Andreas Kyprianou has submitted an application for conference support.

Application data

Contact 1:

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York University, N520 Ross Building

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Conference name: Bernoulli World Congress of Probability and Statistics, Pre-meeting for young researchers

Duration: 2016-07-07 - 2016-07-08

Amount of support requested: 3000 (if possible, we would like to request up to 5000)

Description:

The event consists of a series of 7-8 one-hour lectures/mini-courses at an appropriate level, as well as some additional lectures/open discussion concerning the development of an academic career. At this point in time, the speakers have not been secured as this depends largely on the list of invited speakers for the main event as a matter of economy of scale. This is a current on-going discussion with the scientific organizing committee of the main event. Nonetheless, given the esteem of the

Bernoulli World Congress, it is unquestionable that all of the main speakers will be leaders in their field.

This time round, I would like to theme the event in the emerging field of Statistical Applied Mathematics. This is the vastly open and relatively unexplored space, provoked by the emergence of big data, which lies at the interface of statistics and probability with applied and computational mathematics.

This is an intricate event to organize as it will be necessary to secure a large body of funds (around 30-40K EURO) to help finance attendees (local and/or travel costs), both for this pre-event as well as for the main event. In 2012, the pre-event hosted participants from Argentina, South Africa, Brazil, China, Vietnam, India, Ethiopia, Morocco, Singapore, Ukraine, Russia, Poland, Egypt, Algeria, Iran, Turkey, in addition to USA, Norway, France, Switzerland, UK and Netherlands.

There were 52 participants in total in 2012 and I am expecting to keep the 2016 meeting at a similar size.. Around 40% were women last time, this is a figure that I am ambitious to improve upon in 2016. With such demographic diversity, the pre-event is also an opportunity for scientific societies to present themselves to young researchers and explain how they can assist with future individual/national incentives. Social events are an important aspect of the meeting, allowing researchers to network and gain personal perspective on their future careers.

As well as myself, as chair to the organizing committee, I will have the support of members of the local and scientific committee for the main event. I will also have the direct help of two local organizers. Prof. Alexey Kuzentsov (Probability, York U) and Prof. Hannah Jankowski (Statistics, York U) to act as the other. In addition Prof. Tom Salisbury will also be assisting with local matters.

Letter of request:

Dear Sir/Madam,

The Bernoulli society is one of the most esteemed societies in the field of probability, statistics and stochastics. Every four years, it hosts a world congress lasting one week. This is a huge event that sees a rich variety of parallel and invited sessions coupled with special named lectures and hundreds of attendees.

In 2016, Bernoulli World Congress will be hosted in the week of 11-15th July in Toronto.

Traditionally, preceding this event, there is usually a two-day meeting focused on young researchers in the field and is aimed predominantly at participants form developing countries. I am writing to you as the principal organizer of the aforesaid event to ask if the IMU will be able to offer funds to support for travel and accommodation for participants from developing countries. Participants of the pre-meeting are also assisted in staying the next week for the main meeting. Thanks to the support of the Fields Institute (see below), the dates have now been fixed on 7-8th July 2016, which is perfectly timed relative to the main event.

sincerely,

Andreas Kyprianou

Budget:

List of supporting organizations:

I have already secured a base of funding from the Fields Institute in Toronto. They have permitted me to use the institute for free as well as awarding me a grant of 4000 CAD to go towards supporting participants from developing countries. This is an excellent base of support from which to build further.

Number of participants ...:

Approx 50 participants in the PhD/postdoc/young researcher career stage.. Everything will be done to try and achieve a gender balance of 50%. (This includes speakers).

Event will be publicized through main Bernoulli World Congress page (currently under construction)

See: http://www.fields.utoronto.ca/programs/scientific/16-17/WC2016/

Total budget needed is estimated at around 30-40K EUROs

Total conference budget (in EUR): 30-40K EUROs

Amount requested from the CDC (in EUR): 3K EUROs (or 5K EUROs if this can be afforded)

Statement on the intended use of this amount:

Whilst I appreciate it is usual for the IMU to fund conferences in developing countries, and clearly Canada is not a developing country, my intention is that any funds directed to this meeting by the IMU would be used ***exclusively to support individuals from developing countries*** with careful attention to gender balance. (Here I will strictly follow the IMU's definition of developing countries as advertised on the IMU webpages).

Received IMU Support:

Yes, I received 2.5K USD to fund a meeting called Stochastic Processes and Applications in Mongolian in the summer of 2015.

Together with 12K EURO from CIMPA, I used this money to leverage a further 25K EURO from the DAAD in Germany as well as 10K EURO from the National University of Mongolia. The full programme can be seen on line here:

http://smcs.num.edu.mn/saam2015/

see also

http://www.cimpa-icpam.org/ecoles-de-recherche/ecoles-de-recherche-2015/liste-chronologique-des-ecoles-de/article/stochastic-analysis-and-its-659?lang=fr

Knowledge of program:

Some time ago, I noticed that various events I was attending, e.g. an event on Levy processes and autosimilarity in Tunisia, were funded by the IMU thanks to little leaflets that were left in the registration packs.

CV organizer 1: http://www.mathunion.org/fileadmin/CDC/cdc-uploads/CVgrantsConference/142-cvandreas.pdf

CV organizer 2: http://www.mathunion.org/fileadmin/CDC/cdc-uploads/CVgrantsConference/142-cvtom.pdf

CV: Andreas E. Kyprianou

PERSONAL DETAILS:

Name: Andreas E. Kyprianou

Date of Birth: 01.01.72

Nationality: British and Cypriot

Family Status: Married, three daughters.

Current Position: Full Professor of Probability, Department Mathematical Sciences, University of Bath.

Career history:

01.11.08 - present: Full professor (Department of Mathematical Sciences, University of Bath)

01.07.06 - 01.11.08: Reader (Department of Mathematical Sciences, University of Bath)

01.03.05 - 01.07.06: Reader (Department of Actuarial Mathematics and Statistics, Heriot Watt University, Scotland)

01.03.02 - 01.03.05: Tenured assistant professor (Mathematical Institute, Utrecht University, The Nethelands)

01.01.00 - 01.01.05: 5yr 'Mathematics in Focus' research fellow (Mathematical Institute, Utrecht University, The Netherlands)

01.09.98 - 01.01.00: Lecturer (School of Mathematics, Edinburgh University)

01.01.97 - 01.09.98: Research Mathematician (Shell International Research and Development, The Hague)

01.06.96 - 01.01.97: Lecturer (Department of Statistics, London School of Economics)

Qualifications:

1. First class BA (Hons) in Mathematics. University of Oxford 1993
2. Ph.D. Probability Theory. Sheffield University 1996
3. Certificate of basic university teaching qualification (Basiskwalificatie doceren aan de universiteit), University of Utrecht 2001.

RESEARCH PROGRAMME:

Details of grants awarded:

PI = principal investigator, CI = co-investigator.

Total grant capture 1999 - present: GBP 4.9M

1. Edinburgh Mathematical Society, GBP 500, 1999. *Workshop on mathematical finance, Edinburgh*, PI.
2. Joint British Council - NWO (Dutch Scientific Research Council), Fl. 5,000, 2000-2001. *Law of the iterated logarithm for conditioned random walks*, CI: Ben Hambly, Oxford University.
3. Joint British Council - NWO (Dutch Scientific Research Council), Fl. 5,000, 2000-2001. *Travelling waves solutions to the Fisher-Kolmogorov-Petrovski-Piskounov equation*, CI: Simon Harris, University of Bath.

4. NWO (Dutch Scientific Research Council), EUR 4,000, 2001. *Workshop: Lévy processes and mathematical finance*, CI: Wim Schoutens, Leuven University.

5. NWO (Dutch Scientific Research Council), EUR 4,000, 2004. *Workshop: Exotic option pricing under advanced Lévy models*, CI: Wim Schoutens, Leuven University.

6. KNAW (Royal Dutch Academy of Science), EUR 4,500, 2004. *Workshop: Exotic option pricing under advanced Lévy models*, CI: Wim Schoutens, Leuven University.

7. Journal of Applied Econometrics, USD 1,000, 2004. *Workshop: Exotic option pricing under advanced Lévy models*, CI: Wim Schoutens, Leuven University.

8. NWO (Dutch Scientific Research Council), circa. EUR 200,000, 2004-2007. *Two postdoctoral positions, each for two years. "Lévy processes: pure and applied problems"*, PI.

9. EPSRC, circa GBP 24,000, 2006. *Symposium. "Optimal stopping problems with applications"*, CI: G. Peskir, Manchester University, CI: S. Jacka, Warwick University.

10. Edinburgh Mathematical Society, GBP 500, 2006. *Stochastics day at the Maxwell Institute for Mathematical Sciences, Edinburgh*, CI: Takis Konstantopoulos.

11. Glasgow Mathematical Society, GBP 1,000, 2006. *Stochastics day at the Maxwell Institute for Mathematical Sciences, Edinburgh*, CI: Takis Konstantopoulos.

12. ICMS Edinburgh, circa GBP 18,000, 2006. *Workshop. "Credit Risk under Lévy models"*, CI: Wim Schoutens, Catholic University of Leuven.

13. EPSRC, circa GBP 20,000. 2006. *Visiting researcher Prof. V. Vatutin, Steklov Institute Moscow. "Random walks and branching processes in random environments under Spitzer's condition"*, PI.

14. EPSRC, circa GBP 150,000, 2007-2009. *Postdoctoral position for 3 years. "Lévy processes, optimal stopping problems and stochastic games"*. PI.

15. EPSRC, circa GBP 20,000, 2007. *Visiting researchers Prof. J. Engländer and Prof. G. Kersting. "New applications of spine constructions for branching diffusions"*, CI: Simon Harris, University of Bath.

16. EPSRC, circa GBP 10,000, 2007-2008. *Visiting researcher Prof. Renming Song. "Analytical properties of scale functions"*, PI.

17. Royal Society International Incoming Short Visits, circa GBP 4,000, 2008. *Visiting researcher Dr. Victor Rivero, CIMAT Mexico, "Fluctuation theory of positive self-similar processes and Lévy processes"*. PI.

18. Royal Society International Incoming Short Visits, circa GBP 4,000, 2009. *Visiting researcher Dr. Julien Berestycki, Paris VI. "Modern mathematical branching and fractal phenomena"*. PI.

19. CONACyT, visiting postdoctoral researcher for 2 years, circa USD 50,000, 2009-2010. *Visiting researcher Dr. Antonio Murillo, CIMAT. "Branching Particle Systems and Superprocesses: Spine Decompositions and Some Limit Theorems"*. CI: Dr. Antonio Murillo.

20. AXA Research fund, circa EURO 90,000, 2009-2010. *Postcotoral position for 1 year with 6 month renewal Dr. Kees van Schaik. "Features of recall-type options"*. CI: Dr. Kees van Schaik.

21. EPSRC, cira GBP 32,000, 2009. *Research workshop. "New random geometries and other recent developments in probability"*. CI: Prof. Peter Moïters, Dr. S.C. Harris.

22. AMAMEF, EURO 3000, 2010. *Research workshop. "Crossing Barriers: Hitting and stopping time problems in Finance and Insurance"*. CI: Dr. Alex Cox.

23. CONACyT, visiting postdoctoral researcher for two years, circa USD 50,000, 2010-2012. *Visiting researcher Dr. José Luis Garemendia Perez, UNAM. "Degenerate Lévy-driven stochastic differential equations"*. CI: Dr. José Luis Garemendia Perez.

24. Bath University, International Strategic Fund. GBP 5,000 *Base support funding for Bath-Paris and Bath-Berlin probability workshops. 2010 and 2011 respectively.* CI: Dr. Peter Mörters.

25. Royal Society Travel Grant. GBP 1,155, 2011 PI.

26. Santander Research Grant. GBP 2,000, 2012 PI.

27. Royal Society Newton International Fellowship. GBP 100,000, 2011-2013 CI: Dr. Albert Ferreiro Castilla.

28. EPSRC circa GBP 350,000, 2014-2017 PI. "*Real-valued self-similar Markov processes and their applications*". Including 3-year postdoctoral position, 20% time for 3 years and funding for a research workshop.

29. CIMPA circe 12,000 EURO CI. "*Stochastic processes and applications Mongolia 2015*". Funding to run a two-week research school and symposium in Ulan Bator 27th July - 7th August 2015. Additional funds were obtained from the IMU (2500 USD) as well as from the DAAD in Germany (25,000 EURO). The National Univeristy of Mongolia pledged an additional 10,000 EURO.

30. EPSRC circa GBP 4,000,000, 2014-2022 PI. "*Centre for Doctoral Training: Statistical Applied Mathematics.*" Funding for 50 4-year Ph.D. studentships to be run over a five year period. This component combines with university and industrial partner support to make a total project value of circa GBP 7,000,000. CI: Prof. Paul Milewski, Prof. Simon Wood.

31. EPSRC circa GBP 100,000, 2014-2015 PI. "*Self-similarity and stable processes*". Funding for a 12 month academic visit of Dr. Victor Rivero from CIMAT.

32. Bath University, International Strategic Fund. GBP 5,000. Top up support for academic visit of Dr. Rivero.

33. Bath University, International Strategic Fund. GBP 5,000. Exploratory visit to Chile.

Books:

1. *Exotic option pricing under advanced Lévy models.* (320 pages) Eds A. Kyprianou, W. Schoutens and P. Wilmott. Wiley August 2005.

2. *Introductory lectures on fluctuations of Lévy processes with applications.* (373 pages) Universitext, Springer, July 2006.

3. *The theory of scale functions for spectrally negative Lévy processes.* (with Alexey Kuznetsov and Victor Rivero). Lévy Matters II, Springer Lecture Notes in Mathematics, Springer 2013.

4. *Gerber–Shiu Risk Theory* EAA Series, Springer 2013.

5. *Fluctuations of Lévy processes with applications.* (455 pages) Universitext, Springer, Jan 2014.

6. *Stable processes (in preparation)* (with Alexey Kuzentsov and Juan Carlos Pardo)

Journal Publications:

1. Branching Random Walk: Seneta-Heyde norming. (with J.D. Biggins), 31–49. In *Trees (Versailles 1995).* (B.Chauvin, S. Cohen, and A. Rouault, eds) Birkhäuser, Basel 1995.

2. Seneta-Heyde norming in the branching random walk. (with J.D. Biggins) *Annals of Probability* (1997) 25 337-360.

3. Slow variation and uniqueness of solutions to the functional equation in the branching random walk. *Journal of Applied Probability* (1998) 35 795-802.

4. A note on branching Lévy processes. *Stochastic Processes and their Applications*(1999) 82 1-14.

5. Martingale Convergence and the Stopped Branching Random Walk. *Probability Theory and Related Fields* 116 (2000) 3, 405–419.

6. Martingale Convergence and the Functional Equation in the Multi-type Branching Random Walk (with A. Rahimzadeh Sani). *Bernoulli* 7(4), (2001), 593–604.

7. A note on the alpha-quantile option (with Laura Ballotta). *Applied Mathematical Finance* (2001) 8, 137–144.

8. Law of the iterated logarithm for oscillating random walks conditioned to stay non-negative (with B. Hambly and G.Kersting) *Stochastic Processes and their Applications* (2003) 108, 327-343.

9. Perpetual options and Canadization through fluctuation theory (with Martijn Pistorius). *Annals of Applied Probability* (2003) 13, 1077-1098.

10. Some calculations for Israeli options. *Finance and Stochastics* (2004), 8, 73 - 86.

11. Local extinction versus local exponential growth for spatial branching processes. (with J. Englander). *Annals of Probability* (2004) 32, 78-99.

12. Exit problems for spectrally negative Lévy processes and applications to (Canadized) Russian options (with F.Avram and M.Pistorius). *Annals of Applied Probability* (2004) 14, 215-238.

13. Travelling wave solutions to the K-P-P equation: alternitives to Simon Harris' probabilistic analysis. *Annales de l'Institut Henri Poincaré* (2004) 40, 53-72.

14. Ruin probabilities and Overshoots for general Lévy Insurance Risk Process (with C. Kluppelberg and R. Maller). *Annals of Applied Probability* (2004) 14, 1766 -1801.

15. Measure change in multitype branching (with J.D. Biggins). *Advances in Applied Probability* (2004) vol 36, 544-581.

16. Further calculations for Israeli options (with E. Baurdoux). *Stochastics* (2004) 76, 549 - 569.

17. A martingale review of some fluctuation theory for spectrally negative Lévy processes (with Z. Palmowski). *Séminaire de Probabilités XXXVIII* 16 - 29.

18. Finite expiry Russian options. (with Hans Duistermaat and Kees van Schaik) *Stochastics Processes and their Applications* (2005) 115, 609-638.

19. Asymptotic radial speed of the support of supercritical branching and super-Brownian motion in R^d. *Markov Processes Related Fields* (2005) 11, 145-156.

20. The smoothing transform: the boundary case (with J.D. Biggins). *Electronic Journal of Probability* (2005), 609 –631.

21. Some remarks on first passage of Lévy processes, the American put and pasting principles (with Larbi Alili). *Annals of Applied Probability* (2005) 15, 2062–2080.

22. Lévy processes in finance distinguished by their coarse and fine path properties (with R. Loeffen). In *Exotic option pricing and advanced Lévy models.* (A. Kyprianou, W. Schoutens, P. Wilmott. eds), 1 – 30, Wiley 2005.

23. On the Novikov-Shiryaev optimal stopping problem in continuous time (with B. Surya) *Electronic Communications in Probability* (2005) 10, 146-154.

24. Further probabilistic analysis of the Fisher-Kolmogorov-Petrovskii-Piscounov equation: one sided travelling waves (with John Harris and Simon Harris). *Annales de l'Institut Henri Poincaré* (2006), 42, 125-145.

25. Overshoots and Undershoots of Lévy process (with R. Doney). *Annals of Applied Probability* (2006), 16, 91-106.

26. On extreme ruinous behaviour of Lévy insurance risk processes. (with C. Klüppelberg). *Journal of Applied Probability* (2006) 43, 594-598.

27. First passage of reflected strictly stable processes. *ALEA: Latin American Journal of Probability and Mathematical Statistics* (2006), 2, 119-123.

28. Quasi-stationary distributions for Lévy process (with Z. Palmowski). *Bernoulli* (2006) 12, 571-581.

29. Principles of smooth and continuous fit in the determination of endogenous bankruptcy levels. (with B. Surya) *Finance and Stochastics* (2007), 11, 131-152.

30. Pricing Israeli options: a pathwise approach (with C. Kuhn and K. van Schaik) *Stochastics* (2007), 79, 117 - 137.

31. A note on the change of variable formula with local time-space for bounded variation Lévy processes (With B. Surya). *Séminaire de Probabilités XL* 97-105.

32. Callable puts as composite exotic options (with C. Kuhn). *Mathematical Finance* (2007) 17, 487-502.

33. Distributional study of De Finetti's dividend problem for a general Lévy insurance risk process (with Z. Palmowski). *Journal of Applied Probability* (2007) 44, 428-443.

34. The McKean stochastic game driven by a spectrally negative Lévy process (with Erik Baurdoux). *Electronic Journal of Probability.* (2008) 13, 173–97.

35. On the parabolic generator of a general one-dimensional Lévy processes. (with N. Eisenbaum). *Electronic Communications in Probability.* (2008) Paper no. 20, 198-209

36. Fluctuations of spectrally negative Markov Additive Processes (with Z. Palmowski) *Séminaire de Probabilités XLI.* XLI. 121-135.

37. Special, conjugate and complete scale functions for spectrally negative Lévy processes. (with V. Rivero) *Electronic Journal of Probability.*

38. Analysis of stochastic fluid queues driven by local time processes. (with Takis Konstantopoulos, Paavo Salminen and Marina Sirviö) *Advances in Applied Probability.* (2008) 40, 1072-1103.

39. Branching processes in random environment die slowly (with V.Vatutin). *Discrete Mathematics & Theoretical Computer Science Proceedings Fifth Colloquium on Mathematics and Computer Science.* (2008) 375-396.

40. On continuous state branching processes: conditioning and self-similarity. (with Juan Carlos Pardo) *Journal of Applied Probability.* (2009) 45, 1140-1160.

41. Some explicit identities associated with positive self-similar Markov processes. (with Loic Chaumont and Juan Carlos Pardo) *Stochastic Processes and their Applications.* (2009) 119, 980-1000.

42. The Shepp-Shiryaev stochastic game driven by a spectrally negative Lévy process. (with Erik Baurdoux). *Theory of Probability and its Applications (Teoriya Veroyatnostei i ee Primeneniya).* (2009) 53, 481-499.

43. The Wiener-Hopf factorization. *The Encyclopedia of Quantitative Finance.* (2010) Wiley.

44. Lévy processes. *The Encyclopedia of Quantitative Finance.* (2010) Wiley.

45. A note on scale functions and the time value of ruin for Lévy risk processes (with Enrico Biffis). *Insurance Mathematics and Economics.* (2010) 46, 85-91.

46. General tax structures and the Lévy insurance risk model (with Xiaowen Zhou). *Journal of Applied Probability.* (2010) 46, 1146-1156.

47. Refracted Lévy processes. (with R. Loeffen) *Annals de L'Institute Henri Poincaré.* (2010), 46, 2444.

48. Strong Law of Large Numbers Fragmentation Processes (with S.C. Harris and R.Knobloch). *Annales de l'Instut Henri Poincaré.* (2010) 46, 119-134.

49. Strong law of large numbers for branching diffusions. (with Janos Englander and Simon Harris) *Annales de l'Institut Henri Poincaré.* (2010) 46, 279-298.

50. Convexity and smoothness of scale functions and de Finetti's control problem. (with V. Rivero and Renming Song) *Journal of Theoretical Probability.* (2010) 23, 547-564.

51. Old and new examples of scale functions for spectrally negative Lévy processes. (with F. Hubalek) In: *Sixth Seminar on Stochastic Analysis, Random Fields and Applications. Eds. R. Dalang, M. Dozzi, and F. Russo.* Birkhäuser, Basel. (2010) 119-146.

52. Exact and asymptotic n-tuple laws at first and last passage (with V. Rivero and Juan Carlos Pardo). *Annals of Applied Probability.* (2010) 20, 522-564.

53. A Ciesielski-Taylor type identity for positive self-similar Markov processes (with Pierre Patie). *Annales de l'Instut Henri Poincaré.* (2011) 47, 917-928.

54. On the excursions of reflected local time processes and stochastic fluid queues. (with Takis Konstantopoulos and Paavo Salminen). *Journal of Applied Probability.* (2011) 48A, 79-98.

55. Smoothness of scale functions for spectrally negative Lévy processes (with Terence Chan and Mladen Savov). *Probability Theory and Related Fields* (2011) 150, 691-708.

56. Fluctuation theory and exit systems for positive self-similar Markov processes (with Loic Chaumont, V. Rivero and Juan Carlos Pardo). *Annals of Probability* (2012) 40, 245-279.

57. Travelling waves and homogeneous fragmentation (with Julien Berestycki and Simon Harris). *Annals of Applied Probability* (2011) 21, 1749-1794.

58. The Gapeev–Kühn stochastic game driven by a spectrally positive Lévy process (with Erik Baurdoux and Juan Carlos Pardo). *Stochastic processes and their Applications.* (2011) 121/6, 1266-1289.

59. A Wiener-Hopf Monte Carlo simulation technique for Lévy process (with Alexey Kuznetsov, Juan Carlos Pardo and Kees van Schaik). *Annals of Applied Probability* (2011) 21, 2171-2190,

60. The prolific backbone for supercritical superdiffusions. (with Julien Berestycki and Antonio Murillo). *Stochastic Processes and their Applications.* (2011) 121, 1315-1331.

61. Backbone decomposition for continuous-state branching processes with immigration. (with Yanxia Ren). *Probability and Statistics Letters* (2012) 82, 139-144.

62. Optimal control with absolutely continuous strategies for spectrally negative Lévy processes. (with Ronnie Loeffen and Jose-Luis Pérez). *Journal of Applied Probability* (2012) 49, 150-166

63. An optimal stopping problem for fragmentation processes. (with Juan Carlos Pardo). *Stochastic Processes and their Applications.* (2012) 122, 1210-1225

64. Meromorphic Lévy processes and their fluctuation identities (with Alexey Kuznetsov, Juan Carlos Pardo). *Annals of Applied Probability* (2012) 22, 1101-1135

65. Supercritical super-Brownian motion with a general branching mechanism and travelling waves (with Antonio Murillo-Salas, Rongli Liu and Yanxia Ren). *Annales de l'Instut Henri Poincaré* (2012) 48, 661-687.

66. An application of the backbone decomposition to supercritical super-Brownian motion with a barrier. (with Antonio Murillo-Salas and Jose-Luis Pérez). *Journal of Applied Probability.* (2012) 49, 671-684.

67. Super-Brownian motion: Lp-convergence of martingales through the pathwise spine decomposition. (with Antonio Murillo-Salas). In *Advances in Superprocesses and Nonlinear PDEs Series: Springer Proceedings in Mathematics & Statistics, Vol. 38 Englander, Janos; Rider, Brian C. (Eds.)*, 2013. Springer Proceedings in Mathematics.

68. Spectrally negative Lévy processes perturbed by functionals of their running supremum (with Curdin Ott). *Journal of Applied Probability* (2012) 49, 1005-1014.

69. Efficient Pricing of Contingent Convertibles under Smile Conform Models. (with José Manuel Corcuera, Jan de Spiegeleer, Albert Ferreiro-Castilla, Dillip Madan and Wim Schoutens). *Journal of Credit Derivatives* (2013) 9(3), 121-140.

70. On optimal dividends in the dual model (with Erhan Bayraktar and Kazutoshi Yamazaki). *ASTIN Bulletin* (2013) 43, 359-372.

71. Multilevel Monte Carlo simulation for Lvy processes based on the Wiener-Hopf factorisation (with Albert Ferreiro-Castilla, Rob Scheichl and Gowri Suryanarayana). *Stochastic Processes and their Applications.* (2014) 124, 985-1010.

72. Optimal dividends in the dual model under transaction costs (with Erhan Bayraktar and Kazutoshi Yamazaki). *Insurance: Mathematics and Economics.* (2014) 54, 133-143.

73. Hitting distributions of alpha-stable processes via path censoring and self-similarity (with Juan Carlos Pardo and Alex Watson). *Annals of Probability.* (2014) 42, 398-430.

74. A capped optimal stopping problem for the maximum process (with Curdin Ott). Submitted to *Acta Applicandae Mathematicae.* (2014) 129, 147-174.

75. The total mass of super-Brownian motion upon exiting balls and Sheu's compact support condition. (with Marion Hesse). *Stochastic Processes and their Applications* (2014), 124, 2003-2022.

76. The hitting time of zero for a stable process (with Alexey Kuznetsov, Juan Carlos Pardo and Alex Watson). *Electronic Journal of Probability* (2014) 19, 1-26.

77. Survival of homogenous fragmentation processes with killing. (with Robert Knobloch). *Annales de l'Instut Henri Poincaré* (2014) 50, 476-491.

78. The extended hypergeometric class of Lévy processes (with Juan Carlos Pardo and Alex Watson). *Journal of Applied Probability.* (2014) 51A, 391-408.

79. Occupation times of refracted Lévy processes (with Juan Carlos Pardo and Jose-Luis Pérez). *Journal of Theoretical Probability* (2014) 27, 1292-1315.

80. New families of subordinators with explicit transition probability semigroup. (with James Burridge, Mateusz Kwasnicki, Alexey Kuznetsov.). *Stochastic Processes and their Applications.* (2014) 124, 3480-3495.

81. Branching Brownian motion in a strip: survival near criticality. (with Simon Harris and Marion Hesse). *To appear in Annals of Probability.*

82. The backbone decomposition for spatially dependent supercritical superprocesses (with Jose-Luis Pérez and Yanxia Ren). *To appear in Séminaire de Probabilités.*

83. Potentials of stable processes (with Alex Watson). Submitted to *To appear in Séminaire de Probabilités.*

84. Spines, skeletons and the Strong Law of Large Numbers for superdiffusions (with Maren Eckhoff and Matthias Winkel). *To appear in Annals of Probability.*

85. An Euler-Poisson Scheme for Lévy driven SDEs (with Albert Ferreiro-Castilla and Rob Scheichl). *To appear in Journal of Applied Probability.*

86. Perpetual integrals for Lévy processes (with Leif Döring). *To appear in Journal of Theoretical Probability.*

Submitted preprints

Available from `http://www.maths.bath.ac.uk/~ak257/pubs.html`.

1. Optimal prediction for positive self-similar Markov processes (With Erik Baurdoux and Curdin Ott). *Submitted to Annals of Applied Probability.*
2. Real self-similar Markov processes started from the origin (with Steffen Deriech and Leif Döring). *Submitted to Annals of Probability.*
3. Deep factorisation of the stable process. *Submitted to Annals of Probability.*

Selected Conference Contributions

I have attended a large number of international conferences. Below are some of the ones at which I was present as an invited speaker (mostly local costs and/or travel covered by conference sponsorship) are listed below.

- Invited Speaker: 4th Iranian International Statistics Conference (Aug, 1998, 1 week).
- Invited Speaker: 2rd Iranian International Probability Conference (Aug, 1999, 1 week).
- Invited Speaker: 5th Iranian International Statistics Conference (Aug, 2000, 1 week).
- Invited speaker: University of Cologne (Feb 2003, Workshop on Interacting Particle Systems).
- Invited speaker: Mathematical Research and Conference Center, Bedlewo, Polish Academy of Sciences (May 2003, 1 week).
- Invited speaker: 2nd Lévy processes and applications meeting. Aarhus University (Jan 2001, 1 week)
- Invited section speaker: Universität Karlsruhe (March 2004, 1 week, Stochastische Tagen - German Open Conference on Probability and Statistics).
- Invited participant: Oberwolfach
  - · Mar 2000, 1 week, Mathematische Stochastik.
  - · July 2003, 1 week, branching processes.
  - · May 2004, 1 week, miniworkshop on local time-space (organiser).
  - · February 2007, 1 week, miniworkshop on Lévy processes.
  - · April 2013, 1 week, workshop on Extremes in BRW and BBM.
- Invited speaker and session organiser: 4th Symposium on Lévy processes. University of Manchester (Jan 2005, 1 week).
- Special address: German Association for Actuarial and Financial Mathematics (DGVFM), Berlin (27th April 2005).
- Invited mini-course lecturer: Functional Analysis IX Dubrovnik, Croatia (June 2005, 1 week).
- Invited lecturer: School on Optimal Stopping, University of Manchester (Jan 2006, 1 week).
- Invited speaker: Symposium on Optimal Stopping, University of Manchester (Jan 2006, 1 week).
- Invited speaker: Conference in honor of Ole E. Barndorff-Nielsen CIMAT, Guanajuato, Mexico (March 2006, 1 week).

- Invited speaker: Conference in honour of Dilip Madan's 60th birthday, University of Maryland (Sept 2006, 4 days).
- Summer school lecturer: Satellite Summerschool on Lévy Processes: Theory and Applications, The Sandbjerg Estate - Aarhus University Conference Centre Sondeborg (Aug 2007, 1 week).
- Invited speaker: 5th Symposium on Lévy processes. Copenhagen (Aug 2007, 1 week).
- Invited speaker: Swiss Probability Seminar, Bern (Dec 2007).
- Inviter speaker: 7th winter school on financial mathematics, Lunteren, The Netherlands (Jan 2008, 3 days).
- Principal invited speaker: Stochastic analysis, random fields and applications. Ascona, Switzerland (May 2008. 1 week).
- Invited section speaker: Bernoulli/IMS 7th World Congress in Probability and Statistics Singapore (July 2008, 1 week).
- Invited speaker: 5th Conference in Actuarial Science and Finance, Samos, Greece (Sept 2008, 4 days).
- Invited speaker: 2nd Symposium on optimal stopping with applications, Turku, Finland (June 2009, 5 days)
- Plenary speaker: Croatian Quants Day, 17th April 2009.
- Main speaker: Conference is in honor of Professor Hans U . Gerber, Lausanne, Switzerland (June 2009, 2 days).
- Plenary speaker: International Conference Selfsimilar processes and their applications Angers (July 2009, 1 week).
- Invited section speaker: Stochastic Processes and Their Applications, Berlin, Germany (July 2009, 1 week).
- Invited participant and speaker: Branching random walks and searching in trees. Banff International Research Station, Canada (Jan 2010).
- Invited speaker: Advances in superprocesses and nonlinear PDEs, University of Colorado at Boulder, June 20-27, 2010.
- Invited speaker: 6th International Conference on Lévy Processes: Theory and Applications Dresden, July 26-30, 2010.
- Invited speaker: 73rd Annual Meeting of the Institute of Mathematical Statistics, Gothenberg, Sweden, Aug 9-13, 2010.
- Invited speaker: Workshop on Levy processes, Zürich, December 13-14, 2010.
- Invited speaker: AFMATH Conference 2011, Brussels, February 10-11, 2011.
- Invited speaker: Workshop on Branching Processes and Coalescent Processes, Beijing Normal University, Beijing, China, April 18-22, 2011.
- Invited speaker: Morgan Stanley, New York, 2011, 2012.
- Plenary speaker: Stochastic Processes and Their Applications, Oaxaca, Mexico, June 2011.
- Invited speaker: Symposium celebrating the 60th birthdays of Esa Nummelin, Paavo Salminen, and Esko Valkeila University of Helsinki 8 - 9 Dec 2011.
- Invited mini-course: National Chiao Tung University, Taiwan 4th - 11th March 2012.

- Invited speaker: EPSRC Symposium Workshop - Optimal stopping, optimal control and finance. Warwick 16th - 20th July 2012.
- Invited speaker: Workshop on Mathematical Finance and Related Issues, Kyoto, Japan 2nd - 5th September 2012.
- Invited speaker: UK Mathematical Finance Workshop, London, 3 - 4rd June 2013.
- Invited speaker: 7th Conference on Lévy Processes, Banach Centre Wroclaw, 15 -19 July 2013
- Invited speaker: Lévy processes and auto-similarity, 4 - 9th November, Tunis.
- Invited speaker: Kioloa Conference: From random walks to Lévy processes, Australian National University, January 25-30, 2014.
- Invited speaker: Annual meeting of the Statistical Society of Canada, 25-28 May, 2014.
- Invited Participant: Front Propagation and Particle Systems. Banff International Research Station, Canada (Aug 2014).
- Invited speaker: Limit Theorems in Probability (conference in honour of Nick Bingham). Imperial 23rd - 26th March 2015.
- Invited mini-course speaker, Universtät Zürich. (April 2015, Dr. Leif Döring).
- Invited mini-course speaker, Peking Univeristy. (July 2015, Prof. Yanxia Ren).

Editorial Work:

- Member of the editorial board of the journal *The Journal of Applied Probability* (2006-present).
- Member of the editorial board of the journal *Advances in Applied Probability* (2006-present).
- Associate Editor to the journal *Stochastics: An international Journal in Probability and Stochastic Processes* (2008-present).
- Associate Editor to the journal *ALEA: Latin American Journal of Probability and Mathematical Statistics.* (2013-present).
- Corresponding Editor *Acta Applicandae Mathematicae* (2011-present).
- Book Series Editor *Stochastic Modelling and Applied Probability*, Springer.
- Book Series Editor *Probability and Its Applications*, Birkhäuser.
- Book Series Editor *Progress in Probability*, Birkhäuser.

External Professional Activities:

- Consultancy to Shell International Research and Development 2001.
- Invited discussant to The Home Office internal meeting 2009.
- External expert (= departmental assessor, independent of referees, for promotions) for the department of Statistics at the London School of Economics.
- Member of the EPSRC Peer Review College 2006-present.
- Course on actuarial mathematics for the Mexican Federal Insurance Regulatory Commission (via UNAM).
- Periodic grant proposal reviewing for EPSRC (UK), NWO (NL), NSF (USA), NSA (USA), NSERC (Canda), FWO (Belgium) ISF (Israel).

- Regular reviewing for all probability journals and some mathematical finance journals.
- Scientific Collaborations.
  - Dr. L. Alili (Warwick University),
  - Prof. F. Avram (University of Pau, France),
  - Dr. L. Ballotta (City University London),
  - Dr. E. Baurdoux (LSE),
  - Dr. J. Berestycki (Paris VI),
  - Dr. E. Biffis (Tanaka Business School, Imperial College London)
  - Prof. J. Biggins (Sheffield),
  - Dr. J. Burridge (Portsmouth),
  - Dr. A. Ferreiro-Castilla (Madrid, Spain),
  - Dr. T. Chan (Heriot Watt),
  - Prof. L. Chaumont (Angers, France),
  - Dr. M. Chazal (ULB, Belgium)
  - Prof. J.M. Corcuera (Barcelona, Spain),
  - Prof. Leif Döring (Manheim).
  - Prof. Steffen Dereich (Mnster).
  - Prof. R. Doney (Manchester),
  - Ms. M. Eckhoff (Bath),
  - Prof. N. Eisenbaum (Paris VI),
  - Dr. J. Englander (University of Colorado, Boulder),
  - Dr. B.Hambly (Oxford University),
  - Dr. M. Hesse, (Berlin, Germany),
  - Dr. S. Harris (Bath University),
  - Dr. F. Hubalek (TU Vienna),
  - Prof. G. Kersting (Frankfurt),
  - Prof. C. Klüppelberg (Munich University of Technology),
  - Prof. T. Konstantopoulos (Uppsala),
  - Dr. M. Kwasnicki (Wroclaw),
  - JProf. C. Kühn (Frankfurt),
  - Dr. A. Kuznetsov (York, Canada),
  - Dr. R. Loeffen (Manchester),
  - Dr. R-L. Liu (Peking University, China),
  - Prof. D. Madan (Maryland, USA),
  - Prof. R. Maller (Australian National University),
  - Dr. A. Murillo-Salas (Guanajuato, Mexico),
  - Dr. C. Ott (ETH Zürich, Switzerland),
  - Dr. Z. Palmowski (University of Wroclaw),
  - Dr. J.C. Pardo (CIMAT, Mexico)
  - Dr. P. Patie (ULB, Belgium),
  - Dr. J.L. Pérez (ITAM, Mexico)

- Prof. G. Peskir (Manchester),
- Dr. M. Pistorius (Imperial College London),
- Dr. V. Rivero (CIMAT, Mexico),
- Dr. A. Rahimzadeh (Teacher Training University, Tehran),
- Prof. Y-X. Ren (Peking University, China),
- Prof. P. Salminen (Abo, Finland),
- Dr. K. van Schaik (Manchester),
- Prof. R. Scheichl (Bath),
- Prof. W. Schoutens (Leuven),
- Dr. M. Savov (Bulgarian Academy of Sciences),
- Dr. M. Sirvio (Abo, Finland),
- Prof. R. Song (Urbana-Champagne, US),
- Mr. J. de Spiegeleer (Jabre Capital Partners, Switzerland)
- Dr. B. A. Surya (Utrecht, The Netherlands),
- Ms. G. Suryanarayana (Leuven, Belgium)
- Prof. V. Vatutin (Steklov Institute, Moscow),
- Dr. A. Watson (Zürich, Switzerland),
- Dr. P. Wilmott (Wilmott Associates Financial Group),
- Dr. M. Winkel (Oxford),
- Dr. X. Zhou (Concordia, Canada).

- National seminars.

  I have given seminars all over the UK including, for example: BRIMS, HP-Laboratories, Bristol, Swansea, Bath, Durham, Leicester, Loughborough, LSE, Leeds, Nottingham, Imperial College, King's College, Oxford, Cambridge, Warwick, Manchester, Sheffield, Loughborough, Edinburgh.

- International research invitations.

  Below are a selection of visits I have made to other institutions outside of the UK over the last few years.

  - Teacher Training University, Tehran (summers 1998, 1999, 2000, 1, 2, 1 weeks resp., Prof. Rahimzadeh Sani).
  - University of Western Australia (Jun 2002, 1 week, Prof. R. Maller).
  - University of Munster (Nov 2002, 2 days, Prof. G. Alsmeyer).
  - Kiel University (Feb 2003, 3 days, Prof. U. Roesler).
  - Univeristy of Wroclaw, Poland (May 2003, 1 week, Dr. Z. Palmowski).
  - Frankfurt University
    - · May 2001, 1 week, Prof. G. Kersting.
    - · Aug 2003, 1 week, Junior Prof. C. Kühn.
  - MaPhySto, Aarhus University Nov 2003, 1 week, Dr. G. Peskir.
  - ETH Zürich
    - · April 2003, 1 month, Prof. F. Delbean.
    - · June 2004, 1 week, Prof. P. Embrechts.
  - Munich University of Technology (Jan 2003, 1 week, Dec 2004 1 week, Dec 2005 1 month, Dec 2006 1 week, Prof. C. Klüppelberg).
  - Marburg University (July 2006, 1 month, Prof. R. Schilling).

- EURANDOM (Jan 2008, 2 days. Prof. O. Boxma).
- University of Illinois (Aug 2008, 10 days, Prof. R. Song).
- University of Utah (Aug 2008, 4 days, Prof. D. Khoshnevisan).
- University of California Santa Barbara (Aug 2008, 5 days, Prof. J. Engländer).
- Concordia University (Jan 2009, 7 days, Prof. Xiaowen Zhou).
- Zagreb University (April 2009, 5 days, Prof. Zoran Vondracek).
- CIMAT, Mexico (Sept 2009, 5 days, Prof. Victor Rivero).
- Fields Institute for Research in Mathematical Sciences, Canada (Feb 2010, 5 days, Prof. Alexey Kuznetsov).
- Visiting professorship, Université Libre de Bruxelles, Belgium (April 2010, 1 month, Prof. Pierre Patie).
- University of Colorado at Boulder (June 2010, 1 week, Prof. Janos Engländer).
- Morgan Stanley Quantitative Analysis Research Group, New York (2011, 2012, Dr. Peter Carr).
- ETH Zürich, sabbatical, visiting professor (Aug 2012 - Jan 2013, Prof. P. Embrechts).
- Visiting professor CIMAT, Mexico. (May 2013, 3 weeks, Dr. Victor Rivero).
- Australian National University, (Jan 2014, 2 weeks, Prof. Ross Maller).
- Visiting professor CIMAT, Mexico. (Aug 2014, 2 weeks, Dr. Victor Rivero).
- Visiting Researcher, ETH Zürich (Jan 2015, 1 week, Dr. Leif Döring).

- Conferences/workshops organised.
  - Co-organiser of a one day workshop on financial mathematics, Edinburgh, July 1999. Sponsorship was won from Edinburgh Mathematical Society and Schröders investment group London.
  - Joint organiser of a two day conference on applications of Lévy processes in mathematical finance at EURANDOM, The Netherlands, June 2001. Sponsorship was won from NWO.
  - Joint organizer of a two day conference on exotic option pricing under advanced Lévy models in mathematical finance at EURANDOM, The Netherlands, May 2004. Sponsorship won from four different sources.
  - Joint organiser of a mini-workshop at Oberwolfach titled "Local space-time calculus and applications", Germany, May 2004.
  - Session organiser for the 2005 international meeting on Lévy processes at Manchester University.
  - Organiser of the two week international school and symposium on optimal stopping at Manchester University, January 2006. Sponsorship won from EPSRC and LMS.
  - Organiser of the three day research workshop"Credit Risk under Lévy models" at ICMS, Edinburgh. September 2006.
  - Co-organiser of a workshop in probability and genetics for UK based probability Ph.D. students, Bath July 2008.
  - Co-organiser of the 2009 British Probability Meeting in Bath. "New random geometries and other recent developments in probability".
  - Co-organiser of a 2-day workshop "Crossing Barriers: Hitting and stopping time problems in Finance and Insurance".
  - Organiser of a 2-day workshop "Paris-Bath research workshop on branching structures" September 2010.
  - Co-organiser of a 2-day workshop "Paris-Bath research workshop on branching structures II" September 2011.
  - Co-organiser of a 2-day workshop "Lévy processes and their applications" September 2012 in Zurich.

– Co-organiser of a 2-day workshop "Paris-Bath research workshop on branching structures III" June 2014.
– Co-organiser of a 2-week school and workshop "Stochastic Analysis and Applications, Mongolia", National University of Mongolia, Ulan Bator, July-Aug 2015.
– Co-organiser of a 1-week workshop "Stable Processes", BIRS, Oaxaca branch, Mexico, November 6th-11th, 2016.

UNIVERSITY TEACHING AND SUPERVISION:

Undergraduate courses:

- Stochastic analysis
- Lévy processes and their applications.
- Measure and integration
- Measure theoretic probability theory
- Discrete time finance
- Continuous models in finance
- Optimisation methods of operational research
- Markov Chains
- Student seminar, stochastic volatility models
- Advanced statistics
- Elementary statistics
- Introduction to probability and combinatorics
- Decision theory
- Modeling and simulation
- Applied Stochastic Processes
- "Maths for Poets" (for non-mathematicians)
- Various service teaching for informatics departments, other science departments etc as well as example classes in algebra, analysis and other fields of mathematics.

Graduate courses:

- Spatial Branching Processes and Random Snakes (Utrecht).
- Lévy processes and continuous state branching processes (Bath-Warwick-Imperial-Oxford-Bristol Taught Course Centre).
- Optimal Stopping and applications (Bath, CIMAT Mexico).
- Fragmentation and Coagulation processes (Bath).
- Lévy Processes, the Wiener-Hopf factorisation and applications (Bath-Warwick-Imperial-Oxford-Bristol Taught Course Network).

- Gerber-Shiu theory through Lévy processes (Zürich and CIMAT, Mexico).
- Positive self-similar Markov processes (Bath-Warwick-Imperial-Oxford-Bristol Taught Course Network).

Supervisions:

(a) British M.Sc. theses

- Edinburgh University: 1 (who then proceeded to a Ph.D.: Bergamo).
- Heriot Watt University: 2
- University of Bath: 7 (five proceeded to a Ph.D.: Warwick, ETH Zürich, Bath x 2, KU Leuven).

(b) Dutch Diploma theses

- Utrecht University: 4 (three of whom then proceeded to a Ph.D.: Utrecht, Frankfurt, Bath).

(c) Ph.D. theses

- Martijn Pistorius *Exit problems for Lévy processes and applications to finance.* [1999-2003] Initially took a lectureship at King's College London. Currently a reader in the department of Mathemaitcs at Imperial College London.
- Budhi Arta Surya *Optimal stopping problems driven by Lévy processes and pasting principles.* [2003-2006] Was working as an quantitative analyst for the Bank of America (Asia) in Singapore, currently an assistant professor in the School of Business and Management at the Bandung Institute of Technology, Indonesia.
- Erik Baurdoux *Fluctuation theory and stochastic games for spectrally negative Lévy processes.* [2003-2007] Currently a senior lecturer in the Department of Statistics at the London School of Economics.
- Ronnie Loeffen [2005-2008] *Stochastic control for spectrally negative Lévy processes.* Was a postdoc at the Radon institute for Computational and Applied Mathematics, The Austrian Academy of Sciences, then a scientific researcher at the Weierstrass Institute for Applied Analysis and Stochastics, Berlin. Currently a lecturer at the School of Mathematics, University of Manchester.
- Robert Knobloch [2007-2010] *Asymptotic properties of fragmentation processes.* Was a postdoc at the University of Frankfurt. Currently a postdoc in mathematics at University of Saarbrücken.
- Curdin Ott [2010-2013] *Optimal stopping for the maximum process.* Currently a postoc at ETH Zürich.
- Alex Watson [2010-2013] Topic: stable processes and self-similar Markov processes. Was a postdoc at CIMAT, Mexico. Currently a PostDoc at University of Zürich.
- Marion Hesse [2010-2013] Topic: Quasi-stationary results for branching Brownian motion confined to a strip. Was a Postdoc at the Weierstrauss Institute, Berlin, then became a quantitative analyst at Morgan Stanely, London.
- Maren Eckhoff [2011-2014] (jointly supervised with Peter Mörters) Topic: Superprocesses and large scale networks. Currently works for Tesco supermarket as a quantitative analyst.
- Francis Lane [2013-2016] (jointly with Peter Mörters) Topic: universality constant in field extremes. *In progress.*
- Steven Pagett [2013-2016] (jointly with Tim Rogers) Topic: fragmentation-coalescence models of terrorism. *In progress.*
- Pite Satatkanitkul [2015-2017] Topic: Self-similar Markov processes. *In progress.*

(d) Postdoctoral researchers

- Peter Andrew [2004-2006 (2 years)]: NWO funded. Currently employed outside of academia.

- Zbigniew Palmowski [2004-2005 (1 year)] and [2006-2007 (1 year)]: NWO funded. Recently passed his habilitation at The University of Wrocław, Poland.
- Juan Carlos Pardo [2007-2009 (3 years)]: EPSRC funded. Currently employed as an assistant professor at CIMAT, Mexico.
- Elie Aide Kon [2009 (6 months)]: ENS funded. Currently Maître de Conférences, Laboratoire de Probabilités et Modles Aléatoires, Paris VI.
- Kees van Schaik [2009-2010 (18 months)]: AXA Research Fund funded. Currently employed as a lecturer at the School of Mathematics, Manchester University.
- Antonio Murillo [2009-2011 (2 years)]: CONACyT funded. Currently employed as an Assistant Professor at Guanajuato University, Mexico.
- Jose Luis Garmendia Perez [2010-2012 (2 years)]: CONACyT funded. Currently employed as an Assistant Professor at ITAM, Mexico.
- Albert Ferreiro Castilla [2012-2014 (2 years)]: Royal Society International Newton Fellow. Currently employed as a quantitative analyst at a Spanish bank.
- Bati Sengul [2014-2016 (3 years)]: EPSRC funded.

External Examining at Degree and Professional Level:

(a) Actuarial certification

- Examinations that I have set at Heriot Watt University were certified by the Institute and Faculty of Actuaries for the purpose of exemptions.

(b) External examiner for theses

1. Ph.D. jury member 2002, Utrecht University (Lorna Booth, probability theory).
2. Ph.D. external examiner 2003, Manchester University (Peter Andrew, probability theory).
3. Ph.D. external examiner 2003, University of Bath (Robert Hardy, probability theory)
4. M.Sc. by research 2005, Witwaterstrand University, South Africa (Nadia Uys, probability theory).
5. Ph.D. external examiner 2007, Abo Academy University, Finland (Marina Sirviö, probability theory).
6. M.Sc. by research 2007, Manchester University (mathematical finance).
7. Ph.D. jury member 2007, Paris VI (Juan Carlos Pardo, probability theory).
8. Ph.D. external examiner 2007, London School of Economics (Christopher Strom, mathematical finance).
9. Ph.D. external examiner 2007, Swansea University (Markus Schicks, stochastic analysis).
10. Habilitation thesis external examiner 2007, Humboldt University, Berlin (Dr. Pavel Gapeev, optimal stopping theory).
11. Ph.D. external examiner 2007, London School of Economics (Adrian, Gfeller, mathematical finance).
12. Ph.D. jury member 2008. University of Amsterdam (Shota, Gugushvili, mathematical statistics).
13. Ph.D. external examiner 2008. Manchester University (Mladen Savov, probability theory).
14. Ph.D. rapporteur and jury member 2008. Paris VI (Nathalie Krell, probability theory).
15. Habilitation thesis external examiner 2008, Technical University Munich (Dr. Vitali, Wachtel, probability theory).
16. Ph.D. external examiner 2009, Technical University Munich (Irmingard Eder, probability theory).
17. Ph.D. external examiner 2009, Australian National University (Ben Kaehler, mathematical and statistical finance).
18. Ph.D. external examiner 2009, Hasselt University, Belgium (Tatiana Kadankova, probability theory).
19. Ph.D. external examiner 2009, Manchester University (Jaques du Toit, probability theory).

20. Ph.D. external examiner 2009, Oxford University (Bo Chen, probability theory).
21. Ph.D. external examiner 2010, University of Utrecht (Pavlo Negadajlov, probability theory).
22. Habilitation thesis external examiner 2010, Paris VI (Dr. Phillipe Marchal, probability theory)
23. Ph.D. external examiner 2010, Warwick University (Peter Windrige, probability theory).
24. Ph.D rapporteur and jury member 2011, Paris VI (Alexander Walsh Zuniga, probability theory).
25. Ph.D. external examiner 2011, University of Nottingham (Wang Chun, probability theory).
26. Ph.D. rapporteur and jury member 2012, Paris VI (Pascal Maillard, probability theory).
27. Ph.D. external examiner 2012, London School of Economics (Hongbiao Zhao, actuarial mathematics).
28. Ph.D. external examiner 2012, Hebrew University of Jerusalem (Yonatan Iron, mathematical finance).
29. Ph.D. external examiner 2013, London School of Economics (Neofytos Rodosthenous, mathematical finance).
30. Ph.D. external examiner 2013, Manchester University (Jenny Sexton, probability theory).
31. Ph.D. rapporteur and jury member 2013, Paris VI (Thomas Madaule, probability theory).
32. Ph.D. external examiner 2014, Oxford University (Yuan Xia, stochastic numerical analysis).

(c) External examiner for degree courses

- M.Sc. in Risk and Stochastics, Department of Statistics, The London School of Economics [2006-2010].
- M.Sc. in Actuarial Science, School of Mathematics, The University of Manchester [2011-2015].

UNIVERSITY ADMINISTRATION:

- Director of M.Sc. programme in Financial Mathematics, (Edinburgh, 1998-2000)
- Co-director of Utrecht-Amsterdam masters in Stochastic and Financial Mathematics (Utrecht, 2003-2004)
- Bachelors-Masters transition committee (Utrecht, 2004)
- Departmental Research Committee (Bath, 2006-present).
- Co-founder and director of the Probability Laboratory at Bath (Prob-L@B) (Bath 2007-present).
- Deputy-VC departmental review committee (Bath, 2010).
- Department Mitigating Circumstances officer (Bath, 2010-2011).
- Member of Senate (Bath, 2011-2013).
- Head of Statistics Section (Bath, 2013-2014).
- PI and Director of Doctoral Training Centre (Bath, 2014-2022).
- University of Bath Internationalisation Mexico committee (Bath, 2013-2014).
- Various smaller departmental committees (LSE, Edinburgh, Utrecht, Heriot Watt, Bath 1996-present).

CURRICULUM VITAE[1]
Prof. Thomas S. Salisbury

CONTACT INFORMATION:

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e-mail: salt@yorku.ca; office: N536 Ross; webpage: www.math.yorku.ca/∼salt

EDUCATION:

Ph.D. in Mathematics – 1983, University of British Columbia
B.Sc. in Mathematics – 1979, McGill University

RESEARCH INTERESTS:

Brownian motion, conditioning, superprocesses, Random walks in random environments, Markov processes, excursions, Martin boundaries, actuarial and mathematical finance, variable annuities

EMPLOYMENT:

York University: Full Professor (since 1994), Assoc. Prof. (1988–1993), Assist. Prof. (1985–1988)
Purdue University: Research Assistant Professor (1983–1985)
Visiting positions: Fields Institute (1997–1999, Winter 2010), Institut Henri Poincaré (Fall 2009), Université de Paris Sud (Fall 2009), Univ. of Auckland (Statistics Dept., Winter 2009 & 2014), MSRI (Winter 1998), University of Edinburgh (Fall 1991),
University of California San Diego (1987–1988), Stanford University (Summer 1986)

HONOURS & SELECTED ACTIVITIES

Mathematics:

- President, Canadian Mathematical Society (2006–2008)
- Deputy Director, Fields Institute (2003–2006)
- Chair, York Department of Mathematics & Statistics (2000–2003)
- Member, NSERC evaluation group, Mathematics & Statistics (2012, 2013, 2015)
- Fellow, Institute of Mathematical Statistics (since 2003)
- Fellow, Fields Institute (since 2002)

Education:

- Member, Curriculum Council, Ontario Ministry of Education (2007–2009)
- Chair, Minister's task force on senior high school mathematics (2006)
- Co-chair, Fields Institute Mathematics Education Forum (2003-2006)
- Board of directors, International Mathematical Olympiad Corporation (1995–1996)

Finance/Insurance:

- Chief Probabilist & Director of Analytics, Quantitative Wealth Management Analytics (QWeMA) Group, 2005–2013
- Project leader, MITACS/Mprime finsurance project (2008–2012)
- Instructor, PRM exam preparation course, PRMIA/Fields Institute (2008, 2010, 2011)

[1]September 11, 2014

- Instructor, Financial Engineering Diploma program, York University (since 1999)
- Instructor, QWeMA retirement risk analytics course, Fields Institute (2009, 2010)
- Principal organizer, Fields Institute seminar on quantitative finance (2003–2006)

EDITORIAL

Canadian Mathematical Bulletin: Editor-in-Chief (with S. O. Kochman) (1990–1995)
Probability Theory and Related Fields: Editorial Board (1994–2000)
Fields Institute Communications & Monographs: Editorial Board (since 2003)
Potential Analysis: Editorial Board (2000–2005)
Canadian Journal of Statistics: Editorial Board (1992–1994)

CONFERENCES & PROGRAMS ORGANIZED

Mathematics:

- IMS/Bernoulli Society World Congress of Probability and Statistics, July 2016 (Fields Institute, Toronto). Chair, local organizing committee
- SSC annual meeting, Toronto, May 2014. Session on Spatial Stochastic Processes
- CMS Winter meeting, Toronto, December 2011. Session on Probability (with J. Quastel)
- Seminar on Stochastic Processes – Principal Organizer
  - Fields Institute, March 15–17, 2007
  - Fields Institute, March 18–20, 1999
- Seminar on Stochastic Processes – Scientific program committee, Archivist
  - Univ. of Delaware, April 1–4, 2015
  - Univ. of California, San Diego, March 26-29, 2014
  - Duke Univ., Durham NC, March 14-16, 2013
  - Univ. of Kansas, Lawrence, March 22-24, 2012
  - Univ. of California, Irvine, March 24-26, 2011
  - Univ. of Central Florida, March 11-13, 2010
  - Stanford University, March 26–28, 2009
  - University of Delaware, April 3–5, 2008
  - Princeton University, March 23–25, 2006
  - University of British Columbia, May 20–22, 2004
  - University of Washington, March 27–29, 2003
  - Princeton University, March 21–23, 2002
  - University of Florida, March 8–10, 2001
- 1st CMS-SMM joint meeting, Guanajuato Mexico, Sept 21–23, 2006: Session on Probability
- Symposium on the creative & scientific legacies of Iannis Xenakis, June 8–10, 2006 (principal organizer Jim Harley)
- SSC meeting, May 26-29, 2002, Hamilton: Session on Probability.
- Annual meeting of Canadian Mathematics Department Chairs
  - Fields Institute (2002). Organizer (with H. Gaskill, R. Erdahl)
  - University of Ottawa (2001). Organizer (with G. Bluman, H. Gaskill)
- CMS Winter meeting, December 2001, Toronto – Meeting Director
- AMS meeting, September 23-24, 2000, Toronto: Session on Probability (with N. Madras, G. OBrien, D. Salopek)
- Workshop on Num. Methods & Stochastics, Fields Inst, Apr 19–23, 1999 (with T. Lyons)
- Fields Institute thematic programme on *Probability and its Applications*, Fields Institute, August 1998 - June 1999: Principal Organizer (with D. Dawson, N. Madras, G. Slade)
- SSC-IMS joint meeting, Montreal, July 9-13, 1995: Session on Probability and Analysis

- 21st Bernoulli Society Conference on Stochastic Processes and their Applications, York University June 14–19, 1992 (with G. OBrien, N. Madras, D. Tanny)
- York/McMaster Probability Day, York Univ.: 7th (1996), 5th (1994), 3rd (1992), 1st (1990)
- 84th Ontario Mathematics Meeting, York University (1989): Special Session on Probability

Finance/Insurance:

- 1st North American meeting on Industrial and Applied Mathematics, Oaxaca Mexico, Dec. 8–10, 2010. Organizer, session on *Financial mathematics and economy* (with K. Giesecke & B. Rumbos).
- Fields Institute Industrial–Academic forum on *Financial engineering and insurance mathematics*, Fields Institute, June 21, 2010.
- MITACS Economic Summit on Systemic Risk, Toronto, April 27–29, 2009: Organizer, session on *Risk control in the insurance industry*
- IFID/MITACS Conference on financial engineering for actuarial mathematics, Fields Institute, Nov 9–10, 2008 (with H. Huang, M.A. Milevsky, D. Promislow, K. Moore, S. Jaimungal)
- 2nd Canada-France Math. Congress, Montreal, June 1–5, 2008: Session on Financial Math.
- MITACS-MCME Workshop on Risk Analysis, York University, Dec. 11, 2007
- CMS Summer meeting, Waterloo, June 4–6, 2005: Session on Math. of actuarial finance
- Symposium on Numerical Stochastics in Finance, Fields Inst., April 19, 1999 (with T. Lyons)

Education:

- Canadian Mathematics Education Forum, Fields Institute, May 6–8, 2005: local organizer
- Canadian School Mathematics Forum, UQAM, May 16–18, 2003: Working group on Mathematics Teacher Training, Algebra, and Teacher Shortages
- CMS Winter Mathematics Training Camp, York University: local organizer (2001–2003)
- 1995 International Mathematical Olympiad, York University (1995): local org. committee

STUDENTS & POSTDOCTORAL FELLOWS

Postdoctoral Supervision:

- Alexander Chigodaev, 2013–2014 [PDF, NRU Higher School of Economics, Moscow]
- Xianhua Peng (co-supervised with A. Kuznetsov), Fields-Ontario PDF, 2009/10 [Hong Kong Univ. of Sci & Tech.]
- Deniz Sezer (co-supervised with N. Madras), 2005/08. [Univ. of Calgary]
- Min Kang (co-supervised with N. Madras & G. O'Brien), 1998/99. [N. Carolina State Univ.]
- Stas Volkov (co-supervised with N. Madras & G. O'Brien), 1998/99. [Univ.of Bristol]
- Rami Atar (co-supervised with N. Madras & G. O'Brien), 1998/99. [Technion]
- John Verzani, 1995/96. [CUNY, Staten Island]

PhD Supervision:

- Yang Fenghao (since 2013, co-supervised with A. Kuznetsov)
- Mark Beider (since 2010)
- Yun Qiao (2006–2012): *Pricing and hedging of guaranteed lifetime withdrawal benefits.* MITACS accelerate Internship at RBC, Dec 2011 - March 2012. [Razor Risk]
- Michael Moras (2004–2008): *Conditioned super Brownian motion in Denjoy domains and strips.* [Lecturer, Univ. of Toronto]
- Yumin Wang (2002–2008): *Mathematical finance related to insurance contracts Quantile hedging and efficient hedging for guaranteed minimum death benefits.* [Lecturer, Univ. of Southern Illinois]

Masters Supervision:

- *Survey Papers*
  - Nancy Temraz-Pakeman (2013–2014): The willow tree pricing algorithm
  - Mohamed Abdelghani (2007–2008): Introduction to filtering theory with applications to finance
- *Financial Engineering research projects*
  - Xian Zhang (2011): Volatility of portfolios incorporating mortality linked securities
  - Jessica Tsang Kwai Kew (2010): Asset allocation and efficient frontiers for mortality-linked securities
  - Francois Ouegnin (2008): Linear bi-level programming and optimal allocation problem
  - Yun Qiao (2006): Indifference pricing for GMWBs
  - Gul Oye Ege (2003–2004): Liquidity premia
  - Romana Danicic (2002–2003): Calculating the Liquidity Premium for Fixed Annuities When Interest Rate Follows a Stochastic Process
  - Yumin Wang (2001–2002): Quantile hedging for Bermudan Options
  - Asrat Gashaw (2001–2002): Credit Risk methodologies
  - Shannon Kennedy (2001–2002): Liquidity premiums for variable annuities

NSERC undergraduate summer research projects:

- Jenny Du (2004): Hedge fund modelling
- Ana Duff (1994): Best constants in capacitary inequalities for Markov chain pairs: numerical analysis via simulated annealing

MEDIA

- In: "Research mathematicians gather to examine retirement issues and pensions", by Dave MacLean, Telegraph Journal, Saint John NB, June 1, 2009
- In: "Lady Luck smiles on too many in 6-49 draw as 239 2nd prize tickets cut payout", by Michelle Mcquigge, The Canadian Press, March 20, 2008
- *The Nature of Things*, CBC TV: *Everyday Einstein* (segment on Brownian motion) – D. Zuckerbrot producer, June 18, 2006
- OMNI TV: profile of the Fields Institute (segment on math & music) – 2005
- IMO Press Conferences – July 1995
- *Metro Morning*, CBC Radio, Toronto (IMO segment), July 20, 1995

INVITED OR REFEREED CONFERENCE PRESENTATIONS

Finance/Insurance:

- CAIMS Annual meeting, Saskatoon, Jun. 22-26, 2014.
  Finsurance session: *Optimal initiation for variable annuities*
- SSC Annual meeting, Toronto, May 25-28, 2014.
  Session on Actuarial Finance: *Optimal tontines*
- IFID conference, Fields Institute, Toronto, Nov. 22, 2012:
  Optimizing variable annuity income
- 3C Risk Forum, Fields Institute, Toronto, Oct. 28-30, 2011:
  Planning for retirement: sustainability vs. legacy
- 1st North American meeting on Industrial and Applied Mathematics (NAMIAM), Oaxaca Mexico, Dec. 10, 2010. Session on Financial Mathematics and Economy.
  Optimal utilization of variable annuity guarantees.
- Insurance: Mathematics and Economics, Toronto, June 18, 2010.
  Optimal utilization of variable annuity guarantees: To add, subtract, or multiply?

- AFIR Colloquium (International Actuarial Association Financial Risks Section), Munich, Sept. 9-11, 2009. Session on Pensions – managing accumulations and decumulations *Valuation, hedging and demand for ruin-contingent life annuities (RCLA)*
- MITACS Annual meeting, Plenary speaker, Fredericton, June 3, 2009: *Insurance and Modern Finance*
- Mindpath Conference, 3rd Investment Strategies Symposium, Toronto, Oct 20, 2008: *The Retirement Income Time-Bomb – Risks & Challenges*
- Manulife Investments, Best Practices Symposium III, Quebec City (Oct 30, 2006), Montreal (Nov 1, 2006): *Pour traverser la zone à risque pour la retraite, il faut plus que la répartition de lactif*
- SIAM Conference on Financial Mathematics & Engineering, Boston, July 9–12, 2006. Session on Mathematics of Insurance: *Pricing and hedging of Guaranteed Minimum Withdrawal Benefits*
- Fields Institute, Quantitative Finance seminar, Oct. 25, 2006: *GMWBs*
- Sociedad Matemática Mexicana Meeting, Mexico City, Oct. 24, 2005. CMS-SMM session: *Options, Hedging, and Actuarial Finance*
- Canadian Institute of Actuaries, 2003 Investment Symposium, Toronto, Nov. 9-11, 2003: *Capital Markets Hedging for Insurance Products* (co-presenter M.A. Milevsky)
- Annual Winter Meeting of the Canadian Mathematical Society, Ottawa, 2002. Special Session on Financial Mathematics: *Liquidity premiums for variable annuities*
- Fields Institute workshop on Options in Financial Products: Approaches to Valuation, Toronto, December 2001: *The Real Option to Lapse a Variable Annuity: Can Surrender Charges Complete The Market?* (co-presenter with M.A. Milevsky)
- Summer Meeting of the Canadian Mathematical Society (MATH 2000), Hamilton, 2000. Session on Financial Mathematics: *Knockout Baskets and Survivorship Bias*

Mathematics:

- New Zealand probability workshop, Te Anau NZ, Jan. 6–10, 2014: *Random walks and degenerate random environments*
- International symposium on asymptotic methods in stochastics, Ottawa, July 3-6, 2012. *Random walk in degenerate random environment*
- New Zealand Probability Workshop, Auckland, Jan 23–24, 2012. *Random walk in degenerate random environment*
- 2012 NZMRI/NZIMA Summer Workshop: Random media and random walks. Nelson, New Zealand, Jan 8-13, 2012. *Superprocesses and Branching random walks*
- Symposium in honour of Donald A. Dawson's work, on the occasion of his 70th birthday, Carleton, June 5–8, 2007. *Conditioned super-Brownian motion*
- 1st CMS-SMM joint meeting, Guanajuato Mexico, Sept 21–23, 2006. Session on Probability
- CMS Winter meeting, Victoria, Dec 10-12, 2005. Session on probability: *Singular stochastic integral equations*
- Banff International Research Station, Banff, Sep 27–Oct 2, 2003. Conference on stochastic partial differential equations:
- Mathematisches Forschungsinstitut Oberwolfach, Conference on Branching Processes, Oberwolfach Germany, July 6–12, 2003. *Conditioned super-Brownian motion*
- 4th Annual meeting of Canadian Mathematics Department Chairs, Toronto 2002. *The Department of Mathematics and Statistics at York University*
- Probability Conference in honour of David Blackwell and Lester Dubins, Berkeley, 2002, *The complement of the planar Brownian path*

- 3rd World Congress of Nonlinear Analysts, Catania, Sicily 2000. Session on Aspects of Stochastic Calculus: *Conditioned Super-Brownian Motion*
- First China-Canada Congress of Mathematical Sciences, Beijing 1999. Special Session on Probability Theory: *Conditioned Super-Brownian Motion*
- Annual Winter Meeting of the Canadian Mathematical Society, Kingston 1998 Special Session on Probability: *The Complement of the Planar Brownian Path*
- International Conference on Stochastic Models, Ottawa 1998: *On the Conditioned Exit Measures of Super Brownian Motion*
- 924th Meeting of the American Mathematical Society, Montreal 1997. Session on Potential Theory: *Minimal Parabolic Functions*
- 3rd World Congress of the Bernoulli Society, Chapel Hill 1994. Session on Brownian Motion and Analysis: *Brownian Spirals*. Directions in Probability Workshop: *Heat Kernel Estimates and Extremal Problems arising in studying Brownian Motion and Conditional Brownian Motion* (for R. Banuelos)
- Annual Winter Meeting of the Canadian Mathematical Society, Montreal 1992.
  Session on Stochastic Analysis: *Spiralling Brownian Motions*.
  Session on Potential Theory: *Parabolic Martin Boundaries*
- Mathematisches Forschungsinstitut Oberwolfach, Conference on Stochastic Analysis, Oberwolfach Germany, 1992: *Parabolic Martin Boundaries*
- Mathematical Sciences Institute, Workshop on Stochastic Analysis, Ithaca 1992:
  Conditioned Brownian Motion
- 19th Conference on Stochastic Processes and their Applications, Haifa Israel 1991. Plenary Lecture: *Conditioned Brownian Motion*
- Annual Meeting of the Statistical Society of Canada, Ottawa 1989¿ Session on Stochastic Processes: *Path Intersections*
- Mathematical Sciences Institute, Workshop on Markov Processes in Functional Spaces, Ithaca 1989: *The Maximum Principal for Bi Brownian Motion*
- Rochester Syracuse Probability Day, Rochester 1989:
  Path Intersections and Non Intersections
- Seminar on Stochastic Processes 1988, Gainesville Florida 1988:
  Capacity for Multiparameter Markov Processes
- Annual Winter Meeting of the Canadian Mathematical Society, Vancouver 1987. Special Session on Probability: *Capacity and Potential Theory for Several Markov Processes*
- 838th Meeting of the American Mathematical Society, Los Angeles 1987. Session on Stochastic Processes: *Pathologies of Conditioned Brownian Motion*
- 201st Meeting of the Institute of Mathematical Statistics, San Francisco 1987. Session on Markov Processes: *Conditioning a Pair of Markov Processes*
- Annual Winter Meeting of the Canadian Mathematical Society, Ottawa 1986. Special Session on Probability: *Connecting Brownian Paths*
- AMS IMS SIAM Joint Summer Research Conference in the Mathematical Sciences, on Time Reversal of Markov Processes and Potential Theory, Santa Cruz 1986:
  Connecting Brownian Paths
- Pacific Northwest Probability Meeting, Vancouver 1985: *An Increasing Diffusion*
- 817th meeting of the American Mathematical Society, Chicago 1985: Session on Stochastic Analysis and Related Topics. *An Increasing Diffusion*

Discussant:

- IFID Conference: Models for lifecycle finance, Insurance and Economics. Discussant for T. Kobayashi, *Human capital and asset allocation*, Fields Institute, October 8, 2010.

- IFID Conference on personal risk management. Discussant for K. Moore *Optimal asset allocation and ruin-minimization annuitization strategies: the fixed consumption case*, Fields Institute, April 28, 2004

COLLOQUIUM LECTURES

- University of New South Wales, Dept. of Statistics, Apr. 28, 2014
- University of Queensland, Mar. 17, 2014
- Ohio State University, Dec 1, 2011
- Ryerson University, Nov. 17, 2011
- University of Auckland, Dept. of Statistics, 2009
- Trent University, 2007
- University of Windsor, 2006
- McMaster University, 2004
- University of Waterloo, Dept. of Mathematics, 2000
- MSRI/University of California Berkeley Math Dept. "Evans Lecture", 1998
- Université Laval, 1995
- University of California Berkeley, Statistics Dept., 1994
- University of Guelph, 1993
- University of Western Ontario, Dept. of Mathematics, 1992
- University College Swansea, Dept. of Mathematics, Wales 1991
- University of Waterloo, Dept. of Statistics, 1991
- University of British Columbia, Dept. of Mathematics, 1989
- University of Toronto, Dept. of Statistics, 1987
- University of Rochester, Dept. of Mathematics, 1985
- University of Oregon, Dept. of Mathematics, 1985
- York University, Dept. of Mathematics, 1985
- The Ohio State University, Dept. of Mathematics, 1985

GRANTS

Current funding:

NSERC research grant (2010–2016) *Super Brownian motion, conditioning, finance.*
6 year grant: $30,000 per year, Bin F (OVV)

PUBLICATIONS

Books edited

(1) *Numerical Methods and Stochastics* (with T.J. Lyons). Proceedings of a workshop held April 20–23, 1999. Fields Institute Communications **34**, AMS, Providence RI (2004)

Finance/Insurance papers

(2) Hedging Guaranteed Lifetime Withdrawal Benefits with Stochastic Lapsation (with Y. Qiao). In preparation (2013)
(3) How long does the market think you will live? Implying longevity from annuity prices (with A. Chigodaev and M.A. Milevsky). Submitted (2014)
(4) Optimal Retirement Income Tontines (with M.A. Milevsky). Submitted (2014)
(5) Optimal Retirement Tontines for the 21st Century: With Reference to Mortality Derivatives in 1693 (with M.A. Milevsky). Refereed conference proceeding, to appear in Proceedings of the *Living to 100 Symposium*, Society of Actuaries, Orlando FL (2014)

(6) Optimal initiation of a GLWB in a variable annuity: no arbitrage approach (with H. Huang and M.A. Milevsky). Insurance: Mathematics and Economics **56** (2014), pp. 102-111. [Working paper version ranked 15th on *Retirement Income Journal*'s list of "The best retirement research of 2012".]
(7) Valuation and Hedging of the Ruin-Contingent Life Annuity (RCLA) (with H. Huang & M.A. Milevsky). Journal of Risk and Insurance **81** (2014), pp. 367–395
(8) Optimal Retirement Consumption with a Stochastic Force of Mortality (with H. Huang & M.A. Milevsky). Insurance: Mathematics and Economics **51** (2012), pp. 282–291
(9) A Different Perspective on Retirement Income Sustainability: The Blueprint for a Ruin Contingent Life Annuity (RCLA). With H. Huang & M.A. Milevsky. J. of Wealth Management **11** (2009), pp. 89–97
(10) Financial valuation of guaranteed minimum withdrawal benefits (with M.A. Milevsky). Insurance: Mathematics and Economics **38** (2006), pp. 21–38
(11) Probabilistic investing: or how to win the Globe and Mails Stock Picking Contest (50% of the time). With M.A. Milevsky, Financial Services Review **14** (2005), pp. 197–211
(12) Asset Allocation and the Liquidity Premium for Illiquid Annuities (with S. Browne and M.A. Milevsky). Journal of Risk and Insurance **70** (2003), pp. 509–526
(13) The Real Option to lapse a variable annuity: can surrender charges complete the market? (with M.A. Milevsky). Proc. XIth AFIR Colloquium **2**, Can. Inst. of Actuaries (2001), pp. 537–561

Mathematics papers

(14) Pathwise uniqueness for catalytic stochastic partial differential equations (with L. Mytnik). In preparation (2013)
(15) Diameters of complementary domains for planar Brownian motion (with S. Nacu & Y. Peres). In preparation (2013)
(16) Forward clusters for degenerate random environments (with M. Holmes). Submitted (2013)
(17) Blowup and conditionings of ψ-super-Brownian exit measures (with S. Athreya). Submitted (2012)
(18) Moment densities of super-Brownian motion, and a Harnack estimate for a class of X-harmonic functions (with A.D. Sezer). To appear, Potential Analysis (2014)
(19) Random walks in degenerate random environments (with M. Holmes). To appear, Canadian Journal of Mathematics (2013).
Unpublished appendix: "Speed calculations for random walks in degenerate random environments", arXiv:1304.7520 (2013).
(20) Degenerate random environments (with M. Holmes). Random Structures and Algorithms **45** (2013), pp. 111–137
(21) Conditioning super-Brownian motion on its boundary statistics, and fragmentation. (with A.D. Sezer). Annals of Probability **41**, No. 5 (2013), pp. 3617–3657
(22) Non-Existence of stabilizing policies for the critical push-pull network and generalizations (with Y. Nazarathy & L. Rojas-Nandayapa). Operations Research Letters **41** (2013), pp. 265–270
(23) A combinatorial result with applications to self-interacting random walks (with M. Holmes). Journal of Combinatorial Theory A **19** No. 2 (2012), pp. 460–475
(24) Non-degenerate conditionings of the exit measure of super Brownian motion (with J. Verzani). Stochastic Processes and their Applications **87** (2000), pp. 25–52
(25) On the conditioned exit measures of super Brownian motion (with J. Verzani). Probability Theory and Related Fields **115** (1999), pp. 237–285

(26) On minimal parabolic functions and time-homogeneous parabolic h-transforms (with K. Burdzy). Transactions of the AMS **351** (1999), pp. 3499–3531
(27) Hausdorff Capacity and Lebesgue Measure (with J. Steprans). Real Analysis Exchange **22** (1996/97), pp. 265–278
(28) Energy, and Intersections of Markov Chains. In *Random Discrete Structures* (Aldous, Pemantle editors), IMA volumes in mathematics and its applications **76** (1996), pp. 213-225
(29) Martin Boundaries of Sectorial Domains (with M.C. Cranston). Arkiv för Matematik **31** (1993), pp. 27–49
(30) $2D$ Brownian Motion in a System of Traps: Application of Conformal Transformations (with K. Burdzy and R. Holyst). Journal of Physics A **25** (1992), pp. 2463–2471
(31) A Low Intensity Maximum Principle for Bi Brownian Motion. Illinois Journal of Mathematics **36** (1992), pp.1–14
(32) Capacity and Energy for Multiparameter Markov Processes (with P.J. Fitzsimmons). Annales de l'Institut Henri Poincaré **25** (1989), pp.325–350
(33) Brownian Bitransforms. In *Seminar on Stochastic Processes 1987*, Birkhauser Boston (1988), pp. 249–263
(34) Connecting Brownian Paths (with Burgess Davis). Annals of Probability **16** (1988), pp. 1428–1457
(35) Three Problems from the Theory of Right Processes. Annals of Probability **15** (1987), pp. 263–267
(36) An Increasing Diffusion. In *Seminar on Stochastic Processes 1984*, Birkhauser Boston (1986) pp. 173–194
(37) Construction of Right Processes from Excursions. Probability Theory and Related Fields **73** (1986), pp. 351–367
(38) On the Itô Excursion Process. Probability Theory and Related Fields **73** (1986), pp. 319–350
(39) A Martin Boundary in the Plane. Transactions of the American Mathematical Society **293** (1986), pp. 623–642

Other publications

(40) Retirement income planning roundtable (with E. Bederman, D. Conick, R. Norman, D. Richards). Advisors Edge **10** (supplement), April 2007.
Translated as: La planification du revenu de retraite. Objectif Conseiller **8** (supplement), May 2007
(41) Asset Allocation and the Transition to Income: The Importance of Product Allocation in the Retirement Risk Zone (with M.A. Milevsky). IFID Working Paper (2006). Sponsored by Manulife Financial.
(42) Report of the Ministers task force on senior high school mathematics (with B. Farahani, A. Ladouceur, M. Lemonde, H. Panju). Ontario Ministry of Education (2006)
(43) How to win The Globe and Mail's One-and-Only contest (with M.A. Milevsky). The Globe and Mail, January 6, 2005
(44) Review of *Multidimensional Brownian Excursions and Potential Theory*, by K. Burdzy, Pitman Res. Notes in Math. **164**, Longman Sci. and Technical, Essex New York. In Bulletin of the American Mathematical Society **21** (1989), pp. 152 157
(45) Review of *Potential Theory: an Analytic and Probabilistic Approach to Balayage*, by J. Bliedtner and W. Hansen, Universitext series, Springer Verlag Berlin 1986. In Journal of the American Statistical Association **82** (1987), p. 1198
(46) Construction of Strong Markov Processes from Excursions, and a Related Martin Boundary, PhD thesis, UBC (1983) – supervisor, John B. Walsh