

KEITH SHARP

DEGREES

- 2011 M. Math, Cambridge University, U.K (made available to all who passed 'Part III Maths Tripos')
- 1988 Ph.D. (Management Science, field: Finance-Interest Rate Models) Univ. of Waterloo
- 1976 M.A. (Statistics) University of California, Berkeley (Ranked second or third in final exam for M.A.)
- 1974 M.A. (Astronomy) University of California, Berkeley: Earle C. Anthony Fellowship
- 1972 B.A. & M A. (Mathematics) Cambridge University, U.K. (Ranked sixth out of 177 in final B.A. exam)

PROFESSIONAL QUALIFICATIONS

- 2007- Chartered Financial Analyst (only available by examination)
- 1990- Fellow, Society of Actuaries (Chicago) (largely by examination, some credit for FIA exams)
- 1983- Fellow, Canadian Institute of Actuaries (two-exam conversion from FIA)
- 1982-2006 Fellow, Institute of Actuaries (London) (by exam, 2014 status is 'Affiliate', FIA can be resuscitated)

EXPERIENCE

- 1985-date Teaching actuarial exam preparation instruction crash courses in United States (independent activity)
- 2005-date Teaching actuarial & investment courses at University of Toronto, Department of Statistical Sciences
- 1989-2000 Tenured Associate Professor (& Associate Chair for five years) University of Waterloo, Ontario
- 1982-89 Assistant Professor, Dept. of Statistics and Actuarial Science, University of Waterloo, Ontario
- 1980-82 Associate actuary at TPF&C, (Towers Watson) consulting actuaries, Toronto
- 1977-80 Trainee actuary at PTOW/TPF&C, consulting actuaries, Melbourne, Australia
- 1977 Trainee actuary at Commercial Union Assurance (Aviva), London, U.K.
- 1976 Research assistant to J. Neyman, University of California, Berkeley
- 1973-76 Head teaching assistant, University of California, Berkeley
- 1972 Supervisor, Christ's College, Cambridge University, U.K.

PAPERS IN REFEREED JOURNALS

1. "CARVM and Actuarial Guidelines 33 and 34", Journal of Actuarial Practice, Vol. 7, No. 1999
1, pp 125-146 (K.P. Sharp)
2. "The Commissioners Annuity Reserve Valuation Method", Journal of Actuarial Practice.
1999
Vol. 7. No. 1. pp 107-124 (K.P. Sharp)
3. "Reserves for Policies with Non-Annual Premiums," North American Actuarial Journal,
1998
Vol. 2, No. 3. pp 118-127 (K.P. Sharp)
4. "Lapses and Termination Assumptions in Reserve Calculations", Journal of Insurance
1996
Regulation, Vol. 15, No. 2, pp. 194-211 (K.P. Sharp)
5. "Pension Funding by Normal Costs or Amortization of Unfunded Liabilities". Journal of
1996
Actuarial Practice, Vol. 4, No. 2, pp. 257-274 (K.P. Sharp)
6. "Equivalence of Reserve Methodologies". Transactions. Society of Actuaries. Vol. XLVII.
1995
pp. 455-478 (K.P. Sharp)
7. "A Mathematical Analysis of Financial Accounting Standard No. 88", Transactions, 1993
Society of Actuaries, Vol. XLV, pp. 485-497 (K.P. Sharp)
8. "Funding Methods and Pension Plan Amendments", Journal of Actuarial Practice, Vol. 1.
1993
No. 2, pp. 111-126 (K.P. Sharp)
9. "Modeling Canadian Price and Wage Inflation", Proceedings of the Canadian Institute of
1993
Actuaries, Vol. 24, No. 3. pp. 565-587 (K.P. Sharp)
10. "Inflation and Investment Returns: An Overview ", Proceedings of the Canadian Institute
1993 of Actuaries, Vol. 24, No. 3, pp. 588-599 (K.P. Sharp)
11. "Stochastic Differential Equations in Finance", Applied Mathematics and Computation,
1990
Vol. 37, No. 2. pp. 131-148 (K.P. Sharp)
12. "Mortgage Rate Insurance Pricing Under an Interest Rate Diffusion with Drift", Journal of
1989
Risk and Insurance Vol. 56, No. 1, pp. 34-49 (K.P. Sharp)
13. "Tests of U.S. Short and Long Interest Rate Seasonality", Review of Economics and 1988
Statistics. Vol. 70, No. 1, pp. 177-182 (K.P. Sharp)
14. "Applications of Economic Statistics to the Indexation of Occupational Pensions", 1988
Proceedings of the Canadian Institute of Actuaries Vol. 16, No. 3, pp. 322-334 (K.P. Sharp)
15. "The Valuation of Sick Leave Plans", Proceedings of the Canadian Institute of Actuaries
1987
Vol. 18, No. 1, pp. 363-377 (K.P. Sharp)
16. "A Model for Determining Early Retirement Incentives", Insurance: Mathematics and 1987
Economics Vol. 6, No. 2, pp. 117-127 (K.P. Sharp)
17. "Mortgage Rate Insurance in Canada", Canadian Public Policy Vol. 12, No. 2, pp. 432-437
1986 (K.P. Sharp)

CONFERENCE PROCEEDINGS, REPORTS TO INDUSTRY, STUDY MANUALS ETC.

18. Actex Study Manual for the Course 5 Examination of the Society of Actuaries, 2004 edition
2004
(R.L. Brown and K.P. Sharp)
19. Actex Study Manual for the Course 8 - Individual Examination of the Society of Actuaries,
2002
2002 edition (N.J. Desmarais and K.P. Sharp)
20. Canadian Standard Ordinary Life Experience 1997 and 1998, (58 pages, V. Borchert, R.L.
2000 Brown and K.P. Sharp).
21. Report on Canadian Economic Statistics 1924-1999, Canadian Institute of Actuaries (39
1992-2000 pages, Committee on Economic Statistics/H.H. Panjer and K.P. Sharp, annual
1992-2000).
22. Actex Study Manual for the Course 5 Examination of the Society of Actuaries, 2000 edition
2000
(R.L. Brown and K.P. Sharp, my contribution 107 new pages)
23. Actex Study Manual for the Course 8 - Individual Examination of the Society of Actuaries,
2000
2000 edition (N.J. Desmarais and K.P. Sharp, my contribution 56 new pages)
24. Annuities in Canada: A Report Prepared for the World Bank, Institute of Insurance and
1999
Pension Research (Waterloo) Working Paper (73 pages) (Hyun Tae Kim and K. P. Sharp)
25. Canadian Standard Ordinary Life Experience 1996 and 1997; Canadian Institute of 1999
Actuaries Monograph (56 pages, V. Borchert, R.L. Brown and K.P. Sharp).
26. Actex Study Manual for the Course 210 Examination of the Society of Actuaries, (K.P.
1998
Sharp)
27. Canadian Standard Ordinary Life Experience 1995 and 1996, Canadian Institute of 1998
Actuaries Monograph (V. Borchert, H.H. Panjer and K.P. Sharp) (41 pages).
28. Actex Study Manual for the Course 1-443U Examination of the Society of Actuaries, 1998
1998 Edition (R. De Caro and K.P. Sharp; my contribution 6 new and 10 revised pages for
1998).
29. Canadian Standard Ordinary Life Experience 1994 and 1995, Canadian Institute of 1997
Actuaries Monograph (V. Borchert, H.H. Panjer and K.P. Sharp) (38 pages).
30. Actex Study Manual for the Course 210 Examination of the Society of Actuaries, 1997
1997
Edition (74 new or revised pages for 1997). (K.P. Sharp)
31. Actex Study Manual for the Course 1-443U Examination of the Society of Actuaries 1997
1997 Edition (R. De Caro and K.P. Sharp; my contribution 10 new and 31 revised pages
1997).
32. Actex Study Manual for the Course 1-340 Examination of the Society of Actuaries (joint
1997 authorship; my contribution 10 new pages for 1997).
33. The Savings Rate to Provide an Adequate Pension, Institute of insurance and Pension 1996
Research, Research Report 96-22 (44 pages, 1996). (K.P. Sharp)
34. Actex Study Manual for the Course 210 Examination of the Society of Actuaries, (105 new
1996 and 25 revised pages for 1996). (K.P. Sharp)
35. Actex Study Manual for the Course 1-443U Examination of the Society of Actuaries, 1996 (D.
Kidwell and K.P. Sharp; my contribution 34 new pages for 1996).

36. Actex Study Manual for the Course 1-340 Examination of the Society of Actuaries, (joint 1996 authorship; my contribution 14 new pages for 1996).
37. Equity Conversion Plans for the Elderly, Institute of Insurance and Pension Research, 1995 Research Report 95-16, (John Di Meo, R. L. Brown and K.P. Sharp) (96 pages).
38. Actex Study Manual for the Course 210 Examination of the Society of Actuaries, 1995 1995 Edition. (196 revised pages for 1995). (K.P. Sharp)
39. Actex Study Manual for the Course I-443U, Examination of the Society of Actuaries (D. 1995 Kidwell and K.P. Sharp), (My contribution 65 new pages for 1995).
40. Actex Study Manual for the Course 1-340, Examination of the Society of Actuaries (Joint 1995 authorship; my contribution 8 new pages for 1995).
41. "Costing of Pension Plan Amendments", ARCH 1994.1, pp. 15-24 (K.P. Sharp) 1994
42. "An Academic View of Economic Forecasting", Proceedings of the Investment Seminar. 1994 Canadian Institute of Actuaries/AFIR, Vol. 4, pp. 41-52 (K.P. Sharp)
43. Actex Study Manual for the Course 210 Examination of the Society of Actuaries. 1994 1994 Edition, (25 new pages for 1994). (K.P. Sharp)
44. Actex Study Manual for the Course I-443U, Examination of the Society of Actuaries (D. 1994 Kidwell and K.P. Sharp), (77 new pages for 1994).
45. Pension Mathematics for Actuaries - Commentary and Solutions (180 pages) Actex 1993 Publications (K.P. Sharp)
46. Actex Study Manual for the Course 210 Examination of the Society of Actuaries, 1993 1993 Edition, (222 new or revised pages for 1993). (K.P. Sharp)
47. Actex Study Manual for the Course F-483U Examination of the Society of Actuaries, 1993 1993 Edition, (joint authorship, my 1993 contribution 57 pages).
48. Actex Study Manual for the Course 1-443U Examination of the Society of Actuaries, 1993 1993 Edition (D. Kidwell and K.P. Sharp; my 1993 contribution 30 pages).
49. "Aspects of Interest. Rate Models", Transactions of the 24th International Congress of 1992 Actuaries, Vol. 1, pp. 187-205 (K.P. Sharp)
50. Actex Study Manual for the Course I-443U Examination of the Society of Actuaries, 1992 1992 Edition (D. Kidwell and K.P. Sharp; my 1992 contribution 36 pages).
51. Actex Study Manual for the Course 210 Examination of the Society of Actuaries, 1991 1991 Edition (W.H. Aitken and K.P. Sharp; my 1991 contribution 57 pages).
52. Report on Canadian Economic Statistics, Canadian Institute of Actuaries (36 pages, 1983-1991 Committee on Economic Statistics/P.P. Boyle, H.H. Panjer, K.P. Sharp, annual 1983-91).
53. Actex Study Manual for the Course I-442C and I-443U Examinations of the Society of 1991 Actuaries, 1991 Edition (D. London, F.G. Reynolds and K.P. Sharp; my 1991 contribution 92 pages).
54. Actex Study Manual for the Course 210 Examination of the Society of Actuaries, 1990 1990 Edition (W.H. Aitken and K.P. Sharp; my 1990 contribution 59 pages).
55. Actex Study Manual for the Course P-461U Examination of the Society of Actuaries, 1990 1990 Edition (24 pages written in 1990). (K.P. Sharp)
56. Actex Study Manual for the Course I-442C and 1-443U Examination of the Society of 1990 Actuaries, 1990 Edition (D. London, F.G. Reynolds and K.P. Sharp; my 1990 contribution 21 pages).

57. "An Application of an Interest Rate Diffusion Model to the Valuation of Mortgage Rate Insurance", ARCH 1988.2, pp. 47-66 (K.P. Sharp)
58. Actex Study Manual for the Course 210 Examination of the Society of Actuaries, 1989 1989 Edition (W.H. Aitken and K.P. Sharp; my 1989 contribution 105 pages).
59. Actex Study Manual for the Course P-461U Examination of the Society of Actuaries. 1989 1989 Edition (123 pages written in 1989). (K.P. Sharp)
60. Actex Study Manual for the Course I-442C and 1-443U Examinations of the Society of 1989 Actuaries. 1989 Edition (D. London, F.G. Reynolds and K.P. Sharp; my 1989 contribution 201 pages).
61. Ph.D. Thesis: Jan. 1988 Applications of Stochastic Models of Interest Rates (272 pages). 1988 (K.P. Sharp)
62. "Seasonality of Canadian Mortgage Rates" ARCH 1988.1, pp. 175-189 (K.P. Sharp) 1988
63. "Stochastic Models of Interest Rates", Proceedings of the International Congress of 1988 Actuaries, Helsinki, 1988, book 5, The Applications of Modern Techniques to the Investment of Insurance and Pension Funds, pp. 247-261 (K.P. Sharp)
64. "Pension Funding Assumptions and Pension Indexation" Report of the Task Force on 1988 Inflation Protection; Research Studies, Vol. 1, pp. 301-325, Government of Ontario , 1988, (K.P. Sharp).
65. "Early Retirement Incentives Under High Termination Rates" Pension Forum, Vol. 3, No. 1987 3, pp. 7-10 (K.P. Sharp)
66. "Time Series Analysis of Mortgage Rate Insurance", Advances in the Statistical Sciences, 1987 edited by I.B. MacNeill and G.J. Umphrey, Reidel Publishing, Vol. 6, pp. 201-219 (K.P. Sharp)

UNIVERSITY OF TORONTO TEACHING:

	ACT 230	ACT 239	ACT 240	ACT 244	ACT 245	ACT 247	ACT 349	ACT 370	ACT B40	ACT B47	MAT A33	STA 219	Tot
	UTSG	UTM	UTSG	UTM	UTSG	UTSG	UTSG	UTSG	UTSC	UTSC	UTSC	UTM	
2013 F							x						1
2013W					x	x		x					3
2012F	x						x						2
2012SumF					x	x							2
2012SumS			x										1
2012W					x			x					2
2011F	x		x				x		x				4
2011SumS					x	x							2
2011SumF			x										1
2011W					x			x		x	x		4
2010F	x						x		x			x	4
2010SumS					x	x							2
2010SumF	x		x										2
2010W					x					x			2
2009F	x		x				x		x			x	5
2009SumS					x	x							2
2009SumF	x		x										2
2009W		x			x					x			3
2008F	x			x			x		x				4
2008SumS					x	x							2
2008SumF			x										1
2008W		x			x					x			3
2007F				x			x		x				3
2007SumS					x	x							2
2007SumF			x										1
2007W					x					x			2
2006F			x				x		x				3
2006SumS					x	x							2
2006SumF			x				x						2
2006W													0
2005F			x				x						2

Texts:	
ACT230	Mathematics of Investment and Credit, 4 th Ed, S.A. Broverman
ACT245, 370	Derivatives Markets, 2 nd . Ed., R.L. McDonald
ACT349	Principles of Corporate Finance, 11 th . Ed., Brealey, Myers, Allen

UNIVERSITY OF WATERLOO

1982-00	Taught numerous Actuarial Science courses with excellent teaching ratings (available)
2000	Undergraduate Officer, Actuarial Science
1997-98	Faculty Committee on Student Appeals
1996-98	Appointments Committee, Department of Statistics and Actuarial Science
1996-98	Programs Committee, Department of Statistics and Actuarial Science
1996-99	Undergraduate Officer, Actuarial Science
1996-99	Associate Director, Institute of Insurance and Pension Research
1994-95	Undergraduate Officer, Actuarial Science
1999-00	Board, Institute of Insurance and Pension Research
1982-00	Actuarial Science Advisory Board, University of Waterloo
1992-94	Graduate Affairs Committee, Department of Statistics and Actuarial Science
1991-95	Associate Chair, Actuarial Science
1989-91	Library Committee, Faculty of Mathematics
1989-91	Undergraduate Officer, Actuarial Science
1989-91	Standings and Promotions Committee, Faculty of Mathematics
1986-95	Toronto Actuarial Courses coordinator
1985-91	Undergraduate Affairs Committee, Department of Statistics and Actuarial Science
1983-84	Alumni Advisory Committee, Faculty of Mathematics

PROFESSIONAL ACTIVITIES

2012-	Accreditation Committee, Canadian Institute of Actuaries
2012-	Academic Relations Committee, Canadian Institute of Actuaries
1997-00	Associate Editor, North American Actuarial Journal
1997-99	Committee on Economic Statistics, Canadian Institute of Actuaries
1996-98	Supervisor, Society of Actuaries Fall examinations
1996-98	Examination Committee, Society of Actuaries, Course 165
1982-95	Committee on Economic Statistics, Canadian Institute of Actuaries (Chair 1983-1988)
1990-92	Committee on Investment Practice, Canadian Institute of Actuaries