Anant P. Godbole
Curriculum Vitæ
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Education:

Ph.D.,1984, Michigan State University; M.S, Michigan State University; B.Sc. (Hons.), Bombay University.

Professional Experience:

August 2014 to Present: Director, ETSU Center of Excellence in Mathematics and Science Education.

July 2011 to Present: Professor, Department of Mathematics and Statistics, ETSU.

June 2000 to June 2011: Professor and Chair, Department of Mathematics and Statistics, ETSU.

September 2008 to June 2009: Visiting Professor, Department of Applied Mathematics and Statistics, The Johns Hopkins University.

September 1997 to May 2000: Associate Dean, College of Sciences and Arts, Michigan Technological University (MTU).

September 1996 to November 1996: Visiting Scholar, Department of Statistics, University of California, Berkeley.

September 1990 to August 1991: Visiting Associate Professor of Statistics and Applied Probability, University of California, Santa Barbara.

September 1984 to June 2000: Assistant, Associate and Full Professor of Mathematical Sciences, MTU.

September 1982 to August 1984: Lecturer of Mathematics, Texas A&M University.

Courses Taught:

Freshman Level:
Algebra; Statistics and Probability; The 1-2-3s of Mathematics; Number Concepts and Algebra Structures; Discrete Mathematics (JHU); Trigonometry; Precalculus; Finite

Mathematics; Calculus I and II; Honors Calculus with Mathematica*; Number Concepts and Algebra Structures; Freshman Seminar on Quantitative Biology*, Integrative Biological and Mathematical Sciences 2*, Chance and Risk (JHU).

Sophomore Level:
Calculus III; Biostatistics; Fundamental Concepts of Mathematics I and II; Business Statistics; Statistics with Calculus; Linear Algebra; Introduction to Computational Biology*; Careers in Quantative Biology*; Undergraduate Research in Quantitative Biology*, Mathematical Computing.

Junior Level:
Seminar in Mathematics; Differential Equations; Business Statistics; Engineering Statistics; Math Reasoning; Probability (in research and regular versions); Number Theory; STEM Content for Elementary Teachers.

Senior Level:
Linear Algebra I and II; Graph Theory (in research version); Combinatorics; Probability (at JHU); Advanced Calculus I, II and III (in research and regular versions); Complex Analysis I and II; Mathematical Statistics I and II; Sampling Methods; Fourier Analysis; Random Walks and Electrical Networks*; Measure Theory*; Undergraduate Research*, Actuarial Mathematics, Theory of Interest.

Graduate Level:
Mathematical Population Genetics*; Discrete Mathematical Modeling; Second Order Stochastic Processes*; Probability Theory*; Stochastic Processes*; Stochastic Differential Equations*; Fractal Geometry and its Applications*; Probabilistic Combinatorics*; Generatingfunctionology*; Network Reliability*; Statistics: Its Uses and Abuses*; Patterns and Problem Solving for Elementary and Middle School Teachers, Poisson Convergence (JHU), Analysis 1 and 2, Analysis for Teachers, Algebra for Teachers, Foundations and Structure of Mathematics, Actuarial Mathematics, Theory of Interest, Special Topics in CUAI.

(*Courses marked with a * were developed (or co-developed) by me*)

Honors:

- Finalist, Distinguished Teacher Award, Michigan Tech University, 1987, 1988, 1989 and 1990.
- Nominated for MTU Research Award, 1995 and 1998.
- Distinguished Visiting Professor, Bucknell Universiy, Spring 1998.
- Finalist, State of Michigan Distinguished Teaching Award, 1989 and 1990.
- Awarded the inaugural Department of Mathematical Sciences Teaching Award in 1990.
- Awarded the Distinguished Researcher Award by the Department of Mathematical Sciences at Michigan Technological University in 1992, 1993, and 1999.
- ETSU Mathematics Department Distinguished Research Award, 2004, 2014, and 2019.
- ETSU College of Arts and Sciences Distinguished Research Award, 2006.
- ETSU Mathematics and Statistics Department Distinguished Teaching Award, 2012.

Research Interests:

Probability and Combinatorics, with a special interest in: Poisson approximation; random methods; universal cycles; permutation patterns; extremal combinatorics; and statistical distribution theory.

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 α-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 α-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 Erdös-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 Erdös-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 X 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 Erdös-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 6th 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 6th 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 21st century STEM careers, submitted to *SIAM Review* (with Ariel Cintron-Arias, Ryan Nivens, and Calvin Purvis).

C. Solo Publications of REU Students

1. Jayadev Athreya* and Lukasz Fidkowski* (2000). Number theory, balls in boxes, and the asymptotic uniqueness of maximal discrete order statistics. *Integers*, *Electronic Journal of Combinatorial Number Theory,* **A3**, 5 pp. (electronic).
2. Nathaniel Watson* and Carl Yerger* (2006). Cover pebbling numbers and bounds for certain families of graphs, *Bull. Inst. Combin. Appl.* **48**, 53-62.
3. Anne Shiu* and Carl Yerger* (2009). Rabbits Redux: The cube root of four and the Fibonacci sequence, *Mathematical Spectrum* **41,** 81—85.
4. Annalies Vuong* and Ian Wyckoff* (2004). Conditions for Weighted Cover Pebbling of Graphs; www.arxiv.org/math/0410410.pdf
5. Glenn Hurlbert, Toby Johnson*, Josh Zahl* (2009). On Universal Cycles for Multisets, *Discrete Math* **309,** 5321—5327.
6. Jay Brantner*, Greg Brockman*, Bill Kay*, Emma Snively* (2009). Contributions to Seymour's Second Neighborhood Conjecture, *Involve* **2,** 387—395.
7. Greg Brockman*, Bill Kay*, Emma Snively* (2010). On Universal Cycles of Labeled Graphs, *Electronic Journal of Combinatorics,* **17,** Paper #R4.
8. Greg Brockman*, Bill Kay* (2008). Elementary Techniques for Erdos-Ko-Rado-like Theorems, http://arxiv.org/abs/0808.0774
9. Yevgeniy Rudoy* (2013). An Inductive Approach to Constructing *Universal Cycles* on the k-Subsets of [n]. *Electronic Journal of Combinatorics*, **20**, 18 pp.
10. Michael Earnest* and Samuel Gutekunst* (2013). Permutation Patterns in Latin Squares, *Australasian J. Combinatorics* **59,** 218--228
11. Samuel Hopkins* and Morgan Weiler* (2016). Pattern Avoidance in Poset Permutations, *Order* **33,** 299—310.
12. Chris Coscia* and Jonathan Dewitt* (2016). Locally Convex Words and Permutations, *Electronic Journal of Combinatorics* **23,** Paper P2.10.
13. Chris Coscia*, Jonathan Dewitt*, Fan Yang*, Yiguang Zhang* (2018). Best and worst case permutations for random online domination of the path, *Discrete Mathematics and Theoretical Computer Science* **19(2),** Paper 2.

Significant OEIS Entries

1. "Maximal number of regions obtained by a straight line drawing of the complete bipartite graph K_{n,n}," *Encyclopedia of Integer Sequences,* A117717, 2006 (with Patricia Carey*).
2. "2 X 2 determinants in the C. L. Dodgson Method," *Encyclopedia of Integer Sequences,* A049652, 2006.

3. "2-Balanced Permutations," *Encyclopedia of Integer Sequences,* A000140, 2007 (with Ryen Lapham*).
4. "*k*-good permutations," *Encyclopedia of Integer Sequences,* A124188, 2007 (with Nicole Holder* and David Simpson*).
5. "Permutations with unique longest increasing subsequences," *Encyclopedia of Integer Sequences,* A167995, 2009 (with Brad Wild* and Stephanie Goins*).
6. "The number of longest increasing subsequences in a permutation," *Encyclopedia of Integer Sequences,* A167999, 2009 (with Brad Wild* and Stephanie Goins*).
7. "Permutations with longest increasing subsequences that do not contain [n/2]," *Encyclopedia of Integer Sequences,* A168502, 2009 (with Brad Wild* and Stephanie Goins*).
8. Contributions to OEIS Sequences A024012 and A008865, with Martha Liendo.
9. Contributions to OEIS Sequences, A220097 and A220101, with Adam Goyt, Jennifer Herdan*, and Lara Pudwell.
10. Contributions to OEIS Sequences A000245 and A002057 (with Zachary Gabor and Samuel Connolly).

Professional Service and Editorships:

- Editor of the *Council on Undergraduate Research Quarterly* (1998-2001).
- Editor of the Mathematical and Computer Science Division of the *Council on Undergraduate Research Quarterly* (1995--1998).
- Councilor in the Mathematics/Computer Science Division of the Council on Undergraduate Research (1992-2000).
- Member of the Mathematical Association of America's National Committee on the Curriculum for the Undergraduate Program in Mathematics (1996-2002).
- Member (2016-2019) and Chair (2018-19) of the MAA Committee on the Morgan Prize for excellence in research by an undergraduate.
- Reviewer of research proposals for the National Security Agency and the National Science Foundation. Member of several NSF panel review teams.
- Associate Editor of the electronic journal *Interstat* (1995-2004).
- Facilitator at the CUR Institute on Grantwriting, 2000, 2004.
- External reviewer for the Eastern Illinois University Mathematics Department.
- External reviewer of the Central Michigan University REU Site.
- Associate Editor of the Kluwer journal *Methodology and Computing in Applied Probability* (1997-2014).
- Associate Editor of the Berkeley journal *Involve* since 2012.
- Associate Editor of *ISRN Combinatorics* since 2012.
- Associate Editor of *Journal of Statistical Distributions and Applications* 2014--2016.
- Associate Editor of *Pure Mathematics and Applications* since 2015.
- Reviewer for *Mathematical Reviews* since 1990, completed over 240 reviews.
- Review panel member of the Bioinformatics program at the University of Texas, San Antonio and the Mathematics Department at the University of Texas, El Paso.
- Review panel member of the Mathematics Department at the University of Colorado, Colorado Springs.
- Member of the MAA National Committee on the Profession (2007-2011)
- Referee for the following professional journals and volumes:
  Acta Mathematica Sinica.

Advances in Applied Probability;
American Mathematical Monthly;
Annals of Applied Probability;
Annals of Probability;
Annals of the Institute of Statistical Mathematics;
Australasian Journal of Combinatorics;
Bernoulli Journal;
Bulletin for the Institute of Combinatorics and its Applications;
Canadian Journal of Statistics;
Combinatorica;
Combinatorics, Probability and Computing;
Communications in Statistics, Simulation and Computation;
Communications in Statistics, Theory and Methods;
Council for Undergraduate Research Quarterly;
Directions for Mathematics Research Experiences for Undergraduates;
Discrete Mathematics;
Discrete Mathematics and Theoretical Computer Science;
Discussiones Mathematicae Graph Theory;
Electronic Journal of Combinatorics;
Fibonacci Quarterly;
FILOMAT;
Graphs and Combinatorics;
Journal of Applied Probability;
Journal of Combinatorial Theory, Series A;
Journal of Multivariate Analysis;
IEEE Transactions on Education;
IEEE Transactions on Reliability;
Indian Journal of Probability and Statistics;
Integers: Electronic Journal of Combinatorial Number Theory;
International Journal of Mathematics and Mathematical Sciences;
International Journal of Mathematical and Statistical Sciences;
Interstat;
Involve;
Journal of Combinatorial Designs;
Journal of Combinatorial Mathematics and Combinatorial Computing;
Journal of Combinatorial Optimization;
Journal of Graph Theory;
Journal of Nonparametric Statistics;
Journal of Operations Research Society of China;
Journal of Statistical Distributions and Applications;
Journal of Statistical Planning and Inference;
Journal of the American Statistical Association;
Journal of Theoretical Probability;
Mathematical Proceedings of the Cambridge Philosophical Society;
Mathematics Magazine;
Methodology and Computing in Applied Probability;
Microsurveys in Discrete Probability;
Naval Research Logistics;
Performance Evaluation;
Pi Mu Epsilon Journal;

Random Structures and Algorithms;
Runs and Patterns in Probability;
SIAM Journal on Discrete Mathematics;
SIAM Review;
Springer Plus;
Statistica Sinica;
Statistical Methods;
Statistical Papers;
Statistics and Probability Letters;
Stochastic Models;
Studia Scientifica Mathematica Hungarica;
Utilitas Mathematica;

Conferences and Special Sessions Organized:

1. Organizer of the Special Session entitled *The Probability Theory of Patterns and Runs* held at the American Mathematical Society Meeting in Denton, Texas, November 1990.
2. Co-organizer (with Svetlozar T. Rachev) of the Special Session entitled *Applied Probability* held at the American Mathematical Society Meeting in Santa Barbara, California, November 1991.
3. Co-organizer (with Gary Sherman) of two Special Sessions entitled *Undergraduate Research in Pure Mathematics* and *Undergraduate Research in Applied Mathematics*, held at the American Mathematical Society Meeting in Washington, D. C., April 1993.
4. Organizer of the NSF-CBMS Regional Research Conference *Probability, Algorithms and Combinatorial Optimization*, held in Houghton, Michigan, July 1995. J. Michael Steele of the University of Pennsylvania was the Principal Lecturer.
5. Co-organizer (with Prasad Tetali) of the Session on *Random Structures and Algorithms*, held at the ORSA/TIMS Meeting in Atlanta, June 1995.
6. Organizer of the *workshop Undergraduate Research in Mathematics and Computer Science: Special Problems and Solutions*, Council on Undergraduate Research April Dialogs, National Science Foundation, Arlington, April 1999.
7. Co-Organizer of the NSF-CBMS Regional Research Conference *Statistical Inference from Genetic Data on Pedigrees*, MTU, July 1999 (with Jianping Dong). Elizabeth Thompson of the University of Washington was the Principal Lecturer.
8. Co-Organizer of the NSF-CBMS Regional Research Conference *Structure and Decomposition of Graphs*, ETSU, May 2002 (with Debra Knisley). Robin Thomas of Georgia Tech was the Principal Lecturer.
9. Local Organizer of the Council on Undergraduate Research Proposal Writing Institute, Johnson City, July 2004.
10. Co-Organizer of the Workshop on Mathematical Tools and Statistical Techniques for Quantitative Medical Data Analysis, ETSU, October 2005 (with Don Hong and Robert Gardner).
11. Co-Organizer of the *Future Teachers Conference,* Johnson City, TN, April 2006 (with Michele Banner);
12. Co-Organizer of the *Future Teachers Conference,* Johnson City, TN, April 2007 (with Aimee Govett);
13. Organizer of the 6th International Conference on Lattice Path Combinatorics and its Applications, Johnson City, July 2007.

14. Co-Organizer of the *Future Teachers Conference,* Johnson City, TN, February 2008 (with Aimee Govett).
15. Organizer of the Special Session on Probability and Combinatorics, International Workshop on Applied Probability, Compiegne, France, July 2008.
16. Co-Organizer of the NSF-CBMS Regional Research Conference *Mathematical Epidemiology with Applications*, ETSU, July 2011 (with Ariel Cintron-Arias). Carlos Castillo-Chavez (ASU) and Fred Brauer (UBC) were the Principal Lecturers.
17. Co-organizer of the 25th Cumberland Combinatorics Conference, ETSU, May 2012.
18. Lead Organizer of the 12th International Conference on Permutation Patterns, ETSU, July 2014.

Papers Presented at Professional Meetings:

1. American Mathematical Society Meeting, Minneapolis, Minnesota, November 1984.
2. International Statistical Institute Conference, Amsterdam, The Netherlands, August 1985.
3. Institute of Mathematical Statistics Meeting, Seattle, Washington, July-August 1986.
4. International Congress of Mathematicians, Berkeley, California, August 1986.
5. Mathematical Association of America Regional Meeting, Marquette, Michigan, April 1988.
6. American Mathematical Society Meeting, Chicago, Illinois, May 1989.
7. American Mathematical Society Summer Meeting, Boulder, Colorado, August 1989.
8. Institute of Mathematical Statistics Meeting on Applied Probability, Sheffield, England, August 1989.
9. American Mathematical Society Meeting, Muncie, Indiana, October 1989.
10. American Mathematical Society Meeting, Los Angeles, California, November 1989.
11. American Mathematical Society Annual Meeting, Louisville, Kentucky, January 1990.
12. Society for Industrial and Applied Mathematics Meeting on Applied Probability, New Orleans, Louisiana, March 1990.
13. Institute of Mathematical Statistics Meeting, Baltimore, Maryland, April 1990.
14. Interface 1990 Meeting, East Lansing, Michigan, May 1990.
15. Institute of Mathematical Statistics Meeting, Bozeman, Montana, June 1990.
16. Society for Industrial and Applied Mathematics Annual Meeting, Chicago, Illinois, July 1990.
17. American Mathematical Society Meeting, Denton, Texas, November 1990.
18. Operations Research Society of America and The Institute of Management Sciences Meeting on Probability, Monterey, California, January 1991.
19. Society for Industrial and Applied Mathematics Meeting on Parallel Processing, Houston, Texas, March 1991.
20. Institute of Mathematical Statistics Meeting, Houston, Texas, March 1991.
21. 4th International Reliability Conference, Columbia, Missouri, June 1991.
22. 8th International Conference on Probability in Banach Spaces, Brunswick, Maine, July 1991.
23. American Mathematical Society Meeting, Santa Barbara, California, November 1991.
24. 1st International Conference on Random Mappings, Partitions and Permutations, Los Angeles, California, January 1992.
25. 6th NCUR Conference, Minneapolis, Minnesota, March 1992.
26. American Statistical Association/Institute of Mathematical Statistics Annual Meeting, Boston, Massachusetts, August 1992.
27. 2nd International Symposium on Probability and Applications, Bloomington, Indiana, March 1993.
28. American Mathematical Society Meeting, Washington, D.C., April 1993.

29. American Mathematical Society Meeting, DeKalb, Illinois, May 1993.
30. Institute of Mathematical Statistics/American Statistical Association Annual Meeting, San Francisco, California, August 1993.
31. Institute for Mathematics and its Applications Workshop on Probability and Algorithms, Minneapolis, Minnesota, September 1993.
32. Mathematical Association of America Regional Meeting, Marquette, Michigan, October 1993.
33. Institute for Mathematics and its Applications Workshop on Discrete Random Structures, Minneapolis, Minnesota, November 1993.
34. Annual Conference of the Indian Society of Probability and Statistics, Pune, India, December 1993.
35. American Mathematical Society Annual Meeting, Cincinnati, Ohio, January 1994.
36. 25th Southeastern International Conference on Combinatorics, Graph Theory and Computing, Boca Raton, Florida, March 1994.
37. 3rd World Congress of the Bernoulli Society, Chapel Hill, North Carolina, June 1994.
38. Second Upper Peninsula Combinatorics Workshop on Codes, Designs and Geometries, Houghton, Michigan, August 1994.
39. Conference on Classical Analysis and General Topology in the Undergraduate Curriculum, Oxford, Ohio, September 1994.
40. American Mathematical Society Meeting, Stillwater, Oklahoma, October 1994. Cancelled due to illness.
41. American Mathematical Society Annual Meeting, San Francisco, California, January 1995.
42. International Conference on Applied Probability and Time Series Analysis, Athens, Greece, March 1995.
43. 7th International Conference on Random Structures and Algorithms, Atlanta, Georgia, May 1995.
44. Operations Research Society of America & The Institute of Management Sciences Applied Probability Meeting, Atlanta, Georgia, June 1995.
45. Mathematical Association of America Regional Meeting, Houghton, Michigan, October 1995.
46. 27th Southeastern International Conference on Combinatorics, Graph Theory and Computing, Baton Rouge, Louisiana, February 1996.
47. 8th Quadrennial International Graph Theory Conference, Kalamazoo, Michigan, June 1996.
48. American Mathematical Society Meeting, Chattanooga, Tennessee, October 1996.
49. American Mathematical Society Annual Meeting, San Diego, California, January 1997.
50. Minisurveys in Discrete Probability, Institute for Advanced Study, Princeton, New Jersey, June 1997.
51. International Conference on Combinatorial Methods and Applications to Probability, Hamilton, Ontario, June 1997.
52. 8th International Conference on Random Structures and Algorithms, Poznán, Poland, August 1997.
53. Regional MAA Meeting, Marquette, Michigan, October 1997.
54. International Conference on Recent Advances in Statistics and Probability, Indian Statistical Institute, Calcutta, December 1997--January 1998.
55. Annual AMS/MAA Meetings, Baltimore, Maryland, January 1998 (2 talks).
56. 29th International Southeastern Combinatorics Conference, Boca Raton, Florida, March 1998.
57. Interface 30, Minneapolis, Minnesota, May 1998.

58. 4th International Conference on Lattice Path Combinatorics and Applications, Vienna, Austria, July 1998.
59. 9th SIAM Discrete Mathematics Conference, Toronto, Canada, July 1998.
60. AMS-MAA Annual Meeting, San Antonio, Texas, January 1999.
61. 30th International Southeastern Combinatorics Conference, Boca Raton, Florida, March 1999.
62. International Conference on Recent Advances in Probability and Statistics, Athens, Greece, June 1999.
63. AMS Conference on REU Programs in Mathematics, Washington DC, October 1999.
64. AMS Annual Meeting, Washington DC, January 2000.
65. Undergraduate Mathematics Conference, Alma, Michigan, February 2000.
66. 31st International Combinatorics Conference, Boca Raton, Florida, March 2000.
67. AMS Sectional Meeting, Notre Dame, Indiana, April 2000.
68. MAA Sectional Meeting, Mount Pleasant, Michigan, May 2000.
69. SIAM Discrete Mathematics Conference, Minneapolis, Minnesota, June 2000.
70. Discrete Mathematics Conference, Greensboro, North Carolina, November 2000.
71. Annual AMS Meeting, New Orleans, Louisiana, January 2001.
72. 32nd International Southeastern Conference, Baton Rouge, Louisiana, March 2001.
73. Horizons in Combinatorics, Nashville, Tennessee, May 2001.
74. AASCU Workshop on Mathematics Preparation of Elementary Education majors, San Diego, California, June 2001.
75. International Random Structures and Algorithms Meeting, Poznán, Poland, August 2001.
76. AMS Annual Meeting, San Diego, January 2002.
77. AMS Regional Meeting, Chattanooga, Tennessee, October 2001.
78. AMS Regional Meeting, Atlanta, Georgia, March 2002.
79. RET Programs Meeting, San Francisco, April 2002.
80. SIAM Discrete Mathematics Meeting, San Diego, August 2002.
81. MIGHTY XXXV Conference, Normal, Illinois, September 2002.
82. International Conference on Permutation Patterns, Dunedin, New Zealand, February 2003.
83. Southeastern Section MAA Meeting, Clemson, SC, March 2003.
84. 16th Cumberland Combinatorics Conference, Atlanta, GA, May 2003.
85. Tennessee Math Teachers' Association, Memphis, TN, September 2003.
86. Institute for Mathematics and its Applications, Minneapolis, MN, October 2003.
87. International Workshop on Applied Probability, Athens, Greece, March 2004.
88. SIAM-SEAS Meeting, Johnson City, TN, April 2004.
89. Clemson Mini-Conference, Clemson, SC, October 2004.
90. AMS Special Session on Mathematical Biology, Pittsburgh, PA, November 2004.
91. Banff International Research Station Workshop on DeBruijn Cycles and Gray Codes, Banff, Canada, December 2004.
92. AMS-MAA-SIAM Joint Mathematics Meetings, Atlanta, GA, January 2005.
93. Third International Conference on Pattern Avoidance, Gainesville, FL, March 2005.
94. Southeastern Combinatorics Meeting, Boca Raton, FL, March 2005.
95. TIMBER Conference, Boone, NC, October 2005
96. AMS Regional Meeting, Lincoln, NE, October 2005.
97. Annual Joint Meetings, San Antonio, TX, January 2006.
98. North Carolina Mini-Conference, Boone, NC, April 2006.
99. International Workshop on Covering Arrays, Ottawa, Ontario, May 2006.
100. International Workshop on Applied Probability, Storrs, CT, May 2006.
101. International Conference on Permutation Patterns, Reykjavik, Iceland, June 2006

102. Annual MAA Mathfest, Knoxville, TN, August 2006.
103. Undergraduate Research for all, PURM Conference, Chicago, IL, October 2006
104. TIMBER Conference, Boone, NC, November 2006.
105. MAA Southeastern Regional Conference, Statesboro, GA, May 2007.
106. The ETSU STEP Program, ASCEND Scholars Program, Chicago, IL, September 2007.
107. TIMBER Conference, Boone, NC, November 2007
108. AMS Regional Conference Special Session presentation, Murfreesboro, TN, November 2007
109. Annual Joint Meetings, San Diego, CA, January 2008.
110. Southeastern Combinatorics Conference, Boca Raton, FL, March 2008.
111. University of Tennessee Undergraduate Research Conference, April 2008, Keynote address.
112. Cumberland Combinatorics Conference, Nashville, TN, May 2008.
113. International Workshop on Applied Probability, Compiègne, France, July 2008.
114. CANADAM Conference, Montreal, Canada, May 2009.
115. International Conference on Permutation Patterns, Firenze, Italy, July 2009.
116. MIGHTY Graph Theory Conference, Rochester, NY, October 2009.
117. INTEGERS Conference, Carrollton, Georgia, October 2009.
118. Zero One Matrix International Conference, Coimbra, Portugal, June 2010.
119. Joint Mathematics Meetings, New Orleans, LA, January 2011.
120. 42nd Southeastern Combinatorics Meeting, Boca Raton, FL, March 2011.
121. SIAM-SEAS Meeting, Charlotte, NC, March 2011.
122. Cumberland Combinatorics Conference, Louisville, KY, May 2011.
123. International Random Structures and Algorithms Conference, Atlanta, GA, May 2011.
124. CANADAM Conference, Victoria, BC, May-June 2011.
125. International Permutation Patterns Conference, San Luis Obispo, CA, June 2011.
126. AMS Sectional Meeting Invited Paper, Lincoln, NE, October 2011.
127. International Permutation Patterns Conference, Glasgow, Scotland, June 2012.
128. Trends in Undergraduate Research in Mathematics, Chicago, IL, October 2012.
129. MIGHTY Conference, Ames, IA, September 2012.
130. AMS Special Session Talk, Rochester, NY, September 2012.
131. Joint Mathematics Meetings, San Diego, January 2013.
132. Southeastern Combinatorics Conference, Boca Raton, March 2013.
133. International Permutation Patterns Conference, Paris, France, July 2013.
134. International Conference on Statistical Distributions, Mount Pleasant, MI, October 2013.
135. Integers Conference in honor of Erdos' 100th birthday, Carrolton, GA, October 2013.
136. Joint Mathematics Meetings, Baltimore, MD, January 2014, Special Session talk.
137. Southeastern Combinatorics Conference, Boca Raton, March 2014.
138. AMS Special Session Presentation, Greensboro, NC, November 2014.
139. AMS Special Session Presentation, Huntsville, AL, March 2015.
140. 46th Southeastern Combinatorics Conference, Boca Raton, FL, March 2015.
141. International Permutation Patterns Conference, London, June 2015.
142. International Conference on Random Structures and Algorithms, Pittsburgh, PA, July 2015.
143. International Lattice Path Combinatorics Conference, Pomona, CA, August 2015.
144. Clemson Mini-Conference, Clemson, SC, October 2015.
145. Tennessee Academy of Sciences, Murfreesboro, TN, November 2015.
146. International Workshop on Applied Probability, Toronto, Ontario, Canada, June 2016.
147. International Permutation Patterns Conference, Washington, DC, June-July 2016.

148. Discrete Mathematics Days (JMDA), Barcelona, Spain, July 2016.
149. Midwest Conference in Combinatorics, Normal, IL, October 2016.
150. International Conference on Statistical Distributions and Applications, Niagara Falls, Canada, October 2016.
151. INTEGERS 2016 Conference, Carrolton, GA, October 2016.
152. AMS Special Session Presentation, Raleigh, NC, November 2016.
153. 48th Southeastern Combinatorics Conference, Boca Raton, FL, March 2017.
154. 29th Cumberland Conference, Nashville, TN, May 2017.
155. International Permutation Patterns Conference, Reykjavik, Iceland, June 2017.
156. MAA Mathfest, Chicago, IL, July 2017.
157. Joint Mathematics Meeting, San Diego, January 2018.
158. 49th Southeastern Combinatorics Conference, Boca Raton, FL, March 2018.
159. Teacher Preparation Conference, Knoxville, TN, May 2018.
160. International Workshop on Applied Probability, Budapest, Hungary, June 2018.
161. MAA Mathfest, Denver, CO, August 2018.
162. American Association of Colleges and Universities, Atlanta, GA, November 2018.
163. Joint Mathematics Meetings, Baltimore, MD, January 2019.
164. CANADAM, Vancouver, BC, June 2019.
165. AMS Special Session, Gainesville, FL, November 2019.
166. Joint Math Meetings, 2 talks, Denver, CO, January 2020.

Colloquia Presented:

I have given colloquium talks at the following institutions: University of California (Santa Barbara), University of California (Davis), University of California (Berkeley), University of Zürich, Michigan Technological University, Northern Michigan University, University of California (Riverside), Northern Illinois University, Calvin College, Central Michigan University, Wright State University, Hope College, Kalamazoo College, University of Illinois at Chicago, Adrian College, Texas Tech University, Albion College, Indian Institute of Technology (Bombay), Bombay University, Winona State University, Macalester College, University of Athens, University of Wisconsin (Oshkosh), Bucknell University, East Tennessee State University, University of North Carolina (Greensboro), University of North Carolina (Wilmington), Kennesaw State University, Western Michigan University, University of Virginia (Wise), Furman University, University of the South (Sewanee), North Dakota State University, Howard University, Drexel University, University of Tennessee (Knoxville), The Johns Hopkins University, Morgan State University, Towson University, Rochester Institute of Technology, North China University of Technology, Northwestern Polytechnic University, University of Northern Iowa, University of South Carolina, Clemson University, West Virginia University, North Carolina State University, University of Guelph, University of Central Florida.

Sponsored Research Grants (PI):

1. 1990-91: Pilot Grant for Undergraduate Research awarded by the College of Sciences and Arts, Michigan Technological University.
2. 1991-1992: PI: The Probability Theory of Patterns and Runs, National Science Foundation Grant No. DMS-9100829, $30,000.
3. 1992-1994: PI: Discrete Probability and Associated Limit Theorems, National Science Foundation Grant No. DMS-9200409, $60,000.

4. 1994-1997: PI: Probabilistic Methods in Graph Theory, Combinatorics and Number Theory, National Science Foundation Grant No. DMS-9322460, $90,000.
5. 1995: PI: NSF-CBMS Regional Research Conference in the Mathematical Sciences: *Probability, Algorithms, and Combinatorial Optimization*, National Science Foundation Grant No. DMS-9415060, $25,000.
6. 1996: MTU Research and Graduate School Grant to support visit to UC Berkeley, Fall 1996, $4,500.
7. 1997-2002: PI: Discrete Random Structures, National Science Foundation Grant No. DMS-9619889, $200,000.
8. 1997: Genetic Data Analysis, and 1998: Ethics Across the Curriculum; MTU Faculty Development Grants.
9. 1998-1999: co-PI: NSF-CBMS Regional Research Conference in the Mathematical Sciences: *Statistical Inference from Genetic Data on Pedigrees*, National Science Foundation Grant No. DMS-9813767, $27,000 (with Jianping Dong).
10. 1998-1999: State of Michigan Research Excellence Fund Grant: Statistical, Mathematical and Computational Problems in Molecular Biology (with Jianping Dong, Renfang Jiang, Huann-Sheng Chen, and Xiaoqiu Huang).
11. 1998-1999: Girls in Astronomy, Michigan Space Grant Consortium, $2,500 (with Brenda DeBlois).
12. 1998-1999: PI: Research Experiences for Teachers: Discrete Random Structures, National Science Foundation Grant DMS 9619889-AMD 002, $7,500.
13. 1998-1999: Visiting Women and Minority Scholar Grant, MTU Presidential Commission for Women, $1,600.
14. 2001-02: Improving the Preparation of Elementary Education Majors at ETSU, NSF/American Association of State Colleges and Universities, $4,000 (with Janice Huang, Debra Knisley, Bert Bach, and Rhona Cummings).
15. 2001-02: PI: Research Experiences for Teachers: *Discrete Random Structures,* National Science Foundation, $25,433.
16. 2002-03: co-PI: NSF-CBMS Regional Research Conference in the Mathematical Sciences: *Structure and Decomposition of Graphs*, National Science Foundation Grant No. DMS-0122278, $27,500 (with Debra Knisley).
17. 2002-05: PI: Discrete Random Structures, National Science Foundation Grant No. DMS-0139286, $144,000.
18. 2002-03: PI: The Unicoi County K-8 Mathematics Initiative, W.K. Kellogg Foundation, $39,000, (with Edith Seier and Debra Knisley). (Additional Funding in 2003-04: $5850.)
19. 2003-04: PI: Discrete Random Structures – RET Supplement, National Science Foundation Grant No. DMS-0139291, $15,250.
20. 2005: co-PI: Workshop on Mathematical Tools and Statistical Techniques for Quantitative Medical Data Analysis, National Security Agency, $15,000 (with Don Hong and Robert Gardner).
21. 2005—10: co-PI: Tennessee Board of Regents Teacher Preparation Collaborative, National Science Foundation, $1,200,000 (with Jim Kelley (PI), Judy Hector and Maggie Phelps), Grant No. NSF 0501440.
22. 2005—2010, PI: Talent Expansion in Quantitative Biology, National Science Foundation, $1,000,000 (with Jay Boland, Jack Rhoton, Lev Yampolsky and Hugh Miller), Grant No. NSF 0525447,
23. 2006—09, Probability and Discrete Mathematics, PI. $181,000, National Science Foundation Grant 0552730.
24. 2006-2010, Planner and Senior Advisor on the *Symbiosis* grant, $1,700,000, Howard Hughes Medical Institute.

25. 2007, Probability and Discrete Mathematics, RET Supplement, PI. $37,000, National Science Foundation Grant 0731492.
26. 2008—2013, *Science First,* National Science Foundation GK-12 grant, $3,000,000 (with Gordon Anderson (PI), Aimee Govett, Richard Church, and Sharon Pickering).
27. 2010-2013, PI: Probability, Combinatorics, and Graph Theory, NSF REU-RET Grant 1004624, $340,000.
28. 2010-11, co-PI, NSF-CBMS Regional Research Conference in the Mathematical Sciences: *Mathematical Epidemiology with Applications*, National Science Foundation Grant No. DMS-1040928, $38,000 (with Ariel Cintron-Arias).
29. 2013—2016, REU Grant, *Combinatorics and Probability,* NSF Grant 1263009, $260,000.
30. 2014—2019, S-STEM Grant DUE-1356397, *Preparation of Data Driven Mathematical Scientists for the Workforce,* co-PI (with Ariel Cintron-Arias, Ramona Williams, Jeff Knisley, and Edith Seier), $620,000.
31. 2014—15, *Conferences in the Mathematical Sciences, Permutation Patterns 2014,* DMS-1362322, $26,000.
32. 2014-2017, "Back to the Classroom, Recruiting New High-School Physics Teachers," PhysTEC, $15,000, co-PI (with Bev Smith).
33. 2015, Tennessee Higher Education Consortium, Improving Teacher Quality Grant, $75,000, co-PI (with Ryan Nivens).
34. ETSU Governor's School for Scientific Models and Data Analysis, State of Tennessee, 2015, 2016; 2017, 2018, 2019, 2020, $540,000.
35. Niswonger Mathletes Program, Niswonger Foundation, 2015, $55,000.
36. Eastman MathElites and SciencElites Programs, 2015, 2016, 2017, 2018, 2019, 2020; $500,000.
37. "Innovative Educator Workshop: Incorporating Open Source Computing into the Teaching of High-School Mathematics," Battelle Education, $25,500, 2016, co-PI (with Ryan Nivens).
38. Tennessee STEM Innovation Network Grant, Battelle Education, $35,000, 2017 (with Ryan Nivens).
39. Tennessee STEM Innovation Network Grant, Battelle Education, $33,000, 2018.
40. Tennessee STEM Innovation Network Grant, Battelle Education, $37,000, 2019 (with Laura Robertson).
41. Tennessee STEM Innovation Network Grant, Battelle Education, $37,000 (est.), 2020.
42. 2019—2022, REU Grant, *Combinatorics, Probability,* and Algebraic Coding Theory, NSF Grant 1852171, $340,000 (with Fernando Piñero).

Administrative and Advising Experience:

- Chair, Department of Mathematics, East Tennessee State University, June 2000-June 2011.
- Executive Director, ETSU Center of Excellence in Math and Science Education, 2014—present.
- Undergraduate Advisor;
- Member of the University Assessment Committee;
- Member of the ETSU Quality Enhancement Committee; Member of College P&T Committee;
- Member of the Kellogg III Grant-writing Team (joint with Northeastern University, University of Texas (El Paso) and West Virginia University);

- Chair of History Chair Search Committee;
- Member of Political Science Department Review Team;
- Member of Dean Search Committee;
- Member of the Master of Arts in Liberal Studies Advisory Board;
- Chair Biological Sciences Chair Search Committee;
- Institute for Quantitative Biology Steering Committee;
- P-16 Committee;
- University Research Advisory Council;
- State P-16 Math Committee;
- University School Revisioning Committee;
- Supervised over 200 undergraduate student projects as part of my involvement with undergraduate research since 1990 – both at ETSU and at MTU. Several of these projects have culminated in published research.
- Associate Dean of the MTU College of Sciences and Arts, 1997-2000. Duties include overseeing matters related to curriculum reform, semester conversion, and general education reform within the College; proposal writing for support of interdisciplinary research, integration of research and education, and outreach activity; formation of interdisciplinary research groups; representing the College at various campus forums; development of internships and coop opportunities; formation of a cross-campus group on undergraduate research; development of an Honors program in the Sciences & Arts; coordinating external departmental reviews, etc.
- Associate Chair of the Department of Mathematical Sciences at Michigan Tech, 1991-1994.
- Director of Graduate Studies from 1990 to 1993.
- Chief author of the proposal for the Ph.D. program in the Mathematical Sciences.
- Member of the Departmental Coordinating; Advisory; Recruitment; Tenure and Reappointment; Curriculum; Ph.D. Proposal; and Statistics Committees.
- Advisor to Freshman and Sophomore Mathematics majors and Statistics majors.
- Member of the College of Sciences and Arts Recruitment Committee; member of the College Council; Chair of College Curriculum Committee member of the Academic Forum, member of the Deans/Directors Forum, member of the Academic Deans' Forum.
- Chair of the University Sabbatical Leave Committee; member of General Education Taskforce; Assessment Council; Diversity Forum; Retention Taskforce; Graduate Council; Continuous Improvement of Academic Advising Committee.
- SACS Reaffirmation Team Member, University of Louisiana, Lafayette, February 2010.
- Directed several Master's theses in Mathematics and Electrical Engineering; served on several Master's and Doctoral committees. Major advisees include: Marilyn Agin ('91), Sanjay Khunger ('92), Hao Zhang ('93), Jinghua Qian ('94), Gomathi Sadhasivan ('95), Matt Gregas ('98), Spencer Slade ('99), Papa Sissokho ('99), Peg Balachowski ('99), Kevin Lynch (2005), Janeane Young (2006), Crystal Hall (2006), Travis Buck (2006), James Ray (2006), Cihan Eroglu (2011), Michael Deren (2011), Martha Liendo (2012), Ofosuhene Osei (2013), Andre Campbell (2013), Jie Hao (2014), Benedict Adjogah (2014), Evelyn Fokuoh (2018), Rebecca Rasnick (2019), Aradhana Soni (2020).