

VITA for RICHARD DURRETT

Education:

<i>Degree</i>	<i>Department</i>	<i>Institution</i>	<i>Date</i>
Ph.D.	Operations Research	Stanford University	June 1976
M.S.	Mathematics	Emory University	August 1973
B.S.	Mathematics	Emory University	June 1972

Positions Held:

UCLA E. R. Hedrick Asst. Prof, ... Professor, 1976–85
Cornell Professor, 1985-2010
Duke James B. Duke Professor, 2010–2023, now emeritus

Miscellaneous Achievements:

Alfred P. Sloan Fellowship, 1981–1983
Elected Fellow, Institute of Mathematical Statistics, August 1981
AMS Centennial Fellowship, 1984–1986
Guggenheim Fellowship, 1988–1989
45 minute lecture at International Congress of Math in Kyoto, 1990
Organizer for Workshop for Women in Probability 1994, 2008, and 2012
Editor, Annals of Applied Probability, 1997-1999.
Elected to National Academy of Science, 2007
IMS Wald Lectures, 2008
Fellow American Association for the Advancement of Science, 2009
Elected to American Academy of Arts and Sciences, 2002
Organizing committee Cancer and its Environment, MBI 2014-2015
Plenary talk, Stochastic Processes and their Applications, Paris, July 10, 2015

Graduate students (51)

UCLA. 1979: Chris Cagan; 1981: Jeff Moore; 1984 Rodrigo Banuelos (Purdue), Scott Schumacher; 1985: Charles Clark, Bao Nguyen. **Cornell.** 1988: Irene Ferreira, Glen Swindle, Nelson Tanaka; 1989: Steve Bianco, Chris Noble; 1990: Claudia Neuhauser, Xiaolong Luo; 1991: Seth Stafford, Erich Friedman; 1994: Heike Dengler, Susan Lee; 1995: Gang Ma; 1996: Hassan Allouba; 1997: Don Allers, Nikhil Shah; 1998 Robert Battig, Eknath Belbase, Min-jeong Kang, Semyon Kruglyak; 1999: Ilya German; 2000: Lisa Newton; 2001: Peter Calabrese, Dave Hiebeler; 2002: Nancy Sundell; 2003: Janet Best; 2005: Nathaniel Berestycki, Raazesh Sainudiin; 2006: Yannet Interian; 2007: Arkendra De), Ben Chan, Deena Schmidt; 2008 Emilia Huerta-Sanchez; 2009 Daniel Remenik; 2010: Alexander Gutfraind; 2011 Shirshendu Chatterjee, Stephen Moseley; 2013 Masha Bessonov. **Duke.** 2014: J.C. Li; 2015: Chris Varghese (physics), Yuan Zhang; 2019: Ran Huo, Ruibo Ma; 2021: Zoe Huang, Dong Yao; 2023: Hwai-Ray Tung.

Postdocs mentored since 2000:

Cornell. Vlada Limic (2000-2003); Jason Schweinsberg (2001-2004); Iljana Zähle (2002-2003); Paul Jung (2003-2007); Lea Popovic (2005-2007); Soumik Pal (2006-2008); John

Mayberry (2008-2010); Jon Peterson (2009-2011); **Duke**. David Sivakoff (2010-2013), Jessica Zuniga (2011-2012), David Herzog (2011-2014), Andreas Aristotelous (2011-2014), Mark Ryser (2011-2014), Matt June (2016-2019) .

BOOKS

Brownian Motion and Martingales in Analysis. (1984), Wadsworth Pub.Co.
Lecture Notes On Particle Systems And Percolation. (1988) Wadsworth Pub. Co.,
Probability: Theory and Examples. Fifth Edition (2019), Cambridge U. Press
Essentials of Stochastic Processes. Second edition (2012), Springer
Probability Models of DNA Sequence Evolution. Second edition (2006) Springer-Verlag,
Random Graph Dynamics. (2007) Cambridge U. Press, 2nd edition in preparation
Elementary Probability for Applications. First edition (2009) Cambridge U. Press

SELECTED PAPERS

24 papers cited more than 100 times according to Google Scholar

7. With S. I. Resnick. Functional limit theorems for dependent variables. *Ann. Prob.* 6 (1978), 829-846
14. On the growth of one dimensional contact processes. *Ann. Prob.* 8 (1980), 890-907
15. With J.T. Cox. Some limit theorems for percolation processes with necessary and sufficient conditions. *Ann. Prob.* 9 (1981), 583-603 [GS 289]
16. With T. Liggett. The shape of the limit set in Richardson's model. *Ann. Prob.* 9 (1980), 186-193
23. Oriented percolation in two dimensions. Special Invited Paper. *Ann. Prob.* 12 (1984), 999-1040 [GS476]
24. With T. Liggett, Fixed points of the smoothing transformation. *Z. fur Wahr.* 64 (1983), 275-301 [GS312]
38. With J. T. Chayes and L. Chayes. Connectivity properties of Mandelbrot's percolation process. *Prob. Th. Rel. Field.* 77 (1988), 307-324
39. With Liu Xiu-fang. The contact process on a finite set. *Ann Prob.* 16 (1988), 1158-1173
44. With J.T. Cox. Limit theorems for the spread of epidemics and forest fires. *Stoch. Proc. Appl.* 30 (1988), 171-191
61. With M. Bramson and R.H. Schonmann. The contact process in a random environment. *Ann. Probab.* 19 (1991), 960-983
77. With C. Neuhauser. Particle systems and reaction diffusion equations. *Ann. Prob.* 22 (1994), 289-333
82. With S. Levin. The importance of being discrete (and spatial). *Theoret. Pop. Biol.* 46 (1994), 363-394 [GS 1284]

85. Ten Lectures on Particle Systems. Pages 97-201 in St. Flour Lecture Notes. Lecture Notes in Math 1608. (1995). Springer-Verlag, New York [GS 312]
90. With S. Levin. Allelopathy in spatially distributed populations. *J. Theor. Biol.* 185 (1997), 165-172 [GS 349]
103. With S. Kruglyak, M. Schug, and C. Aquadro. Equilibrium distributions of microsatellite repeat length resulting from a balance between slippage events and point mutations. *Proc. Nat. Acad. Sci., USA.* 95 (1998), 10774–10778 [GS 595]
107. With Ted Cox and Ed Perkins. Rescaled voter models converge to super-Brownian motion. *Ann. Prob.* 28 (2000), 185–234
134. With Jason Schweinsberg. Approximating selective sweeps. *Theor. Pop. Biol.* 66 (2004), 129–138
135. With Jason Schweinsberg. Random partitions approximating the coalescence of lineages during a selective sweep. *Ann. Appl. Probab.* 15 (2005), 1591–1651
164. Rick Durrett, Deena Schmidt Waiting for two mutations: with applications to regulatory sequence evolution and the limits of Darwinian evolution. *Genetics* 180 (2008), 1501–1509
168. Rick Durrett Coexistence in Stochastic Spatial Models. (Wald Lecture Paper). *Ann. Appl. Prob.* 19 (2009), 477-496 [GS 216]
172. Rick Durrett and Stephen Moseley. Evolution of resistance and progression to disease during clonal expansion of cancer. *Theor. Pop. Biol.* 77 (2010), 42-48
182. Rick Durrett, James Gleeson, Alun Lloyd, Peter Mucha, Feng Shi, David Sivakoff, Josh Socloar, and Chris Varghese. Graph fission in an evolving voter model. *Proc. Nat'l. Acad. Sci.* 109 (2012), 3682-3687
198. Anne Talkington and Rick Durrett. Estimating tumor growth rates in vivo. *Bulletin Mathematical Biology.* 77 (2015), 1934-1954
210. Allison J. Lopatkin, Hannah R. Meredith, Jaydeep K. Srimani, Conner Pfeiffer, Rick Durrett, and Lingchou You. Persistence and reversal of plasmid-mediated antibiotic resistance. *Nature Communications.* 8, paper 1689, November 22, 2017

Recent

206. James Gleeson and Rick Durrett Temporal profiles of avalanches on networks. *Nature Communications.* 8, paper 1227, October 31, 2017
229. Zoe Huang and Rick Durrett Motion by mean curvature in interacting particle systems. *Probability Theory Related Fields* 181, 489-532
234. Hwai-ray Tung and Rick Durrett Signatures of neutral evolution in exponentially growing tumors: A theoretical perspective published 11 Feb 2021 in *PLOS Computational Biology*
236. Laura Boyle, Sofia Hletko, Jenny Huang, June Lee, Gaurav Pallod, Hwai-Ray Tung, Rick Durrett Selective sweeps in SARS-CoV-2 variant competition *Proceedings of the National Academy of Science.* 119, issue 47