

Curriculum Vitae**February 3, 2008**

Kenneth S. Berenhaut
Department of Mathematics
Wake Forest University
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Education

Ph. D., Statistics, The University of Georgia, 2000 [Dissertation title: "Geometric Renewal Convergence Rates and Discrete Lifetime Distribution Classes"]

M.A., Mathematics, The University of Georgia, 1997

M.Sc., Mathematics (Emphasis: Analytic Number Theory), The University of Manitoba, 1994 [Thesis title: "The Siegel-Walfisz Condition for Almost Completely Multiplicative Functions"]

B.A., Mathematics (Emphasis: Analytic Number Theory), The University of Manitoba, 1991

Research Interests

Applied probability; convergence rates; mathematical inequalities; mathematical and statistical models; difference equations; periodicities in sequences; statistical methodology; matrix inequalities; analytic, probabilistic and combinatorial number theory; discrete structures.

Honors and awards

2007 CURM grant awardee (\$20000)

2007 Wake Forest University Excellence in Research Award

2007 Wake Forest University Excellence in Entrepreneurship Award

2007 Archie Fund Grant (\$5000)

2006 Selected as MA Hooder for WFU Graduate Hooding Ceremony

2006 Chambers Fund Grant (\$4000)

2006 Wake Forest University Excellence in Research Award Nominee

2006 Chambers Fund Grant (\$7000)

2005 Alfred P. Sloan Foundation Research Fellowship Nominee

2005 Wake Forest University Excellence in Research Award Nominee

Curriculum Vitae**February 3, 2008**

2004 Alfred P. Sloan Foundation Research Fellowship Nominee

2003-2006 Sterge Faculty Fellow

2003 Z. Smith Reynolds Foundation Research Leave for Junior Faculty, Fall 2003

2002 Nominee for Robert C. Anderson Memorial Research Award, The University of Georgia.

2000 R. L. Anderson Student Paper Award, Southern Regional Council on Statistics Summer Research Conference [Paper title: Renewal Convergence Rates for New Better Than Used Distributions]

1999-2000 Graduate School Assistantship, The University of Georgia

1999 Best Senior Student Award, Department of Statistics, The University of Georgia

1999 R. L. Anderson Student Paper Award, Southern Regional Council on Statistics Summer Research Conference [Paper title: Geometric Renewal Convergence Rates and Stochastic Orderings]

1995-1996 Graduate School Assistantship, The University of Georgia

1993-1994 Faculty of Science Postgraduate Fellowship, The University of Manitoba

1991 Jared Israels Award for undergraduate research in the Sciences, Engineering and Medicine, The University of Manitoba (\$1500.00) [Paper title: The Inversion Theorem on Convergence of Infinite Series]

Editorial Activities

1. Board Member, Mathematical Sciences Publishers, (UC Berkeley)
2. Associate Editor, *Australian Journal of Mathematical Analysis and Applications*
3. Associate Editor, *International Journal of Applied Mathematical Sciences*
4. Associate Editor, *International Mathematical Forum*
5. Associate Editor, *International Journal of Contemporary Mathematical Sciences*
6. Associate Editor, *International Journal of Mathematical Analysis*
7. Associate Editor, *Applied Mathematical Sciences*
8. Associate Editor, *The Journal of World Mathematical Review*
9. Associate Editor, *International Journal of Algebra*
10. Founding Editor, *Involve-A Journal of Mathematics*
11. Associate Editor, *The Open Operational Research Journal*
12. Associate Editor, *Communications in Mathematical Analysis*

Curriculum Vitae

February 3, 2008

Publications ¹***Manuscripts under review/ under revision/ current***

- [1] Berenhaut, K. S. and Chen D.**, Inequalities for functions with convex logarithmic derivative, Submitted.
- [2] Berenhaut, K. S. and Chen D.**, Moment generating functions, local approximations and one-step conditioning, Submitted.
- [3] Berenhaut, K. S. and Chen D.**, Inequalities for convolution ratios under local approximation, Submitted.
- [4] Berenhaut, K. S., Chen D.** and Tran, V.**, On the Dyson condition for sums of independent random variables, In revision, *Statistics and Probability Letters*.
- [5] Berenhaut, K. S., Stancil, B. J.* and Newman, J. H.**, On some piecewise-linear difference equations with Mersenne-type periodic solutions, Submitted.
- [6] Norris, J. L., Pollock K. H., Berenhaut, K. S. and Pledger, S., Multiple-species models for true abundances allowing for heterogeneity of capture between and within species, In revision, *Journal of Agricultural, Biological, and Environmental Statistics*.
- [7] Berenhaut, K. S. (2009) *Periodicities in Sequences*, (Book, in Preparation).

Publications in print/ in press

- [8] Berenhaut, K. S., Donadio, K. M.* and Foley J. D.**, (2007) On a rational recursive sequence with parameter near the boundary, In press, *International Journal of Difference Equations*.
- [9] Berenhaut, K. S., Foley J. D.** and Stevic, S. (2007) The boundedness character of the difference equation $y_n = A + \frac{y_{n-k}}{y_{n-m}}$, In press, *International Journal of Computer Mathematics*.
- [10] Berenhaut, K. S., Donadio, K. M.* and Foley J.D.** (2007) On the rational recursive sequence $y_n = A + \frac{y_{n-1}}{y_{n-m}}$ for small A , *Applied Mathematics Letters*, Published online at www.sciencedirect.com, Nov. 5, 2007.
- [11] Berenhaut, K. S. (2007) On some systems of difference equations with periodic solutions, In press, *Dynamics of Continuous, Discrete and Impulsive Systems*.
- [12] Berenhaut, K. S. and Saidak, F. (2007) A note on the maximal coefficients of squares of Newman polynomials, *Journal of Number Theory*, **125** (2), 285--288.
- [13] Berenhaut, K. S., Foley, J. D.** and Stevic, S. (2007) The periodic character of the rational difference equation $y_n = 1 + \frac{y_{n-k}}{y_{n-m}}$, *Proceedings of the American Mathematical Society*, **135** (2007), 1133-1140.
- [14] Berenhaut, K. S., Foley, J. D.** and Stevic, S. (2008) The global attractivity of the rational difference equation $y_n = A + \left(\frac{y_{n-k}}{y_{n-m}}\right)^p$, In Press, *Proceedings of the American Mathematical Society, Proc. Amer. Math. Soc.* **136** (2008), no. 1, 103--110.

¹ The notation * indicates a WFU undergraduate student coauthor, ** indicates a WFU graduate student coauthor, † indicates a University of Georgia graduate student (I spent Fall of 2003 on research leave at UGA), and ‡ indicates a Winston-Salem high school student.

Curriculum Vitae

February 3, 2008

- [15] Berenhaut, Kenneth S.; O'Keefe, Augustine B.** Recursive sequences of the form $y_n = a_n y_{n-1} + y_{n-3}$ with integer coefficients. *Indian J. Math.* **49** (2007), no. 2, 189--209.
- [16] Berenhaut, K. S., Saidak, F. and O'Keefe, A. B.** (2007) Remarks on linear recurrences of the form $y_n = y_{n-1} + a_{n-1} y_{n-2}$, Proceedings of the Twelfth International Conference on Fibonacci Numbers.
- [17] Stevic, S. and Berenhaut, K. S., (2007) The behavior of the positive solutions of the difference equation $x_n = \frac{f(x_{n-2})}{g(x_{n-1})}$, *Abstract and Applied Analysis*, Published online at www.hindawi.com, Dec, 2007.
- [18] Berenhaut, K. S., Gibson, B. G.*, Newman, J. H.* and Anderson, J. F. †, (2007) Bounds for fourth-order $[0,1]$ difference equations, *Computers and Mathematics with Applications*, **54** (2007), no. 9--10, 1250--1259.
- [19] Berenhaut, K. S., Abernathy, Z. J.*, Fan, Ying Wai** and Foley, J. D.** (2007) Inequalities for coefficients of reciprocals of power series, Appeared, *Advances in Inequalities for Series* (Edited by S.S. Dragomir & A. Sofo).
- [20] Berenhaut, K. S., Saidak, F. and O'Keefe, A. B.** (2007) Bounds for recurrences on ranked posets, *International Journal of Contemporary Mathematical Sciences*, Volume **2**, no. 19, 929--942.
- [21] Berenhaut, K. S. and Foley, J. D.** (2007) The Periodic Character of the Rational Difference Equation $y_n = \frac{y_{n-m} + y_{n-m-k}}{y_{n-k}}$, *International Mathematical Forum*, Vol. **2**, 2007, no. 41-44, 2065-2077.
- [22] Berenhaut, K. S. and Foley, J. D.** (2007) Product difference equations approximating rational equations, *Differential & Difference Equations and Applications*, Hindawi Publ. Corp., New York, 2006, 159--168.
- [23] Berenhaut, K. S. and Stevic, S. (2007) The global attractivity of a higher order rational difference equation, *Journal of Mathematical Analysis and Applications*, Volume **326**, Issue 2, 15 February 2007, Pages 940--944.
- [24] Berenhaut, K. S., Foley, J. D.** and Stevic, S. (2007) The global attractivity of the rational difference equation $y_n = \frac{y_{n-k} + y_{n-m}}{1 + y_{n-k} y_{n-m}}$, *Applied Mathematics Letters*, Volume **20**, Issue 1, January 2007, Pages 54--58.
- [25] Berenhaut, K. S. and Stevic, S. (2007) The difference equation $x_{n+1} = a + \frac{x_{n-k}}{\sum_{i=0}^{k-1} c_i x_{n-i}}$ has solutions converging to zero, *Journal of Mathematical Analysis and Applications*, Volume **326**, Issue 2, 15 February 2007, Pages 1466-1471.
- [26] Berenhaut, K. S., Foley, J. D.** and Bandyopadhyay, D. † (2006) Inequalities for inner products under some monotonicity constraints, *Journal of Inequalities in Pure and Applied Mathematics*, Volume **7**, Issue 5, Article 158.
- [27] Berenhaut, K. S., Allen E. E and Fraser, S. J.* (2006), Bounds on coefficients of reciprocals of formal power series with rapidly decreasing coefficients, *Discrete Dynamics in Nature and Society* Volume **2006** (2006), Article ID 40270, 18 pages.
- [28] Berenhaut, K. S., Dice, J. E.*, Foley, J. D.**, Iricanin, B. and Stevic, S., (2006) Periodic Solutions of the Rational Difference Equation $y_n = \frac{y_{n-3} + y_{n-4}}{y_{n-1}}$, *J. Difference Equ. Appl.* **12**, no. 2, 183--189.

Curriculum Vitae

February 3, 2008

- [29] Berenhaut, K. S., Saidak, F. and O'Keefe, A. B.** (2006) Recursive sequences of the form $y_n = a_n y_{n-1} + y_{n-2}$ with integer coefficients, *Indian Journal of Mathematics*, Vol. **48**, no. 1, 39-54.
- [30] Berenhaut, K. S. and Stevic, S. (2006) On positive nonoscillatory solutions of the difference equation $x_{n+1} = \alpha + \frac{\{x_{n-k}\}^p}{\{x_n\}^p}$, *Journal of Difference Equations and Applications*, Volume **12**, Number 5 May 2006, Pages 495--499.
- [31] Berenhaut, K. S., Foley, J. D.** and Stevic, S. (2006) Boundedness character of positive solutions of a max difference equation, *Journal of Difference Equations and Applications*, **12**, no. 12, 1193-1199..
- [32] Berenhaut, K. S. and Foley, J. D.** (2006) Explicit bounds for multi-dimensional linear recurrences with restricted coefficients, *Journal of Mathematical Analysis and Applications*, Volume **322**, Issue 2, 15 October 2006, Pages 1159-1167.
- [33] Berenhaut, K. S. and Stevic, S. (2006) The Behaviour of the Positive Solutions of the Difference Equation $x_n = A + \left(\frac{x_{n-2}}{x_{n-1}}\right)^p$, *Journal of Difference Equations and Applications*, **12**, no. 9 (2006), 909-918.
- [34] Berenhaut, K. S. and Foley, J. D.** (2005) Applications of recurrence bounds to networks and paths, Accepted, *International Journal of Applied Mathematics*.
- [35] Berenhaut K. S. and Goedhart, E. G.**, Stević, S. (2006), Explicit bounds for third-order difference equations, *ANZIAM J.* **47**, 359-366.
- [36] Berenhaut, K. S., Foley, J. D.** and Stevic, S. (2005) Quantitative bounds for the recursive sequence $y_n = A + \frac{y_{n-1}}{y_{n-k}}$, *Applied Mathematics Letters*, Volume **19**, Issue 9, September 2006, Pages 983-989.
- [37] Berenhaut K. S. and Goedhart, E. G.**. (2006) Second-order linear recurrences with restricted coefficients and the constant $(1/3)^{1/3}$, *Mathematical Inequalities & Applications*, Volume **9**, 445--452.
- [38] Berenhaut, K. S. and Stevic, S. (2005) On the difference equation $x_{n+1} = \frac{1}{x_n x_{n-1}} + \frac{1}{x_{n-3} x_{n-4}}$, *Journal of Difference Equations and Applications*, **11**, no. 14, 1225--1228.
- [39] Lewis, J.†, Berenhaut, K. S., Souter, R. and Daniels, R. F. (2005), Completely compatible taper, whole tree and merchantable volume models based on the gamma and inverse gamma probability functions, *Forest Science*, **51**, No. 6., pp. 578-584. .
- [40] Fan, Y. W.** and Berenhaut, K. S. (2005), A bound for linear recurrence relations with unbounded order, *Computers and Mathematics with Applications*, Volume **50**, Issue 3/4, Pages 509--518.
- [41] Thul, C., Choi, H. S., Suerken, C. K. , Berenhaut, K. S. and Norris, J. (2005), A comprehensive survey of school psychologists' attitudes, feelings, and professional services offered to gay male and/or lesbian parents and their children, *Journal of Applied School Psychology*, Volume **22**, Issue 1, pages 89-109.
- [42] Mallakin A., Mezey, P. G., Zimpel, Z., Berenhaut, K. S., Greenberg, B. M. and Dixon, D. G. (2005), Use of molecular shape similarity to model the photoinduced toxicity of anthracene and oxygenated anthracenes, *QSAR & Combinatorial Science*, Volume **24**, Issue 7, page 844-852.
- [43] Berenhaut, K. S. and Fletcher, P. T.* (2005), On inverses of triangular matrices with monotone entries, *Journal of Inequalities in Pure and Applied Mathematics*, Volume **6**, Issue 3.

Curriculum Vitae

February 3, 2008

- [44] Berenhaut, K. S. and Morton, D. C.* (2005), Second-order bounds for linear recurrences with negative coefficients, *Journal of Computational and Applied Mathematics*, Volume **186**, 2 pp 504-522
- [45] Berenhaut, K. S., Morton D. C.* and Fletcher, P. T.* (2005), Bounds for inverses of triangular toeplitz matrices, *SIAM Journal on Matrix Analysis*, Volume **27**, Number 1, pp. 212-217
- [46] Berenhaut, K. S. and Bandyopadhyay D.† (2005), Monotone convex sequences and Cholesky decomposition of symmetric Toeplitz matrices, *Linear Algebra and its Applications*, Volume **403**, 1 July 2005, Pages 75-85.
- [47] Berenhaut, K. S. , Morton, D. C.* and Fan, Y. W.** (2005), Bounds for second-order recurrences in terms of maximal products over integer partitions, Appeared, *Proceedings of the Eleventh International Conference on Fibonacci Numbers*.
- [48] Berenhaut, K. S. and Goedhart, E. G.** (2005), Explicit bounds for second-order difference equations and a solution to a question of Stević, *Journal of Mathematical Analysis and Applications*, Volume **305**, Issue 1, 1 May 2005, Pages 1-10.
- [49] Berenhaut, K. S. (2004), Review of *Advanced Calculus with Applications in Statistics* by André I Khuri, *Journal of the American Statistical Association*, **99**, No. 467, 903--904.
- [50] Berenhaut, K. S. and Lund, R. B. (2003), Bounds for linear recurrences with restricted coefficients, *Journal of Inequalities in Pure and Applied Mathematics*, **4**, 2, Article 26, 15 pp.
- [51] Hall, D. B. and Berenhaut, K. S. (2002), Score tests for heterogeneity and overdispersion in zero-inflated poisson and binomial regression models, *Canadian Journal of Statistics*, **30**, 3, 415--430.
- [52] Berenhaut, K. S. and Lund, R. B. (2002), Renewal convergence rates for DHR and NWU lifetimes, *Probability in the Engineering and Informational Sciences*, **16**, 1, 67--84.
- [53] Berenhaut, K. S., and Lund, R. B. (2001), Geometric renewal convergence rates from hazard rates, *Journal of Applied Probability*, **38**, 180--194.
- [54] Berenhaut, K. S. (2000), *Geometric Renewal Convergence Rates and Discrete Lifetime Distribution Classes*, Ph.D. Dissertation, Department of Statistics, University of Georgia.
- [55] Berenhaut, K. S. (1994), *The Siegel-Walfisz Condition for Almost Completely Multiplicative Functions*, Master's Thesis, Department of Mathematics and Astronomy, The University of Manitoba.

Technical Reports (not appearing above)

- [56] Berenhaut, K. S. (1999), Recursions, Power Series and Geometric Renewal Convergence Rates, Technical Report 1999-22, University of Georgia.
- [57] Berenhaut, K. S., and Lund, R. B. (2000), Renewal Convergence Rates for New Better than Used Distributions, Technical Report 2000-13, Department of Statistics, University of Georgia.

Curriculum Vitae**February 3, 2008*****Ongoing Collaborations***

1. Berenhaut, K. S. and Bandyopadhyay, D.
2. Berenhaut, K. S., Donadio, K. M.* and Guy, R. T.**
3. Berenhaut, K. S. Guy, R. T.** and Vish, N.**
4. Berenhaut, K. S. and Guy, R. T.**
5. Berenhaut, K. S., Newman, J. H.** and Stancil, B. J.*
6. Berenhaut, K. S., Donadio, K. M.* and Foley, J. D.**
7. Berenhaut, K. S. and Vish, N.**
8. Berenhaut, K. S. and Saidak, F.

Teaching and/or research experience

July 2006-Present Associate Professor with Tenure, Wake Forest University

Fall of 2003 Visiting Assistant Professor, The University of Georgia (on leave from Wake Forest University)

2003-2006 Assistant Professor and Sterge Faculty Fellow, Wake Forest University

2000-2006 Assistant Professor, Wake Forest University

1994-2000 Teaching Assistant, The University of Georgia

Summer of 1999 Research Assistant, The University of Georgia [analysis of Florida ecological data for the Environmental Protection Agency]

1997 and 1998 Mathematics Instructor, Howard Hughes summer program, The University of Georgia

1992-1994 Teaching Assistant, The University of Manitoba

1992 and 1993 Mathematics Seminar Leader, Shad Valley summer program for gifted high school students, Winnipeg, Manitoba

Courses taught

Wake Forest University: 109 Elementary Probability and Statistics; 111 Calculus with Analytic Geometry I; 117 Discrete Mathematics; 645/646 Elementary Theory of Numbers I, II; 657/658 Mathematical Statistics I, II; 659 Multivariate Statistics; 747 Topics in Discrete Mathematics (Finite Markov Chains and Algorithmic Applications); 758 Topics in Statistics (a. Probability and Measure, b. Information Theory); 761 Stochastic Processes.

University of Georgia: Precalculus, Analytic Geometry and Calculus, Elementary Statistics.

Curriculum Vitae**February 3, 2008****Advising for undergraduate research and B.S. projects***(11 published manuscripts and 1 submitted manuscript with undergraduate student coauthors)*Wake Forest University

1. Sam J. Fraser Jr., graduated Spring, 2003
2. Daniel C. Morton, graduated Spring 2004
3. Preston T. Fletcher, graduated Fall 2005
4. Benjamin G. Gibson, graduated Spring, 2006
5. Jennifer E. Dice, graduated Spring, 2006
6. Zachary J. Abernathy, graduated Spring, 2006
7. Jonathan H. Newman, graduated Spring 2007
8. Katherine M. Donadio
9. Bennett J. Stancil

Advising for graduate research and Masters Theses*(27 published manuscripts and 5 submitted manuscripts with graduate student coauthors)*Wake Forest University

10. Ying Wai Fan, graduated, 2004
11. Eva G. Goedhart, graduated 2005
12. John D. Foley, graduated 2006
13. Augustine B. O'Keefe, graduated 2006
14. Vy Tran, graduated 2006
15. Donghui Chen
16. Richard T. Guy
17. Nathan Vish

High School Student Research Projects*(1 published manuscript with a high school student coauthor)*Winston-Salem

18. Jacob H. Anderson (Mount Tabor High School, graduated, 2005)

Refereed for Journals (not listed under Editorial Activities)*Applied Stochastic Models in Business and Industry**Annals of Applied Probability**International Journal of Mathematics and Mathematical Sciences**Statistics and Probability Letters**Computers and Mathematics with Applications**Dynamics of Continuous, Discrete and Impulsive Systems**Applied Mathematics Letters**Electronic Journal of Linear Algebra**Journal of Applied Mathematics and Computing**Journal of Difference Equations and Applications**Chaos, Solitons and Fractals*

Curriculum Vitae

February 3, 2008

The American Statistician

Bulletin of the Malaysian Mathematical Sciences Society

Rocky Mountain Journal of Mathematics

Discrete Dynamics in Nature and Society

Proceedings of the Twelfth International Conference on Fibonacci Numbers

Advances in Difference Equations

Professional Affiliations

American Mathematical Society

International Society of Difference Equations

Research Group in Mathematical Inequalities and Applications

Council on Undergraduate Research