

COLIN M. RAMSAY
E.J. Faulkner Professor
COLLEGE OF BUSINESS ADMINISTRATION

PERSONAL DATA

OFFICE ADDRESS

Actuarial Science Program
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EDUCATION

Ph.D.	School	University of Waterloo, Waterloo, Canada
	Date:	1984
	Major Field:	Statistics and Actuarial Science
M.Math	School:	University of Waterloo, Waterloo, Canada
	Date:	1980
	Major Field:	Actuarial Science
B.S.	School:	The City University, London, England
	Date:	1979
	Major Field:	Actuarial Science

COLLEGE AND UNIVERSITY POSITIONS

1993-present	Endowed College Chair, E.J. Faulkner Professor of Actuarial Science.
1993-present	Professor of Actuarial Science, University of Nebraska-Lincoln.
1991-1993	Associate Professor of Actuarial Science, University of Nebraska-Lincoln.
1990-2003	Director of Actuarial Science, University of Nebraska-Lincoln.
1986-1991	Assistant Professor of Actuarial Science, University of Nebraska-Lincoln.

1984-1986 Assistant Professor of Statistics and Actuarial Science, University of Western Ontario, London, Canada.

RESEARCH INTERESTS

Long Term Care, Sickness and Disability Insurance, and Innovative Applications of Micro-Economics to Actuarial Science (e.g., absenteeism and presenteeism, peer-to-peer insurance, uni-sex actuarial pricing), Adverse Selection, and Micro-Insurance Pricing,

PROFESSIONAL MEMBERSHIPS

Society of Actuaries
Casualty Actuarial Society (Academic)
American Academy of Actuaries
American Risk and Insurance Association
Royal Statistical Society

EDITORIAL BOARDS

1993-2006 Editor of: *Journal of Actuarial Practice*
2017 – Present Associate Editor of *Quarterly Journal of Finance and Accounting* (QJFA)

AD HOC REVIEWER

North American Actuarial Journal
Insurance Mathematics & Economics
Astin Bulletin
Scandinavian Actuarial Journal,
QTQM Journal
Stochastic Models
International Journal of Production Research
Communications in Statistics - Theory and Methods
Distinktion: Journal of Social Theory
Journal of Computational and Applied Mathematics

WORK IN PROGRESS

(Text Books)

Expected Completion Date: January 1, 2021
Title: Principles of Modern Life Contingencies Publisher: John Wiley and Sons
Estimated number of pages: 1,000+ pages over 12 chapters.

Expected Completion Date: January 1, 2022
Title: Solutions Manual for Principles of Modern Life Contingencies
Publisher: John Wiley and Sons

WORK IN PROGRESS

(Articles)

“Doubly Enhanced Medicaid Partnership Annuities (DEMPANs) and Long Term Care for Retired Seniors in the Medicaid Penumbra.” (with Victor I. Oguledo)

“Moral Hazard in Annuity Markets: Is It a Problem?” (with Victor I. Oguledo and Annika Krutto).

“Actuarial Implications of Peer-To-Peer (P2P) Insurance” (with Tatiana Margulies and Victor I. Oguledo)

“Bikinis vs Briefs: Gender Neutral Pricing of Life Insurance Contracts under the European Union Directive,” (with Victor I. Oguledo and Annika Krutto).

“Computation of Transition Probabilities for Finite Markov Multi-State Models.” (with Annika Krutto).

PAPERS CURRENTLY UNDER REVIEW

(In Refereed Publications)

RECENT GRANT FUNDING

2015 Proposal: “Expanding Annuity Markets: A Solution to the Problem of Longevity Risk”
Principal Investigator, Society of Actuaries Centers of Actuarial Excellence 2014 Grant Competition. Award:
\$150,518 for 2015-2018.

PUBLICATIONS

(Articles in Refereed Publications)

“Doubly Enhanced Annuities (DEANs) and the Impact of Quality of Long-Term Care under a Multi-State Model of Activities of Daily Living (ADL,”) (with Victor I. Oguledo), *North American Actuarial Journal*, Published Online: 04 Oct 2019, <https://doi.org/10.1080/10920277.2019.1598270>

“The Annuity Puzzle and an Outline of Its Solution,” (with Victor I. Oguledo), *North American Actuarial Journal*, Vol. 22, No. 4, 2018, pp: 623-645. <https://doi.org/10.1080/10920277.2018.1470936>

“Optimal Employee Behavior and Optimal Sickness Insurance Design when Employers Penalize Sickness Presenteeism,” (with Victor I. Oguledo and Annika Krutto). *North American Actuarial Journal*, Vol. 22, No. 3, 2018, pp: 426-457. <https://doi.org/10.1080/10920277.2018.1435287>

“Optimal Disability Insurance with Moral Hazards: Absenteeism, Presenteeism, and Shirking,” (with Victor I. Oguledo), *North American Actuarial Journal*, Vol. 19, No. 3, 2015, pp. 143-173.

“Pricing High-Risk and Low-Risk Insurance Contracts with Incomplete Information and Production Costs,” (with Victor I. Oguledo and Priya Pathak), *Insurance: Mathematics and Economics*, Vol. 52, No. 3, 2013, pp. 606-614.

“Pricing Funeral (Burial) Insurance in a Microinsurance World with Emphasis on Africa,” (with Luis David Arcila), *North American Actuarial Journal*, Vol. 17, No. 1, 2013, pp. 63-81

- "Insurance Pricing with Complete Information, State-Dependent Utility, and Production Costs," (with Victor I. Oguledo), Insurance: Mathematics and Economics, Vol. 50, No. 3, 2012, pp. 462-469.
- "Optimum Allocations to Health Care Flexible Spending Accounts," (with Victor I. Oguledo), North American Actuarial Journal, Vol. 15, No. 3, 2011, pp. 448-467.
- "The Exact Distribution of Compound Sums of Pareto Distributed Losses," Scandinavian Actuarial Journal, Vol. 109, No. 1, 2009, pp. 27-37.
- "The Distribution of Sums of I.I.D. Pareto Random Variables with Arbitrary Shape Parameter," Communications in Statistics--Theory and Methods, Vol. 37, No. 14, 2008, pp. 2177-2184.
- "Exact waiting time and queue size distributions for equilibrium $M/G/1$ queues with Pareto service," Queueing Systems, Vol. 57, No. 4, December, 2007, pp. 147-155.
- "Determining the Optimum Guarantee Period for a One-Life Retirement Annuity Using Utility Theory," (with Gopi Shah Goda), North American Actuarial Journal, Vol. 11, No. 3, 2007, pp. 100-112.
- "The Distribution of Sums of Certain I.I.D. Pareto Variates," Communications in Statistics--Theory and Methods, Vol. 35, No. 3, 2006, pp. 395-405.
- "A New Method of Estimating Loss Reserves," Proceedings of the Casualty Actuarial Society, 2005, pp. 462-485.
- "A Note on a Borrower's Optimum Choice of Points and Mortgage Interest," (with Victor Oguledo), Nordic Journal of Surveying and Real Estate Research, Vol. 2, No. 2, 2005, pp. 56-62.
- "A Formula for the After-Tax APR for Home Mortgages," (with Victor Oguledo), International Journal of Bank Marketing, Vol. 23, Nos. 6 and 7, 2005, pp. 464-469.
- "A Restaurateur's Dilemma: A Two-Period Capacity Decision Problem with Uncertain Demand and Repeat Customers" (with Anna Vygodina), Journal of Economics, Vol. 31, No. 1 2005, pp. 55-70.
- "Pricing Optional Group Term Insurance: A New Approach Using Reservation Prices," Insurance: Mathematics and Economics, Vol. 36, No. 1, 2005, pp. 37-55.
- "A Solution to the Ruin Problem for Pareto Distributions," Insurance: Mathematics and Economics, Vol. 33, 2003, pp. 109-116.
- "Calculating Ruin Probabilities via Product Integration," (with Miguel Usabel), ASTIN Bulletin, Vol. 27, No. 2, 1997, pp. 263-273.
- "An Introduction to Business Credit Insurance," Transactions of the Society of Actuaries, Vol. 45, 1993, pp. 275-209.
- "Percentile Cost Methods: A New Approach to Pension Valuations," Transactions of the Society of Actuaries, Vol. 45, 1993, pp. 351-415.
- "On Loading Gross Premiums for Risk without Using Utility Theory," Transactions of the Society of Actuaries, Vol. 45, 1993, pp. 305-336.
- "Annuity Distributions: A New Class of Compound Poisson Distributions," Insurance: Mathematics and Economics, 1993, pp. 15-22.

"A Note on Random Survivorship Group Benefits," ASTIN Bulletin, Vol. 23, 1993, pp. 149-156.

"A Practical Algorithm for Approximating the Probability of Ruin," Transactions of the Society of Actuaries, Vol. 44, 1992

"Improving Goovaerts' and De Vylder's Stable Recursive Algorithm," ASTIN Bulletin Vol. 22, 1992, pp. 51-59.

"Minimum Variance Moving-Weighted-Moving Average Graduation," Transactions of the Society of Actuaries, Vol. 43, 1991, pp. 305-325.

"On the Probabilities Associated with Exponential Type 1 Counters," Sankhya, Series A, Vol. 53, Part 3, 1991, pp. 357-364.

"The Linear Model Revisited," Insurance: Mathematics & Economics, 1991, pp. 137-143.

"A Note on the Normal Power Approximation," ASTIN Bulletin, Vol. 21, 1991, pp. 147-150.

"On Blocked Poisson Processes in Risk Theory," Insurance: Mathematics & Economics, 1991, pp. 1-8

"The Impact of Mortality on Panjer's Model of Aids Survival," Transactions of the Society of Actuaries, Vol. 42, 1990, pp. 321-333.

"On a Generalization of Wald's Identity with an Application to Risk Theory," Insurance: Mathematics & Economics, 1990, pp. 149-153.

"AIDS and the Calculation of Life Insurance Functions," Transactions of the Society of Actuaries, Vol. 41, 1989, pp. 393-422.

"On an Integral Equation for Compound-Annuity Distributions," ASTIN Bulletin, Vol. 19, No. 2, 1989, pp. 191-198.

"Strong Limit Theorems for Sums of Random Variables Defined on a Markov Chain," Applied Probability, Stochastic Processes and Sampling Theory, I. B. Mac Neill and G. Umphery, editors, Vol.1, 1987, pp. 189-196.

"Non-Ruin Probabilities When Claims Form a Compound Poisson-Markov Chain Process," Scandinavian Actuarial Journal, 1986, pp. 3-12.

"The Moments of Compound Interest Functions When Interest Fluctuates as a Compound Markov Chain," Insurance and Risk Theory, M. Goovaerts, et al., editors, Reidel, Holland, 1986.

"An Optimal and Equitable Net Risk Premium Payment Plan," Journal of Risk and Insurance, 1986, pp. 294-300.

"The Optimality of the Net Single Premium in Life Insurance," Journal of the Institute of Actuaries, Vol. 112, 1986, pp. 499-508.

"Two Other Views of the Traditional Net Risk Premium Rate," Insurance: Mathematics & Economics, Vol. 4, 1985, pp. 245-248.

"A System of Integro-Differential-Difference Equations in Risk Theory, Using Compound Birth-Death Processes," Scandinavian Actuarial Journal, 1985, pp. 39-48.

"The Asymptotic Ruin Problem when the Healthy and Sickness Periods Form an Alternating Renewal Process," Insurance: Mathematics & Economics, Vol. 3, 1984, pp. 139-144.

PRESENTATIONS (DURING PAST 5 YEARS)

"The Impact of Quality of Care on Retiree Choice of Long-Term Care in the USA." Presented at the 23rd International Congress on Insurance Mathematics and Economics, Technical University of Munich, Munich, GERMANY, July 10–12, 2019.

"Doubly Enhanced Annuities: The Annuity Puzzle and Long-Term Care in the US." Presented on Tuesday, Jan. 22, 2019 at the West East Institute Conference, Barcelona, SPAIN.

"Doubly Enhanced Annuities: The Annuity Puzzle and Long-Term Care in the US." Presented to the Actuarial Faculty on Thursday, Jan. 24, 2019 at the University of Barcelona, Barcelona, SPAIN.

"Discounted Lifetime Cost of Post-Retirement Long-Term Care and Annuity Benefits Under a Markov Mortality-Morbidity Model." Presented at the 11th International Conference of the ERCIM WG On Computational and Methodological Statistics, University of Pisa, ITALY, December 14–16, 2018

"Doubly Enhanced Annuities and the Impact of Price and Quality of Long Term Care on Retiree Decisions." Presented on Thursday, August 9, 2018 at the Actuarial Research Conference (ARC) 2018, Western University, London, Ontario, CANADA.

"Agricultural Insurance, Farmer Security, and Food Security in CARICOM." Presented at the 32nd West Indies Agricultural Economics Conference, August 6th to 11th, 2017, Georgetown, Guyana

"The Annuity Puzzle and an Outline of Its Solution." Presented at the 2017 Actuarial Research Conference, July 26 to July 29, 2017, Georgia State University, Atlanta, GA

"The Annuity Puzzle and an Outline of Its Solution." Presented at the 20th International Congress on Insurance Mathematics and Economics, July 3 to July 5, 2017, Vienna, Austria

"Optimal Employee Behavior and Optimal Sickness Insurance Design when Employers Penalize Sickness Presenteeism," Presented at the 20th International Congress on Insurance Mathematics and Economics, Atlanta, GA (July 2016).

"Optimal Employee Behavior and Optimal Sickness Insurance Design when Employers Penalize Sickness Presenteeism," Presented at the 10th Tartu Conference on Multivariate Statistics, 28 June - 1 July 2016, Tartu, Estonia

"Optimal Disability Insurance with Moral Hazards: Absenteeism, Presenteeism, and Shirking," Presented at the 19th International Congress on Insurance Mathematics and Economics, Liverpool, England (July 2015).

"The Twin Issues of Absenteeism and Presenteeism in Designing Sickness Insurance Schemes" Presented at the 1st International Congress on Actuarial Science and Quantitative Finance, Universidad Nacional de Colombia, Bogota, Colombia (June 2014).