhäuser, Boston, 1992.
89. "Contributions to the coupon collector problem," in *Proceedings of the 6<sup>th</sup> NCUR Conference* **2**, Robert Yearout, ed., pp. 1009-1013, University of North Carolina, Asheville, 1992 (with Robert Weishaar\* and Mark Geske\*).
90. "Poisson approximations in reliability," in *Proceedings of the 6<sup>th</sup> NCUR Conference* **2**, Robert Yearout, ed., pp. 1032-1035, University of North Carolina, Asheville, 1992 (with Laurel Deegan\*).
91. "Poisson approximations for runs and patterns of rare events," *Advances in Applied Probability* **23**, 851-865, 1991.
92. "Specific formulæ for some success run distributions," *Statistics and Probability Letters* **10**, 119-124, 1990.
93. "Degenerate and Poisson convergence criteria for success runs," *Statistics and Probability Letters* **10**, 247-255, 1990.
94. "On hypergeometric and related distributions of order  $k$ ," *Communications in Statistics A* **19**, 1291-1301, 1990.
95. "On the Markov-binomial distribution and its Poisson limit," Technical Report No. 139, Department of Statistics and Applied Probability, University of California, Santa Barbara, 12 pp., 1990 (with Candace N. McLean\*).
96. "Some remarks on Kolmogorov's strong law in Hilbert spaces," *Calcutta Statistical Association Bulletin* **37**, 91-94, 1988.
97. "On Klass' series criterion for the minimal growth rate of partial maxima," *Statistics and Probability Letters* **5**, 235-238, 1987.
98. "On the strong law of large numbers in Banach spaces," *Proceedings of the American Mathematical Society* **100**, 543-550, 1987.

#### **B. Other Academic (marked A) and Educational Publications (marked E)**

1. **A:** "Applications of the Stein-Chen method to the theory of patterns and runs," in *Runs and Patterns in Probability*, A. Godbole and S. Papastavridis, eds., pp. 253-262, *Mathematics and its Applications* **283**, Kluwer, Boston, 1994.
2. **A:** *Runs and Patterns in Probability: Selected Papers*, Anant P. Godbole and Stavros Papastavridis eds., *Mathematics and its Applications* **283**, Kluwer Academic Publishers, Boston, 1994. xvii + 340 pp.
3. **E:** "Probability theory: a program of undergraduate research," *CUR Quarterly* **15**, 96-102, 1994.
4. **A:** 3 articles on "Acceptance sampling," in *Encyclopedia of Mathematics, Supplemental Volume I*, pp. 19--20, M. Hazewinkel, ed., Kluwer Academic Publishers, Dordrecht, 1997.
5. **A:** "Turán Number," *Encyclopedia of Mathematics, Supplemental Volume II*, p. 471, M. Hazewinkel, ed., Kluwer Academic Press, Dordrecht, 2000.

6. E: "The Michigan Tech REU Program in Probability," *Proceedings of the Conference on Summer Undergraduate Mathematics Programs*, Joe Gallian, ed., American Mathematical Society, pp. 93-104, 2000.
7. E: "A statistical perspective on inquiry," *Of Significance* **1**, 41--46, 1999 (with Peg Balachowski\*\*).
8. E: "Cooperative learning through undergraduate research," in *Cooperative Learning in Undergraduate Mathematics Education (CLUME)*, N. Erfan and V. Perera, eds., Karunaratne and Sons, Ltd., pp. 89—101.
9. E: "Traditional Roots, New Beginnings: Transitions in Undergraduate Research at ETSU," in *Proceedings of the Conference on Promoting Undergraduate Research in Mathematics*, J. A. Gallian, ed., American Mathematical Society, Providence, 2007, pp. 67—72.
10. E: "Undergraduate Biology and Mathematics Programs," in *Proceedings of the Conference on Promoting Undergraduate Research in Mathematics*, J. A. Gallian, ed., American Mathematical Society, Providence, 2007, pp. 365—368 (with Suzanne Lenhart and Margaret Robinson).
11. E: "Mentoring interdisciplinary undergraduate students via a team effort," (with Istvan Karsai, Jeff Knisley, Debra Knisley, and Lev Yampolsky), *CBE-Life Sciences Education*, CBE - Life Sciences Education **10**, 250-258.
12. E: "Undergraduate research for all majors in the mathematical sciences," *Council on Undergraduate Research Quarterly*, Fall 2011, Volume 32, No. 1, pp. 2—3, on-line edition, <http://www.cur.org/assets/1/7/VignettesWeb.pdf> .
13. E: "A Decade of Undergraduate Research for all ETSU Mathematics Majors," *Involve* **7**, 2014, 281--293. (With Ariel Cintron-Arias).
14. E: "Creating Quantitative Biologists: The Immediate Future of SYMBIOSIS," *MAA Notes: Undergraduate Mathematics for the Life Sciences: Processes, Models, and Directions*, Glen Ledder et al, eds., with Moore D., Helfgott M., Joplin K.H., Karsai I., Miller H.A. III, and Seier E, 2013, Mathematical Association of America, Washington, DC, 201—206.
15. E: "SYMBIOSIS: An Integration of Biology and Statistics at the Freshman Level: walking together instead of on opposite sides of the street," *MAA Notes: Undergraduate Mathematics for the Life Sciences: Processes, Models, and Directions*, Glen Ledder et al., eds., with Joplin K.H., Seier E., Helfgott M., Karsai I., Moore D. and Miller H.A. III, 2013, Mathematical Association of America, Washington, DC, 97—104.
16. A: Review of Laszlo Lovasz's text *Large Networks and Graph Limits*, *Mathematical Reviews*, MR3012035, American Mathematical Society, Providence, 10 pages.
17. E: Tai, C., R. Nivens, L. Roberson, K. Keith, A. Godbole, and J. Rhoton. 2018. Harnessing the business community and other entities to support the vision of the NGSS. In *Preparing Teachers for Three-Dimensional Instruction*, ed. J. Rhoton, Arlington, VA: NSTA Press, 153--160.
18. E: Mathematical Modeling as a means to capacity building in 21<sup>st</sup> century STEM careers, submitted to *SIAM Review* (with Ariel Cintron-Arias, Ryan Nivens, and Calvin Purvis).