CURRICULUM VITAE

Peter Olofsson

CONTACT INFORMATION

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DEGREES

Ph.D., Mathematical Statistics, Göteborg University, Sweden, 1994

EMPLOYMENT

June, 2011– : Professor and Chair, Mathematics Department, Trinity University, San Antonio, Texas

August 2007–May 2011 : Associate Professor, Mathematics Department, Trinity University, San Antonio, Texas

July 2005–June 2007 : Visiting Associate Professor, Mathematics Department, Tulane University, New Orleans, Louisiana

January 2005–June 2005 : Visiting Associate Professor, Department of Statistics, Rice University, Houston, Texas

July 1996–December 2004: Lecturer, Department of Statistics, Rice Uni-

versity, Houston, Texas

July 1995–June 1996: Lecturer, Department of Mathematics, Göteborg University, Sweden

April–May 1995: Research position, Mittag–Leffler Institute, Royal Swedish Academy of Sciences, Stockholm, Sweden

January–March, June 1995: Research position, Department of Mathematics, Göteborg University, Sweden

PUBLICATIONS

Books

1. *Probabilities: The Little Numbers that Rule Our Lives*, second edition, Wiley, 2014

2. *Probability, Statistics, and Stochastic Processes*, second edition. Joint with Mikael Andersson, Wiley, 2012

3. *Probabilities: The Little Numbers that Rule Our Lives*, general audience book, Wiley, 2006

4. *Probability, Statistics, and Stochastic Processes*, undergraduate textbook, Wiley, 2005

Research articles

1. The probability of speciation on an interaction network with unequal substitution rates. Joint with Kevin Livingstone, Douglas Steinman, and Joshua Humphreys. To appear in *Mathematical Biosciences*, 2016

2. Parent of origin, mosaicism, and recurrence risk: probabilistic modeling explains the broken symmetry of transmission genetics. Joint with Ian Campbell, Chad Shaw, James Lupski, Pawel Stankiewicz, Jonathan Stewart, and James Regis. *American Journal of Human Genetics*, 2014, **95(4)**:345–359

3. Parental somatic mosaicism is under-recognized and influences recurrence risk of genomic disorders. Joint with Ian Campbell, Chad Shaw, James Lupski, *et al.* (29 co-authors). *American Journal of Human Genetics*, 2014, **95(2)**, 173–182

4. A continuous time branching process model of yeast prion curing curves. Joint with Suzanne Sindi. *J. Appl. Probab*, 2014, **51(2)**, 453–465

5. A discrete time branching process model of yeast prion curing curves. Joint with Suzanne Sindi. *Mathematical Population Studies*, 2013, **20(1)**, 1–13

6. A stochastic model for the development of Bateson–Dobzhansky–Muller incompatibilities incorporating protein interaction networks. Joint with Garner Cochran, Andrius Dagilis, Karen MacPherson, Kerry Seitz (students), and Kevin Livingstone. *Mathematical Biosciences*, 2012, **238**, 49–53

7. Modeling and estimating bacterial lag phase. Joint with Xin Ma (student). *Mathematical Biosciences*, 2011, **234(2)**, 127–131

8. Budding yeast, branching processes, and generalized Fibonacci numbers. With Ryan Daileda. *Mathematics Magazine*, 2011, **84(3)**, 163–172

9. Modeling growth and telomere dynamics in *S. cerevisiae*. With Alison A. Bertuch. *Journal of Theoretical Biology*, 2010, **263(3)**, 353–359

10. A stochastic model of cell cycle desynchronization. With Thomas O. McDonald (student). *Mathematical Biosciences*, 2010, **223(2)**, 97–104

11. Can telomere shortening explain sigmoidal growth curves? *Journal of Biological Dynamics*, 2010, **4(6)**, 527–538

12. Size-biased branching population measures and the multi-type $x \log x$ condition. *Bernoulli*, 2009, **15(4)**, 1287–1304

13. A stochastic model of a cell population with quiescence. *Journal of Biological Dynamics*, 2008, **2(4)**, 386–391

14. Intelligent design and mathematical statistics: a troubled alliance. *Biology and Philosophy*, 2008, **23(4)**, 545–553

15. Exact sampling formulas for multi-type Galton-Watson processes. With Chad A. Shaw. *Journal of Mathematical Biology*, 2002, **45**, 279–293

16. An application of a general branching process in the study of the genetics of aging. With Otto Schwalb, Ranajit Chakraborty and Marek Kimmel. *Journal of Theoretical Biology*, 2001, **213(4)**, 547–557

17. A branching process model of telomere shortening. *Communications in Statistics-Stochastic Models*, 2000, **16(1)**, 167–177

18. A Poisson approximation with applications to the number of maxima in a discrete sample. *Statistics and Probability Letters*, 1999, **44**, 23–27

19. Stochastic models of telomere shortening. With Marek Kimmel. *Mathematical Biosciences*, 1999, **158**, 75–92

20. The $x \log x$ condition for general branching processes. *Journal of Applied Probability*, 1998, **35**, 537–544

21. General branching processes with immigration. *Journal of Applied Probability*, 1996, **33**, 940–948

22. Branching processes with local dependencies. *Annals of Applied Probability*, 1996, **6**, 238–268

Review articles

1. Telomere shortening: an overview. With Marek Kimmel. In: P. Haccou, P. Jagers and V. Vatutin *Branching Processes: Variation, Growth, and Extinction of Populations*. Cambridge university press, 2005, 225–231

2. Mathematical modeling of telomere shortening: an overview. *Archives of Control Sciences*, 1999, **9(XLV)**, 133–141

3. Branching processes with local dependencies. In: K. Athreya and P. Jagers (eds.), *Classical and Modern Branching Processes.* Springer, New York, 1997

Miscellanous

1. Mode, Charles J.; Durrett, Rick; Klebaner, Fima; Olofsson, Peter Applications of stochastic processes in biology and medicine [Editorial]. *Int. J. Stoch. Anal.*, 2013

2. Entry on counting processes in *Encyclopedia of Environmetrics*, 2013

3. Probability, statistics, evolution, and intelligent design. *Chance*, 2008, **21(3)**, 42–45

4. Book review of Athreya & Lahiri, *Measure Theory and Probability Theory*, Springer 2006. *SIAM Review*, 2007, **49(3)**, 537–538

5. The Coulter Hoax: How Ann Coulter Exposed the Intelligent Design Movement. *Skeptical Inquirer*, 2007, **31(2)**, 48–50

RESEARCH GRANTS

2014, NIH grant 2R15GM093957-02, PI, "Branching processes and cell populations," 3 years, amount: $186,845

2010, NIH grant 1R15GM093957-01, PI, "Branching process models in cellular population dynamics," 3 years, amount: $202,204

2009, NSF grant 0906692, Co-PI, "UBM Institutional: Integrated Research in Biomathematics at Trinity University," 4 years, amount: $751,000 (PI: Saber Elaydi)

OTHER GRANTS AND AWARDS

2007, Hardie Faculty Fellowship, Trinity University, summer salary, 2008–2010

2013, Trinity University Distinguished Achievement Award for research

RECENT SEMINARS AND CONFERENCE TALKS

"Branching Processes: the Mathematics of Life and Death," Jönköping University, Sweden, December 16, 2015 (invited)

"A Stochastic Model of Speciation through Bateson–Dobzhansky–Muller Incompatibilities," Gothenburg University, Sweden, October 30, 2015 (invited)

"A Stochastic Model of Speciation through Bateson–Dobzhansky–Muller Incompatibilities," University of Houston, February 27, 2015

"Probability Paradoxes and Problems," Southwest Research Institute, September 22, 2014, San Antonio (invited)

"A Branching Process Model of Prion Dynamics," Mathematics Colloquium, November 21, 2013, Tulane University, New Orleans (invited)

"A Branching Process Model of Prion Dynamics," Joint Statistics Meetings, August 3–8, 2013, Montreal, Canada (contributed)

"A Branching Process Model of Prion Dynamics," SIAM Conference on Application of Dynamical Systems, May 19–23, 2013, Snowbird, UT (invited)

"General branching processes and cell populations," International Conference on Stochastic Processes in Systems Biology, Genetics and Evolution, August 22–25, 2012, Rice University, Houston, TX (invited)

"Modeling prion dynamics in yeast," Branching processes and derived processes, CIRM, Luminy, France, April 28, 2011 (invited)

"Budding yeast, branching processes, and generalized Fibonacci numbers," Joint Mathematics Meetings, New Orleans, LA, January 9, 2011 (contributed)

"Growing, slowing, growing: How cells survive telomere shortening," INFORMS Annual Meeting, Austin, TX, November 7, 2010 (invited)

"Growing, slowing, growing: How cells survive telomere shortening," IMS 73rd annual meeting, Göteborg, Sweden, August 13, 2010 (contributed)

"Modeling growth and telomere dynamics in yeast," Center for Computational Molecular Biology, Brown University, Providence, RI, May 19, 2010 (invited)

"Modeling growth and telomere dynamics in yeast," Conference of Texas Statisticians, Baylor University, Waco, TX, April 9–10, 2010 (invited)

EDITORIAL BOARDS

Member of the editorial board for *Biology Direct*, Mathematical Biology section, and for *Journal of Biological Systems.*

MEMBERSHIPS

American Association for the Advancement of Science, American Mathematical Society, American Statistical Association, Bernoulli Society, European Society for Mathematical and Theoretical Biology, Institute of Mathematical Statistics, Society for Mathematical Biology, Swedish Statistical Society

REFEREE ASSIGNMENTS

Mathematical Biosciences, Journal of Theoretical Biology, Scandinavian Journal of Statistics, Computational Statistics, Springer Verlag, Duxbury Press, John Wiley and Sons, SIAM Review, Biology Direct, Electronic Communications in Probability, Mathematical Methods in the Applied Sciences, Journal of Applied Probability, BMC Genomics, SIAM Journal of Applied Mathematics, Statistics and Probability Letters, Mathematical Medicine and Biology, PLoS Computational Biology, Nature